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Electronic Commerce Readiness in Developing Countries: The Case of the Chinese Grocery Industry

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1. Introduction

Electronic Commerce (e-Commerce) offers many potential benefits particularly in productivity gains and transaction cost reductions, mainly by enabling organisations to conduct business transactions electronically, facilitating efficient information sharing between organisations within and across industries and allowing automatic product identification. The rapid dissemination of information, the digitisation of record keeping and the networking capability of the Internet has improved flexibility and responsiveness and encouraged new and more efficient intermediaries. It has increased the use of outsourcing, expanded market access, reduced time to market by linking orders to production and improved internal coordination. Because of its potential in this era of globalisation, many countries have rapidly adopted e-Commerce (Andersen et al. 2003; Bean 2006; Gibbs and Kraemer 2004).

E-Commerce is also seen to play a significant role in bridging the digital gap between developed and developing worlds through improving developing countries' access to information, knowledge and expertise and enabling organisations around the world to extend their supply chain and to engage in global trading efficiently and effectively regardless of their geographical locations. Consequently, e-Commerce has the potential to enhance developing countries' competitiveness and reduce poverty (Qureshi 2005; Qureshi and Davis 2007). Nevertheless, contradictory findings have been discovered in several studies which highlight that e-Commerce further marginalises developing nations and widens the digital divide (Odera-Straub 2003).

At this stage, the e-Commerce adoption has been concentrated in developed countries. According to The United Nations Conference on Trade and Development (UNCTAD), 95% of e-Commerce takes place in developed countries, with Africa and Latin America combined accounting for less than 1% of the total (UNCTAD 2005). In 2008, only 3% of the developing countries had access to Broadband Internet, in sharp contrast to the 28% penetration rate enjoyed by developed nations (AGENCIES 2008). These figures demystify the digital divide that exists between developed and developing nations.

The fact that developing countries have lagged behind developed countries in the adoption of e-Commerce technology and those e-Commerce-enabled applications to support

Business-to-Business transactions (B2B e-Commerce) has created significant challenges to achieving global advanced supply chain management. B2B e-Commerce technologies are by nature inter-organisational systems and as such, they cannot be adopted in isolation from other trading partners. In addition, B2B e-Commerce technologies and applications were generally developed in Western countries that have very different national environmental backgrounds to those of developing countries, in areas such as legislation, technology infrastructure, competition, financial resources, labour rates and regional ways of doing business. As a result, differences in the readiness between developed and developing nations in adopting e-Commerce have been observed in many studies (Gibbs et al. 2003; Molla 2004) and, therefore, developing countries are facing a uniquely challenging environment in the course of e-Commerce adoption (Bean 2006).

This chapter presents the current situation in China and its readiness in e-Commerce adoption. China is used as an example of a developing country in the chapter because it is one of the major trading partners of many developed countries. The chapter specifically explores the Chinese grocery industry to illustrate the relevance of B2B e-Commerce, the current level of adoption and challenges faced. The grocery industry has been chosen because the industry has been pioneering the use of technologies to improve efficiency. This is due to the nature of the industry, which involves high-volume transactions with low profit margins. By systematically assessing the Chinese grocery industry's readiness on the organisational, industrial and national level, this chapter highlights the unique challenges faced by organisations in China in adopting e-Commerce and the opportunities offered through the adoption of e-Commerce. Lessons learned and the implications of the study are discussed to conclude the chapter.

2. E-Commerce in China

In contrast to western countries, China is one of the late adopters of e-Commerce, since the majority of the IT/e-Commerce infrastructure was not established until the late 1990s (Tan and Wu 2004). However, China was able to catch up with the rest of the world in the adoption of e-Commerce technologies including email, websites, intranets, extranets and mobile technologies (Tan and Wu 2004; Xu et al. 2004). On the other hand, the leapfrog approach to adoption has caused the deficient deployment of traditional e-Commerce technologies such as Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT). This has severely restricted China's e-Commerce development despite the widespread adoption of other e-Commerce technologies (Dedrick and Kraemer 2001; Tan and Wu 2004; Trappey and Trappey 2001; Xu et al. 2004).

The overall e-Commerce development and diffusion in China varies widely according to different geographic locations, industrial fields and firm sizes. Large cities and economically-advanced provinces along the coastline generally have access to better IT infrastructures and more Internet users than remote and poorer provinces. Information-intensive industries such as banking and insurance are better at adopting any information-related technologies. The current e-Commerce activities in China are concentrated in large cities, coastal provinces, certain industries, large enterprises and among well-educated young people (Tan and Wu 2004). According to International Data Corporation estimates, e-Commerce revenues in China totalled US\$2.2 billion in 2000 with B2B accounting for

204

US\$1.68 billion and Business-to-Consumer (B2C) accounting for US\$522 million (Dedrick and Kraemer 2001).

As identified by the survey carried out by Tan and Wu (2004), the top 4 drivers for e-Commerce adoption in China are: market expansion for existing products, customer demand, entering new markets and cost reduction. In general, wholesale and retail firms consider "customer demand" as the most important driver. Small firms are also subject to stronger pressure from customer demand than large firms, while large corporations benefit from stronger government incentives than small firms. In addition, global firms also face heavier pressure to use e-Commerce due to increased international competition and hence the need to coordinate their operations more effectively across national borders has been recognised (Kraemer et al. 2005).

E-Commerce development in China is also influenced by the unique characteristics of the state. As an authoritarian state, the Chinese government plays an extremely prominent role in influencing e-Commerce adoption. The nature of the state has both positive and negative impacts on the progress of e-Commerce development in the country. On the positive side, in order to attract foreign investment to rebuild the ravaged economy under the strict Communist rule, the Chinese government has endeavoured to build an attractive investment environment. This includes an effective IT infrastructure and an e-Commerce-friendly government policy (Chen et al. 2005; Gibbs and Kraemer ; Xu et al. 2004).

Government efforts to promote IT began in 1986 through the establishment of the 863 plan, a technology development scheme that includes promotion of IT production and use. The most significant projects were the series of Golden projects, including the Golden Bridge National Data Network and other projects aimed at developing IT infrastructure and applications. IT moved further to the forefront in the tenth Five-Year Plan, 2001-2005. The plan states that "*information technology should be used extensively in all circles of society and use of computers and Internet should be wide-spread*". In addition, the plan calls for the development of Electronic Commerce and the use of information technology in commercial sectors. The tenth Five-Year plan earmarks 1.7 trillion Yuan (US\$200 billion) for spending on information and communication technologies. Of this amount, about 1.2 trillion goes into telecommunications while 400 billion goes into electronic manufacturing. In order to coordinate its efforts to improve telecommunication and promote IT, the government is allegedly setting up a new high-level telecommunications commission directly under that State Council.

