E-commerce and Internet Adoption among SMEs Non-traditional Exporters

A Case Study of Ghanaian Fruit Exporters

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E-COMMERCE AND INTERNET ADOPTION AMONG SMEs NON - TRADITIONAL EXPORTERS, A CASE STUDY OF GHANAIAN FRUIT EXPORTERS.

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E-commerce and the use of the Internet as a modern day technology to enhance ones business operation have become inevitable in current global business. The purpose of this study is to examine and describe how Ghanaian SMEs NTFEs (Non-Traditional Fruit Exporters) are embracing this new concept.

Data from four cases were used to evaluate how these companies adopted the Internet and E-commerce in their business operations and the benefits they enjoy as well as barriers and challenges that stood in their way in achieving this objective. Semi-structured questionnaires were used to collect data. From this we were able to establish the general adoption levels of these firms.

The results from the study indicated that e-commerce and the use of the Internet by SME’s NTFEs in Ghana has become a means to achieving competitiveness on the global market.
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CHAPTER ONE

1.0 INTRODUCTION

In this chapter an overview of the entire thesis has been highlighted. It covers the background to the Study, the Problem Discussion, Ghana’s ICT Framework Enabling Internet and E-Commerce adoption among SMEs, Overview of Ghana’s Export Sector, Purpose of the Study, Research Questions, Significance of the Study, Limitations, and De-limitation of the Study.

1.1 Background to the Study

The Information and Communication Technologies (ICTs) and the Internet have become very important and a powerful tool in today’s business world in such a way that it is now becoming ‘the life blood’ of business, without which most businesses cannot stand the modern day competition of it’s operations. ICT, especially, the Internet has different meanings and uses to many people (Rao, 1997). The internet can be used for different purposes and professionals like doctors, engineers, agriculturists, teachers, and marketers etc., the naming may be endless.

E-commerce became possible in 1991 when the internet was commercialized and since that time many businesses have developed their own web sites (Ecommerce Land, 2004).

E-commerce (EC) could be defined as the process of electronically buying, selling or exchanging products (goods), services or information via the internet or computer networks, but EC is not just about buying and selling, it is also about electronically communicating, collaborating and discovering information (Turban et al., 2008).

In recent years, the competitive business environment makes the adoption of electronic mails (e-commerce) and the use of the internet inevitable to the Ghanaian exporters. Businesses are now aware that the internet can facilitate a quicker and efficient movement of information among trading partners at a reduced and fastest cost. According to Sandy & Burgess, (2003) the internet is significantly altering the manner in which traditional commerce is being undertaken in developing countries such as Ghana. The use of the internet in export marketing allows the
exporters to remove all geographical constraint, as it permits the instant establishment of virtual branches throughout the world.

According to Hinson and Sorenson (2006) globally, business-to-business (B2B) e-commerce figures soared, with estimates ranging between $200 and $600 billion for the year 2000. And it was predicted to reach $12 trillion by 2006 (UNCTAD, 2004). The same report postulates that Africa is the region with the least internet users, although the number has doubled since 2000, and information on ICT usage indicators is largely incomplete (UNTAD, 2004). In spite of the scarcity of accurate ICT data on Africa, the UNECA SCAN-ICT project\(^1\) carried on six African countries (Ethiopia, Ghana, Morocco, Mozambique, Senegal, Uganda) discovered that in the case of Ghana (INIIT, 2002), 81% of firms surveyed had internet access, 35% had web presence, and 16% were engaged in e-commerce. More recently, however, out of 104 countries surveyed in the World Economic Forum's (WEF) Global Information Technology Report (GITR) for 2004-2005, Ghana improved its world ranking from 74th position in 2003/2004 to 64th in 2005. This goes to explain the fact that new e-commerce practices are being integrated into existing business processes. This is necessitated by competition from other exporting countries.

Eshun and Taylor (2009) in their recent work stated that, a recent survey by the Network Readiness Index that measures the degree of preparation of a nation or community to participate in and benefit from ICT developments, Ghana was one of 23 African countries in the top 100. This means that more businesses and individuals have come to embrace the use of the internet and e-commerce activities to enhance their businesses and remain competitive. In Africa, Ghana ranked number 7 (Aryeetey & Fosu, 2006 and International Telecommunications Unions, 2004).

The table below shows the level of internet usage in Ghana;

---

\(^1\) UNECA SCAN-ICT Project: This is a project sponsored by the United Nation Economic Commission for Africa (UNESCA) for the development and implementation of ICT policy framework in developing countries; the project’s name is the SCAN-ICT project. (www.uneca.org/aisi)
Table 1.1: Ghana Internet Usage and Population Growth

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Users</th>
<th>Population</th>
<th>% Pen.</th>
<th>Usage Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>30,000</td>
<td>18,881,600</td>
<td>0.2 %</td>
<td>ITU</td>
</tr>
<tr>
<td>2006</td>
<td>401,300</td>
<td>21,801,662</td>
<td>1.8 %</td>
<td>ITU</td>
</tr>
<tr>
<td>2008</td>
<td>880,000</td>
<td>23,382,848</td>
<td>3.8 %</td>
<td>ITU</td>
</tr>
<tr>
<td>2009</td>
<td>997,000</td>
<td>23,887,812</td>
<td>4.2 %</td>
<td>ITU</td>
</tr>
</tbody>
</table>


For example, in Ghana, the major macro factor facilitating and providing an enabling platform to safeguard development of the ICT industry and to facilitating electronic commerce and internet usage is the ICT policy for Ghana’s economy called Ghana ICT for accelerated development (ICT4AD) policy (Boah-Mensah E., Business & Financial Times, 2008). This initiative is also meant to prepare the economy as a way of bridging the digital divide between Ghana and her trading partners in the developed economies.

The main ICT policy objectives clearly establish the determination of Ghana to use ICT as a key developmental enabler. Notwithstanding this, various investments in ICT infrastructure by existing Internet service Providers (ISPs) and Telecommunication companies are helping to improve their service delivery and consequently cover the whole country. Despite these massive investments in ICT infrastructure and ICT capacity building and its impact in attracting foreign investors to the country, Ghana still falls behind other countries in terms of ICT usage because of some challenges the country faces. Some of these challenges as stated by Hinson & Sorenson (2006 & 2007) are the lack of a critical drive and strategy to harness the full potential of ICT for the socio-economic development of the country, the lack of the critical mass of ICT engineers and scientists relevant for undertaking ICT related projects professionally, less developed regulatory and legal framework for ICT industry, effective leadership and the political will for successful ICT projects, and the high cost of Internet usage.
The proliferation of the use of modern information communication technology including the internet and e-commerce to enhance business is widely felt across many industries in Ghana.

According to Frempong (2007), the internet has become so important that, its usage should form an integral part of the operations of Small and Medium-Scale Enterprises (SMEs) in developing countries. He further maintains that the internet now has become one of the pervasive ICT services, which is radically changing the traditional forms of trade and providing windows of opportunities which enterprises, especially those from developing countries, could exploit (ibid).

Despite the contributions that the adoption of Internet technology can make to the well being of firms, research shows that many of them are yet to embrace the technology in ways that will allow them to capitalize on its potential benefits (Cragg & Mills, 2009). It is important that during this internet era, attempt should be made to efficiently adopt and adapt to the use of internet and e-commerce to create a competitive advantage among SME’s in Ghana and thereby helping SME’s to develop and gain grounds in the global competitive environment. Firms need to know the status (benefits, as well as the barriers and challenges) of e-commerce and internet adoption when establishing policies and strategies (Hinson & Sorenson, 2007).

In Ghana SMEs control the industrial landscape and they show great potential in accelerating economic development which will lead to wealth creation and poverty reduction (Frempong, 2007). SMEs in non-traditional export complement the SMEs in tradition exports to play significant role in generating foreign exchange, income and employment for the economy of Ghana. While the traditional exports comprise of cocoa beans, timber, minerals and electricity, the Non-Traditional exports can be grouped as Agricultural, Processed and Semi-processed and Handicraft. (Source: Ghana Export Promotion Council, 2008 www.gepcghan.com).

The present study concentrates on the Horticultural fruits such as pineapples, mangoes, pawpaw, oranges and avocado pear exporters and how the sector is adopting the internet and e-commerce to enhance their business operations. The choice of Non-traditional Fruit Exporters (NTFE) in Ghana for this study is informed by several important reasons. First, NTFE sector has many challenges regarding marketing of the fruits that make it worth investigating to better understand the perceived benefits the firms will derive from adopting the internet and e-commerce. Again, the impacting complementary role the non-tradition fruit exports make to the traditional exports
of the country is another motivating. For example, statistics from GEPC shows that this sector generated in real values: $459 million in 2001, $504 million in 2002, and $589 million in 2003. The effort put in by the government of Ghana to grow the non-traditional fruit export sector makes it worthwhile in examining the challenges and barriers the sector is facing regarding the use of internet and e-commerce (Ghana Export Promotion Council, 2008).

Also, the NTFE sector, like other non-traditional export sectors, has a very competitive business environment (Hinson & Sorensen, 2006). It attracts strong competition from both local and international firms. This sets pressure on fruit exporting business firms in Ghana to explore ways of surviving and gaining competitive advantage over rivals in the industry locally and globally. The adoption of internet and e-commerce for many industries in Ghana is a key competitive tool that allows smaller firms not only to survive but also gain competitive urge over rivals (European Commission, 2002; DTI, 2001). In view of that the internet and e-commerce might offer useful benefits, capabilities, and competitive advantages to the NTFE firms in many ways. (Hinson & Sorensen, 2007, p. 56) observe that “…the massive transfer of new ICT into small firms (especially exporting firms in developing countries will enhance their capacity to compete favorably with firms operating in the developed nations…” Taking into consideration the competitive business environment and the unique challenges in terms of marketing the finished product in this sector, it is necessary to explore and examine the adoption of the internet and e-commerce by the NTFE in order to increase understanding of the barriers, challenges, perceived benefits, drivers and other related issues in this context.

### 1.2 Problem Discussion

The NTFE sector has, witnessed tremendous increase in productivity. Considerable attention has been devoted to the NTFE due to the enormous contribution it provides the national economy. Many research works have been done in the use of ICT in enhancing the Ghana Export arena, few have focused on the Non-Traditional Fruit Exporters (NTFE) (Sorensen & Buatsi, 2002).

Teo & Pian (2003) explain that the level of internet adoption by firms can be grouped into four levels: level 0 – e-mail adoption, level 1 – internet presence, level 2 – prospecting, level 3 – business integration, and level 4 – business transformation. Eshun & Taylor (2008) have established that most of the SMEs non-traditional handicraft exporters in Ghana are at the e-mail
adoption level. This is the take-up rates of ICT among firms. Levels begin with the use of e-mail and progress through web site development to the buying, selling and payment mechanism of e-commerce, with a few at the Internet presence. They further maintain that the most prominent challenge faced by SME’s is lack of government support in assisting them to adopt e-commerce and internet technologies in their day to day operations.

Hinson & Sorensen (2006) have studied the e-business for non-traditional exporting firms in Ghana and maintained that internationalized exporters in Ghana are adopting e-business as a result of competitive pressures, and the decision to adopt e-commerce practices among exporting firms is dependent on the level of ICT infrastructural development of these firms. Poon and Swatman’s (1997, 1999) have studied small business internet adoption and state inter alia, that small businesses e-commerce issues are increasingly topical and demand attention from applied ICT scholars. This is why many researchers have studied and documented findings on the adoption of the internet and e-commerce in different context in Ghana’s SME exporters. However, few of the studies have delved into the internet and e-commerce adoption among SMEs fruit exporters in Ghana. This present study is an extension of a multi-faceted research on e-commerce and internet adoption among SMEs focusing on non-traditional fruit export firms in Ghana. Management of the companies and other industry policy makers need to be empirically informed about the critical factors that affect e-commerce and internet adoption, perceived benefits and barriers in the context of SME’s fruit exporters in Ghana. There is the need to conduct further studies to provide empirical evidence to increase understanding of the adoption of internet and e-commerce in Ghana with particular reference to non-traditional fruit exporters. In view of the above, the main problem of the study is: how can the adoption of the internet and e-commerce by SMEs non-traditional fruit exporters in Ghana be described?

1.3 Ghana’s ICT Framework Enabling Internet and E-Commerce adoption among SMEs

The effort of the government of Ghana to set an enabling ICT environment for e-commerce and internet adoption by SMEs cannot be overemphasized (ICT4AD, 2006). In this respect, the government of Ghana has established the Ghana ICT for accelerated development (ICT4AD) policy for facilitating and providing an enabling platform to safeguard the development of the ICT industry and to facilitate electronic commerce and internet usage in the country (Business &
Financial Times September, 2008). Information and Communication Technology (ICT) for Accelerated Development (ICT4AD) document is Ghana’s outline for the use of ICT as a mechanism for industrial and socio-economic development. According to ICT4AD document, it is envisaged that a simultaneous focus on developing the ICT industry and the use of ICTs is to drive other sectors of the economy to accelerate Ghana’s development.

On the whole the aim of the policy is to build an ICT-led socio-economic development process with the possibility to move Ghana into a middle income, information-rich, knowledge-based and technology driven economy.

1.4 Overview of Ghana’s Export Sector

Exporting is an international trade that deals with outflow of goods and services from one country to another. The importance of exporting to all countries, particularly developing countries cannot be overemphasized, as it brings in the much needed foreign exchange for development and for payment for goods and services (www.gepcghan.com). When the inflow of earnings is greater, balance of payment position is better and the faster the rate of development (www.gepcghan.com).

