

Electronic Customer Relations in Supermarkets and Grocery Stores

Anna Burdg and June Wei
Department of Management
College of Business
University of West Florida
11000 University Parkway, Pensacola, FL, 32514
amb72@students.uwf.edu and jwei@uwf.edu
850-474-2771

ABSTRACT

This paper aims at investigating the customer relations in supermarkets and grocery stores. Specifically, this paper first developed an electronic customer chain model. Then, a set of electronic business items were derived based on the model. Data were also collected to analyze the patter of implementation on these items in the top six companies in the U.S. The results will help to enhance the customer relations in the supermarkets and grocery stores electronic business.

Keywords: customer chain, e-business, grocery stores

INTRODUCTION

Margins in the Supermarket and Grocery Stores (S&GS) industry are historically low with the five year average profit margin at 2.27% (Supervalu, 2009). For this reason, grocers have been slow to add technology unless the technology can offer an immediate return. With little growth and low margins, grocery companies have to constantly be thinking about their bottom lines. Information technology (IT) in the industry has to prove to quickly increase sales and/or reduce costs otherwise some companies may not adopt it (Imlay, 2006). The irony is that grocers are focused so much on their present bottom lines that they cannot see the necessity of the IT for their future profitability.

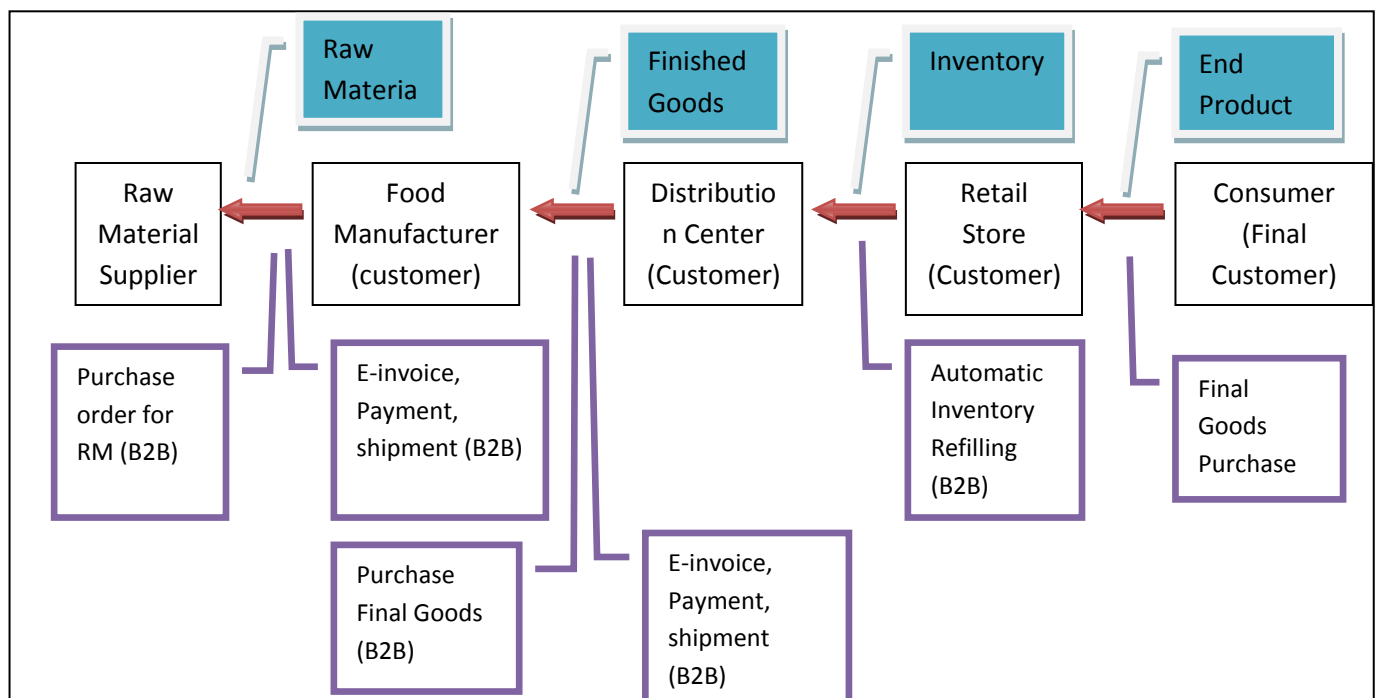
Information technologies that provide benefits of efficiency in this industry are point of sale (POS) systems (Imlay, 2006; What is POS, 2011), global data synchronization (GDS) (Barkwell & Woo, 2006), electronic data interchange (EDI) (Narayanan, Maruchek, Handfield, 2009), and radio frequency identification (RFID) (Barkwell & Woo, 2006; Frazier, Prater, & Reyes, 2005; Holloway, 2006). These forms of IT are used for e-commerce activities, which are simply business transactions done through the use of IT. They create efficiencies by getting rid of time and distance factors, lowering distribution and transaction expenses, offering more information, and tapping into a larger customer and supplier base (Vlachos, 2011). However, the IT has not been sufficiently implemented in the S&GS industry. Due to the lack of research in the area of IT implementation in the S&GS industry, the objective of this paper is to develop important IT items in order to accelerate the IT adoption in the S&GS industry.

