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**BARRIERS TO INTERNET AND  
E-COMMERCE USE BY WOOD PRODUCTS  
EXPORT FIRMS IN GHANA**

Case firms:

Coppon Wood Processing Limited and Yenok Wood Products Limited

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**ABSTRACT**

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Internet and e-commerce use for export marketing enables export firms to reach the mass and ensure profitability as it removes all geographical constraints, permits the instant establishment of virtual branches throughout the world, and allows direct and immediate foreign market entry to the smallest of businesses. Today's business life revolves around the internet and has made it compulsory for export firms to use and not an option to consider. However this is not the case of the wood export firms in Ghana.

The purpose of the thesis is to describe the Ghana wood industry, the internet, and e-commerce (with emphasis on business-to-business e-commerce), and explore the barriers the firms in this industry face in using e-commerce and discuss about the way forward for these firms. The theoretical part reviews the Ghana wood industry, defines the internet and e-commerce, and provides guidelines and understanding of internet marketing in electronic marketplaces.

The major barriers have been investigated in the empirical part by way of face-to-face interviews with the case firms and a meeting with an expert, all in Ghana. A quantitative study was made among thirty other firms in the industry to validate the findings from the interview with the case firms. The research showed that high cost of internet services was the major barrier as a result of the inadequate information and telecommunication infrastructure in the country. How B2B e-commerce can be developed for the wood industry and suggestions for further research are included.

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Keywords                      Internet, E-commerce, Firms

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Kandidaatin Kansainvälisen Kaupan Koulutusohjelma

## TIIVISTELMÄ

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Internetin ja sähköisen kaupankäynnin käyttö markkinoinnissa mahdollistaa vientiyrityksille massojen tavoittamisen ja takaa kannattavuuden, koska se poistaa maantieteelliset haitat, mahdollistaa toimipisteiden si perustamisen ympäri maailmaa ja myös pienimmille yrityksille suoran ja välittömän pääsyn kansainvälisille markkinoille.

Tämän päivän liike-elämä pyörii Internetin ympärillä, joten vientiyrityksille sen käyttäminen on pakollista, ei vaihtoehto. Näin ei kuitenkaan ole puutavaran vientiyrityksillä Ghanassa. Esteitä, joita tämän alan yritykset kohtaavat sähköisessä kaupankäynnissä (eritoten yritysten välisessä) tutkitaan ja pohditaan tässä työssä. Teoriaosuudessa tarkastellaan Ghanaa. Tarkoituksena on kuvata Ghanan puuteollisuutta ja Internetin käyttöä ja määritellä sähköisen kaupankäynnin merkitys ja antaa ohjeita ja auttaa ymmärtämään internet-markkinointia sähköisillä markkinoilla.

Suurimmat esteet on kartoitettu empiirisessä osassa kasvotusten tehdyissä haastatteluissa alan yrityksissä sekä tapaamisessa alan asiantuntijan kanssa Ghanassa.

Kvantitatiivinen tutkimus tehtiin kolmessakymmenessä muussa yrityksessä alan yrityksissä tehtyjen havaintojen varmentamiseksi. Tutkimus osoitti, että korkeat kustannukset internet-palvelujen käytössä oli merkittävin este, joka johtuu riittämättömistä tiedoista ja tietoliikenteen infrastruktuurista maassa.

Jatkotutkimukseen sisältyy pohdintaa siitä, kuinka B2B-kauppaa voidaan kehittää puuteollisuudessa.

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Asiasanat

Internet, E-kauppa, Yritykset

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# 1 INTRODUCTION

## 1.1 Background

The internet has become an extremely important modern day technology for business. The way of doing business has changed in recent times because of the use and application of internet based technologies in business. The use of the internet for export marketing enables export firms to reach the mass and ensure profitability as it removes all geographical constraints, permits the instant establishment of virtual branches throughout the world, and allows direct and immediate foreign market entry to the smallest of business.