1.4.1 Traditional and Non-Traditional Exports.

Exportable products in Ghana are classified as either traditional or non-traditional. Traditional exports comprise of cocoa beans, timber, minerals and electricity. The rest are classified as non-traditional exports (ibid). The Non-Traditional Exports (NTEs) have shown strong and excellent performance over recent years, getting to $1.164 billion, above the $1 billion mark for 2006. The exports improved from $460 million in 2001 to $1,164 million in 2007, showing a growth rate of over 150 per cent. On yearly basis, the growth translates into a 20.7 per cent increase yearly (modernghan.com, 2008). Now, the Ministry of Trade and Industry (MOTI) has set to ensure that the non-traditional export grows to 5 billion dollar mark in 2015 from the present 1.34 billion dollar mark towards fulfillment of the Ghana government’s vision of creating a better Ghana for all (GNA: Trade News, 2009).
1.4.2 Developments in Non-Traditional Fruit Export Sector

The Ghanaian non-traditional fruit export industry (NTFE) is made up of horticultural products like pineapple, mango, avocado pear, banana and pawpaw and these are exported mostly to the European market (www.gepc.com). The exportable fruits to European markets have shifted geographically over the past forty years, from the Mediterranean borders especially Egypt in the 1960s, to eastern and to the southern Africa after the 1970s, and now to western Africa after the 1980s (Barrett & Browne, 1996).

There has been a sharp increase in exports of fruits from Ghana, especially fresh pineapples for European markets since the 1980s (Takane, 2004). This coincided with the adoption of structural adjustment programs (SAP) and a series of policy changes toward economic liberalization since 1983. Under the SAP, both the government of Ghana and the international donor communities have encouraged the non-traditional export and for that matter NTFE sector in order to promote diversification of the country’s export sector (ibid).

According to Takane (2004) the production of pineapple for export is geographically concentrated along the coastal savanna near the capital, Accra. The concentration of the production activities near the city of Accra is as a result of the proximity to the international Airport in Accra and a major Seaport in Tema. The perishable nature of the produce coupled with the underdeveloped transportation networks in rural areas add up to the sitting of these non-traditional fruits in the coastal savanna area of Nsawam near Accra.

Major importing countries of fresh pineapples (a major fruit export) are Belgium, Switzerland, France, Italy, Luxembourg, the Netherlands, and the UK (Takane, 2004). The export of fresh pineapples in Ghana has increased persistently since the mid-1980s. The export volume of fresh pineapple in 1983 was only 57 tons, while in 1999 it exceeded 33 thousand tons. Fresh pineapple exports make up 15% of the total value of Ghana’s non-traditional agricultural exports in 1999. The estimated value of pineapple export from Ghana to European Union countries in 2001 was about 30 million Euros (World Trade Atlas, 2002).
1.5 Purpose of the Study

In view of the above, the main purpose of the study is to examine how SMEs non-traditional fruit exporting enterprises in Ghana have adopted the internet and e-commerce in conducting their business activities.

For the above purpose, the specific objectives of the study are as follows:

1. To identify the benefits derived by SMEs fruit exporters in Ghana from adopting the internet and e-commerce in their businesses.
2. To explore the barriers to the adoption of the internet and e-commerce among SMEs, non-traditional fruit exporters in Ghana.
3. To describe the challenges faced by SMEs, non-traditional fruit exporters in Ghana in the adoption of internet and e-commerce technologies.
4. To describe the level of internet and e-commerce adoption among the SMEs, non-traditional fruit exporting firms in Ghana.

1.6 Research Questions

Based on the problem discussion and the purpose of study the following research questions were developed:

1. How can the benefits of internet and e-commerce adoption among SMEs NTFEs in Ghana be described?
2. How can barriers to the adoption of internet and e-commerce technologies amongst SMEs NTFEs be described?
3. How can the challenges SMEs NTFEs in Ghana face in the adoption of internet and e-commerce technologies be described?
4. How can the level of internet and e-commerce adoption among the SMEs NTFE in Ghana be described?
1.7 **Significance of the study**

The results of this study could provide insight into unique factors that drive the internet and e-commerce adoption by SMEs NTFEs in Ghana.

It will provide empirical evidence within the framework of the levels of e-commerce adoption as theoretized by authors such as Martin & Matlay (2001); Ram & Foley (2002); Teo & Pian (2003) and Sorenson & Buatsi (2002).

The results of this study will also be significant in diverse ways to business/marketing practitioners, policy makers and stakeholders. To the management of non-traditional fruit exporters, it may serve as a guide to policy initiatives. To policy makers like government agencies such as the Ministry of Trade and Industry, the findings and results of this study could provide invaluable insights and a more reliable guide to monitoring the impact of the operations of the activities of fruit exporters and measure their respective policy goals and objectives.

1.8 **Limitations of the study**

The following limitations are anticipated:

- Financial and time constraints will limit this study to a few firms.

- We also envisage that management of some fruit exporters and firms are going to be reluctant to give all information that will benefit our work. Some will consider such information as trade secrets or bothering on their competencies as a company and therefore would not divulge such information to the researcher.

- Some respondents will provide responses to merely satisfy the research work but not the true state of affairs of their firms which may affect the quality of the work to be produced.
1.9 Delimitation of the Study

This research work will be limited to the Ghanaian fruit exporters only. Although the findings are not generalizable, the outcome of the study could be relevant to fruit exporters in other countries.

1.10 SMEs IN GHANA - A General Overview of the SME Sector

SMEs are commonly referred to as Small- and Medium-sized Enterprises. There is no single and uniformly acceptable definition of Small and Medium Enterprises (Storey, 1994). However, in this study, we shall make use of the definition given by National Board for Small-Scale Industry (NBSSI), Association of Ghana Industries (AGI) and GEPC (2006). Which states that, small enterprises are businesses that employ up to 29 workers (including micro-enterprises that employ 1-5 workers) with value of fixed assets greater than $10,000. To them medium enterprises employ 29-99 workers with value of fixed assets of $100,000?

According to Offei (N.D) and Mensah (2004) Small and Medium Enterprises (SMEs) in Ghana constitute a greater percentage of the economy of Ghana and they have difficulty getting startup capital since income levels in general are low and as such difficult in building up savings (Offei, N.D)

Most of the SMEs in Ghana especially in the fruit exporting business are family owned, hiring skilled laborers is difficult. There is also a problem of having access to modern technology. Many firms use old machinery, have problems with finding replacement parts to purchase and there are regional differences in accessing funding (Tagoe et al., 2005).
CHAPTER TWO

2.0 Literature Review

2.1 Overview

This chapter reviews relevant literature that provides the theoretical framework and context for the study. It has the following headings: The Definition and Historical Overview of the Internet and E-Commerce, The Benefits of the Internet and E-Commerce in Business, Barriers and Challenges of Internet and E-Commerce adoptions In Developing Countries. Models of Internet and E-Commerce Adoption by Ghanaian SMEs Non-Traditional Export Industry.

2.2 The Definition and Historical Overview of the Internet and E-Commerce

According to Turban (2008) the Internet, also called the Net is a public, global communications network that provides direct connectivity to serve billions of users worldwide over a local area network (LAN), usually via an Internet Service Provider (ISP). It is a network of networks consisting of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. You can access internet network via communication devices and media such as modems, cables, telephone lines, satellites etc.

E-commerce is a term that is interchangeably referred to as, e-business, digital marketing, e-marketing, internet marketing, and e-tailing (Chaffey, 2006). Many authors such as Bloch et al. (1996) and Henderson (2001) are of the view that e-commerce is the purchase of goods and services over a computer-based network. According to Turban et al. (2002), e-commerce is the process of buying, selling, or exchanging products, services and information using computer networks including the Internet. Gibbs et al. (2003) also state that e-commerce is “the use of the Internet to buy, sell, or support products and services. It includes business transactions, information sharing, business relationship management, and the creation of online communities. For this study, definition by Gibbs et al. (2003) has been adapted, because it is much more comprehensive than Turban et al. (2002) as it looks at business relationship management and the creation of online communities.
History of e-commerce dates back to the design of trading over the Internet (Ecommerce-Land, 2004). Chaffey et al. (2006) and Turban et al. (2008) all claim that the internet started as an experiment by the U.S. government in the late 1960s and initially used by its agencies and academic researchers and scientists. E-commerce became possible in 1991 when the Internet was opened to commercial use and people began flocking to participate in the World Wide Web.

2.3 The Benefits of the Internet and E-Commerce to SMEs

E-commerce offers numerous benefits and opportunities to SMEs. This technology has a global nature and therefore reaches millions of people worldwide. These benefits and opportunities include the following.

2.3.1 Reduction in Cost

Going on-line or hooking to the internet make SMEs operate at a lower cost and consumers have access to a whole lot of goods and services at their disposal at the click of the button (Yannis, 2000). Also, (Schneider and Perry, 2000; Chaudhury and Kuilboer, 2002) affirm this assertion.

2.3.2 Penetration to the World Market

According to Yannis (2000); Gibbs et al. (2003) and Turban et al. (2008) SMEs through e-commerce adoption have the potential of expanding the markets of developing countries, either through online intermediaries or directly through the use of web site. Turban et al. (2008) agrees that the technology has a global nature and therefore have the opportunity to reach millions of people worldwide.

2.3.3 Networking

SMEs can achieve networking among themselves by way of say production networking, like firms cooperating over such input activities as training, technological development, product design, finance, research development, export promotion, marketing research, transportation and distribution and many more (Yannis, 2000). Networking enables electronic socialization such as finding unique items using online auctions (Turban et al., 2008).
2.3.4 Efficiency and Effectiveness

Using the e-commerce enhances the operations of a business and as a result reduces operational cost of firms (Yannis, 2000). Turban et al. (2008) also points out that consumers enjoy instant delivery of goods and services, for example digitize product can be downloaded immediately upon payment, also there is convenient auction participation such that auctions can be done anytime and from any place. EC ensures improved effectiveness in terms of a widening market and ensuring that customers’ needs are well serviced (ibid).

2.3.5 Enhances Communication

According to Wen et al. (2001) e-commerce ensures consistency and accuracy of information. Also, Turban et al. (2008) explains that EC ensure availability of information by way of ensuring that firms as well as customers find what they need easily and with details and demonstrations.

2.3.6 Improves Processes

According to Yannis (2000) smaller businesses that want to benefit from electronic commerce needs to adopt EC developmental tools such as e-mail, electronic documents and data base access as part of their daily operations. Other authors agree that, with the advent of internet and e-commerce, information can be sought for and provided and allow for new products to be based on customers’ exact needs. Orders can be placed and filled, products delivered, services performed in a matter of seconds. Firms can easily search through a large database of products and services, build order over several days, compare prices with a click of the mouse and buy selected products at best prices (Wen et al., 2001; Ecommerce-Land, 2004; Ching & Ellis, 2004). EC serves as new customer/supplier contact and the creation of new ways of selling existing products (Schneider and Perry, 2000; Chaudhury and Kuilboer, 2002).

2.3.7 Stimulates Competition

EC enables a company to achieve competitive advantage and save cost, based on reduced advertising costs; product differentiation by customizing products and timely response to market needs; customer focus through better customer relationships and better customer services (Wen,
et al., 2001). Additionally, NTFEs who do not keep up with the progression are in danger of being left out in the international competition.

### 2.3.8 Provides Variety

With EC and the internet technology, consumers have a wider range of products to choose from and it also serves as a new medium for commerce (Walters and Lancaster, 1999).

### 2.3.9 Enhances Export Marketing

Bring development to the export market, and helps in augmenting competitiveness of business activities (Lee & Clark, 1997; Hodgkinson & McPhee, 2002; Damaskopolous & Evgenious, 2003; Teltscher, 2002).

Despite numerous benefits that are associated with firms that incorporate e-commerce activities in its operations, there are several barriers that hold back companies’ adoption of the Internet and e-commerce.

### 2.4 Barriers to Internet and E-commerce Adoptions by SMEs

According to Docherty & Simpson (2004) additionally, success of application and implementation of e-commerce depends upon recognizing the barriers presented by the internet for e-commerce. A problem once identified is half solved. This means that once a company is able to identify its barriers, it can easily decide on strategies and technologies to overcome them.

Kshetri (2007) in the diagram (figure 2.1) below analyzed e-commerce barriers under three categories: economic, socio-political and cognitive factors. To him the economic and socio-political factors focus mainly on environmental characteristics, the cognitive aspect talks about organizational and individual behaviors. The economic barriers as explained by Kshetri (2007) include slow internet diffusion, unavailability of credit cards, unavailability of physical delivery systems and low bandwidth availability.

On the other hand, Kshetri (2007) argues that the socio-political barriers take account of government regulations like privacy and security, lack of business laws for e-commerce and cultural attitude of preference to face-to face transactions as against on line transactions. The
cognitive barriers include lack of awareness and understanding of potential opportunities that e-commerce and the internet provides.

**Figure 2.1**

**Business and Consumer-Level E-commerce Barriers in the Developing World**

<table>
<thead>
<tr>
<th>Barrier type</th>
<th>Consumer level</th>
<th>Business level</th>
</tr>
</thead>
</table>
| **Economic**| • Low credit card penetration.  
• Lack of electrical supply.  
• Low tele-density.  
• Lack of purchasing power. | • Underdeveloped financial systems.  
• Internet less attractive for traditional economic sectors.  
• Lack of economies of scale.  
• Unavailability of ICT and other supporting infrastructures. |
| **Sociopolitical** | • Inadequate legal protection for Internet purchases | • Preference to face-to-face communications over e-mail.  
• Precedence of established relationships.  
• Lack of DES laws. |
| **Cognitive** | • General and computer illiteracy and lack of English language skills  
• Lack of availability of local language websites  
• Lack of awareness and knowledge of e-commerce benefits  
• Lack of confidence in service providers. | • Lack of knowledge to use ICTs profitably.  
• High degrees of risk aversion.  
• Lack of workforce with e-commerce expertise. |

Adopted from Kshetri, N. (2007)

The second diagram fig.2.2 below is a summary of the factors outlined in the first diagram which could further be compressed into pre-transaction barriers, transaction barriers and post transaction barriers.
The pre-transaction barrier is made up of internet penetration, ICT skills and ICT infrastructure Kshetri, N. (2007). The transactional barrier is made up of credit card penetration and financial transaction laws (ibid). The post-transaction barrier includes delivery of infrastructure and delivery services (ibid).

