Consultancy Report for Eastern Associates

By
Prabhath Perera
(2007)

Table of Content

Executive Summary 3
Introduction 4
  Aim 4
  Background 4
RFID Technology 4
  Overview 4
  Implementation 4
  Advantages 4
  Disadvantages 5
On-line System 5
  Overview 5
  Inventory Management 6
  Payments 6
  On-line Fraud and Security 7
Outsourcing 8
  Overview 8
  Advantages 9
  Disadvantages 9
Customer Relationship Management (CRM Technology) 9
  Advantages 9
  Disadvantages 10
Impact of Future Technologies 10
Reference 12
Bibliography 13

Executive Summary

The report describes the use of several technologies for Eastern Associates operations such as RFID technology, full integrated e-Business system and integrating e-Business system with Customer Relationship Management system. Further the report outlines the online fraud and security issues and prevention, pros and cons of outsourcing e-Business functions, the impact of future technologies to Eastern Associates operations and impact of investing for future technologies.

The RFID technology will allow the company to efficiently manage the inventory. Since RFID technology able to scan more than one product at the same time, it will not only save time but also reduce costs and increases the productivity. On the other hand, use of RFID technology is expensive. There are expensive implementation and equipment costs such as E-tags, RFID reader etc.

The integration of online ordering system to the existing inventory management system will allow the company to increase the efficiency. However it is necessary to ensure the compatibility of both system for the integration, before implement it. The payments of the online system could be directly deposit to the company bank account through the secure online payment gateway. The both secure payment gateway and the online system should provide the maximum security for transactions for both seller and the customer. Therefore ensure the security features provided by online shopping cart software and the secure payment gateway. It is recommended to adopt a reputed shopping cart and a secure payment gateway. Also ensure not to store unnecessary customer information such as credit card details. In addition ensure to install firewall, antivirus, spyware software for all the company computers before access internet.

Outsourcing e-Business functions will allow the company to focus more on its core operations. Outsourcing from an industry professional will allow the company to select the suitable technology and implement or integrate the technology efficiently. Also outsourcing will reduce other costs such as labor. On the downside, there are security issues since an outside company involve in internal operations, risk of relying on another company, cost overruns etc.

The integration of the CRM with the e-Business will allow the company to provide a better service to the customer. Since all the relevant customer information will store in the CRM system, the company will be able anticipate customer needs by analyzing previous information of the customer. In addition CRM system will assist the company to create effective marketing strategies, develop better communication channels etc. The potential drawbacks of CRM are high implementation cost and time, lack of preliminary investigation before the implementation, privacy issues since storing customer information etc.

The future technologies will allow the company to increase the productivity and efficiency of the company operations. However there are several risks of adopting latest technologies into company operations. For instance mobile commerce will allow the company and its customers to track products, delivery details etc. Since the technology is new, the technology is expensive and there are security issues as well. However there are other latest low cost technologies such as faster broadband, VoIP etc.

Introduction

Aim

The aim of the report is to assess use of latest technologies for Eastern Associates operations, outsourcing and impact of future technology to the business.

Background

Eastern Associates (EA) is a small scale garden ornaments manufacturing and selling company located in Melbourne. The company sells products such as Garden Gnomes, garden water features, Garden statues, etc

Eastern Associates wish to improve their stock tracking, e-Business, and customer relationship by integrating latest technologies such as RFID, full integrated on-line system, CRM system to the business. Further Eastern Associates concern about outsourcing e-Business operations, knowledge in on-line security and fraud and impact of future technologies to the business.

RFID Technology

Overview

Radio Frequency Identification (RFID) is a system which can be used to transmit the identity of a product wirelessly and track the product. There is a RFID tag on the product which contains the information about the product.

A RFID reader can be used to retrieve the information in the RFID tag and pass the information to the computer system.

Implementation

Implementation of RFID technology will require a number of physical components and software. A RFID tag (E-tag) which works as the transponder will require to store the product information and need to place it on the product. A RFID reader (Tag Reader) which works as the transceiver will require to retrieve data from E-tags. Then the RFID reader will send retrieved data to the inventory management software and the data will be shared through the company network system. Therefore the inventory management system has to integrate with the RFID technology. Further there is Electronic Product Code (EPC) which is a standard to identify each product. In addition a secure network will require to share data.