According to the World Trade Organization (WTO) Work Programme, e-commerce is understood to mean the production, distribution, marketing, sale and delivery of goods and services by electronic means. It can therefore be deduced that e-commerce encompasses all kinds of commercial transactions that are concluded over an electronic medium or network, especially, the internet, whether locally or internationally. Vladimir Zwass (1996), the editor-in-chief of the International Journal of Electronic Commerce, defines e-commerce as sharing business information, maintaining business relationships, and conducting business transactions by means of telecommunication networks. According to him, the World Wide Web's Internet has become the prime driver of contemporary e-commerce. Although incorrectly often used interchangeably, the World Wide Web is the information and the Internet is a way of accessing that information (Tassabehji, 2003).

The internet is driving the new economy by creating unprecedented opportunities for countries, companies, and individuals around the world. In some countries and industries, using the internet and e-commerce is no longer an option to consider but a requirement for survival. The first country to introduce the internet in the entire West African region is Ghana. Network Computer Systems (NCS) Ltd., a company that is wholly owned by a Ghanaian, initiated the use of internet technology in Ghana in 1994. There are currently, three main Internet Service Provid-



ers (ISPSs) including NCS. The others are Africa Online Ltd and the Internet Ghana Ltd. NCS (Tetteh & Burn, 1999).

However, according to research conducted, companies and private sector in Africa have not been active initiators of e-commerce. For example, a survey in Ghana called “Ghana SCAN-ICT” revealed that about 65% of ICT companies do not have presence on the internet and 84% reported that they were not involved in e-commerce (Mensah, Bahta, & Mhlanga 2005). As the economy of Ghana is picking up, the timber industry, specifically companies that export wood products, are doing their best to extend their international reach to be able to attract new buyers worldwide since wood products exports contribute significantly to the economy of Ghana.

In order to reach as many potential customers as possible while reducing costs, these companies have to adopt the internet and e-commerce in their export marketing strategy. They will be able to reduce the number of middlemen involved in their supply chain and open doors to global markets. A directory I received from the Timber Industry Development Division (TIDD) of the Ghana Forestry Commission (GFC) via e-mail shows that out of the 230 wood products export companies in Ghana, only 2% of them have WebPages, 40% have e-mails, and only 2 of these companies have an own domain name business e-mail addresses.

In 2005, Ghana’s revenue was €170 million from the export of 455,000 cubic metres of wood products. However, this fell in 2006; wood products export in the first three quarters of 2006 was €125.82 million in value and 328,620 cubic metres in volume. These figures corresponded to 8.8% and 6.7% decline in value and volume, respectively, compared to 2005. Wood exports to the US and European markets were reported to have declined in volumes 23% and 32%, respectively (Domson 2008, 1).

## **1.2 Purpose of the thesis**

The purpose of the thesis is to describe the Ghana wood industry, the internet, and e-commerce (with emphasis on business-to-business e-commerce), and explore the barriers the firms in this industry face in using e-commerce and discuss about the way forward for these firms.

## **1.3 Research questions**

The research questions to be addressed by this thesis will be:

- i. How has your company attracted new customers abroad?
- ii. What are the barriers to adopting the use of the internet and e-commerce?
- iii. Is your company willing to improve upon the usage of the internet and e-commerce?

## **1.4 Limitation of the study**

The market under discussion is the business-to-business (B2B) market and this market is characterized by huge transactions and so the results might not be applicable to the other markets, specifically, business-to-consumer (B2C) markets.

In this thesis, e-commerce is understood to mean the production, distribution, marketing, sale and delivery of goods and services by electronic means. However, this thesis focuses mainly on the “marketing” aspect of the definition of e-commerce and using the internet as the main medium of communicating the marketing strategy to potential consumers.

Another limitation is that the research would be conducted within the wood export sector of Ghana and so findings might not be applicable to the other sectors of the economy.