**Figure 2.2  BARRIERS TO E-COMMERCE**

Adopted from Kshetri, N. (2007)

Dixon et al (2002); European Commission (2002); Buckley and Montes (2002) describes six formidable barriers to firms entering the digital economy as follows;

- Some SMEs are not aware of what ICT can do to enhance their business operations in the face of stiff competition in the global world. Some consider the technologies and techniques not applicable to the products and services they offer.
• Some SMEs are in small and niche markets. These markets are sometimes entirely local such that they do not need the global connectivity available through the internet. In such niches word-of-mouth acts as the guarantee for quality service and reliability.

• The perception of unresolved security and privacy issues associated with the use of the internet.

• Most SMEs lack the necessary IT skills that form the bases to engaging in the digital economy.

• High initial set up costs and the perceived ongoing cost of ICT and e-commerce also act as barriers to the adoption among SMEs.

• Due to the legacy of IT sunk cost, most SMEs do not have the luxury of resources for experimentation in the IT area. To such SMEs, their investments need to work for them immediately and need not be written down.

Riemenschneider and McKinney (1999) have identified that the barriers for the adoption of e-commerce are security, training, cost, technical knowledge, and observance to corporate standards. Barriers to the adoption of internet and e-commerce have been categorized into three (Scupola, 2001). Firstly, the “perceived costs”, which includes financial investment, administrative changes, and the time it takes to put the system in place. Secondly, the “organizational readiness”, which is the extent to which an organization is prepared to adopt e-commerce – such as skills and knowledge of information technology, internal IT support, and support from external parties such as IT vendors. The third category is “external environment”, which includes government regulation (ibid).

Cultural barriers in some countries may also exist to deter the acceptance of e-commerce as a way of doing business Aladwani, (2003); Bingi, et al (2001). For example, in Ghana shopping is a social activity and personal face-to face contacts with sellers are an important shopping experience. This is very particular with market women who prefer to meet and bargain for reduction of cost price of goods and services even if it is insignificant.

MacGregor & Vrazalic (2005) use the diagram below (fig. 2.3) to explain further the barriers to e-commerce adoption:
The model hinges on two main headings – too difficult and unsuitable. Under the too difficult heading, there are variables such as lack of technical knowledge, complexity in e-commerce implementation, financial investment etc. whiles, under the unsuitable heading, e-commerce is not suited to products/services, not suited to clients’ way of doing business. Most of these of these barriers have already been raised by Kshetri (2007).

2.5 Challenges to the adoption of internet and e-commerce.

While many writers of e-commerce literature share the view that e-commerce has enormous opportunities to businesses in developing countries, a number of challenges need to be overcome before developing countries can fully enjoy the benefits of e-commerce and internet adoption. These include the following: limited telecommunications infrastructure, getting hold of qualified staff with the requisite skills to develop and support e-commerce sites, low level of skills in ICT prevents people from using the internet, untimely and unreliable systems to deliver physical goods, low bank account and credit card penetration, low income, low computer and internet penetration (Anigan, 1999; Bingi, 1999; Marshall, 2000).
Elkin (2001) also argue that distrust of what businesses do with personal and credit card information is an e-commerce issue and could be a serious obstacle to e-commerce growth.

Another major challenge is in the area of the number of internet users needed to build a critical mass of online consumers (Akoh, 2001). This is woefully inadequate. It is also common knowledge that some SMEs lack familiarity with even traditional forms of electronic commerce such as telephone sales and credit card use.

Additionally, low level of economic development and small per capita incomes of developing countries like Ghana becomes a challenge to SMEs adoption of e-commerce and internet technologies (Akoh, 2001).

2.6 Internet and E-Commerce Adoption Models

There are several models of internet and e-commerce adoption, however due to the relevance of these models to help us build the conceptual framework, we have decided to review the following; PIT Model (Foley & Ram, 2002), Adoption Ladder Approach (Martin & Matlay, 2001) and Teo and Pian (2003) Model.

2.6.1 The adoption Ladder Approach

The Adoption Ladder Approach which is favored by the UK government’s Department of Trade and Industry details the elements of organizational sophistication that accrue at successive steps of the perceived ladder. The ladder sequence begins with the use of e-mail and progresses through web site development to buying, selling and payment mechanism of e-commerce and to the supply chain management of e-business, as shown in, fig. 2.4 below;
Figure 2.4: Adoption Ladder Approach Model

This adoption ladder approach implies that businesses derive benefits directly from the organizational changes and increasing ICT sophistication that the unique qualities of the internet offer. These qualities include: Ubiquity, Interactivity (permits collaboration amongst Users), speed, (allow businesses to build quickly) and finally Intelligence (having the ability to store, retrieve and process information). These qualities, they maintain, allow new forms of markets to emerge (Kenney and Curry, 2001).

However, some Local Futures Group\(^2\) argues that to achieve an ‘e-SME’ status, firms must cross two digital divides (Local Future Group, 2001). The first divide involves acquiring basic ICT

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\(^2\) The Local Futures Group provides a geographical perspective on social and environmental change. In addition they provide a range of services designed to help organizations understand current conditions and anticipate future change.
skills and technology to operate e-mail and simple brochure websites. Then the second digital divide is the threshold to e-business and requires advanced IT skills.

The ‘adoption ladder approach’ highlights the transformational aspects of technology and the key social processes from which it emerges (Scarborough and Corbett, 1992).

2.6.2 PITs Model by Foley and Ram

Foley and Ram (2002) suggest a simplified way to interpret patterns of take-up of e-business techniques by SMEs which they call the PIT model.

This model better accommodates the diversity of adoption of ICT and e-commerce approaches by SMEs (Foley & Ram, 2002). This is so because ICT might be introduce into different areas of a firm’s activities at different rates and at different times. The PITs model has two elements:

- The functions ICT can be used for in the firm and
- The activities ICT can be applied to in the firm.

Foley & Ram (2002) argue that the internet can be used for three sophisticated activities by SMEs. These are as follows;

- To PUBLISH and publicize Information on a website, eg product and contact details and terms and conditions of delivery.
- To INTERACT with customers and Suppliers through automated Communication Systems.
- To TRANSFORM the way e-business undertakes its activities, that allows customers to freely specify delivery times and places.

Foley & Ram (2002) explain that this e-business sophistication can be applied to all business activity within an SME. For example in the area of finance, it can be applied to include – logistics and delivery, finance, purchasing and procurement, marketing and sales and also after sales service and last but not the least human resource management.
2.5: The PITs model of ICT adoption by SMEs

In the above diagram as e-business activities in different parts of the firm begin to overlap, synergies begin to appear which have the potential to bring major changes to the SME and the way it functions.

These changes are seen in fig 2.5 in the shape of automated billing, automated payment, automated stock replenishment, mass customization and customer driven relationship marketing.

2.6.3  **TEO AND PIAN Model of Internet and e-commerce adoption**

The internet has created new technologies for firms to do business in innovative ways, making the Web to be called a market space by some researchers (Teo & Pian, 2003). In order to control the potential of the Internet, firms are establishing their presence on the Web (ibid).

Teo and Pian (2003) describe the internet and e-commerce adoption levels by SMEs as ranging from levels 0-4. These are explained below;
LEVEL 0:
This level involves only e-mail adoption. At this level organizations normally have e-mail account that is used to establish links with their customers and business partners.

LEVEL 1: WEB PRESENCE
At this level SMEs have made the decision to adopt internet but still awaits implementation. The objective of such a decision is for the firm to move to internet adoption by having a website that provides product information and product brochures.

LEVEL 2: PROSPECTING
At this level SMEs have a limited use of the internet. Most SMEs at this level provide customers with product information, news, events, interactive content, personalized content and e-mail support, which allow customers to have access to the firm’s products at very little cost in terms of distribution.

LEVEL 3: BUSINESS INTERGRATION
At this level business integration takes place as adoption is fused into the firm’s business model. Web strategy is integrated with the firm’s business strategy. Businesses are electronically integrated with key suppliers and customers for procurement and supply chain activities.

LEVEL 4: BUSINESS TRANSFORMATION
This is the highest level of web adoption. The level transforms the overall business model throughout the organization. Here new relationships are built and new business opportunities are sought.
The Teo and Pian (2003) model is further compressed into a graph and a table as shown below in figure 2.6 and table 2.1.

![Teo and Pian’s (2003) Web adoption model](image)

**Table 2.1: Levels of Internet and E-commerce Adoption**

<table>
<thead>
<tr>
<th>Levels of Internet and E-commerce</th>
<th>Details</th>
</tr>
</thead>
</table>
| Level 4: Business Transformation   | - Transformation of overall business model throughout the organization  
- New business opportunities |
| Level 3: Business Integration     | - Integration of business process  
- Cross-functional links between customers and suppliers  
- Interactive marketing and sales  
- Online communities  
- Secure transactions  
- Advanced search functions |
| Level 2: Prospecting | - Customers’ access for products with minimal information distribution cost  
- Company information  
- News  
- Events  
- Interactive content  
- Personalized content  
- e-Mail support  
- simple search |
|---------------------|------------------------------------------------------------------|
| Level 1: Internet Presence | - Web site  
- Company information  
- Product brochures |
| Level 0: e-Mail Adoption | - e-Mail account |

SOURCE: Adapted from Teo & Pian, 2003

In the context of the Ghanaian situation, Sorenson and Buatsi (2002) also discussed three levels of internet and e-commerce adoption by SMEs in Ghana.

Level 1: they talk about the brochure or publishing level (one way communication).

Level 2: the manual or the database level (simple interaction).

Level 3: the e-commerce and personalization level (complex interaction).

All the models of internet and e-commerce adoption methods explained above seem to have one common approach. They tend to divide the levels according to complexity, moving from simple...
levels of adoption to a more involving and complex level of internet and e-commerce adoption. This is because businesses adopt e-commerce and internet activities for several reasons (Teo & Pian, 2003).
CHAPTER THREE

3.0 CONCEPTUAL FRAMEWORK

According to Miles & Huberman (1994, p.18), “The conceptual framework explains, either graphically or in narrative form, the main things to be studied.” The conceptual framework has been built based on the literature review, to explain issues related to benefits, barriers, challenges and levels of e-commerce adoption.

This chapter explains the frame of reference to enable us answer the following research questions.

3.1 How can the benefits of internet and e-commerce adoption among SMEs NTFEs in Ghana be described?

Reviewing literature in chapter two shows that, the benefits of e-commerce are many and varied. Among them are:

- Facilitates the search for information, gives access to place an order and compare prices, buy at best prices (Ecommerce-Land, 2004).
- Allow the search for information and provide answers to complaints, fill orders, deliver products and perform services (Ching & Ellis, 2004).
- EC gives access to variety of products and serves as a new medium for doing business (Walters & Lancaster, 1999).
- Facilitates the promotion of products, saves cost, provides timely information, shortens remittance time, brings consistency in information for better customer services, better customer relationship, customization of products, brings competitive advantage and as a convenient way of doing business (Wen, et al., 2001).
- Adopting e-commerce and internet has the benefit of reducing cost, access to global markets, networking and efficiency in terms of cost reduction, ability to keep pace with a changing business environment, enhances communication, stimulates competition and improves market potentials by satisfying customer needs (Yannis, 2000).
• Product quality, new customer supplier contact (Schneider and Perry, 2000; Chaudhury and Kuilboer, 2002).
• EC fuels the process of globalization (Gibbs et al., 2003).
• Brings development to the export market, and helps in augmenting competitiveness of business activities (Lee & Clark; Hodginkson & McPhee, 2002; Damaskopolous & Evgenious, 2003; Teltscher, 2002).
• It enhances communication and reduces transaction cost (Scully & Woods, 2001).

The elements of benefits above are the expected answers to our first research question “How can the benefits of internet and e-commerce adoption among SMEs NTFEs in Ghana be described?”

3.2 How can barriers to the adoption of internet and e-commerce technologies amongst SMEs NTFEs be described?

A lot of literature on barriers of internet and e-commerce adoption exists in the texts that are discussed in chapters 1 & 2.

Kshetri (2007) discuss barriers to e-commerce as being economic, socio-political and cognitive factors, under two main headings: consumer level and business level.

• Under consumer level, the barriers to e-commerce are low credit card penetration, lack of electricity supply, low teledensity, and inadequate legal protection for internet purchase, computer literacy and unavailability of local language on websites, lack of awareness/knowledge on e-commerce benefits and lack of confidence in service providers.
• Under business level, he maintains among others that, under developed financial system, internet is less attractive for traditional businesses, lack of economies of scale, unavailability of ICT infrastructure, people preferring face-to-face conversation, lack of knowledge on ICT, high degree of risk aversion, lack of workforce with e-commerce expertise.

Dixon et al. (2002); European Commission (2002); Buckley and Montes (2002) discuss the barriers to e-commerce as follows: lack of awareness to ICT benefits, small market/niches,
unresolved security and privacy issues, lack of IT skills, high set-up cost and lack of extra resources for experimentation.

Riemenschneider & McKinney (1999) see security, training, technical knowledge, cost, and observance to corporate standards as barriers.

Scupola (2001) looks at three main categories:

- Perceived costs – financial investment, administrative changes, and time taking to put the system in place.
- Organizational Readiness – skill or knowledge to adopt ICT.
- External Environment – government regulation.

MacGregor & Vrazalic (2005) discusses barriers from 2 perspectives – too difficult and unsuitable:

- Too difficult – lack of technical knowledge in organization, too complex to implement, difficulty in choosing between different e-commerce options and security issues.
- Unsuitable – not suitable to producers and services, not suitable to ways of doing business, not suitable to clients’ ways of doing business and no advantages from e-commerce.