Advantages

‘One of RFID’s most attractive offerings is its fundamental attribute of not requiring line-of-sight when reading RFID tags’ (Michael & McCathie 2005). This means unlike other technologies such as barcodes, RFID tag does not need to be on the surface of the product and does not require manual product scanning. Since the RFID technology allows to scan larger number of products (E-tags) at once rather than product by product, it not only save time also it helps to reduce the labor costs. According to Alexander et al (2002), the product check-in time could be reduced by 60-93% with RFID

technology. Further use of RFID technology results more efficient inventory management. RFID readers on shelves could monitor the selling process of products and automatically request more inventory. This helps supply chain to deliver the right product to the right place in real-time demand. Not only that, RFID also helps to track products and share information in real-time. For instance when warehouse deliver some products to the shop and, a message will send automatically to the shop with all the information about delivering products. In terms of security, when the products being stolen or lost, the Electronic Product Code network could track products and inform Supply Chain Management system with product details in real-time. In addition RFID tags could be reused if a company using tags within their own premises. But it cannot be used in an open supply chain where one company place tags on a product and read the tag by another company.

Disadvantages

On the other hand there are some drawbacks of the RFID technology. The major disadvantage is the high cost. Despite saving money from low labor and efficient inventory management, the implementation integration of RFID technology is expensive. The price of RFID tag (E-tag) is US$0.15-0.75, which is considerably expensive when using tags for larger number of products. Also integration of RFID into an existing system is expensive and takes time to implement.

> 'The industry analyst Forrester Research issued a report warning that most RFID technology is still immature and it would cost the average Wal-Mart supplier up to US$9 million to comply with the mandate' (Donoghue 2004).

Since RFID technology recently came to the real-world business environment, there are lack of standards for the technology which may causes confusion among developers and users. 'Within the RFID market, a lack of standards has resulted in manufacturers having different operating guidelines for tags, readers, and antennae' (Persaud 2007). Further radio frequency can be interfered (by iron, steel, water etc.) and it may cause un-reliable data transmission. In terms of privacy, end product consumers have worried about RFID tags because tags can be hidden and can continue to track even after being sold.

On-line System

Overview

E-commerce website is a system which automatically sells products and process transaction through the internet. Since there are number of online shopping cart (E-commerce) software available, it is better to buy software and customize it to meet the company needs. There are several issues which need to be address when implement an online system such as security, payments, inventory management etc.

In the first place it is necessary to identify the process of the shopping cart transaction. First customer needs to register and log in to the website. When customer places the order and makes payments, the website connects to a secure payment gateway. The payment gateway will securely process the transaction (Verify credit card details) and upon approval, the secure payment gateway will send the seller the confirmation. If the transaction is approved, payment will credited to the seller bank account and seller will deliver goods to the customer.

Inventory Management

Since the company willing to sell products online as well as selling products in a physical store, it will be convenient to manage the inventory through one inventory management system. Therefore product stocks could be efficiently managed by integrating the website to the existing inventory management system. When the inventory is low, it will automatically re-order the inventory or inform the company.

> 'The program alerts you via e-mail when a low-inventory threshold is reached and again when inventory is exhausted. When the inventory reaches zero you can elect to either (1) inform customers that the item is out-of-stock and not allow a purchase or (2) accept the purchase and back-order the product' (Wilson 2004).

However it is necessary to find out the compatibility of the existing inventory management system to integrate with an E-commerce system. The reason is the inventory management system may not support the E-commerce system. It is better to contact the inventory management system company or the E-commerce (shopping cart) software company to clarify the compatibility of both products.