On the negative side, the Chinese government still seeks to control the flow of information and restricts foreign participation in telecommunication, Internet and information content provision. In fact, there are still some powerful and privileged interests in China that are resisting the transition to e-Commerce as the Internet has already undermined the Chinese Communist Party's monopoly on "public" information (Martinsons 2001). As a result, encryption regulations have been established, forbidding Chinese firms from using any foreign-made standalone encryption products. The only legitimate encryption products are the ones made in China and registered with the new State Encryption Management Commission, which consequently gives the state a means of monitoring computer traffic. Therefore, safeguarding privacy, security and encryption have become major concerns for many Chinese organisations in relation to e-Commerce adoption.

Overall, the e-Commerce development in China is still at its very early stage. With strong support from the Chinese government and increasing customer demand, a significant

growth in e-Commerce activities has been experienced in the past decade. However, its future development is not without obstacles. As the degree of e-Commerce sophistication increases, along with the need to share information, a range of technical and non-technical barriers is expected to come into effect, hindering further development.

3. The Chinese Grocery Industry

Because of the changes in the political, social and economic environments, the Chinese grocery industry has evolved over time, developing numerous retail formats from wet markets, retail-cooperatives to supermarkets. Table 1 summarises the evolution of the Chinese grocery industry.

Year	Format	Description
Before 1949	Wet markets, street markets, small shops	These were private retail sectors. Distribution system was virtually nonexistent. Grocery needs were fulfilled locally.
1953-1958	Retail co- operatives, State-owned enterprises (SOE)	Chinese Communist Party (CCP) dictated a state- controlled economy. Private retailers were either formed into retail co-operatives or bought out to establish SOEs to sell basic food at low prices.
1959-1980	State-owned enterprises (SOE)	CCP expanded the control on China's economic activities and extended SOE retail sector to urban areas
1981-1990	Wet markets, provisional shops, staple food stores, supermarkets (marginal- player)	Economic liberalisation began. Wet markets and small shops that sell grocery items in the urban areas started to flourish again. In March 1981 the first supermarket in China catering for foreign tourists was established in Guangzhou.
1990s	Supermarkets, wet markets street markets, staple food stores	The supermarket format experienced an exponential growth in the large cities and special economic zones due to their consumers' high purchasing power.
Late 1990s – now	Supermarkets, wet markets, street markets	Supermarkets started to move into other cities in the eastern region and extended into large cities in the central region.

Table 1. The Evolution of the Chinese Grocery Industry

Before the Chinese Communist Party (CCP) became the ruling party, small shops and wet markets dominated China's retail sector. These store formats were later taken over by the retail-cooperatives and state-owned enterprises (SOE) when the CCP became the ruling party. The distribution of grocery items remained under strict state control until the economic liberalisation, which happened in the early 1980s. Economic liberalisation allowed private ownership of retail and wholesale operations. The supermarket format was first introduced during this period, but its growth was hampered by a lack of appropriate suppliers and the high prices charged (Lo et al. 2001). However, the supermarket experienced an exponential growth during the 1990s to the 2000s. The popularity of supermarkets among Chinese consumers has increased due to the arrival of western culture and growing consumer purchasing power. Supermarkets have grown into a US\$55 billion industry by 2004, consisting of approximately 53,000 units and occupying a share of 30% of urban food market (Hu et al. 2004; Lo et al. 2001).

3.1 Chinese Consumer Behaviour

While cultural, political and economical forces are shaping the grocery industry over time, Chinese consumers have also developed a set of unique behaviours, which has fundamental impacts on the characteristics of China's supermarkets. Being raised in a collective society under the influence of Confucian philosophy, Chinese consumers are extremely price conscious and tend to be very informed and disloyal shoppers. They are willing to search extensively for a better deal and consider it to be a leisure-activity (Ackerman and Tellis 2001). Meanwhile, vast geographical coverage and sophisticated local cultures have also caused Chinese consumers to have significantly different product preferences and value systems, varying from city to city (Ackerman and Tellis 2001).

In order to address such consumer behaviour, China's supermarkets are under constant pressure to offer low prices and a wide range of products to facilitate the Chinese consumer habit of comparing prices and seeking bargains. Commonly used sales generation techniques such as the loss-leaders strategy, are usually unable to generate expected results due to Chinese consumers' preference for frequent grocery shopping in small volumes (Goldman 1996; Goldman January 2001; Mai and Zhao 2004). In addition, differences in local product preferences make it impossible to centralise inventory management among chain stores and, as a result, local sourcing and direct-store delivery distribution strategies are common among China's supermarket chains. These Chinese consumer characteristics and behaviours pose unique challenges to the supermarkets and consequently require different strategies compared to supermarkets in developed countries, which are summarised in Table 2. These unique market characteristics have caused unexpected problems among the first wave of foreign investors. After rushing into the Chinese market, foreign chains frequently fail to replicate the successes in their home countries (Goldman 1996; Goldman January 2001; Mai and Zhao 2004).

Furthermore, Chinese consumers' obsession over price has made the competition within the supermarket sector especially furious. New entrants can easily attract a large number of customers from established chains by offering lower prices and it is a constant struggle to retain market share among the existing players. Continuous price and promotion wars are raging among the major chains, thinning their profits. The intrusion of foreign supermarket chains armed with modern management concepts and technologies has further increased the intensity of the competition. To stay competitive, Chinese chains have frequently consolidated to form retail giants such as the Bailian group. Consequently, as Mousteraski (2001) estimates, a total of 350,000 small shops have had to go out of business (Mousteraski 2001).

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Consumer	Consumer	Supermarket	Supermarket Strategy
Characteristics	Behaviour	Challenges	
Price	Extensive	Under constant	Frequent sales and price
conscious	product search	pressure to offer low	wars among
		prices	supermarkets
Disloyal	Shop from a	Hard to maintain a	Offer huge range of
	number of	stable customer base,	products from white
	supermarkets,	under constant	goods to cosmetics.
	based on price	pressure to attract and	$\bigcirc (\bigcirc) \bigcirc (\bigcirc)$
	and product	retain customers.	$\bigcirc \land \bigcirc \neg $
	offerings.		
View grocery	Frequent, small	Sales generating	Extensive sales range,
shopping as	shopping trips	strategies fail to have	heavy advertising and
leisure activity		spill-over effect on	frequent promotional
		normally priced	activities
		products	
Local pre-	Distinct product	Different inventory	Inventory is managed on
ferences	preferences in	requirements in	a store-by-store basis.
	different regions.	different regions,	Direct-store delivery and
		which makes it	local sourcing are
		difficult to manage	common practices.
		inventory centrally.	