The barriers stated above are the expected answers to our second research question “How can barriers to the adoption of internet and e-commerce technologies amongst SMEs NTFEs are described?”

### 3.3 How can the challenges SMEs NTFEs firms face in the adoption of internet and e-commerce technologies be described?

- Anigan (1999); Bingi (1999), & Marshall (2000) state the following as challenges to e-commerce and internet adoption: limited telecommunication infrastructure, getting hold of qualified staff with the requisite skills to develop and support e-commerce sites, low level of internet skills in ICT preventing people from using the internet, untimely and
unreliable systems to deliver physical goods, low income levels, low bank accounts and credit card penetration, low computer and internet penetration.

- Elkin (2001) talk about the distrust of what businesses do with personal and credit card information.

- According to Akoh (2001) challenges such as low level of economic development, unfamiliarity with traditional forms of EC, low credit card usage, small per capita income inhibits the adoption of e-commerce.

This reference is arrived at in view of our third research question: “How can the challenges SME’s NTFEs firms face in the adoption of internet and e-commerce technologies is described?”

### 3.4 How can the level of internet and e-commerce adoption among the SMEs, NTFE in Ghana be described?

To answer the above question, combinations of models and levels of the Internet and e-commerce adoption have been identified in the literature, these includes - Adoption Ladder Approach by Martins & Matlay (2001); PITS Model by Ram & Foley (2002), Teo & Pian (2003) and Sorenson & Buatsi (2002).

For levels of the Internet and e-commerce adoption, the familiar approach is dividing the levels according to difficulty, moving gradually from a simple level to a more complex Internet and e-commerce adoption.

Businesses adopt the Internet for different reasons, ranging from simple Internet presence to using the Internet to change business operations.

The table below summarizes our research questions and theories used to answer them.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Theoretical support</th>
<th>Content</th>
</tr>
</thead>
</table>
-Give access to buy at best prices  
-Serves to lower cost of doing business  
-Search for information  
-Facilitates placement and filling of orders  
-Facilitates delivery of products and provide after sales service  
-Serves as a platform of inexpensive advertising  
-Create interactions with stakeholders  
-Serves as a new customer/supplier contact  
-Creates new ways to sell products  
-Gives access to a variety of products  
-Reduces cost  
-Give access to global market  
-Enhances networking and product promotion  
-Shortened remittance time  
-Bring consistency in information  
-Bring development to export market  
-Bring better customer service and customer relationship  
-Facilitates customization of products  
-Brings competitive advantage  
-Convenience of doing business online.  |
-Less attractive for the traditional sector due to face-to-face preference  
-Unavailability of ICT infrastructure  
-Lack of knowledge on ICT  
-Lack of electricity supply  
-Low credit card penetration  
-Unavailability of local language on website  
-Lack of knowledge on EC benefits  
-Lack of confidence in service providers  
-High degree of risk averse  
-High set up costs  
-Lack of IT skills  
-Lack of extra resource for experiment  |
### 3.5 Emerged Conceptual Framework

The concept discussed in this chapter provides us with a framework of theories. From these we have developed a conceptual framework that shows how the various research questions are related to one another.
The first research question looks at the benefits that the adoption of internet and e-commerce may provide to firms. This leads us to the barriers and the challenges they may face in adopting internet and e-commerce.

The diagram below shows initially that the presence of perceived benefits (RQ1) of e-commerce and internet usage drives NTFE’s to adopt this approach to doing business. However to fully integrate this system there are perceived impediments (Barriers RQ2) in their way such as underdeveloped financial systems, lack of adequate electricity supply and low credit card penetration. After overcoming the barriers and deciding to adopt the technology, the diagram moves us into yet another hurdle of challenges (RQ3) which are conceptualized to be perceived factors that make it difficult to adopt e-commerce and the internet in doing business. This includes getting hold of qualified staff to develop e-commerce and support e-commerce sites and low bank account and credit card penetration.

After overcoming the barriers and challenges, various authors have come up with theories (RQ4) to which we consider to enable us know how deep the organizations are into applying e-commerce and the internet to stay in today’s competitive business environment.

**Figure 3.1: Emerged Frame of Reference**

![Diagram](source)

**Source:** Authors own creation
CHAPTER FOUR

4.0 RESEARCH METHODOLOGY

4.1 Introduction

This chapter focuses primarily on the methodological decisions and choices used in conducting this research. It covers the process, purpose, approach and the strategy of the research. It will also include the sample selection method, methodological quality standards and the analysis of the data. This will help us provide justification for the steps taken for our study.

Methodology involves having a general familiarity with some of the philosophical issues and arguments about the process of research Fisher (2007)

4.2 Research Process

Research work requires one to follow a sequence of steps (Neumann, 2006). But the exact sequence and steps vary somewhat with the type of social research, being it qualitatively or quantitatively (ibid). In the case of Malhotra & Birks (2007) a research process is made up of six broad steps which defines tasks to be accomplished in the study and these stages includes the definition of the problem, developing an approach to the problem, formulating research design, fieldwork, data preparation and analysis and report generation and presentation.
4.3 Research Purpose

According to Neumann (2006) the purpose of social research may be organized into three groups and may be based on what the researcher is trying to get done. The researcher may like to explore a new topic (Exploration) or describe a phenomenon (Descriptive) or explain (Explanation) why something occurred (ibid).

- Exploratory research is carried out on a new topic to give insight and to help understand findings. And it is also used, when the aim of the researcher is to plan more precisely questions that future research can answer (Malhotra & Birks, 2007).

  It is used to measure events that are inherently very difficult to measure and where that event cannot be easily measured quantitatively (ibid)

- Descriptive research presents as it is, a picture of the specific details of a situation, social setting or relationship Neumann (2006). With the descriptive research the information
needed is clearly defined as it is characterized by past formulation of specific research questions (Malhotra & Birks, 2007). Most works found in literature (journal, publications etc) for decision making are all descriptive (Neumann, 2006).

- Explanatory research builds on exploratory and descriptive and also, it elaborates, extends or tests a theory to look out for causes and reasons of behaviors (Neumann, 2006).

The purpose of this research is to conduct an exploratory and descriptive research in order to find out what is happening in a given situation, in this instance, the adoption of internet and e-commerce by NTFEs in Ghana.

4.4 Research Approach

According to Neumann (2006) there are two methodological approaches available to researchers, depending upon the information to be investigated; the researcher can adopt either qualitative or quantitative. However, in many cases, researchers use both approaches depending on the purpose of the study.

According to Saunders et al. (2007) qualitative data collection technique focuses on non-numeric data in the form of words, pictures or video clips to describe data, while a quantitative data collection technique focuses on numerical data such as numbers.

4.4.1 Qualitative Research

Qualitative research refers to the meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things. Qualitative research strategies provide perspectives that can prompt recall of these common forgotten sights, sounds and smells (Fisher, 2007). Finally, Malhotra (2007) says that qualitative research methodology is an unstructured methodology based on small samples that provide insights and understanding of the problem setting.

4.4.2 Quantitative Research

In contrast, quantitative research refers to counts and measures of things (Jackson, 1968). This methodology seeks to quantify data and tries to apply some form of statistical analysis Malhotra (2007). Unfortunately because quantitative strategies relies chiefly on numbers and qualitative
research uses words, images, and descriptions, many people erroneously regard quantitative strategies as more scientific than those employed in qualitative research (Bruce, 2007).

In this study we have selected qualitative research approach, as this will give us a deeper understanding of e-commerce and internet adoption among Ghanaian SME non-traditional fruit exporters.

4.5 Research Strategy

Research Strategy involves a general plan that the researcher will use as a study guide to answer his research questions (Saunders et al. 2007).

According to Yin (1994) research strategy explains how the researcher will collect and analyze data. Yin further states that there are five research strategies for conducting social science research. These are:

- Survey
- Experiments
- Case studies
- Archival analysis
- History

In addition to Yin’s five research strategy, Saunders et al. (2007) included action research and grounded theory. According to Yin (1994) the use of any of the above strategies will depend on three very important factors as stated below;

- The type of research question posed.
- The extent of control a researcher has over behavioral events and
- The degree on contemporary issues as opposed to historical events.

To Yin (2009) the type of research question posed is the most important of the three factors. The table below shows the five research strategies and how each is related to the relevant situations for different research methods.
Table 4.1 Relevant Situations for Different Research Strategy

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires control over behavioral events</th>
<th>Focuses on contemporary events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, What, Where, How many, How much</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, What, Where, How many, How much</td>
<td>No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History</td>
<td>How, Why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>How, Why</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Yin, 2009

In this study the research problem and research questions ask ‘why’ our study does not require the control of behavioral events, it focuses on contemporary events such as e-commerce strategies and internet usage. This approaches fits very well into Yin’s (2009) requirement for a case study.

4.5.1 Survey

A survey is a research technique where information is gathered by the use of questionnaire from a sample of people.

4.5.2 Experiments

Experiments are the only ways of doing explanatory or casual inquiries. They allow investigation of changes in one variable as is in the case of sales, while changing one or two other variables. A typical experimentation research strategy is test marketing (Zikmud, 1994)
4.5.3 Case Studies

Robson (2002) explains case study as ‘a strategy for doing research involving an empirical investigation of a particular contemporary phenomenon using multiple sources of evidence’.

According to Denscombe (2000) the aim of case study is to have a general view of the situation by studying the specifics. Yin 1994 also explains that case study can bring deeper understanding and knowledge about selected cases to be undertaken.

4.5.4 Archival research

It refers to a study that uses administrative records and documents as the principal sources of data. It is usually used when the purpose is to find out about the past and changes over time, and often forms the starting point for explanatory, exploratory or descriptive studies.

4.5.5 History

The historical methods deals with, past and it is used when no relevant persons are alive to report.

4.5.6 Action Research

Action research focuses on the individual researcher understanding and values relating to the research issue (Fisher, 2007). It is a research of improving practice rather than about producing knowledge (Elliot, 1991). The believe here is that action or behavior, can only be changed by changing a person’s values and beliefs, and that values and beliefs can only be changed by testing than in action, Fisher (2007).

Elliot (1991) defines action research as improving practice rather than producing knowledge.

4.5.7 Ethnographic Research

This type of research study explains the cultural bases of a people including organizational cultures, by writing accounts of their subjective experiences of living and working in the culture that is being studied over a period of time (Saunders et al., 2000, 2007; Malhotra & Birks, 2007).
It must be noted, however that, each of these strategies discussed above have a different way of collecting and analyzing empirical evidence.

From the above discussions and for the purpose of this thesis we have decided to choose case study as our research strategy using the qualitative approach, because we believe that it will give us a deeper understanding and insight about the adoption of internet and e-commerce technologies amongst Ghanaian NTFEs.

4.6 Data Collection Method

According to (Yin, 2009; Denscombe, 2000) data can be collected from different sources when using case study as a research strategy. These are from Documents, through interviews, direct observation, and participant observation. Yin (2009) included archival records and physical artifacts in addition to the four methods describe by Denscombe (2000).

Each of these sources has its own strengths and weaknesses in their usage. For example whereas personal interview which we shall use extensively in this study has a strength of being focused directly on the case at hand and also being insightful by providing perceived causal inferences, its weakness is that when questions are poorly constructed there is the tendency for bias responses and inaccuracies due to poor recall.

Neumann (2006) argues that collecting data by using questionnaire can be by close-ended or open-ended questions which have its strengths and weaknesses. Respondents are strictly limited in closed – ended questions where they are given different alternative answers to choose from. In open – ended questionnaire respondents are given the freedom to answer the way they like.

In this study we will combine both types in interviewing respondents. This will allow respondents to answer some of the questions in their own free way while answering other in a logical sequence from a given series of options.
4.7 Sample Selection

Miles & Huberman (1994) believe that it is not possible to study everyone, everywhere all the time hence there is the need for sampling. Since we are conducting a qualitative research we shall use a smaller sample unlike in quantitative research where a larger sample size is needed.

Malhotra (2007) classified sampling as probability and non-probability sampling techniques. With the probability sampling, each element of the population has a fixed probabilistic chance of being selected for the process being undertaken. We have the following main techniques for selecting events in a probability sampling, these are - simple random, systematic, stratified sampling, cluster and multi-stage (Saunders et al., 2007).

Whereas, in the case of non-probability sampling, researchers do not use chance selection procedures but rely on the personal judgment of the researcher (Malhotra, 2007). The methods for conducting non-probability sampling include - quota, purposive, snowball, self-selection and convenience.

The sampling selection method helps researcher to reduce the amount of data needed to be collected by looking at only data from a sub-group rather than all possible events (Saunders et al., 2000).

For this thesis we used purposive sampling method since the selection was based on some characteristics that the respondents had to satisfy, which include the following:

- Must be a Non-traditional fruit exporter.
- Must employ internet and e-commerce technology in its business activities.
- Must be willing to give out relevant information required for the study.
4.7.1 Population

The target population for the study comprised all 20 duly registered members of the horticultural association of Ghana, as the data provided by the Ghana Export Promotion Council (GEPC).

4.7.2 Sample size

Out of the sample frame of 20 non-traditional fruit exporters, we selected 4 companies who duly satisfied the criteria for selection as stated above. We chose only 4 out of the sample of 20 respondents because according to Miles and Huberman (1994) researchers cannot study everyone everywhere doing everything.

In each company, we interviewed the owner/C.E.O or his designated representative. Most of the C.E.O/Owners is the main decision makers in the organization, and as such considering the subject under study it is prudent to hear from the owners/C.E.O personally or their own selected representatives.

4.8 Methodological Quality Standards

To ensure that there is no ambiguity in interpretation of questions and answers and that inaccuracy in responses do not occur as a result of interviewer error, a successful study should take cognizance of two very important factors. These are reliability and validity of data and methods used (Saunders et al., 2007).