Payments

The payments from the customer could be deposit to the company bank account through the secure payment gateway. Since the secure payment gateway process the transaction automatically, it saves the time and increase the efficiency of the system. Most of banks in Melbourne offer payment gateways such as commonwealth bank offer CommWeb secure payment gateway and ANZ bank offer ANZ eGate. Also there are many payment gateways in the market for affordable prices. For an instance PayPal offer a secure payment gateway called Payflow Gateway. However it is necessary to ensure the compatibility of the payment gateway and the E-commerce system. The following graph illustrates the compatibility of widely use payment gateways with shopping cart systems:

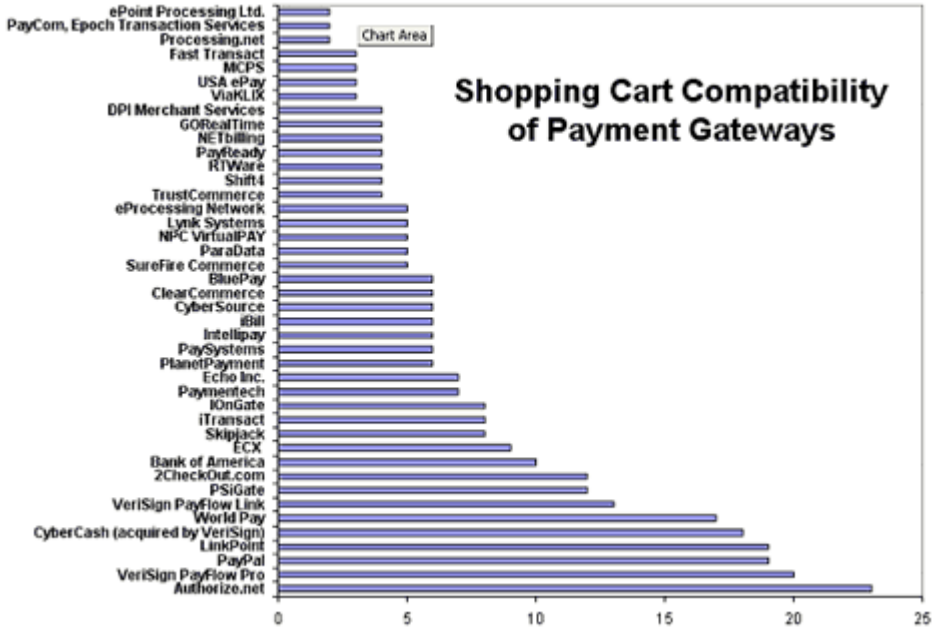

Fig 1 Shopping Cart Compatibility of Payment Gateways
(How Does Shopping Cart Software Work? 2004)

Some payment gateways transfer each transaction to the seller bank account and some transfer all the transactions at the end of the day as a one batch.

On-line Fraud and Security

Online fraud and security is a major issue in E-commerce industry. Both customer and seller should concern about security issues in an e-commerce environment. Customers may not buy goods if they do not trust the website. It is seller responsibility to take every single action to establish a secure shopping cart through out the shopping process. Therefore it is better to use reputed e-commerce software or services. For an instance shopping cart software or secure payment gateways. However most of secure payment gateways establish a Secure Socket Layer (SSL) during the transaction which protects customer's sensitive information from other parties (ex: Hackers). Many reputed secure payment gateways offer additional security features. The PayPal Payflow Gateway offers fraud protection which protects the seller from fraud and chargebacks. In addition most of shopping cart software offer fraud detection options such as tracing each order, IP and user entered data. Further it is important to use a reputed online credit card processing company. The reason is that it is necessary to authenticate the purchaser as the true owner of the credit card. There is a technology called Address Verification Service (AVS) which matches the buyer information with the financial institution. Fortunately most of reputed secure payment gateways have all these safety features in-built. Also it is important to acknowledge customers about the security of the website (Shopping Cart). Reputed online security companies (Ex: VeriSign) offer certificates, SSL encryption and other online security for websites. By adding a certificate, the company will be able to gain customer loyalty while providing maximum security for online transactions.