Table 2. Consumer behaviour and its impact on China's supermarkets

3.2 Major players and their operations

In the last few decades, the Chinese grocery industry has seen a significant shift of power in favour of the retailers (Luk 1997). The demolition of the state-controlled grocery distribution system has catalysed the development in the retail sector with powerful players such as Lianhua, Suguo and Carrefour dominating the market, with enormous buying power.

Meanwhile, the former state-owned distribution system was left behind, with no significant growth over the past years. Coupled with the Chinese economy's transformation from a seller's market to a buyer's market, retailers gained a dominant position in the marketing channel (Bean 2006; Luk 1997). There are currently no major players in the distribution sector that can compete with the power of retail giants such as Carrefour or Bailian. The majority of the sector remains extremely fragmented. These distributors remain small in size and usually specialise in a specific area or product category (Bean 2006). As a result, products that go through the conventional distribution channels typically have to be handled by various parties before reaching their destination.

The underdevelopment of the distribution sector has created significant difficulties for the supermarkets in inventory management. Smaller supermarkets usually procure supplies directly from the wholesalers, with limited direct-supply relationships for certain products (Hu et al. 2004). Large chains, on the other hand, may use a combination of a pick-and-pack approach and direct-store delivery (e.g. Suguo and Carrefour) or a third-party logistics (Wal-Mart) system depending on their focus and size. Limited e-Commerce technologies such as B2B portals are used among these major chains to enable information exchange

between the supply chain partners, while the smaller chains still deploy manual procurement procedures.

3.3 The Potential of E-Commerce for the Chinese Grocery Industry

Based on the characteristics of the Chinese grocery industry and its consumers, e-Commerce offers great potential. It is able to enhance the organisational performance in several ways. Firstly, e-Commerce can have a strong impact on administration and daily operations. Administration and transaction processing is extremely demanding, due to the labour-intensive nature of the grocery industry and the enormous volume of transactions made. E-Commerce's ability to automate day-to-day document exchange and communications within and between organisations can significantly enhance operational efficiency as well as reduce administration costs. Operational efficiency will enable the industry to offer low costs to the consumers (Kurt Salmon Associates 1993).

Secondly, inventory management and supply chain coordination is crucial to the performance of the firms. Retailers are expected to offer a wide range of products to suit the Chinese consumer habit of product search and price comparison. The ability to manage inventory efficiently and effectively can therefore generate significant advantage for the firms in an industry where low-prices are merely a point of competitive parity. E-Commerce, therefore, has a great deal to offer to the industry in streamlining the product and information flow within the supply chains so that the inventory level can be kept to a minimum, while product range can be increased. Advanced supply chain management practices such as Vendor Managed Inventory (VMI) and cross-docking, which are enabled by various e-Commerce technologies, will not only enhance product replenishment efficiencies but also improve product quality and availability (Kurnia and Johnston 2001; Simchi-Levi 2003).

Lastly, Chinese consumers' ever-changing preferences and demands have made it especially important for firms to respond quickly to the changing market needs. By facilitating realtime market demand sharing among supply chain participants, e-Commerce is able to provide better information to assist decision making process within firms. It consequently enhances firms' responsiveness to the market and environment.

3.4 Current Use of Information Technologies

Firms in the grocery industry introduced stand-alone computers to their stores and offices in the 1990s. However, the build-up of hardware and software for Enterprise Resource Planning (ERP) and other decision supporting functions only began two to three years ago. In the wake of the liberalisation of the Chinese economy, the grocery industry has been quick to adopt Internet-based applications. Enterprise applications and other applications such as Electronic Data Interchange (EDI) were, however, generally left behind, leaving a large gap in a firm's IT infrastructure.

The most commonly used technologies are Point-of-Sales (POS) systems and bar-coding, which can be found in almost any supermarket. However, given the limited EDI and data analysis capabilities, the POS system is mainly used for checkout purposes only. The data collected through the system are rarely utilised for sales analysis or inventory management purposes (Sinclair et al. 1998). With plenty of low cost labour working in the supermarket stores, it is apparent that computerised systems are not typically required for labour saving

purposes. Sinclair et al. (1998) argue that many supermarkets in China have installed computerised applications systems under the assumption that these applications' full potential benefits will eventually be realised.

Major supermarket players have taken the first step towards adopting e-Commerce technologies. In order to effectively coordinate a large number of suppliers, Internet-based Business-to-Business portals were established as a means to communicate with the suppliers electronically without worrying about the system compatibility or the hardware and software investment at the supplier's end. By logging into the retailer's B2B portal through the Internet, a supplier is able to obtain information about their products and hence make replenishment decisions accordingly. This approach has allowed the supermarkets to bypass the inadequate information technology infrastructure and realise some degree of VMI without significant investments.

The Warehouse Management System (WMS) is another application that has been adopted by major chains to improve their operational efficiency. It is usually a standalone system that tracks and coordinates the inventory movement within the distribution centre by assisting warehouse staff to accurately store incoming inventory and prepare outgoing orders. All incoming stock is first entered into the WMS manually upon arrival to update the inventory record and generate a storage slip. It is then placed onto the inventory transportation terminal, which automatically stores the inventory into the appropriate place in the warehouse. Upon receiving store orders, WMS generates an outgoing inventory slip to list stocks required and their locations in the warehouse to assist the manual pick-andpack process. Although this system seems to be primitive compared to western standards, it is one major step forward for the Chinese supermarket chains to achieve automatic inventory control.

4. The e-Commerce Readiness Framework

Adopting e-Commerce offers organisations a new way of conducting business, due to the technology's ability to revolutionise modern business operations. E-Commerce's impact transcends organisational boundaries. The consequent complexity of adopting and using e-Commerce is immense. As a result, in order to ensure the success of e-Commerce adoption, e-Commerce readiness has to be achieved. E-Commerce readiness refers to an institution's ability to fully support the adoption, use and diffusion of e-Commerce. In this paper, the term institution encompasses the organisations under study, the industry and the country to which the organisations belong. Consequently, as depicted in figure 1, E-Commerce readiness has dimensions, organisational readiness, industrial readiness and national readiness. Achieving E-Commerce readiness at all three levels forms the basic conditions of e-Commerce adoption by any organisation.