With all the above considered restrictions, the thesis can be considered as an explanatory overview on the subject, “Barriers to internet and e-commerce use by wood export firms in Ghana”, and a foundation for more research in future.

## **2 GHANA'S WOOD INDUSTRY**

### **2.1 Ghana**

Ghana is located on the west coast of Africa, about 750 km north of the equator between the latitudes of 4 and 11.5° north and longitude 3.11° West and 1.11° East. It is bounded on the north by Burkina Faso, on the west by La Cote D'Ivoire, on the east by Togo and on the south by the Gulf of Guinea (Atlantic Ocean). Tema, the industrial city, which is adjunct to Accra, the capital city of Ghana, is on the Greenwich Meridian (zero line of longitude), making Ghana the closest landmark to the centre of the world. The country has a total land area of 238,537 km<sup>2</sup> (92,100 sq. miles) stretching 672 km north to south and 357 km east to west. Out of a total land area of 23 million hectares, 13 million hectares (57%) is suitable for agricultural production, and 5.3 million hectares (39%) of this is under cultivation. The country has an approximated population of 22 million inhabitants and most of its people live in the southern part of the country. (Ghana Investment Promotion Council 2000)

### **2.2 The scope of the industry**

Ghana has a large number of wood processing businesses which together cover virtually the whole range of wood products. There are about 100 sawmills. There are currently 230 wood producing companies and an increasing number sell furniture component. Sources of sliced and rotary veneer total 17 companies, at least 6 companies produce flooring, 6 companies produce doors, and about 10 companies produce plywood. Mouldings, profiles and machined woods are available from over 40 companies. Other products produced by these companies are dowels, tool handles, window frame sections, wooden toys, transmission poles and fencing.

Ghana encourages direct technical liaison between overseas companies and its own producers of added value wood products. In this way assemblers and manufacturers in distant markets can develop business based on their specific needs, for example in terms of dimension and tolerance. (Tropical timbers of Ghana 2007)

### **2.3 Capacity**

Annual gross wood production from the forest totals 1.2 million cubic metres which represents the annual cuts allowed in the country. In the early 1990s, about 700,000 cubic metres of this supported export products and 500,000 cubic metres fed the domestic demand. Exports of logs have ceased and woods are now processed before they are shipped. Sawn wood products have good demand but the industry is increasingly adding value so as to create employment in the country. Exports of machined timber and components are rising. Overseas buyers are purchasing more wood from Ghana in the form of furniture components, plywood, rotary and sliced veneer, flooring, profiled boards and mouldings. (Tropical timbers of Ghana 2007)

### **2.4 Markets**

As well as meeting the domestic needs of its own people, Ghana exports wood products to many other countries in Africa including Burkina Faso, Cote d'Ivoire, Egypt, Libya, Mali, Morocco, Niger; Togo, and Tunisia. More distant markets include Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, England, Finland, Poland, Russia, Sweden, Switzerland, Cuba, United States of America, Cyprus, Israel, Japan, Lebanon, Malaysia, New Zealand, Saudi Arabia, Singapore, Taiwan, Thailand, and United Arab Emirates. (Tropical timbers of Ghana 2007)

### **2.5 Forest Resources**

Most of Ghana's productive forests are legally designated as permanent Forest Reserves. They are controlled by the Forestry Commission within policies, regulations and management plans based on a 40-year felling cycle and incorporating environmental and social safeguards. There are nearly 700 different tree species with a small number being commercial. (Tropical timbers of Ghana 2007)

## **2.6 Product groups**

Wood products found in Ghana can be grouped into 8 main groups;

- Machined wood
- Furniture parts and furniture
- Doors and windows
- Flooring and decking
- Heavy duty
- Dowels and tool handles
- Veneers
- Panel woods

(Tropical timbers of Ghana 2007)

## **2.7 Timber trade procedures and guidelines**

Timber Industry Development Division (TIDD) is established and mandated under the Forestry Commission Act 571, 1999 to facilitate the development of the wood products sector of the Ghanaian economy. (Tropical timbers of Ghana 2007)

The following timber trade procedures and guidelines are published to assist both buyers and sellers in the timber export business to know what to do at any point in the process.