While shopping cart software and secure payment gateway provide security and fraud protection, ensure not to risk anything from your side (seller's side). For instance ensure not to store unnecessary information of the customer. Ex: Credit Card information. Further be aware of suspicious orders and customers. For instance when a customer orders large quantities, use free email accounts, ask for immediate deliveries etc. Also take all appropriate security actions such as installing a firewall, anti-virus software and scan for virus, spam, spyware on regular basis. In addition add fraudulent notices on the shopping cart. Explain the legal situation and the company will take legal actions against fraudulent orders. The following graph shows survey results of actions of organisations to control fraud risk.

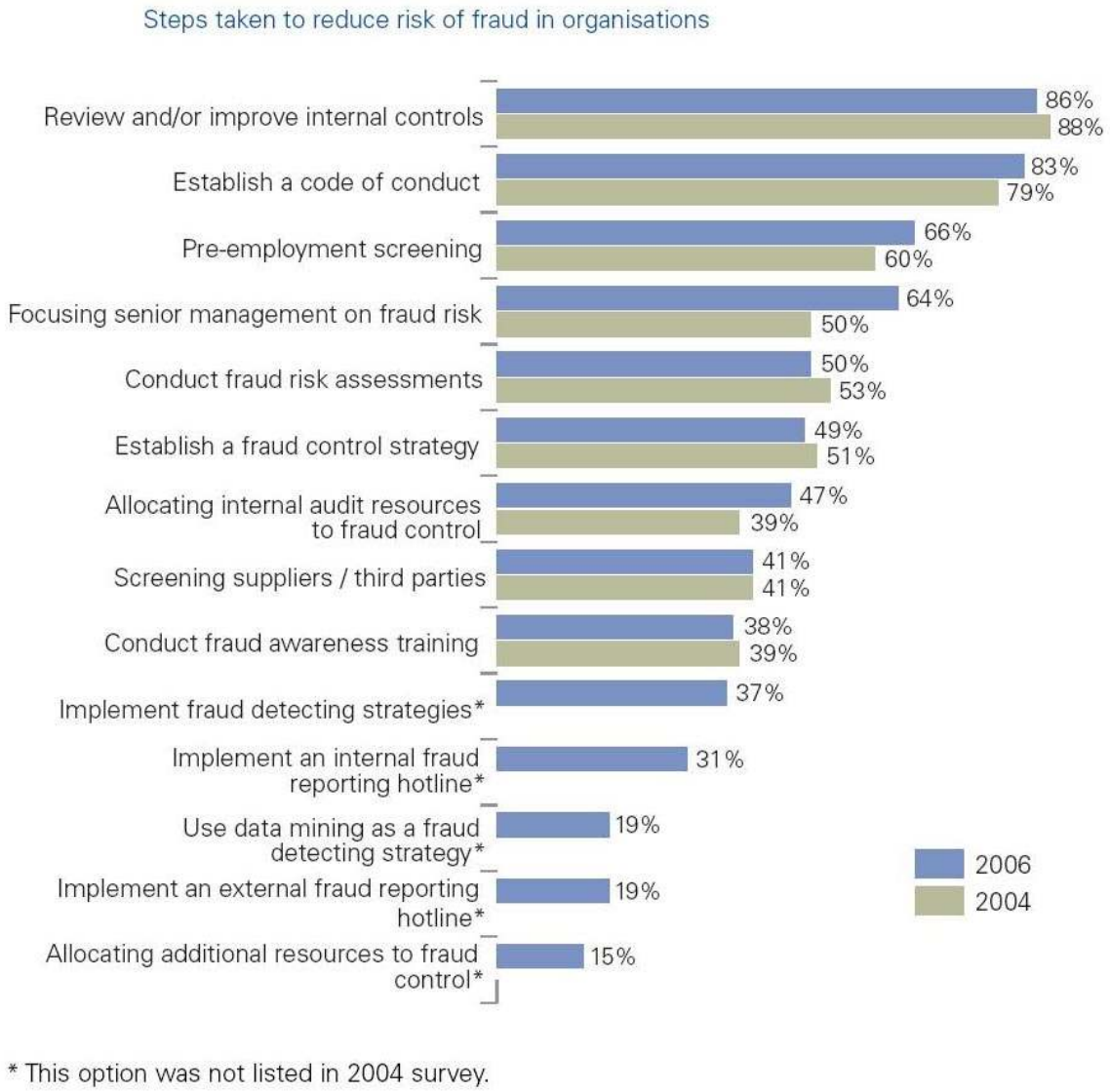

Fig 2 What are organisations doing to control fraud risk?
(Fraud Survey 20062004)