Organisational readiness refers to the organisation's internal capability to support the adoption and use of e-Commerce technologies. Four main factors are commonly regarded as important in determining an organisation's e-Commerce readiness. These are organisational structure, organisational culture, organisational size and slack resources as well as skills and knowledge. The industry represents the immediate business environment in which organisations operate. Given the different industrial affiliations, structures and operating norms of different commercial sectors, different industries can have very different levels of e-Commerce readiness. Industrial readiness is concerned with the conditions within the

industry that are conducive to e-Commerce adoption. It can be measured through factors including the existence of industrial e-Commerce standards and coordinating bodies, the industrial structure and the power relationships among the participants within the industry.



Fig. 1. The e-Commerce Readiness Framework

National readiness indicates the maturity of a country's macro environment for supporting e-Commerce activities. The common national factors can be classified into four main categories, namely infrastructures, state, culture, and resources. The *Infrastructures* category refers to the maturity of a nation's IT, banking and transportation infrastructure. The *State* category includes factors such as the nature of the state, policy and legal framework, economic freedom and economic commitment which determines the national environment for business operations. The *Culture* category consists of factors that influence the behaviour of the businesses and consumers in a certain country such as the pattern of communication and cultural diversity. The *Resources* category examines the availability of the adequate financial, technological and human resources required to support e-Commerce activities in the country.

Based on the E-Commerce readiness framework presented above, an assessment of the Chinese grocery industry's e-Commerce readiness is discussed in the next section. The framework helps reveal the advantages and challenges faced by Chinese organisations within the grocery industry in the adoption of e-Commerce, and consequently it enables the establishment of more effective practices and strategies to promote e-Commerce growth in the industry.

5. E-Commerce Readiness in the Chinese Grocery Industry

For the purpose of this study, a multiple case study was conducted with six organisations within the Chinese grocery industry. Interviews and a review of business documentation and other relevant secondary data were used as the data collection techniques. A semi structured interview protocol was developed based on the various e-Commerce readiness factors shown in Figure 1. Each interview lasted around one hour and was recorded for later analysis. At the end of each interview, the information obtained was checked against the prepared questions to ensure that all questions had been answered. Interviews were tape-recorded and later transcribed into written-up field notes. A qualitative data analysis technique was used to identify and categorise themes/concepts of interest through close examination of data in the written-up field notes. Cross case analyses were also conducted to compare the findings from different interviews. Through the cross case comparison, various emerging concepts were then refined (Neuman 2006). Table 3 summarises the profile of the participating organisations in this study.

Compan	Туре	Full-time	Interviewee	Ownership
у		employees		
А	Manufacturer	350	Regional	Local with foreign
			Manager	ownership
В	Broker	25	Chief	Local
			Executive	
			Officer	
С	Retailer	80	Marketing	Local with foreign
			Manager	ownership
D	Retailer	500+	General	Local
			Manager	
Е	Retailer	65	General	Local
			Manager	
F	Distributor	15	General	Multi-national Chain
	$ \neg \neg \bigcirc \rangle$		Manager	$(\bigcirc)(\bigcirc)(\bigcirc)$
Table 3. Participant Profiles				

Company A is a major manufacturer of instant noodles in China. Employing around 350 full-time employees, it is a typical well-established traditional grocery manufacturer in China. Despite its mixed ownership, Company A's operation largely remains unchanged, with the limited addition of stand-alone computers and the Internet used at management level. With virtually no dedicated IT investment, business is carried out through conventional means, including face-to-face interactions and telephone conversations. The interviewee (Regional Manager) demonstrated little understanding of e-Commerce and was not enthusiastic about the prospects of future adoption within the organisation, since the traditional way had been working well.

Company B is a small broker of grocery items with twenty-five full-time employees. As most of other similar sized grocery distributors in China, it is independent and locally owned. Given its recent establishment, its operation is unsurprisingly supported by IT, which gives all employees direct access to computers, Internet and e-mail. Since most of company B's employees have a tertiary degree, the interviewee (Chief Executive Officer) showed a comprehensive understanding of e-Commerce and indicated willingness in its future investment because of the organisation's positive experience with IT.

Company C is a medium sized grocery retailer with foreign ownership. Like other grocery retailers in China, it is equipped with standard information technology such as scanner/barcoding, Internet and a website to attract customers and facilitate its day-to-day operation. The majority of staff members at management level hold a tertiary degree. The interviewee (Marketing Manager) also demonstrated adequate e-Commerce knowledge and expressed a commitment to maintain the current level of IT investment, but with a limited willingness to further increase e-Commerce adoption in the near future.

Company D is one of the major retailers in China. It was a State-Owned Enterprise (SOE) until the recent privatisation. As the largest player in the region, it is very well funded and has a team of highly educated managers. Compared to the other locally owned retailers, Company D is relatively more advanced in the e-Commerce adoption. It does not only possess basic technology such as scanner/bar-coding and the Internet, but it also has taken one step forward in adopting B2B and B2C e-Commerce. It has set up a sophisticated transactional and interactive website which offers online shopping, after sale service for the customers and acts as a communication portal for their business partners. The interviewee (General Manager) demonstrated a keen interest in furthering their e-Commerce initiatives and was optimistic about e-Commerce's future in China's grocery industry.

Company E is a small, local grocery retailer with around sixty full-time employees. Because of its small size, it lacks the financial and technical resources to adopt any advanced technologies. It is equipped with the industry standard Scanner/Bar-coding system, E-mail, Internet, and it has an interactive website that accepts online payment. The interviewee (General Manager) completed a tertiary education and demonstrated a sound understanding of e-Commerce and its potential.

Company F is a part of a multinational grocery distribution chain. Its local office has only fifteen fulltime employees, but due to its foreign heritage, it invests heavily in information technologies and uses them extensively in its day-to-day operations. Although their financial resources are still limited, all of the employees have direct access to personal computers, the Internet and e-mail. During the interview, the General Manager demonstrated e-Commerce proficiency.

6. The Study Findings

The results of the data analysis are discussed in this section based on the three levels of e-Commerce readiness: national, industrial and organisational levels.

6.1 National Readiness

As the world's most populous nation, and as an authoritarian state, the national readiness of China has an important influence on e-Commerce development in the grocery industry. Given the recent focus on economic development, China has made significant strides toward establishing an e-Commerce friendly environment. However, due to the vastness of the country, a relatively underdeveloped economy, an inefficient bureaucratic system and the deep-rooted relationship-based culture, China still has long way to go before it is qualified as e-Commerce ready. A number of observations obtained from the interviews are discussed below in detail.