The remainder of the paper is organized as follows: Section 2 develops an S&GS electronic customer model. Section 3 presents methodology in which a set of electronic business including business-to-business (B2B) and business-to-consumer (B2C) items were derived based on the developed model. Data were also collected in the top six companies in the S&GS industry. Section 4 presents findings and Section 5 includes discussions and conclusions.

S&GS ELECTRONIC CUSTOMER CHAIN MODEL

The customer chain involves every person associated with the value chain. Each person is someone else’s customer. External customers purchase the end product while internal customers are employees of the manufacturing or service companies that are producing the product or service as well as employees of companies along the supply chain. These internal customers rely on the person or process that precedes them on the value chain (Krajewski, Malhotra, & Ritzman, 2007). A customer chain consulting company defines the customer chain as “the connection of all the activities from the initial customer contact to the delivery of all desired products, services, and support” (Customer Chain, 2010). Another definition of the customer chain refers to the customers as stakeholders. The stakeholders each have stake in the success of the product and are involved from customer order to delivery of the final product and support each process in the middle (Donaldson, Ishii, & Sheppard, 2006).

Figure 1 depicts the customer chain in the S&GS industry. Each upstream activity is the customer of the preceding activity. In this picture, the manufacturer (e.g., purchasing or procurement manager) is the customer to the raw material supplier (e.g., shipping manager); the distribution center (e.g., warehouse supervisor) is the customer to the manufacturer (e.g., shipping manager); the retail store (e.g., store manager) is the customer to the distribution center (e.g., shipping manager); and the final consumer is the customer of the retail store. Figure 1 also shows the flow of materials from raw materials to end product. The e-customer chain illustrates the e-business actions taken between business and customers such as e-procurement, e-invoice, payment, and inventory management.



*Figure 1. E-Customer Chain for the S&GS Industry***METHODOLOGY**

Table 1 lists the major e-business applications in the S&GS Industry. B2B is the dominant user of e-business activities. B2C has six possible e-business applications, but one of those, e-grocery, is not widely used.

Table 1: B2B and B2C Implementation Items

	Application	Description
B2B		
1	Inventory Tracking	Use of RFID to track inventory from production to distribution and to store
2	Information Exchange	Use of GDS to share product information from supplier to manufacturer to retailer
3	Communication	Use of EDI, e-mail, and company extranet to communicate with suppliers, manufacturers, and distributors
4	POS System	Use of POS for automatic product refilling
5	E-invoicing	Use of EDI to transmit e-invoices for payments of raw materials, finished goods, or final inventory
6	E-procurement	Use of EDI to transmit purchase orders for raw materials
7	Product Purchasing	Use of EDI to transmit purchase orders for final good inventory
8	Funds Transfer	Use of EDI to pay for raw materials or finished goods
9	Technology Purchases	Purchasing technology software (RFID, EDI, POS, etc.) from third party vendors
B2C		
1	Corporate Website	Makes available company and product information for the use of the external customer
2	E-grocery	Allows customers to shop, order, and pay for their groceries online
3	Customer Service	Use of e-mail and chat to communicate with customers online
4	Mobile Applications	Makes available company and product information for the use of the external customer using a "smart" phone
5	Internet Marketing	Advertisements online to entice customers to shop at a particular store
6	Transactions	Use of POS to make customer transactions in store

Table 2 shows how each of the e-business applications listed in Table 1 applies to the customer chain shown in Figure 1. Table 2 indicates that each business activity in the IT adopted chains is obviously driven by technology, whether it is software, internet, or automated machines. It is clear that EDI (Item 9 in B2B) is the most dominant technology in the industry and crosses each value chain activity and is used by every internal customer.