4.8.1 Validity

Validity refers to how well an idea “fits” with actual reality. That is to what extent the study objective is measured as it was intended to be (Neumann, 2006). To sum up, all social researchers want their measures to be reliable and valid (ibid).

According to Yin (1994) four logical tests are needed to judge the quality of any given research design. All these are relevant when conducting case study or any type of social science research. The four tests are:
• Construct validity

• Internal validity

• External validity

• Reliability

**Construct Validity**

Construct validity refers to research that uses questionnaires to access whether a person or an organization exhibit a particular characteristic (Fisher, 2007).

**Internal Validity**

This type of validity establishes a causal relationship. Meaning that, certain conditions should lead to other conditions and that there are no errors internally to the design of the research project Neumann (2006). Internal validity is concerned with whether the evidence presented justifies the claims of cause and effect Fisher (2007).

**External Validity**

It is the ability to generalize findings of a study. It is used primarily in experimental research.

To ensure validity of the study, before the questionnaire was sent out it was given to 2 Professors in marketing to review its contrast validity. The variables and constructs for various concepts used in the study such as adoption of e-commerce, barriers, benefits and challenges of e-commerce were all derived from previous research to ensure that the construct are valid in relation to what is in the existing marketing literature.

**4.8.2 Reliability**

Reliability refers to the degree of accuracy of the data collected. Reliability means dependability or consistency. It means that the same thing is repeated under very similar conditions (Neumann, 2006).
To ensure reliability in this study we will be very careful in our sample selection to ensure accessibility. We will carefully design our questionnaire in simple and understandable language for easy comprehension by our respondents.

To have a representative sample of NTFE we contacted the Ghana Export Promotion Council Head Office in Accra who had detailed list of all registered members. We secured their e-mail addresses and telephone numbers. We were also given all their locations. This helps us contact their Managing Directors on phone before visiting their premises to administer questionnaire.

To ensure that respondents to our questionnaire give frank and honest answers we assure them of the anonymity of their answers.

4.9 Analysis of Data

According to Yin (1994) data analysis is a process that involves examining, categorizing, tabulating the evidence to address the initial proposition of the study. Furthermore, he maintains that it is important for researchers to have analytic skills on what he wants to analyze and how to do so choosing amongst different techniques (ibid).

The data analysis is what unlocks the information hidden in the raw data and transforms it into something useful and meaningful (Saunders et al., 2007). It is also a stage where ideas are confirmed by empirical reality (ibid). In this study, we would undertake analysis according to our research questions and compare the data to make the necessary deductions.

We will use cross case analyses and within case analyses to analyze data that will be collected from our respondents and see how those respondents fared. Comparisons will be made to look out for any similarities and differences and conclusions made bearing in mind the research questions of our study.
CHAPTER FIVE

5.0 INTRODUCTION

This chapter looks at the empirical data collected from some Ghanaian fruit exporters. Each of the case presents the organization’s characteristics, adoption level, the benefits of Internet and e-commerce, barriers to Internet and e-commerce adoption and the challenges to Internet and e-commerce adoption. The data collected was in accordance with the research questions. This was done to enable the companies’ concerned to answer questions freely, and provide us with the requisite information needed.

5.1 DATA PRESENTATION

Our presentation will be based on four companies who responded positively when we visited their premises:

- Company ‘A’
- Company ‘B’
- Company ‘C’
- Company ‘D’

In each case we will provide some background information about the company.

5.2 CASE ONE – Company ‘A’

Company ‘A’ was set up in 1998 and has been operating in the non-traditional fruit exporting sector for the past 12 years. The company has about 79 permanent workers, with a larger number on casual basis. The company exports pineapples, mangoes and coconut to Europe. During our interactions with the Managing Director, it came to light that company ‘A’ acts as agent to several other small scale fruit producers in other parts of the country. This explains why the company had the largest number of employees.
5.2.1 General Internet Adoption Level

The company had a website in operation for the past six years. The HR manager explained that their website was a very busy site used regularly to reach their customers.

5.2.2 Benefits of Internet and E-commerce Adoption By Company ‘A’

The HR manager of this company explained that one of the most important steps the company had taken recently was to adopt e-commerce and internet in their business dealings. He enumerated the following as the benefits their organization enjoyed from this approach to business:

- Enables electronic mailing.
- Reduces time for sending and receiving news, newsletters and magazines.
- Reduces cost of doing business.
- Facilitates the search for information.
- Enables delivery of products and provides after sales services.
- Facilitates placement and filling of orders.
- Enables interactions with stakeholders.
- Gives access to a variety of products.
- Creates new ways to sell products on line.
- Serves as a means of new customer/supplier contact.
- Brings competitive advantage to the firm.
- Ensures access to the global market.
- Enhances networking with other companies.
- Facilitates customization of products.
- Serves as a platform for good service delivery.
- Facilitates good customer relationship.
5.2.3 **Barriers to Internet and E-commerce Adoption as described by Company ‘A’**.

The HR manager of Company ‘A’ acknowledged that, despite the enormous benefits that accrued to them from adopting the internet and e-commerce for their business operations, there were barriers that needed to be overcome.

The HR manager was critical of the constant power failures resulting from lack of adequate electricity supply. He explained that sometimes this tends to damage their computers and delays in accessing the internet to retrieve valuable customer information from their mail and website. This has resulted sometimes in the loss of business to their competitors. He also said underdeveloped online payment system was a major barrier to adopting the internet and e-commerce. Last but not the least; the HR manager was not happy about network failures. He said sometimes one will try unsuccessfully for over an hour trying to hook onto the net.

5.2.4 **Challenges to Internet and E-commerce Adoption as described by Company ‘A’**.

The CEO of Company ‘A’ acknowledged that unfamiliarity with traditional forms of e-commerce activities such as online shopping and the use of credit and debit cards for payments was a major challenge and to overcome this, the company will try to convince its customers to use this new methods as they were faster and convenient.

5.3 **CASE TWO – Company ‘B’**

Company ‘B’ was set up in 2005 and has 10 workers and exports only pineapples as a non-traditional fruit. It exports to countries in Europe, particularly United Kingdom (UK) and Germany. Their main competitors are Bomart Company limited and Ahuntam limited.

5.3.1 **General Internet Adoption Level**

This company has an e-mail address and a website address. The CEO, however, admitted that they do not use their website regularly to transact business. He agreed that they adopted internet and e-commerce in their operations basically to reach out to their clients and that it helped them in their banking transactions and also for the purpose of searching information on the industry.
5.3.2 Benefits of Internet and E-commerce to Company B

The CEO of Company ‘B’ agreed that there were a lot of benefits that accrued to them by adopting the internet and e-commerce in their business operations. He enumerated the benefits as follows:

- Enables electronic mailing.
- Reduces time for sending and receiving news, newsletters and magazines.
- Reduces cost of doing business.
- Facilitates the search for information.
- Facilitates fast delivery of products and provides after sales service.
- Enables fast placement and filling of orders.
- Serves as a platform for inexpensive advertising.
- Creates new ways to sell products on line.
- Serves as a means of new customer/supplier contact.
- Facilitates new ways of doing business.
- Gives access to the global market.
- Enhances networking with other companies.
- Shortens remittance time.
- Facilitates good customer relationship

5.3.3 Barriers to Internet and E-commerce Adoption By Company ‘B’

The CEO of Company ‘B’ acknowledged that the company needed to overcome certain barriers to the adoption of internet and e-commerce to enhance their businesses. He listed the following as the barriers that needed to be overcome.

- Underdeveloped financial systems operating in the country – raising letters of credit from banks was a big barrier as local banks were reluctant to do so.
- Most customers lacked knowledge about the benefits of e-commerce activities.
- There was low credit card penetration as a few customers had access to the use of credit cards.
- He also talked about power failure resulting from inefficiency in the supply of electricity.
• Underdeveloped online payment systems.
• Poor security systems to check internet fraud and privacy issues.
• Lack of technological experts to handle the computer systems.

5.3.4 Challenges to Internet and E-commerce Adoption By Company ‘B’

The CEO agreed that there were few challenges in their quest to adopt e-commerce and internet in their business operations. These included the following:

• Limited telecommunications infrastructure and underdeveloped internet service provision.
• Getting hold of qualified staff to develop and support e-commerce sites. The few available charged exorbitant prices especially in the development of websites.
• Very low and unreliable system to deliver physical goods.

The CEO explained that, they had to make use of the available infrastructure to overcome the challenge of limited telecommunication infrastructure, since this was not peculiar to Company ‘B’ only.

On the issue of getting hold of qualified staff, the CEO said that, Company ‘B’ have sort the services of professional recruitment agency to recruit qualified personnel who had the requisite skills to ensure their e-commerce programs were on course.

Lastly, with unreliable systems to deliver physical goods to customers, the CEO was contemplating to outsource this service to a well established courier service to do the delivery.

5.4 CASE 3 – Company ‘C’

Company ‘C’ was set up in 2005 and has 250 employees exporting only pineapples to Europe, Middle East and North Africa. Their main competitors as explained by their CEO were Dole, Del Monte and Chiquita all from Costa Rica.

5.4.1 Internet Adoption Level

Company ‘C’ launched their website in 2005. The CEO agreed that they do not use the site regularly. According to him, adopting the internet and e-commerce in the company’s operations,
is a reliable and a faster way to communicate with clients. The company uses the internet to reach out to their customers who reciprocate by sending the company mails.

5.4.2 Benefits of Internet and E-commerce to the Business operations of Company ‘C’

The CEO of Company ‘C’ agreed that adopting internet and e-commerce in their business operations has brought a lot of benefits to them. Some of which include the following:

- Enables electronic mailing.
- Reduces cost of doing business.
- Facilitates the search for information.
- Gives access to buying products at best prices e.g. Machinery and spare parts.
- Facilitates placement and filling of orders.
- Enables the company to interact with stakeholders.
- Creates new ways to sell products.
- Serves as a means of new customer/supplier contact.
- Convenient to do business via the internet.
- Serves as a competitive advantage to their firm.
- Brings development to export marketing.
- Shortens remittance time.
- Offers better customer services to client.
- Facilitates good customer relationship.

5.4.3 Barriers to Internet and E-commerce Adoption by Company ‘C’

The CEO of Company ‘C’ like earlier CEO’s interviewed, confirmed power failure and lack of adequate electricity supply as the major barrier to the adoption of internet and e-commerce in their business operations. He said the last straw that broke the donkeys back was the very poor state of telecommunication and internet services in the country.

5.4.4 Challenges in the Adoption of Internet and E-commerce by Company ‘C’

Company ‘C’ identified limited telecommunication infrastructure in the country as a major challenge to them in the adoption of internet and e-commerce in their business operations. They
also explained recruiting qualified staff with the requisite skills to handle the computer systems were a major challenge to them.

The CEO of Company ‘C’ agreed that limited telecommunication infrastructure was a nationwide problem that had to do with service providers improving on their network systems. Hence the Company will continue to make changes as service providers improve upon their infrastructure.

The CEO of Company ‘C’ said that, he will always be on the lookout for IT experts to augment the existing staff.

The CEO of Company ‘C’ stated ‘network failure’ as a new challenge on the open ended questionnaire.

5.5 CASE 4 – Company ‘D’

Company ‘D’ was set up in 1997 and has been producing and exporting non-traditional fruits such as pineapples, mangoes, coconut, papaya, and dried fruits to Europe especially the UK, Netherlands and Germany. The company’s main competitors are suppliers from Central America.

5.5.1 Adoption of Internet and E-commerce by Company ‘D’

The company has thirteen (13) employees. The company has an e-mail address as well as a website for their products. The general manager explained that companies from Central America such as Honduras and Costa Rica were their main competitors. The company launched its website in 2002. He explained that they do not use the site regularly, but agreed the site served as a marketing instrument for the company. He agreed that, the e-mail address served them as a communication aid to interact with their customers.

The company networked with their business partners by using their website. The general manager agreed that the internet was a reliable means of reaching their clients, and was sure most of their clients browse through their sites for valuable information.
5.5.2 Benefits of Internet and E-commerce to Company ‘D’

The General Manager enumerated the following benefits enjoyed by their company:

- Enables electronic mailing.
- Reduces cost of doing business.
- Facilitates the search for information.
- Facilitates placement and filling of orders.
- Serves as a means of new customer/supplier contact.
- Enhances way of doing business.
- Enable customers access a variety of products.
- Monitor market/industry development.

5.5.3 Barriers to the Adoption of Internet and E-commerce by Company ‘D’

The General Manager of Company ‘D’ acknowledged that they needed to overcome certain barriers when they decided to adopt e-commerce and internet to conduct business. The most frustrating barrier according to the General Manager was the rampant power failures as a result of inefficiency of national electricity company. Lack of technological experts to handle the computer system, and lack of extra resources for experimentation were also cited.

5.5.4 Challenges to Internet and E-commerce Adoption By Company ‘D’

The General Manager of Company ‘D’ listed the following as the challenges they faced in the adoption of the internet and e-commerce in their business operations:

- Limited telecommunication infrastructure.
- Getting qualified staff to develop and support e-commerce sites. He explained that even in situations where staffs were available, their charges were woefully expensive for small scale businesses to pay.

These two challenges seem to cut across almost all the companies we interviewed and surprisingly the CEOs had no alternative but to use the available infrastructure to achieve their e-commerce objectives.
The CEO explained that he will arrange for his staff to upgrade their IT skills to the required standards.
CHAPTER SIX

6.0 DATA ANALYSIS

In this chapter we are going to analyze the data which was collected from the four companies – ‘A’, ‘B’, ‘C’ and ‘D’. The analysis will be done within case and across cases.

In chapter three, we looked at various theories from which we derived a conceptual framework that shows how the various research questions are related to one another. The first research question looks at the benefits that the adoption of internet and e-commerce provide to firms. This leads us to the barriers and the challenges firms face in adopting internet and e-commerce. Within case analysis will be conducted on the four companies to know how each performed.