Infrastructure

Sound telecommunication and transportation infrastructure in developed regions, however national infrastructure remains fragmented

As the backbone to e-Commerce development, the availability and quality of national infrastructure such as the transportation, telecommunication and banking systems are vital to its growth. Although China's national infrastructures can still be characterised as fragmented and inefficient (Chang et al. 2003; Jiang and Prater 2002; Okamoto and Sjoholm 2001; Purbo 2001), China's recent efforts in economic advancement have brought infrastructure development to the top of the country's agenda. Accordingly, all Chinese respondents demonstrated great confidence in the country's basic telecommunication and transportation infrastructure and believed in the ability of the Chinese infrastructure to support their current e-Commerce applications. The Marketing Manager of Company D supports the view of the China infrastructure development as revealed below:

"In our region of operation, the basic infrastructure is very reliable. We have not encountered any significant problems so far. The government has invested heavily in infrastructure development in the past few years, and we are very happy with the result."

However, it is worth noting that given all our respondents are positioned on China's economically-advanced east coast, their experience may not be representative of the national condition. According to state statistics, significant disparities still exist within the country, especially between the advanced costal and isolated central regions. Realising the importance of a mature national infrastructure, the Chinese government has shifted its infrastructure development focus from cities to the country in an attempt to bridge the infrastructural divide that exists within the nation (GOV.cn 2005). With an estimated 496 billion USD investment required, the infrastructural disparities in China are not expected to be resolved in the near future.

Banking system inadequate in supporting e-Commerce development

Despite the recent economic boom, the Chinese banking system remains unsupportive of e-Commerce transactions. Its ability to facilitate credit card transactions and electronic funds transfer is extremely limited compared to western banking systems. Such an inadequate banking system is especially detrimental to the further development of e-Commerce. It effectively prevents e-Commerce from progressing to a more mature development stage characterised by routine electronic inter-organisational transactions and cooperation activities. Although such inadequacy is having little impact on the current development of e-Commerce in China because most of the e-Commerce applications are restricted to basic administration tasks, it poses a great risk for hampering the development of the general economy in the near future as e-Commerce is expected to play a more important role in the modern business. A comment made by the Regional Manager of Company A below highlights the inadequacy of the current state of the Chinese banking system:

"No, we prefer to do our sales the traditional way. It is much more reliable and simpler for us to bill our customers the old way. The electronic banking is highly unreliable and very costly. We do not see any significant benefits in using it. "

Overall, the national infrastructure in China is currently capable of supporting basic e-Commerce activities. However, its current readiness for more advanced e-Commerce development is unsatisfactory. China's fragmented telecommunication and transportation infrastructure will obstruct the establishment of a nation-wide supply chain and cooperation networks, while the inadequate banking system prevents the widespread use of e-Commerce technologies and consequently the realisation of its full benefits. Taking the current economic and political conditions into consideration, China is well placed to improve its national infrastructure readiness to match e-Commerce development. The government's strong commitment on economic advancement has put infrastructure development projects on a fast track and as a result, the prospect for China's national infrastructure readiness is rather positive.

Culture

Relationship-based business practices hamper the development of e-Commerce

The interviews consistently revealed that relationship-based or "guanxi" business transactions are still symbolic of China's business practices. The majority of the respondents confirmed their reliance on personal social networks for obtaining new business opportunities and trading partners as previous studies indicated (Chen and Ning 2002; Dickson and Zhang 2004; Efendioglu and F.Yip 2004; Hansen April 2001; Jiang and Prater 2002; Malley 2004; Meng 2004; Millington et al. 2005; Tan et al. 2007).

Regardless of a company's industry sector, size, or nature of the business, the timehonoured practice of informal bargaining through socialising and entertaining clients is still widely used as a key approach to form new or maintain existing business relationships. This phenomenon is further reflected in the way e-Commerce technologies are used in the adopting companies. When asked about the detailed usage of e-Commerce technologies in the organisation, the majority of the respondents see e-Commerce as a tool for information dissemination, and communication within existing relationships. This is consistent with the findings in numerous other studies (Chae et al. 2005; Chen and Ning 2002; Kshetri and Dholakia 2002; Martinsons 2003). Only one respondent indicated a limited success in obtaining new trading partners through e-Commerce websites. The responses show that the businesses' heavy dependence on the traditional relationship-based communication and transactions severely limits the development of e-Commerce in both countries. For example, the Regional Manager of Company A reveals:

"Yes we have a website and e-mail systems, but we prefer to call our clients and suppliers for serious business matters. We have been doing it for ages and it works well for us."

The existence of the relationship-based economy and the reliance on personal relationship and face-to-face communication for business deal making can be largely attributed to China's complex pattern of communication and its geographical cultural diversity. The large numbers of local dialects, customs and consumer preferences forged the unique business practices in different regions of the nation. Only through local knowledge and personal networking, can a deal be executed successfully between two different regions of a country. The complex communication pattern, including the high power distance and the rich, informal way of business communication also made it essential to carry out business through proper channels and in a face-to-face manner in order to negotiate successfully with the trading partners. This, in turn, reduces the relevance of e-Commerce technologies to the businesses.

Lack of trust among trading partners

After a decade of e-Commerce development and diffusion in China, it appears that some organisations finally started to develop a sense of trust within their business relationships. All respondents except one confirmed the existence of a trusting relationship with their trading partners. However, the level of trust is still considered to be low. When asked about the sharing of information with their partners, all IT capable organisations indicated reluctance in sharing important information. It appears that although businesses have made improvements in the trust level among trading partners, they are still largely cautious in cooperating with their partners, as highlighted in the following interview excerpt of the Marketing Manager of Company C:

"We trust our trading partners as much as they can be trusted."

Furthermore, as revealed in our interviews, the concern that the suppliers will not hesitate to take advantage of the situation if they are not monitored carefully is still prevalent among the major grocery retailers. Conflicts between large retailers and their suppliers are widespread in China, which sometimes can escalate to violent confrontations between the two parties (Dickson and Zhang 2004; Liu and Wang 1999). As a result, lack of trust is believed to be one of the major impediments to B2B e-Commerce adoption.

In general, Chinese culture is currently not ready to fully support e-Commerce activities. The inherent mistrust between business partners and the demand for face-to-face interaction severely reduces the usefulness of e-Commerce technologies for Chinese organisations. Given the change-resistant nature of cultural values, e-Commerce adoption efforts in China will continue to face significant cultural barriers in the future.

State

Chinese government strongly drives e-Commerce adoption but its strict information oversight impedes future development

The influence of the state can be measured through respondents' reliance upon the government's support for their e-Commerce adoption efforts. It is clear that the respondents regard government support as one of the major drivers for adoption and the main reason for using such technologies in the first place. Such responses are reflective of the nature of the state. With China being ruled by the Central Communist Party, the effect of its heavy promotion of e-Commerce development has become apparent at the organisational level in the grocery industry. It is a testimonial to the influence an authoritarian state can have on e-Commerce adoption.