Outsourcing

Overview

Outsourcing IT functions is hiring IT experts from outside for company's information technology work. There are two types of outsourcing:

- Domestic Outsourcing (Onshore Outsourcing)
- Overseas Outsourcing (Offshore Outsourcing)

Domestic outsourcing is outsourcing from a local firm and overseas outsourcing is outsourcing from another country. Mostly it is cheaper to outsource from countries such

as India, Sri Lanka where the labor costs are lower than developed countries. However it is necessary to consider about other facts such as language and cultural barrier, time, communication costs as well as the labor costs.

Advantages

There are many advantages of using outsourcing. Since Eastern Associates is specialized in a different industry (garden ornaments), outsourcing other function will not only save money, also allow the business to focus more on the company's core competencies and strengths, which will give the competitive advantage. 'Focus your company on your core competency, and let someone else do the rest'(Lowe 2002). Since most of IT companies provide tested and widely use technologies, outsourcing could reduce the risk of investing and implementing the wrong technology. The IT industry experts will assist to find out the suitable technology for the company needs. In addition saving money by outsourcing will improve the competitive position of the business. Outsourcing will save company money in different ways by reducing costs such as operational costs, technical staff costs etc. Further outsourcing from industry professionals will provide the access to advance and cutting edge technologies which could improve the efficiency of the business. 'Outsourcers have the expert staff and technological assets to facilitate functions like the conversion from legacy systems to new infrastructures, taking the burden away from their clients' (Arabe 2001). In terms of human resources, when outsourcing IT functions the company does not require to recruit people for its IT works.

Disadvantages

On the downside, security and confidentiality issues may occur when outsourcing. For instance there is a possibility of unauthorized access to the company data when outsourcing. This could lead to financial loses, reputation etc. The main reason for outsourcing is the low cost. But it is possible to overrun the project costs. Also the outsourcing company may not deliver the expected system or a poorly developed system. If the contract does not address these issues, it will result financial damages. There may be less managerial control over the project when its compare to managing your own staff. Also the company may focus on the outsourcing project process rather than the business or customers. There is a risk of outsourcing company ceasing to trade. Ex: bankrupt. There may other issues such as 'replacing skilled people by people with less skill' (Gray 2006, p. 169) and risk of loosing these skilled people when working with another company (outsourcing company). There may be hidden costs, agreements in the contract, poorly defined goals and objectives, lack of knowledge in employment law, lack of risk analysis and contingency planning, language barriers when off-shore outsourcing, lack of communication etc. which will results project failures.

Customer Relationship Management (CRM Technology)

CRM is an "infrastructure that enables the delineation of and increase in customer value and the correct means by which to motivate valuable customers to remain loyal – indeed to buy again." (Dyché, 2001).

Advantages

There are many advantages that could gain by integrating CRM to the e-Business. The company will be able to gather all the information about customer and it will lead to

improve the customer service. Since the company has all the information about the customer, the company could provide customized service to each customer which increases the customer satisfaction. The better customer service will help to increase the customer loyalty and make them buy products again from your business. The analyzed information about customers will assist the company when creating marketing strategies.

> 'CRM systems help the organisation in identifying potential customers. By keeping a track of the profiles of their existing clientele, the business can easily come up with a strategy to determine the kind of people they should target such that it returns them maximum clientage' (Gollan 2006).

Further identifying customer trends, buying patterns etc. will lead to anticipate customer needs. For instance if a customer frequently buys Garden statues, then the online store could offer latest Garden statues, every time customer visit the website. Also the CRM system will allow the company to reduce costs and sales distribution. For instance 'use web applications to decrease number of direct sales people and distribution channels needed' (Gray 2006, p. 103). In addition it will reduce the customer support and labor costs by automating call centre and providing all the information to the customer service representatives. Ultimately all these advantages will result more profit, selling more products, good reputation and a better customer service.