WITH IN – CASE ANALYSIS

6.1 Data analysis in terms of Company ‘A’

6.1.1 Adoption Level of Company ‘A’

Several combinations of levels of the Internet and e-commerce adoption have been identified in literature (Martins & Matlay, 2001; Ram & Foley, 2002; Teo & Pian, 2003; and Sorenson & Buatsi, 2002).

According to ‘The Adoption Ladder Approach by Martins & Matlay, (2001)’ Company ‘A’ could be described as being in the second stage of the ladder (the website). This has placed the company on the worldwide market and given it a window to suppliers as was explained by the HR manager, their website was a very busy site used regularly to reach their customers.

But with the Teo & Pian (2003) model, Company ‘A’ could be described as being in the first level (web presence). According to Teo and Pian’s web adoption model, websites at this stage, provides information and brochures and tend to be non strategic in nature. This assertion came out clearly as Company ‘A’ explained that they used their website specifically to send information on order placements and complaints.
Ram and Foley’s (2002) PIT Model explains that the internet can be used for three major activities. To publicize information on a website, to interact with customers and suppliers and transform the way e-business undertakes its activities. Data collected from Company ‘A’ puts its internet and e-commerce adoption, at level two where they use the website to interact with their customers and suppliers.

According to Buatsi and Sorenson, (2002) three levels of internet and e-commerce adoption can be discussed in the Ghanaian context. Just as all three adoption levels have indicated above, company ‘A’ is at level two of this theory, that is the manual or data base level which is used for interactive purposes with their customers and suppliers. The initial level according to Buatsi and Soreson is the brochure or publishing level which company ‘A’ had moved away from.

Looking at all the four adoption levels discussed above it is clear that Company A’s internet and e-commerce adoption has not gone beyond the second level as they use their websites to send and receive information from their customers and interact with them.

6.1.2 Benefits of Internet and e-commerce Adoption by Company ‘A’

According to Ecommerce-Land, (2004); Ching & Ellis (2004); Yannis (2000); Walters & Lancaster (1999); Schneider & Perry (2000); Chaudhury & Kuilboer (2002); Lee & Clark (2002); Hodgkinson & McPhee (2002); Teltser (2002); Damaskopolous & Evgeniou (2003); Scully & Woods (2001). Numerous benefits will accrue to businesses that adopt e-commerce and the internet in their business operations. The HR manager of Company ‘A’ explained that one of the most important steps the company had taken recently was by adopting e-commerce and the internet in their business operations, because of the benefit they have realized.

By using the internet, the HR manager of Company ‘A’ agrees that, communication and transaction costs have reduced considerably. Products can be delivered on time, after sales service provided promptly and information sought quickly from the click of the button.

By using the internet, Company ‘A’ can place and fill orders with ease, get access to the global market. The company’s turnover has increased as a result of creating new ways to sell their products. A variety of products can be offered to customers on the net.
The company, by adopting the internet is now able to link businesses (B2B), and between business and customers (B2C), facilitates new ways of doing business and customization of products. It also, enables interactions with stakeholders and gives a platform to good service delivery.

### 6.1.3 Barriers to the Adoption of Internet and E-commerce by Company ‘A’

A lot of literature review that acts as barriers of internet and e-commerce adoption exists in the text. Kshetri (2007) discusses barriers to e-commerce under two main headings: consumer level and business level. Under the consumer level, Kshetri raises the issue of low credit card penetration, low telephone density and inadequate legal protection for internet purchase. However, data collected from Company ‘A’ identify only power failure and inadequate electricity supply as hindering their adoption of the internet and e-commerce. This point is similar to what Kshetri (2002) note in literature. Another point raised by the HR manager of Company ‘A’ as a barrier is that of underdeveloped online payment systems that was prevalent in Ghana.

On the open ended question, the HR manager of Company ‘A’ brought up the issue of network failure as a major barrier that was different from what we got from literature. He explained that, for example, most banks complained of frustrating situations of network failure any time they went to cash remittances from customers to pay for goods bought from them. According to the HR manager, it was very embarrassing to be turned away from a bank’s branch as a result of network failure.

The HR manager said that, in situations where they have to link their customers by internet using their own computers, network failure cropped up as a major disappointment.

### 6.1.4 Challenge to the Adoption of Internet and E-commerce by Company ‘A’

Akoh (2001) argues that low familiarity with traditional forms of EC such as the use of credit cards and small per capita income of third world countries was a major challenge to the adoption of the internet and e-commerce in their business operations. This issue is collaborated by the HR manager of Company ‘A’, who stated familiarity with traditional forms of EC as a challenge.
In the open ended question we put to them, no new challenge was raised by the HR manager.

6.2 Data analysis in terms of Company ‘B’

6.2.1 Adoption Level of Company ‘B’

According to Martin & Matlay (2001); Ram & Foley (2002); Teo & Pian (2003); Sorenson & Buatsi (2002) different levels of the Internet and e-commerce adoption have been identified in literature.

Company ‘B’ has a website which was launched in 2008. However, the company does not use their website regularly. The company uses the website to reach out to their customers by way of sending information and undertaking financial transactions such as payment of goods supplied.

According to the Adoption Ladder approach by Martin & Matlay (2001) Company ‘B’ has progressed through e-mail level to the website development (which puts Company ‘B’ on level two). But the website is not being used effectively. This may be due to the high cost of training staff to man their computer set up.

However, with Teo & Pian’s (2003) model, Company ‘B’ is at the first level (web presence). According to Teo and Pian’s web adoption model, websites at this stage, provide information and brochures, and tend to be non strategic in nature. Company ‘B’ uses their website to reach out to their clients by way of sending and receiving information.

Ram and Foley’s (2002) PIT Model explains that the internet can be used for three major activities. To publicize information on a website, to interact with customers and suppliers and transform the way e-business undertakes its activities. Data collected from Company ‘B’ puts its internet and e-commerce adoption, at level two where they use the website to reach out to their clients.

According to Buatsi and Sorenson (2002) three levels of internet and e-commerce adoption can be discussed in the Ghanaian context. Just as all three adoption levels have indicated above, company ‘B’ is at level two of this theory, that is the manual or data base level which is used for interactive purposes with their customers and suppliers. The initial level according to Buatsi and Sorenson is the brochure or publishing level which company ‘B’ has moved from.
Looking at all the four adoption levels discussed above it can be said that Company B’s internet and e-commerce adoption has not gone beyond the second level as the company uses their websites to send and receive information from their customers and interact with them.

6.2.2 Benefits of Internet and e-commerce Adoption by Company ‘B’

Data collected from Company ‘B’ indicates that the adoption of e-commerce and internet has brought considerable benefits that have enhanced their business operations. Company ‘B’ uses its website to send and receive e-mails, newsletters and have succeeded in reducing the company’s cost of doing business. To Company ‘B’ the internet served as a platform for inexpensive advertising. According to the managing Director the adoption of internet and e-commerce activities has ensured the promotion of the company’s brand image facilitates access to the global market and serves as a convenient way of doing business.

According to Porter (2001) the internet is an enabler and a powerful tool that can be used as part of every strategy. Data collected from Company ‘B’ confirms this assertion by Porter. Adopting the internet and e-commerce has given the company access to the global market by means of delivering products online e.g. catalogue, e-books and software. Above all the company benefitted from better customer relationship, as customers sent their complaints quickly online and receives feedback from the company.

6.2.3 Barriers of Internet and e-commerce Adoption by Company ‘B’.

The Managing Director of Company ‘B’ agreed that an underdeveloped financial system such as low credit card usage is a barrier to the adoption of the internet and e-commerce.

Data collected from Company ‘B’ revealed that frustrations from constant power failure as a result of inadequate electricity supply reduced the company’s interest in e-commerce and the use of the internet.

According to the C.E.O of Company ‘B’, fraud from the use of electronic and online payment system is a major barrier. The C.E.O explained that many customers do not have access to credit cards. He also mentioned poor security systems to check internet fraud prevented his Company from enjoying the full benefits of the internet and e-commerce activities.
The C.E.O of Company ‘B’ revealed that high cost of employing IT experts to handle the company’s computers also served as a barrier.

6.2.4  Challenges of Internet and e-commerce Adoption by Company ‘B’.

During our interview with the C.E.O of Company ‘B’, he confirmed what has been found in literature by Anigan & Bingi (1999), and Marshall (2000), that getting qualified staff to develop and support e-commerce sites and the cost of setting and maintaining internet infrastructure was a big challenge to the company. This accounts for the reason why they have not been able to develop and use their website to the fullest.

The C.E.O of Company ‘B’ agreed that telecommunication infrastructure is not well developed in the country and this is having serious effect on the company’s operations.

6.3  Data analysis in terms of Company ‘C’

6.3.1  Adoption Level of Company ‘C’

Martins & Matlay (2001); Ram & Foley (2002); Teo & Pian (2003); Sorenson & Buatsi (2002) all describe different levels of the Internet and e-commerce adoption in literature.

The Adoption Ladder Approach by Martins & Matlay (2001) puts Company C’s internet and e-commerce adoption on the second stage of the ladder (the website).

According to Teo & Pian’s (2003) model the company has moved from e-mail to the website stage. This means the company has moved from level 0 to level 1 (web presence), websites at this stage, provides information and brochures and tend to be non strategic in nature.

Ram and Foley’s (2002) PIT Model explains that the internet can be used for three major activities. To publicize information on a website, to interact with customers and suppliers and transform the way e-business undertakes its activities. Data collected from Company ‘C’ puts its internet and e-commerce adoption, at level two where they use the website as a fast and reliable way of reaching out to their clients.

According to Buatsi and Sorenson (2002) three levels of internet and e-commerce adoption can be discussed in the Ghanaian context. Just as all three adoption levels have indicated above,
company ‘C’ is at level two of this theory, that is the manual or data base level which is used as a fast and a reliable way to communicate with clients.

All the adoption models explained above put Company ‘C’ at the web presence level as made known in the other companies.

6.3.2 Benefits of Internet and e-commerce Adoption by Company ‘C’.

The C.E.O of Company ‘C’ agrees that the use of the internet and e-commerce to do business has opened up new ways of reaching potential customers on the global market. To the C.E.O, doing business via the internet enables the company to buy products at best prices, secure information on customers as well as competitors, and allows the company to create new ways to sell the company’s products.

According to the C.E.O, using electronic on line payment system shortens remittance time, brings development to export marketing and facilitates good customer relationships by providing clients with good customer services. These benefits were confirmed in literature by (Saffu et al., 2008; Schneider and Perry, 2000).

6.3.3 Barriers to Internet and e-commerce Adoption by Company ‘C’.

Kshetri (2007) analyzed e-commerce barriers under three categories: socio political, economic and cognitive factors. The economic barrier as explained by Kshetri (2007) includes persistent power failure as a result of inadequate power supply. This barrier was confirmed by the C.E.O of Company ‘C’, which ought to be overcome, before adopting the internet and e-commerce to their business operations.

6.3.4 Challenges to Internet and e-commerce Adoption by Company ‘C’

Anigan, G. & Bingi, P. (1999) and Marshall, P. (2000) all stated that adopting the internet and e-commerce by SMEs in their business operations will definitely face some challenges. This situation was clearly buttressed by the C.E.O of Company ‘C’ when he answered our questionnaire. He explained that limited telecommunications infrastructure, expensive gadgets and high cost of hiring skilled personnel to operate the set up were major challenges to his company.
It is interesting to note that in the open ended question, the CEO of Company ‘C’ stated ‘network failure’ as an additional challenge to the adoption of e-commerce and internet Technology to their business operations.

6.4 Data analysis in terms of Company ‘D’

6.4.1 Adoption Level of Company ‘D’.

The Marketing Manager of Company ‘D’ explained that the company launched its website in 2002, but does not use the site regularly; however the company interacted with its customers by way of addressing their complaints and suggestions. Looking at the fact that the company had an e-mail and a website address, the company was on the second level in respect of the Adoption Ladder Approach as explained by Martin & Matlay (2001).

With Teo & Pian’s (2003) model the company can be said to have moved from email to the website stage. This means the company has moved from level 0 to level 1 (web presence). At this stage the company websites provides information and brochures to customers.

According to the PITS Model as explained by Ram and Foley (2002), Company ‘D’ can be put at level two where the website is used as a way of reaching out to their clients.

Buatsi and Sorenson (2002) also discuss three levels of internet and e-commerce adoption and from this theory, Company ‘D’ can be said to be at level two of this theory which is the data base level. This level is used as a fast and reliable way to communicate with clients.

From all four theories discussed above it is clear that Company D’s internet and e-commerce adoption level has not gone past level two of the theories used to explain them.

It was obvious from the interview we had with the Marketing Manager, that the company used its website as a marketing instrument for sending and receiving information from their customers, and promoting their brand identity. He said the company used their e-mail as a communication aid, and their business partners’ website as information gathering tool.

The Marketing Manager pointed out to us that, the company used the internet to reach out to their customers who in return browse their website for information.
6.4.2 Benefits of Internet and e-commerce Adoption By Company ‘D’

The Marketing Manager of Company ‘D’ explained that the company sent and received e-mails, newsletters and magazines electronically and that by adopting the internet and e-commerce, the company has succeeded in reducing the cost of doing business. The company searched for, and got information about potential customers and markets more easily.

The Marketing Manager agreed that e-commerce was a convenient way of doing business as access to a variety of products on the global market was easier.

Damaskopolous & Eugeniou (2003); Teltscher (2002) concluded that, e-commerce facilitates cost reduction and brings development to the export market. The Marketing Manager agreed that by adopting e-commerce and internet usage, the company could monitor industry development that could place the company in a better position to deliver quality services to clients.