However, it was also noted that most of the respondents expressed their concern over the privacy and security of business data if they conducted business online, due to the strict oversight of the nation. In fact, the issue of data security is the second main institutional barrier to e-Commerce development, more so than the lack of a legal framework for Chinese businesses. The Chinese government's strict control over the information exchanged on

216

websites and the ban of any foreign encryption technology has prevented most businesses from taking their e-Commerce to the next level (Chvaja et al. 2001; Hynes et al. 2006; Jennex and Amoroso 2004), as revealed by the Marketing Manager of Company C:

"We adopted e-Commerce because we believe it is a good time to do so with all the support and guidance provided by the government. However, I do not think that we will take it any further than where it is now. I simply do not want to put all our information online and rely on e-Commerce to do our business."

Strong commitment to economic development is positively linked with e-Commerce development

In this era of globalisation, liberalising the markets and introducing "open door" policies are two of the key tools for the developing countries to promote their economic development. In order to take advantage of the financial resources and managerial expertise of the foreign investors, China has strived to attract foreign direct investments (FDI). Towards that end, China has modified its legal, tax and infrastructure systems to different degrees to create a more attractive investment environment for potential foreign investors.

The inflow of FDIs brought new and powerful competitors into the usually stagnant domestic markets. Consequently, this introduced significant competitive pressure into the economic environment. The interviews show that the respondents, especially the retailers, are experiencing a high degree of competitive pressure from major global players such as Carrefour, Wal-Mart and Metro. Their e-Commerce adoption and usage are directly a result of the increase in competition and demands from trading partners. Four respondents cited competition as one of the main reasons for them to use e-Commerce and two respondents were planning to invest significantly to expand their e-Commerce applications to improve their operations. Consequently, it is expected that increased foreign investment will promote economic growth and consequently encourage e-Commerce adoption.

Lack of rule of law impedes e-Commerce development

Lack of rule of law is one of the major barriers discovered through the study. All respondents expressed their concerns over the country's abilities to protect their rights. Due to China's authoritarian government control, its legal system is far from stable. Laws are interpreted arbitrarily and enforced depending on the government's political agenda and corruption remains rampant (EIU 2007; Malley 2004). As a result, most of the respondents hesitate to take their existing e-Commerce applications any further. Some respondents regarded the weak legal system of China as one of the major risks for their future e-Commerce investments. This finding echoes the results of previous research projects conducted in developing countries, in which the lack of rule of law is consistently identified as a key barrier to e-Commerce development (Chen and Ning 2002; Gibbs and Kraemer 2004; Martinsons 2003; Tan et al. 2007; Trappey and Trappey 2001).

China's authoritarian government has proven to be largely advantageous to the current development of e-Commerce. Its strong commitment to development and economic prosperity has allowed e-Commerce to enjoy a friendlier environment than other developing countries at its initial stage of development. However, the state's centralised control and the lack of rule of law will significantly impede future advancement of e-Commerce in the country as the demand for economic freedom and solid legal protection rises. The Chinese government will need to address these problems before China can be ready for further development of e-Commerce.

Resources

Sufficient IT investment, IT expertise and existence of technology standards promote e-Commerce development

After over three decades of market reform and explosive economic growth, China has amassed huge economic resources. The country has invested heavily in IT education and related technology standards. The consequent creation of a relatively favourable e-Commerce environment has allowed Chinese businesses to adopt and use e-Commerce more effectively. This is reflected in the general satisfaction expressed by the study respondents concerning the resource conditions of the country that support their efforts to adopt e-Commerce. None of the respondents have encountered significant difficulties in obtaining the required IT support and expertises. Thus, from a resource availability perspective, China is ready to support e-Commerce development.

6.2 Industrial Readiness

Through decades of evolution, the Chinese grocery industry developed a set of characteristics that are shaping the adoption and development of e-Commerce in the industry. Its unbalanced power structure, fragmented sector development and the overall lack of e-Commerce standards and coordination have prevented the effective diffusion of e-Commerce within the industry. While powerful players such as the supermarket chains are well-positioned to adopt e-Commerce, other sectors are generally not ready for it. Below are some important observations obtained from the study regarding the industrial readiness.

Unbalanced power relationship increases resistance to e-Commerce adoption

The current imbalance in industrial bargaining has created significant friction between grocery retailers and their suppliers and wholesalers. By controlling the access to the end consumer market, the grocery retailers, especially the large supermarket chains, command almost absolute power over their suppliers. They dictate payment terms, margins and even suppliers' business practices. The usually fragmented and small-sized suppliers are generally powerless in the face of giant retailers' demands.

E-Commerce has the ability to radically improve a supermarket's efficiency and profitability. As such, e-Commerce has been actively adopted and promoted by Chinese retailers, with some major chains introducing sophisticated supply chain management and inventory control systems. The grocery suppliers on the other hand, see e-Commerce in a less favorable light. Despite the supermarkets' strong demand for e-Commerce-facilitated B2B transactions, few distributors or manufacturers see the value in adopting e-Commerce systems. Their mistrust of retailers effectively prevents the healthy and widespread dissemination of e-Commerce within the industry. A positive attitude and active collaboration and information sharing is crucial for successful adoption and diffusion of e-Commerce (Kurnia and Johnston 2001; Grandon and Pearson 2004; Uzoka et al. 2007).

Fragmented sector development prevents industry wide e-Commerce adoption

In addition to the unbalanced power distribution among the industrial participants, the fragmented sector development also significantly hampers e-Commerce adoption and diffusion within the industry. As discussed above, the retailing sector has experienced significant growth since the economic reform, while the distribution and manufacturing sectors have remained fragmented and stagnant in their growth. As a result, the retailers are the only sector with adequate resources and scope to support e-Commerce adoption and development. The other sectors lack the capability to facilitate effective e-Commerce

adoption within the industry. The uneven adoption of e-Commerce severely restricts the realisation of promised e-Commerce benefits for adopting organisations, which further discourages e-Commerce diffusion within the industry.

Lack of industry standards and coordinating bodies hampers e-Commerce development Finally, the Chinese grocery industry's poor e-Commerce readiness can also be attributed to the lack of e-Commerce standards and a lack of coordinating bodies within the industry. The current e-Commerce activities in the industry are largely unregulated, utilising a widerange of e-Commerce standards depending on each organisation's own preferences. The

fragmented nature of the e-Commerce systems used in the industry is detrimental to the future development of e-Commerce. It increases the risk of e-Commerce investments and consequently deters new e-Commerce adoption initiatives.