## **2.8 Registration**

Both buyers and processors, shippers, sellers, dealers of wood products in Ghana are required to register with the TIDD.

### 2.8.1 Buyer's registration process

- The prospective buyer shall submit an application and a filled “Application-for-registration-as-a-buyer-of-timber-and-wood-products” TIDD form B/119 which is supplied free of charge by the TIDD.
- Upon receiving the filled TIDD from B/119 with evidence of compliance to the demand made on this form, including the payment of \$50 registration fee, the TIDD undertake to seek for a Confidential Status Report on the prospective buyer from the buyer's bankers.
- Response to the Confidential Status Report request from the prospective buyer's bank shall determine the issuance of the certificate of registration to the buyer. The certificate shall be for periods ranging from one to five years, after which the buyer will have the certificate renewed.
- The renewal of an expired certificate shall be by completing a TIDD form BB/119 by the buyer or the representative. A renewal fee, if any, shall be communicated to the buyer on submission of the renewal form.
- All payments shall be made at the following bank  
MERCHANT BANK (GH) LTD.  
P. O. BOX 401  
ACCRA, GHANA  
TEL: +233 21 666383, 666331  
TELEX: 2191 Merban GH  
ACCOUNT NUMBER: 10171067

All payments shall be made “Commission to Drawer's Account”

## 2.8.2 Exporter's or retailer's registration process

The TIDD undertakes the registration of the following local businesses:

- Overseas buyer's local agents or representatives
- Export traders
- Overland exporters
- Large-scale furniture manufacturers
- Small-scale furniture manufacturers
- Bench saw millers
- Retailers

Registration forms are specific and different for three groupings namely;

- Overseas buyer's local agent-TIDD form (xxx/xx)
- Export traders and overland exporters-TIDD form E/2 and TIDD form R/3 for renewal
- All other businesses not listed under the groups 1 and 2-TIDD form R/4

### 2.8.2.1 Procedure for registration of group 1

- A formal application shall be submitted to TIDD in respect of the registration. The applicant could either be a company or an individual.
- The applicant is required to fill TIDD form (xxx/xx) and attach the relevant documents as follows:
  - i. A certificate from the registrar-general's office
  - ii. An income tax clearance certificate
  - iii. An authorization from the registered buyer
  - iv. A copy of the certificate of registration of the buyer
- The applicant shall pay the appropriate registration fee and obtain TIDD official receipt



- A decision is then taken and a certificate of registration is approved and issued after thorough examination of the filled form and attachments. The certificate can be renewed after a period of one year

The registration process shall be complete within two days minimum.

### **2.8.2.2 Procedures for registration of groups 2 and 3**

The registrations of groups 2 and 3 involve the use of TIDD form E/2 and R/4 respectively. Each business unit has specific requirement spelt in either of the forms to deal with it. Generally, the registration process requires the following;

- Submit an application and fill the appropriate TIDD registration form, attaching the relevant documents including;
  - i. Certificate of registration from the registrar-general's department.
  - ii. Income tax clearance certificate (compulsory for export traders and overland exporters)
  - iii. Inspection report (compulsory for new mill)
  - iv. Submission of form C (for concession holders)
  - v. Certificate to commence business
  - vi. Company code and regulations
- The applicant shall pay the appropriate registration fee and obtain TIDD official receipt.
- A decision is then taken and a certificate of registration is approved and issued after thorough examination of the filled form and attachments. The certificate can be renewed after a period of one year.

The registration process shall be complete within five days minimum

## **2.9 Timber export procedure**

Exporters are required to go through an export procedure involving contract approval, inspection and grading, and export permit acquisition.