Disadvantages

There are potential drawbacks of CRM technology. Since the CRM technologies are still immature, the implementation cost may high and it will take long period for the implementation. Implementing CRM without researching customer culture may fail to deliver expected results. 'Investing in CRM technology without a customer-oriented cultural mind-set will fail to yield an acceptable ROI' (Xu et al. 2002). Also it is necessary to design the CRM system to suits the working style of employees. Further there is a risk of unreliable data in the system which may results limited benefits from the system.

> 'The variety of users combined with change processes may mean that there are no viable data present in the system at its outset. This would result in limited benefit for the users at the outset, no opportunities for quick wins and a resultant drop in support for the system' (Corner and Hinton 2002).

Also poor communication inside the business may effect on the business. Therefore all the relevant employees should know all the information about CRM and how to use it effectively, in order to gain the advantage of CRM system. Further there is a risk of integrating a CRM system as a complete solution and it is better to implement it with short term goals and a contingency plan. In addition legal issues may occur when using customer information. 'Privacy issues are not simple. Customer concerns, legal regulations, and public policies are overwhelming around the world' (Gray 2006, p. 109).

Impact of Future Technologies

Use of latest technologies will not only increase the efficiency and productivity of the company operations but allow the company to successfully compete with its competitors. But it is necessary to choose suitable technologies for the company needs rather than using technologies just because they are new. Further research on cutting-edge technologies is required before the implementation. Therefore it better to adopt timely tested and proven technologies which deliver the expected results. Since technology getting new day after day, there is always a risk of becoming a technology absolute after a period of time. Further there are management difficulties and lack of training and

support availability of new technologies. Therefore research the advantages and drawbacks of latest technologies and consider about long term and short term advantages and return of investment before adopt it.

The latest technologies such as mobile commerce will allow customers to purchase products or access information anytime they want from any where. But it is necessary to determine advantages of using such a technology for business operations. For instance wholesale buyers will be able to check garden ornaments prices or availability of products and order products from their PDA. How ever there are risks and issues of using mobile commerce at this stage. Ex: since it's a latest technology there are security issues of using mobile commerce. As a new technology, implementation of a mobile commerce system will expensive compared to advantages of such system to a small-scale company.

Since Eastern Associates concerning to introduce an e-Business system, faster broadband access could benefit the businesses in different ways. A fast internet connection will allow the company to communicate with buyers online, which is easier, cheaper and faster than other communication methods. For instance faster broadband access will allow the company to use latest communication technologies such as VoIP (Voice over IP) or online communication (Ex: Skype) which is cheaper than telephone calls (For both local and international calls). Further online communication will allow parties (buyer, seller etc.) to stay online through out their work time. Another benefit of faster internet is the ability to manage the online shopping cart more efficiently. For instance manage regular updates of the shopping cart such as products. Since the company able to provide all the information through the internet (via email, voice chat etc.), it will increase the company efficiency, customer satisfaction and ultimately lead to gain more customers and orders. Investment on broadband could not concern as expensive investment since faster broadband internet connections are largely available in Australia for affordable prices.

Reference

Alexander, K, Gilliam, T, Gramling, K, Kindy, M, Moogimane, D, Schultz, M & Woods, M 2002, *Focus on the Supply Chain: Applying Auto-ID within the Distribution Center*, *Auto-ID Center, Massachusetts Institute of Technology*, retrieved 08 January 2008, <http://gs1au.org/assets/documents/info/case_studies/case_epc_applying_autoid.pdf>

Arabe, KC 2001, *e-Commerce Outsourcing: Big Advantages for Smaller Businesses*, Thomas Publishing Company, retrieved 11 January 2008, <http://news.thomasnet.com/IMT/archives/2001/03/ecommerce_outso.html?t=archive>

Chapple, L, Ferguson, C, Geddes, K, Lee, K, Mahler, B & Morris, P 2006, *Fraud Survey 2006*, KPMG Australia, retrieved 08 January 2008, <http://www.kpmg.com.au/Portals/0/FraudSurvey%2006%20WP(web).pdf>