6.4.3 Barriers to Internet and e-commerce Adoption by Company ‘D’.

Dixon et al. (2002) discuss the barriers to e-commerce to include the lack of awareness to ICT benefits, unresolved security and privacy issues, and high set-up costs. Our interview with the Marketing Manager revealed similar barriers. The marketing manager pointed out that the high set-up cost as a result of the technological cost of hiring experts to handle the computer system was a key barrier. The manager also explained that this barrier also affected other companies who wanted to go the e-commerce and internet way. The Marketing Manager agreed that he lacked the requisite IT skills and was limited by the fact that extra resources for experimentation were non-existent. This issue was brought up by Scupola (2001) who stated that organizational readiness to adopt e-commerce and internet was a major barrier.

6.4.4 Challenges to Internet and e-commerce Adoption by Company ‘D’.

Elkin & Akoi (2001) agree that the distrust of what businesses do with personal and credit card information was a challenge to the adoption of internet and e-commerce by SME’s and that the familiarity with the use of traditional forms of e-commerce such as credit card use was necessary to the adoption.
Our interview with the Marketing Manager revealed such challenges in addition to the fact that limited telecommunications infrastructure such as computers, access to efficient network systems as key challenges to the company adopting the internet and e-commerce in their daily business transactions.

6.5 CROSS CASE ANALYSIS

This section will compare data collected from the four non-traditional fruit exporters. Cross case analysis will mean analyzing data from the selected companies to look out for similarities and differences found in each case. The cross case analysis will be conducted based on our research questions.

6.5.1 The status of Internet and E-commerce Adoption among the various companies

The status of internet and e-commerce adoption and their trends amongst the four non-traditional fruit exporters interviewed will be presented here in terms of their characteristics which will include their ownership, number of employees, years of experience, area of coverage, countries they export to, their reasons for adopting this technology and the barriers and challenges they face.

6.5.2 Characteristics of Non-traditional Fruit Exporters Sampled

All the sampled fruit exporters are concentrated along the coastal region of Ghana, near the capital, Accra, due to the nearness of the international airport, and the seaport in Tema. The perishable nature of the produce, coupled with underdeveloped transport networks in rural areas account for this concentration. Additionally, processing companies producing fruit juice are concentrated in the cities of Accra, Nsawam, and Tema. Furthermore, these cities offer domestic market for fresh pineapples and other fruit items. The major fruit producing and exporting areas in Ghana are as shown in the diagram below:
The figure 6.1 below shows the major fruits producing and exporting areas in Ghana, as well as the Seaport at Tema and the International Airport.

Adopted from Takane (2004)
The companies had operated between 5 to 10 years. They had between 5 - 79 employees. Company ‘A’ had the largest number of employees and proved to be the most effective. It had links with other smaller suppliers who brought in smaller quantities to be bought and shipped out. Out of the four companies sampled, only Company ‘A’ had a network of agents.

Out of the four firms interviewed, two targeted customers in the Middle East and North Africa while the remaining targeted customers in Europe.

The interviewed companies gave several different reasons for adopting e-commerce business practices and the internet. Common amongst the reasons given were that it served as an easy means to transact business, to reach clients, as a fast and reliable means of communication with their clients and as a marketing instrument.

6.6 CROSS CASE ANALYSIS OF THE BENEFITS TO THE INTERNET AND E-COMMERCE ADOPTION.

TABLE 6.1 Benefits of Internet and E-commerce Adoption

Table 6.1 below shows the benefits of e-commerce and internet adoption derived from literature review as enumerated by the four companies included in this study.

<table>
<thead>
<tr>
<th>Benefits of internet and e-commerce</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>Company D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Enables electronic mailing.</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>b. For receiving/sending news, newsletters, magazines, etc</td>
<td>√</td>
<td>√</td>
<td>-</td>
<td>√</td>
</tr>
<tr>
<td>c. Reduces cost of doing business</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>d. Facilitates the search for information</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
<td>------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>e.</td>
<td>Gives access to buying products at best prices.</td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>f.</td>
<td>Facilitates fast delivering products online e.g. e-catalogue, e-books, software, etc and for providing after sales service.</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>Facilitates placement and filling of orders</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>h.</td>
<td>Serves as a platform for inexpensive advertising.</td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td>Enables interactions with stakeholders.</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>j.</td>
<td>Gives access to a variety of products</td>
<td>√</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>k.</td>
<td>Creates new ways to sell products</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>l.</td>
<td>Serves as a new customer/supplier contact</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>m.</td>
<td>Convenience of doing business</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>n.</td>
<td>Brings competitive advantage to firms</td>
<td>√</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>o.</td>
<td>Ensures access to the global market</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>p.</td>
<td>Enhances networking with other companies</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>q.</td>
<td>Brings development to export marketing</td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>r.</td>
<td>Shortens remittance time</td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Facilitate monitoring of market/industry development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>s.</td>
<td>Facilitates customization of products</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>t.</td>
<td>Better customer service</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>u.</td>
<td>Better customer relationship</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>Consumers can search through large databases.</td>
<td>√</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>w.</td>
<td>Gives access to build orders over several days.</td>
<td>√</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The adoption of internet and e-commerce as has already been discussed in the literature brings some benefits to all the firms interviewed. From the table 6.1 above, all the four companies agreed that by adopting the internet and e-commerce in their business dealings, they could send and receive mails, reduce cost of doing business, serves as a platform for getting vital business information about the market and their customers. With the internet, the companies were able to place and fill orders easily and gave them all the convenience to do their business.

However, three out of the four companies agreed that the adoption of the internet and e-commerce enabled them interact with their stakeholders and gave them the opportunity to create new ways to sell their products. The three companies also had access to the global market and enjoyed the benefit of networking amongst themselves and their clients.

On the other hand, there were differences in the uses of the internet by the companies. For example, it was only Company ‘C’ that used the internet as a way of buying products at best prices and bringing development to the export market. Three out of the four companies stated that the internet was a platform for inexpensive advertising. Company ‘A’, customers could search through large databases to secure market information and to build orders over several days.
Finally, all but Company ‘D’ above said they achieved better customer relationship by adopting the internet and e-commerce in their business operations.

### 6.7 CROSS CASE ANALYSIS OF THE BARRIERS TO THE INTERNET AND E-COMMERCE ADOPTION.

#### TABLE 6.2 Barriers of Internet and E-commerce Adoption

Table 6.2 shows the barriers of e-commerce and internet adoption derived from literature review and the responses given by the four companies included in the study.

<table>
<thead>
<tr>
<th>BARRIERS</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>Company D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Underdeveloped financial system</td>
<td>-</td>
<td>√</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>b. Less attractive for the traditional sector due to face-to-face preference</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>c. Lack of knowledge on ICT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>d. Lack of knowledge on EC benefits</td>
<td>-</td>
<td>√</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>e. Low credit card penetration</td>
<td>-</td>
<td>√</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>f. High set up cost.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>g. Unavailability of local language on website</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>h. Power failure and lack of adequate electricity supply</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Lack of confidence in internet service providers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>j.</td>
<td>Undeveloped online payment systems</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>k.</td>
<td>Government regulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l.</td>
<td>Poor security systems to check internet fraud and privacy issues</td>
<td>-</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>m.</td>
<td>Lack of technological experts to handle the computer systems</td>
<td>-</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>n.</td>
<td>High degree of risk averse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o.</td>
<td>Lack of IT skill</td>
<td>-</td>
<td>-</td>
<td>√</td>
</tr>
<tr>
<td>p.</td>
<td>Lack of extra resources for experimentation</td>
<td>-</td>
<td>-</td>
<td>√</td>
</tr>
<tr>
<td>q.</td>
<td>Observance to corporate standards</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>r.</td>
<td>Low trust for online payment (use of credit/debit cards)</td>
<td>-</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>s.</td>
<td>Customers’ unwillingness to accept internet/e-commerce business transactions</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>t.</td>
<td>Administrative changes</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>u.</td>
<td>Suitability</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>v.</td>
<td>High set up cost</td>
<td></td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>
From table 6.2 above, as was derived from literature, adopting internet and e-commerce by non-traditional fruit exporters involved scaling several barriers. Data collected from the four firms indicated that lack of adequate supply of electricity leading to persistent power failures was a major barrier that cut across all four companies interviewed.

Underdeveloped online payment systems nationwide also came up as a major barrier which was brought up by all the four companies interviewed. Companies ‘B’ and ‘D’ stated that lack of technological experts to handle the computer systems available them was also a barrier to the companies adopting internet and e-commerce in their business operations.

Companies ‘A’ and ‘B’ complained of underdeveloped online payment system in the country as a barrier to adopting the internet and e-commerce processes for their business. The similarities between these two companies are that they both export pineapples to European market. On the other hand, the two differ in terms of experience in this trade. Company ‘A’ having been in the export business for twelve years as against six years for Company ‘B’.

Finally, Company ‘B’ identified low management commitment for e-commerce as a barrier to adoption. Lack of interest by the owner of the company in the use of the internet alone could kill any initiative.
6.8 CROSS CASE ANALYSIS OF CHALLENGES TO THE ADOPTION OF INTERNET AND E-COMMERCE.

TABLE 6.3 Challenges of Internet and E-commerce Adoption

Table 6.3 shows the challenges of e-commerce and internet adoption derived from literature review and the responses given by the four companies included in the study.

<table>
<thead>
<tr>
<th>CHALLENGES</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>Company D</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Limited telecommunication infrastructure</td>
<td>-</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>b. Getting hold of qualified staff to develop and support E-commerce sites</td>
<td>-</td>
<td>√</td>
<td>-</td>
<td>√</td>
</tr>
<tr>
<td>c. Limited internet browsing skills</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>d. Low per capita income</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>e. Low computer/internet penetration</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>f. Low reliable system delivery</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G Distrust of what businesses do with credit card information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>H Unfamiliarity with traditional forms of EC</td>
<td>√</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>i. Low level of economic development</td>
<td>-</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>
From table 6.3 above, all the four firms interviewed agreed that despite the various benefits that accrued to them from adopting the internet and e-commerce technologies to enhance their businesses, they face a few challenges. Nine challenges were listed from literature. All four respondents agreed that limited telecommunications infrastructure leading to poor service delivery by the various companies as evidenced in Ghana was a major challenge.

Three of the firms, Companies ‘B’, ‘C’ and ‘D’ all agreed with literature that unreliable systems that were delivered to them were a major challenge.

Companies ‘B’ and ‘D’ agreed that they did not have qualified staff to develop and support the use of internet and e-commerce technologies. However, out of the nine perceived challenges listed from literature only three featured prominently as challenges that cut across the four firms and only one company CEO mentioned ‘network failure’ as an open ended answer that was not mentioned in literature.
CHAPTER SEVEN

CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This final chapter will examine the overall conclusions of this study. The findings from each research question will be addressed in order to answer the research problem. The implications to both manager and theorist will be presented followed by recommendations for future research.

7.0 CONCLUSIONS

The purpose of this study was to describe in detail how Ghanaian fruit exporters were applying the internet and e-commerce technologies to their daily businesses by looking at the research questions 7.1 - 7.4 below:

7.1 How can the benefits of internet and e-commerce adoption among SME’s NTFEs in Ghana be described (RQ 1)

With the first research question we sought to find out the benefits accruing to SMEs NTFEs in Ghana. As has been found in the literature, there are many and varied benefits fruit exporters enjoy in adopting e-commerce and the internet in their activities viz: reduced cost of doing business, searching for information, delivering products at best prices, as a platform for inexpensive adverts, access to a variety of products, competitive advantage to firms, for monitoring market trends.

We found out that Company ‘C’ saw “gives access to buying products at best prices” and “brings development to the export markets” as benefits accruing to the company. This we perceive was because apart from exporting to Europe unlike the remaining companies, Company ‘C’ also exports products to the Middle East as well as to North Africa hence the need to use the internet to achieve those benefits.

It became clear from the responding SMEs that they have accepted the internet and e-commerce as having great potential to improve their businesses. They made it clear from their responses
that it was a means of improving customer services to their clients and by using the internet, they have access to the global market.

We also conclude that there was the willingness by SMEs non-traditional fruit exporters to adopt the internet and e-commerce technologies since they were very much aware of the numerous benefits that will accrue to them, but the fear of not having the technical staff to help in implementing internet e-commerce processes becomes a nightmare, and for most managers their lack of computer knowledge was a major hindrance.

In respect of differences between the cases, we conclude that the size of the company in terms of number of employees and the target markets for their products influence their choice of perceived benefits of the internet and e-commerce activities to their companies. For example, Company ‘A’ had a larger number of employees and other agents that fed the company with raw materials to be processed for Europe.

Surprisingly, no additional benefits were brought up by any of the companies interviewed apart from what we listed from literature.

7.2 How can barriers to the adoption of internet and e-commerce technologies amongst SMEs NTFEs be described (RQ 2)

From our study and the responses we received from the companies interviewed, all of them cited power failure and lack of adequate electricity supply leading to damage to most of their computer systems. We could conclude from their responses that most manager/owners lacked the technological expertise to handle computer systems hence a barrier to going online and using e-commerce technologies.

Most of the managers also complained that in the beginning when they were on-line their customers did not trust on-line payment systems and this was a major barrier to them.

We conclude that lack of adequate electricity supply was a nation-wide problem and not peculiar to SMEs in the NTFE sector only, and as the government sought to tackle this problem by improving on electricity supply, the problem will change for the better in the near future.
7.3 How can the challenges SMEs NTFEs firms face in the adoption of internet and e-commerce technologies be described (RQ 3)

The challenges encountered by the SMEs NTFEs in adopting the internet and e-commerce technologies was described by our respondents as including unfamiliarity with traditional forms of e-commerce, limited telecommunications infrastructure and getting hold of qualified staff to develop and support e-commerce sites. To them all these resulted in poor connectivity that tends to reduce interest. It was also evident that most technical equipments imported into the country did not meet the specifications and standards under the tropical conditions that pertained in the country which presented a huge challenge as availability of technical experts was none existent.