Table 2: Relationships of B2B and B2C to the E-Customer Chain in S&GS Industry

	Purchase Order for RM	E-invoice, Payment, Shipping	Purchase Final Goods Inventory	E-invoice, Payment, Shipping	Automatic Inventory Refilling	Final Goods Purchase by Consumer
B2B						
1		√		√	√	√
2	√	√	√	√	√	
3	√	√	√	√		
4			√	√	√	√
5		√		√		
6	√					
7		√		√		
8		√		√		
9	√	√	√	√	√	√
B2C						
1						√
2						√
3						
4						√
5						√
6					√	√

Table 3 shows how the e-business applications have been applied to the top six U.S. companies in the industry. The top six companies were chosen by annual revenue in 2011. To determine the extent of implementation of e-business items in Table 1 for each company, the company websites were examined. In Table 3, “0” indicates that the company does not implement a particular item, and “1” indicates that a company fully implements on a daily basis.

Table 3: Implementation of E-business Applications in 6 Companies

Company	Wal-Mart	Kroger	Whole Foods Market	Supervalu	Publix	Meijer	Implemented %
B2B							
1	1	0	0	0	0	0	17
2	1	1	1	1	1	1	100
3	1	1	1	1	1	1	100
4	1	1	1	1	1	1	100
5	1	1	1	1	1	1	100
6	1	1	1	1	1	1	100
7	1	1	1	1	1	1	100
8	1	1	1	1	1	1	100
9	1	1	1	1	1	1	100

Total	9	8	8	8	8	8	
%	100	89	89	89	89	89	
B2C							
1	1	1	1	1	1	1	100
2	1	0	1	0	0	1	50
3	1	1	1	1	1	1	100
4	1	1	1	1	1	1	100
5	1	1	1	1	1	1	100
6	1	1	1	1	1	1	100
Total	6	5	6	5	5	6	
%	100	83	100	83	83	100	

FINDINGS

From Table 3, it can be seen that the industry leader, Wal-Mart, is the only grocery company that has completely implemented each e-business application identified for this industry. It could be concluded from the fact that Wal-Mart's low cost leader strategy leads the industry coupled with 100% implementation of e-business applications that RFID is in fact a competitive advantage for Wal-Mart and is necessary for the future profitability of grocery companies.

As would be expected, the other five companies have highly implemented these e-business applications, with each having over 80% implementation. Whole Foods Market and Supervalu have the lowest percentage of implementation. This is true because, of these six companies, Whole Foods and Supervalu are the only two that do not do any of their own manufacturing. Meijer only falls behind Wal-Mart in implementation because it does not use RFID. Publix and Kroger are behind Meijer because they do not have e-grocery capabilities.

While each of the six companies has not implemented every application, each has implemented the most important IT for sharing information and lowering costs on the value chain—EDI, GDS, and POS. The only B2C application that has not been 100% implemented is e-grocery. Shopping for groceries online is not a widespread trend in the U.S.; thus, all grocers do not participate in it.

DISCUSSIONS AND CONCLUSIONS

Although the Supermarkets and Grocery Stores Industry is not the most technological industry, success hinges on each company's ability to use IT to add value. Adding value in this low margin industry means reducing costs in each value chain activity so that prices can be as low as possible without eroding all profitability. The most prevalent IT in the industry is electronic data interchange. Wal-Mart is leading the way for the future of this industry and has completely (100%) implemented each of the e-business applications in its value chain, which explains why the company is the industry leader. The future of IT in this industry is RFID. Implementation of this technology by each of the large players in the S&GS industry will determine which companies will remain competitive for the foreseeable future.

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