Chou, DC, Lin, B, Xu, Y & Yen, DC 2002, 'Adopting customer relationship management technology, Industrial Management & Data Systems, vol. 102, no. 8, pp. 442 - 452, retrieved 11 January 2008, <http://www.emeraldinsight.com.ezproxy-f.deakin.edu.au/Insight/ViewContentServlet?Filename=Published/EmeraldFullTextArticle/Articles/0291020804.html>

Donoghue, A 2004, *RFID: Proceed with caution*, ZDNet Australia, retrieved 08 January 2008, < http://www.zdnet.com.au/insight/hardware/soa/RFID-Proceed-with-caution/0,139023759,139147123,00.htm>

Dyché, J 2001, *The CRM handbook: A business guide to customer relationship management,* Addison-Wesley.

Gollan, C 2006, *Advantages of CRM*, EzineArticles.com, retrieved 11 January 2008, <http://ezinearticles.com/?Advantages-of-CRM&id=244781>

Gray, P 2006, *Manager's Guide to Making Decisions about Information Systems*, John Wiley & Sons, Hoboken, NJ.

How Does Shopping Cart Software Work? [Image] 2004, retrieved 10 January 2008, <http://www.wilsonweb.com/wct7/images/carts_payment_gateways.gif>

Lowe, K 2002, *The Pros and Cons of Outsourcing - Should you outsource business functions or is it better to keep them in-house?*, Entrepreneur.com, retrieved 11 January 2008, <http://www.entrepreneur.com/humanresources/hiring/article49616.html>

McCathie, L & Michael, K 2005, *The pros and cons of RFID in supply chain management*, University of Wollongong, retrieved 08 January 2008, <http://ro.uow.edu.au/infopapers/105>

Persaud, D 2007, *Are You Tuned into Radio Frequency Identification?*, Technology Evaluation, retrieved 08 January 2008, <http://www.glscs.com/news/einsider.htm>

Wilson, RF 2004, *How Does Shopping Cart Software Work?*, Web Marketing Today, retrieved 10 January 2008, <http://www.wilsonweb.com/wct7/cart_intro.htm>

Bibliography

BearingPoint carries out feasibility study for RFID-based baggage handling systems 2005, Telecomworldwire, retrieved 09 January 2008, <http://findarticles.com/p/articles/mi_m0ECZ/is_2005_Nov_10/ai_n15801434>

Charlton, K & Taylor, N 2004, *Online Credit Card Fraud against Small Businesses*, Australian Institute of Criminology, retrieved 09 January 2008, < http://www.aic.gov.au/publications/rpp/60/>

Gambon, J 2006, *RFID Contains Solution to Chinese Shipping Problems*, RFID Journal, retrieved 10 January 2008, <http://www.rfidjournal.com/article/articleview/3412/>

Gibson, C & Bonsor, K 2008, *How RFID Works*, Howstuffworks, retrieved 09 January 2008, <http://electronics.howstuffworks.com/rfid.htm>

Ross DF, 2005, 'E-CRM FROM A SUPPLY CHAIN MANAGEMENT PERSPECTIVE', *Library - Information Science & Technology Abstracts*, vol. 22, no. 1, pp. 33-44, retrieved 10 January 2008, < http://web.ebscohost.com.ezproxy-m.deakin.edu.au/ehost/pdf?vid=26&hid=8&sid=28fcb918-9667-4559-acfe-4af6b35f090f%40SRCSM1>

What is RFID? 2008, RFID Journal, retrieved 10 January 2008, <http://www.rfidjournal.com/article/view/1339/1/129>

Wokosin, L, n.d, How *Does E-Commerce Work?*, Society for Technical Communication, retrieved 10 January 2008, <http://209.85.173.104/search?q=cache:hWNgSJhM63oJ:www.stc.org/confproceed/2001/PDFs/STC48-000128.PDF+How+Does+E-Commerce+Work%3F&hl=en&ct=clnk&cd=1&gl=au>