We conclude by the findings that all the firms had to deal with limited telecommunications infrastructure as challenge because this was a national problem and all the companies had to be content with what was available.

From our findings, we can conclude that, Company ‘A’ was a market leader. It had several agents from which it received several supplies. Company ‘A’ produces and exports two other items (coconut and mango) on a larger scale. The company has also been in operation for a longer period of time (12 years) than the other companies.

We conclude from our finding that only Company ‘C’ had other challenge outside what was stated in literature. The company stated network failure as a new challenge.

7.4 How can the level of internet and e-commerce adoption among the SMEs, NTFE in Ghana be described (RQ 4)

All the firms interviewed agreed that they had adopted the internet and e-commerce technologies to enhance their businesses. All but Company ‘C’ had website presence. We can conclude that all the four companies used the internet and e-commerce technologies to reach their customers and receive mails from them. To the companies, their websites helped as marketing instruments, while their e-mail addresses helped them as communication aids with their clients.
It is a good sign to the industry that they were all using e-commerce technologies to move their businesses to higher levels.

The findings of the study shed more light on how SMEs NTFEs in GHANA adopt the internet and e-commerce approaches to their businesses. The internet and e-commerce has opened such businesses to the global market and made them more competitive. Information gathering and sending has become faster and cheaper. This means that all the four companies have recognized the need to change their business processes to conform to changing business trends in order to keep up with competition.

Almost all the companies faced barriers such as power failure as a result of lack of adequate electricity supply and challenges such as low level of economic development, in their quest to use the internet and e-commerce to enhance their business operations.

We found out that, all the four companies interviewed were at the lower ladder of adopting e-commerce technology. The technologies used are predominantly e-mail and internet (web presence), and are used primarily as an additional marketing tool to display company’s products and services information, rather than an e-commerce platform to enable online transactions and organizational transformation.

7.5 IMPLICATIONS

This section will look at implications of this study to theory, managers and for future researchers.

7.5.1 IMPLICATION FOR THEORY

The purpose of this study was to understand and describe how NTFEs in Ghana adopt the internet and e-commerce to their business operations, the benefits, barriers and challenges these companies faced in their quest to use these new technologies to enhance their businesses. We interviewed four firms and drew conclusions for all four research questions that in the end helped us to better understand our research purpose.

This study has contributed to theory by analyzing the adoption theories provided by Martin & Matlay (2001); Teo & Pian (2003); PITS Models by Foley & Ram (2002) and Sorenson & Buatsi (2002).
The theories helped us conclude that all four firms interviewed were at level two of the adoption levels (web presence) and that the third and fourth levels of adoption are considered as advanced web presence levels (Teo & Pian, 2003). These advanced levels are online transactions which require higher technological support, uncharacteristic of small firms (ibid). This is prevalent among larger firms. This implies that as firms grow and become more familiar with the web, the more advance features are likely to evolve (ibid).

The findings of this research should call for other researchers to examine these factors to see whether they are applicable to other context.

We concluded that firms adopting web technologies should view web sites as a strategic move rather than as a simple web presence. The study has shown us that there were similarities and differences in each company’s perceived benefits, barriers and challenges to the adoption of the internet and e-commerce approaches to their business operations. The study however revealed network failure as a challenge that was not found in literature but was mentioned by a firm as a major challenge.

### 7.5.2 IMPLICATIONS FOR PRACTITIONERS

Based on the data collected we can suggest that business practitioners should try to use the internet to seek market information in order to stay competitive on the global market.

Adopting the internet and e-commerce technologies should be a matter of priority to SMEs NTFEs in Ghana, since this trend is currently the international marketing tool in use. Smaller firms should try to merge with other firms to create bigger firms so that they can strategically move their internet and e-commerce adoption levels to higher transactionary levels.

Stakeholders such as Federation of Association of Ghanaian Exporters (FAGE) and Ghana Export Promotion Council (GEPC) should intensify education of their members for them to know the numerous benefits that are available to businesses when they apply e-commerce technologies to their daily operations.
CEOs should be encouraged to upgrade their skills/knowledge in ICT. Since in most SMEs, the decision to adopt these technologies lies on them. Hence having the basic computer skills themselves, will encourage them to use the internet.

In order for firms to get hold of qualified staff, we recommend that, practitioners spend more money to employ and train personnel to man their IT departments in order to stay competitive and conform to changing trends in business.

We also recommend to would be practitioners that to counter the problem of power failures resulting from inadequate electricity supply, SMEs should as a matter of priority purchase stand-by generators to supplement the power supply from the national grid.

We found out that on-line payment systems and transactions were not a common practice adopted by customers and industry players. We therefore recommend to practitioners to encourage their customers to get more involved by giving them incentives such as trade discounts. Companies should also ensure that their sites are adequately protected in terms of security to safeguard fraud.

### 7.6 RECOMMENDATIONS FOR FUTURE RESEARCH

We would like to recommend for further research the following:

- The obstacles to most firms moving to the 3rd and 4th places on the adoption levels and how they can be overcome,

- What solutions are being found by service providers to improve upon infrastructural problems?

- Further studies be carried out to involve larger sample size to see if the findings reported in this study hold in other cases.

- Finally, we also recommend further study be carried out in other sectors of the non-traditional exports sector, such as Vegetables and spices.
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APPENDIX: A

LULEA TECHNOLOGY UNIVERSITY & UNIVERSITY OF EDUCATION - KUMASI

The Chief Executive Officer

……. Company Limited

KUMASI/ACCRA

Dear Sir,

LETTER OF INFORMED CONSENT

We are pleased to inform you that you have been selected as a respondent in a study about how fruit exporters in Ghana are using the internet and electronic means to conduct business.

We are students of University of Education, Winneba (KUMASI). The outcome of this study will be used for only academic purpose, specifically to write a course project work in Marketing and E-commerce.

A questionnaire is designed to collect information about your opinion regarding how your business organization is using the internet and electronic means to conduct business.

We guarantee that your anonymity is fully assured and that your participation in this research is voluntary; and you have the right to withdraw at any point of the study, for any reason, and any corresponding information will be destroyed.

We would be grateful if you could complete the questionnaire attached to this letter, which will take about ten minutes (10) to do so. Thank you.

Yours faithfully,

PETER GYAWU

ROLAND ACHEAMPONG

(Project Group Members)
APPENDIX: B

RESEARCH QUESTIONNAIRE

Definition of term:

Electronic commerce (e-commerce) refers to the use of computer-mediated networks including the internet to transact business including sending, receiving and exchange of information, goods/services, and money. Computer networks include the use of the internet, telecommunications, mobile phone/networks, RDFI, internet-enabled PDAs, ATM, etc.

A. ORGANISATION’S CHARACTERISTICS

Please tell us briefly about your company?

Tick where applicable.

1. What is your company’s Name? .................................................................

2. What is the total number of employees? ....................................................

3. How long has your business organization been in operation? ................

4. Which type of fruits do you export? ............................................................

5. Which countries do you export to?

   [ ] West Africa   [ ] Europe   [ ] Asia   [ ] America

Others, Please specify .................................................................

6. Who are your main competitors .................................................................
B. ADOPTION LEVEL

1. When did you launch your website? .................................................................

2. Do you use your site regularly? [ ] Yes [ ] No

3. Why did you adopt internet and e-commerce in your operations? ......................

.............................................................................................................................

4. Do you use the internet to reach your customers? [ ] Yes [ ] No

5. How do your target customers use the internet? ..............................................

.............................................................................................................................

C. BENEFITS OF INTERNET AND E-COMMERCE

Which of the following activities do you perceive to be the most important benefits of internet and e-commerce to your business? Tick where applicable.

<table>
<thead>
<tr>
<th>Benefits of internet and e-commerce</th>
<th>Tick all that apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Enables electronic mailing.</td>
<td></td>
</tr>
<tr>
<td>b. For receiving/sending news, newsletters, magazines, etc</td>
<td></td>
</tr>
<tr>
<td>c. Reduces cost of doing business</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facilitates the search for information</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>e</td>
<td>Gives access to buying products at best prices.</td>
</tr>
<tr>
<td>f</td>
<td>Facilitates fast delivering products online e.g. e-catalogue, e-books, software, etc and for providing after sales service.</td>
</tr>
<tr>
<td>g</td>
<td>Facilitates placement and filling of orders</td>
</tr>
<tr>
<td>h</td>
<td>Serves as a platform for inexpensive advertising.</td>
</tr>
<tr>
<td>i</td>
<td>Enables interactions with stakeholders.</td>
</tr>
<tr>
<td>j</td>
<td>Gives access to a variety of products</td>
</tr>
<tr>
<td>k</td>
<td>Creates new ways to sell products</td>
</tr>
<tr>
<td>l</td>
<td>Serves as a new customer/supplier contact</td>
</tr>
<tr>
<td>m</td>
<td>Convenience of doing business</td>
</tr>
<tr>
<td>n</td>
<td>Brings competitive advantage to firms</td>
</tr>
<tr>
<td>o</td>
<td>Ensures access to the global market</td>
</tr>
<tr>
<td>p</td>
<td>Enhances networking with other companies</td>
</tr>
<tr>
<td>q</td>
<td>Brings development to export marketing</td>
</tr>
</tbody>
</table>
r. Shortens remittance time

s. Facilitate monitoring of market/industry development

t. Facilitates customization of products

u. Better customer service

v. Better customer relationship

w. Consumers can search through large databases.

x. Gives access to build orders over several days.

Please state any other benefits.

---

### D. BARRIERS TO INTERNET AND E-COMMERCE ADOPTION

Which of the following activities do you perceive to be the most important barrier your company face in adopting the internet and e-commerce in your business? Tick where applicable.

<table>
<thead>
<tr>
<th>BARRIERS</th>
<th>Tick all that apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Underdeveloped financial system</td>
<td></td>
</tr>
<tr>
<td>b. Less attractive for the traditional sector due to face-to-face preference</td>
<td></td>
</tr>
<tr>
<td>c. Lack of knowledge on ICT</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>---</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>d.</td>
<td>Lack of knowledge on EC benefits</td>
</tr>
<tr>
<td>e.</td>
<td>Low credit card penetration</td>
</tr>
<tr>
<td>f.</td>
<td>High set up cost.</td>
</tr>
<tr>
<td>g.</td>
<td>Unavailability of local language on website</td>
</tr>
<tr>
<td>h.</td>
<td>Power failure and lack of adequate electricity supply</td>
</tr>
<tr>
<td>i.</td>
<td>Lack of confidence in internet service providers</td>
</tr>
<tr>
<td>j.</td>
<td>Undeveloped online payment systems</td>
</tr>
<tr>
<td>k.</td>
<td>Government regulation</td>
</tr>
<tr>
<td>l.</td>
<td>Poor security systems to check internet fraud and privacy issues</td>
</tr>
<tr>
<td>m.</td>
<td>Lack of technological experts to handle the computer systems</td>
</tr>
<tr>
<td>n.</td>
<td>High degree of risk averse</td>
</tr>
<tr>
<td>o.</td>
<td>Lack of IT skill</td>
</tr>
<tr>
<td>p.</td>
<td>Lack of extra resources for experimentation</td>
</tr>
<tr>
<td>q.</td>
<td>Observance to corporate standards</td>
</tr>
<tr>
<td>r.</td>
<td>Low trust for online payment (use of credit/debit cards)</td>
</tr>
<tr>
<td>s.</td>
<td>Customers’ unwillingness to accept internet/e-commerce business transactions</td>
</tr>
<tr>
<td>t.</td>
<td>Administrative changes</td>
</tr>
<tr>
<td>u.</td>
<td>Suitability</td>
</tr>
<tr>
<td>v.</td>
<td>High set up cost</td>
</tr>
</tbody>
</table>
E. CHALLENGES TO INTERNET AND E-COMMERCE ADOPTION

Which of the following activities do you perceive to be the most important challenge your firm face in adopting the internet and e-commerce in your business? Tick where applicable.

<table>
<thead>
<tr>
<th>CHALLENGES</th>
<th>Tick all that apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Lack of telecommunication infrastructure</td>
<td></td>
</tr>
<tr>
<td>b. Lack of qualified staff to develop and support E-commerce sites</td>
<td></td>
</tr>
<tr>
<td>c. Lack of internet browsing skills</td>
<td></td>
</tr>
<tr>
<td>d. Low per capita income</td>
<td></td>
</tr>
<tr>
<td>e. Low computer/internet penetration</td>
<td></td>
</tr>
<tr>
<td>f. Low reliable system delivery</td>
<td></td>
</tr>
<tr>
<td>g. Distrust of what businesses do with credit card information</td>
<td></td>
</tr>
<tr>
<td>h. Lack of familiarity with traditional forms of EC</td>
<td></td>
</tr>
</tbody>
</table>

Please state any other barriers

w. Illiteracy of customers in computing/internet

x. Cultural barriers

y. Too complex to implement

z. Low management commitment for e-commerce
Please state any other challenges

### F. RESPONDENT’S CHARACTERISTICS

Please tick [✓] only one option appropriate for your answer.

1. Please indicate your gender.  
   [ ] male  
   [ ] female

2. Please indicate your positions in the company
   [ ] Chief Executive Officer  
   [ ] Information Systems Manager  
   [ ] Marketing Manager  
   [ ] others, please specify... 

3. Please indicate your current highest academic or professional qualification.
   [ ] WASSCE  
   [ ] Post-secondary/Technical Certificate  
   [ ] Bachelor’s degree  
   [ ] Post-graduate/Master’s degree  
   [ ] PhD  
   [ ] Post-Doctoral  
   Others please specify: ..............................................................

4. Please select your age group.
   [ ] below 35 years  
   [ ] 35 – 45 years  
   [ ] 46 – 55 years  
   [ ] 56 yrs and above

5. Companies e-mail address, if any...........................................................

6. Company’s website address, if any...........................................................

Thank you for taking time to complete this questionnaire.