There is also virtually no industrial support to guide the adoption and implementation of new e-Commerce applications. The absence of an e-Commerce coordinating body to provide support for e-Commerce adoption efforts and oversee e-Commerce transactions has significantly increased the perceived difficulty of e-Commerce adoption and usage. The respondents frequently pointed out that the lack of industrial support and the general lack of confidence in their e-Commerce capability is the main deterrent to their e-Commerce adoption effort. This situation is especially prominent among the small distributors given their limited size and resources.

6.3 Organisational Readiness

The study conducted with a number of organisations within the Chinese grocery industry highlights the unilateral development of e-Commerce within the different sectors of the industry. Depending on the firm's supply chain position, specialty, size and resources, their organisational readiness varies. A number of important observations regarding the organisational readiness from this study are discussed below.

The firm's scope has a positive link to its e-Commerce readiness

From the interview analysis, a positive relationship has been identified between a firm's scope and the firm's enthusiasm for e-Commerce adoption. Retailers, as the dominant player within the industry in both business size and scope, have a more positive attitude towards e-Commerce adoption. They possess the required resources for supporting e-Commerce adoption and are the most optimistic about e-Commerce's potential to enhance their performance. The distributors on the other hand are able to maintain a broad business scope despite of its relative small size. Their extensive service offerings make e-Commerce an attractive tool for improving the coordination efficiencies of their business activities. As a result, they are also relatively willing to commit to future e-Commerce investments. However, due to their small size and limited financial resources, they may face some challenges in e-Commerce implementation. Finally, this study suggests that the manufacturers commonly lack the scope to make e-Commerce an appealing business investment. With their traditional mindset and well-established trading channels and procedures, the manufacturers generally see little need to change and thus are unwilling to commit investments in e-Commerce. Although there is only one manufacturer involved in the interview, the interviews with the retailers and distributors have confirmed the view expressed by the Regional Manager of Company A (manufacturer) regarding the negative attitude of manufacturers towards e-Commerce adoption.

Such cross-sectional comparison between different sectors of the industry effectively highlights the importance of business size and scope to e-Commerce readiness. Without sufficient business size and resources, organisations are unable to successfully support the adoption of e-Commerce through implementation and assimilation. The lack of business scope also restricts firm's ability to realise e-Commerce's potential benefits and consequently reduces its business relevance as demonstrated by the manufacturers interviewed.

An organisation's position in the supply chain affects e-Commerce adoption

The cross case comparison also suggests that the closer the organisation is to the consumer, the more information technologies are used as part of daily business procedures. With all interviewees confirming their IT and basic e-Commerce adoption situation as the industry standard practice, this study concludes that this phenomenon is relatively wide-spread within the grocery industry. The manufacturers, as being located furthest away from the consumer in the supply chain, repeatedly questioned the necessity of e-Commerce technologies in the manufacturing sector and expressed contentment regarding their traditional way of operation under the current situation. This is revealed in the following interview excerpt of the Regional Manager of Company A:

"...at the moment, our business is operating with the traditional approach and performing well, we are not really looking into any e-Commerce initiatives."

Other participating companies, on the other hand, demonstrated a much more advanced e-Commerce understanding and IT usage. Being able to meet consumer demand is considered by the majority of the participants to be one of the major reasons for adopting IT and introducing e-Commerce. The study shows that the retailers use information technology to a much greater extent than the distributors, which is consistent with an e-Commerce survey carried out in China by Tan and Wu (2004). As a result, depending on the firm's position on the grocery supply chain, their organisational e-Commerce readiness changes.

Strong support from the senior managers

Intriguingly, the interviews revealed that there exists strong top management support for IT implementation and upgrades within the Chinese grocery industry. This can be directly attributed to China's hierarchical decision-making structure where all important business decisions originate from the executive level. Given the amount of investments required for e-Commerce adoption, this study found that it is usually company executives who champion e-Commerce development initiatives instead of the IT managers. As the key decision-maker of the organisation, an executive's direct control over a company's business practices, personnel and resources guarantees adequate support for e-Commerce projects and maximises the chance of success. In addition, the collective nature of Chinese culture also contributes significantly to the smooth introduction of new technologies. It enables smooth execution of top management's orders while minimising change resistance in the lower level of the firm, as highlighted in the following interview excerpts:

"...of course we gave our full support for computerizing the workplace and putting up a website. We are the ones who proposed the idea and made the final call after all." (Marketing Manager, Company C)

220

"... once a decision was made, we all see it as our own goal to see the decision being carried through. We work as a single entity and resistance to the change is minimal. After all, we [senior managers] all agreed upon the necessity for introducing e-Commerce into our business." (General Manager, Company D)

Sound understanding of e-Commerce but limited e-Commerce expertise available

During the interviews, all respondents except one demonstrated a good understanding of e-Commerce and its potential benefits, threats and opportunities. However, when asked about the existence of IT expertise within the firm to support future advancement of e-Commerce, only two respondents provided an affirmative answer. Other respondents were unsure about the adequacy of their current internal e-Commerce expertise. However, companies with strong financial resources further explained their intention to recruit more technical personnel to rectify this problem in the near future. Despite the various responses regarding the availability of internal IT expertise, all respondents believed that there was plenty of IT expertise in the market given the yearly increase of IT graduates. As a result, Chinese grocery firms can be regarded to be ready in terms of their e-Commerce skills and understanding, given their relative ease in gaining these skills either internally or externally.

Supporting Conditions	Likely Barriers			
National Readiness				
 Sound telecommunication and transportation infrastructure in developed region Strong drives and supports for e- Commerce development from the government Strong commitment of the government to economic development Sufficient resources (IT and skills) and technology standards 	 Overall infrastructure is still fragmented Inadequate banking system Relationship-based Chinese culture Lack of trust among trading partners Strict information oversight by the government Weak legal framework 			
Industrial Readiness				
Organisational Readiness	 Unbalanced power relationship within the industry Fragmented sector development Lack of industry standards and coordinating bodies 			
• Sound understanding of e-	• Varying firms' scope and size			
Commerce	within the industry affect the			
• Strong support from senior	resource availability			
inanagers in some organisations	 varying firms perception regarding the necessity of e- Commerce, depending on their position in the supply chain Limited e-Commerce expertise available 			



Overall, the Chinese grocery firms' organisational readiness varies according to their particular size, scope and specialty. The retailers as the most powerful player in the industry can be generally regarded as being ready to adopt e-Commerce. Their immense business scope and constant pressure from the end consumers heightens e-Commerce's relevance. They are best positioned to reap the benefits promised by e-Commerce technologies. The retailers' significant size and abundant resources also have allowed them to fully support e-Commerce adoption and optimise its implementation and diffusion. The distributors on the other hand are moderately ready for e-Commerce adoption. Their large business scope makes e-Commerce technologies attractive. However, their lack of sufficient size and resources may present a problem during the process of e-Commerce. Their relative isolation from the end-market and their deep-rooted traditional business practices severely dampen the attractiveness of e-Commerce technologies. Consequently, this reduces their willingness to adopt e-Commerce.

Table 4 summarises the supporting conditions and the likely barriers to e-Commerce adoption in the Chinese Grocery Industry based on the findings of this study. It shows that the current situation in the Chinese grocery industry is likely to present more barriers to e-Commerce development than supporting conditions. The findings are further discussed in the next section.

7. Discussion & Conclusion

Currently, e-Commerce has been used within the industry to various degrees, with retailers leading the way in incorporating e-Commerce technologies into the majority of their daily operations. Some of the major retailers have already introduced transactional and interactive websites to facilitate B2C and B2B e-Commerce. However the majority of the businesses within the grocery industry possess only standalone internal computer networks and websites. The e-Commerce readiness of the Chinese grocery industry is influenced by a multitude of factors from the national, industrial and organisational levels, each offering unique opportunities and challenges for e-Commerce adoption.

As summarised in Table 4, on the national level, the abundance of IT expertise and the state's strong commitment to the economic and e-Commerce development helps promote e-Commerce adoption in the country. On the other hand, the weak national legal framework, the relationship-based Chinese business culture, as well as the lack of trust within business relationships significantly reduce the attractiveness and relevance of e-Commerce. Unless rectified, these barriers will effectively confine future e-Commerce adoption to fragmented networks and standalone applications.

Significant weaknesses in China's industrial-level readiness have also been identified. The lack of industry standards and lack of a coordinating body to control the development and adoption of e-Commerce within the industry, the fragmented industrial structure and the severely imbalanced power relationship pose substantial challenges for the adoption and diffusion of e-Commerce. None of the industry current condition seems to support e-Commerce development.

Finally, the evaluation of the organisational level readiness shows some promises. Strong executive support and the overall sound understanding of e-Commerce demonstrate the existence of a viable foundation for future e-Commerce growth. The main challenge lies in

the unbalanced development of different organisations. The distributors lack the resources and business scale to make e-Commerce viable at the moment, while the manufacturers seem not ready for e-Commerce. Again, although there is only one manufacturer involved in this study, the view expressed by the interviewee has been confirmed indirectly in other interviews. In addition, since the participating manufacturer is one of the largest manufacturers in China, the lack of readiness identified in this study is also likely to be applicable for other manufacturers with similar or smaller scope and size.

Overall, the study indicates that the e-Commerce readiness in China, specifically the grocery industry is still relatively low. However, after recent substantial development and growth, the retailing sector of the grocery industry is better positioned to adopt e-Commerce with adequate business size, scope as well as significant resources. Retailers' more advanced e-Commerce readiness is directly reflected in their relatively more sophisticated e-Commerce development as observed in this study. Despite the e-Commerce advancements the retailing sector has made, without the cooperation of the manufacturing and distribution sectors, the Chinese grocery industry will not be capable of fully adopting e-Commerce and realising its promised benefits. In order to help the grocery industry to improve its e-Commerce readiness and consequently increase its chance for capitalising on the e-Commerce technologies in the future, some suggestions are proposed below.

In order to improve organisational readiness, the study findings suggest that the awareness and understanding of e-Commerce potential need to be improved within the manufacturing sector to further encourage adoption. This may require the involvement of an industry body that can improve the visibility of e-Commerce practices among the industry players and to demonstrate the benefits obtained. Through progressively increasing the awareness and understanding of e-Commerce business practices and procedures, an increasing number of organisations will be willing to consider e-Commerce as a means of organisational improvement.

In terms of the industrial readiness, the grocery industry as a whole lacks e-Commerce facilitating technologies such as EDI and other application standards. For e-Commerce to be introduced successfully within the industry, it is crucial not only to have a firm hardware backbone but also universal operational and communication standards and protocols. The national and industry governing bodies need to provide incentives and assistance to promote investments in the adoption of such technologies. Only by establishing a solid operation foundation are firms able to reap the full benefit of e-Commerce in the future. Based on the experience of western countries, this process may take several years as it is not easy to coordinate and streamline business processes to implement e-Commerce initiatives within an industry.

However, with the advancements in Internet-based e-Commerce applications, it is hoped that China and other developing countries can bypass some early problems faced by western organisations in implementing e-Commerce such as EDI high implementation costs and compatibility issues. To facilitate the future adoption of e-Commerce, national e-Commerce readiness also needs to be improved. Laws and regulations need to be put into place to protect vulnerable parties and rebuild the sense of trust between trading partners. Stronger legal frameworks will also help facilitate online activities and reassure organisations when conducting e-Commerce.

However, it is worth noting that sound e-Commerce readiness does not equate to e-Commerce adoption. E-Commerce readiness only assesses the organisation and its environment's ability to support e-Commerce adoption. It underlies the condition of e-Commerce adoption and provides indications of the possible adoption difficulties. Successful e-Commerce adoption and development also depends on other factors rooted in the technology, the adopting organisation and the adoption environment. These factors impact on the adoption decision-making and the implementation, management and use of new technologies and systems.

This chapter systematically examines the reason why China as an example of a developing country lags behind developed countries in e-Commerce adoption from a readiness point of view. China is considered to be one of the fastest growing developing countries in the world. By using China as the research focus, this chapter does not only shed light into the unique e-Commerce adoption environment in the Chinese grocery industry but it also highlights the likely causes of the lack of e-Commerce readiness in the majority of developing countries. However, it is also worth noting that depending on the specific conditions of each country, the challenges faced in e-Commerce adoption may vary.

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227

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E-commerce provides immense capability for connectivity through buying and selling activities all over the world. During the last two decades new concepts of business have evolved due to popularity of the Internet, providing new business opportunities for commercial organisations and they are being further influenced by user activities of newer applications of the Internet. Business transactions are made possible through a combination of secure data processing, networking technologies and interactivity functions. Business models are also subjected to continuous external forces of technological evolution, innovative solutions derived through competition, creation of legal boundaries through legislation and social change. The main purpose of this book is to provide the reader with a familiarity of the web based e- commerce environment and position them to deal confidently with a competitive global business environment. The book contains a numbers of case studies providing the reader with different perspectives in interface design, technology usage, quality measurement and performance aspects of developing web-based e-commerce.

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