### **2.9.1 Contract approval**

- Contract for timber business is based on the Ghana hardwood contract form which is available at TIDD. The terms and conditions of trade are detailed behind the contract form.
- A valid contract duly signed between a buyer and seller is submitted to TIDD for vetting and approval. The contract document shall contain the following information; species, product, quality, quantity, specification, price, shipment date, freight, insurance, payment terms, and destination.

Additionally, the seller is required to support contract application with approved and valid yield from FSD as a basis for determining required volume and species.

- Price is quoted on Free-on-board (FOB) terms: the buyer takes charge of freight and cost. The terms of payment is irrevocable and confirmed letters of credit, telegraphic transfer and pre-cash payment and other Bank of Ghana approved terms of payment.
- After the contract has been approved, the seller shall then proceed to produce to the specifications, quantity and quality in the contract. Approved contracts are presently valid for six months.

The process of approving a contract in undertaken is a matter of days.

## **2.10 Inspection and grading processes**

The goal set for undertaking this process is principally to inspect and grade all logs and timber products by tracking their movement and destinations and keeping up-to-date data on them. To achieve this goal, the following are activities that are undertaken;

- TIDD maintains check-points in all major processing areas as well as exit points for shipment of timber and wood products. These check-points are located at Tanoso, Santasi, Kentikrono, and Aboabo in the Ashanti region, Agona Nkwanta and Inchaban in the western region, then Sunyani and Techiman in the Brong Ahafo region.

In addition, measuring points are maintained at remote locations and mills at Awaso, Suhuma Timber Company, Ayum Forest Products, Scanstyle Mim Timbers, Suntex Company, and Nkawkaw area.

- TIDD inspectors are stationed at processing mills to track in-coming and out-going parcels of wood by conducting appropriate inspection and grading and issuing relevant certificates and other documents to cover the exercise.
- TIDD inspectors are obliged to undertake random checks at mills to inspect and ensure that in particular, logs found within the premises of the processing mills are covered with appropriate and relevant documentation and that they are not illegally sourced.
- With reference to production meant for export, the TIDD inspectors at mills monitor and provide assistance that ensures that the marked parcel meets contract specifications and grade. A certificate and inspection report are issued on the product, which are used to request for a permit to export the product. Likewise, all containerized wood products are inspected and certified at the mills before transportation to the port for export.

Contingent to the above, all timber export products ready at the port of exit are subjected to final inspection to validate the contract specification and grade before an export permit is issued, clearing the way to ship the product.

## **2.11 Export permit process**

The TIDD is the statutory body which is mandated to grant timber export permits for the shipment of wood and wood products from Ghana. Timber export permits are issued to exporters after examination, authentication, and approval of the following documents, which must all be consistent with the information contained;

- Valid contract of sale approved, stamped and signed by TIDD

- Wood products inspection certificates approved, stamped and signed by TIDD final inspectors
  - Input – output data sheets stamped and stamped by the exporter and TIDD
  - Packing list or factory specification sheet covering the products
  - Stamped and signed by the buyer or a recognized buyer’s representative
  - Summary factory specification sheets
  - Permit issue form
  - Permit invoice form
  - Valid Ghana exchange control form A2, Bank of Ghana foreign exchange form 4A (FEX 4A) for exporters which is stamped and signed by the negotiating bank and the exporter
  - A valid document showing method of payment. For example, a valid confirmed and irrevocable letter of credit (date of shipment and date of negotiation are also checked for their validity), telegraphic/swift transfer, confirmation of payment by a letter from the negotiating bank and other acceptable instruments of payment.
- If an export permit application and all its supporting documents are found to be in order and that they meet all conditions, then the permit application is approved, stamped and signed by the approving TIDD officer. Granting of a permit for the shipment of timber products is effected by the issuance of a permit invoice form which is stamped and signed by an authorized TIDD officer. Each timber export permit has a validity period of 21 days.
- The permit issuing process is completed in one day granted that all documentations are satisfactory.

(Timber Trade Procedures and Guidelines 2005)

### **3 THE INTERNET AND E-COMMERCE**

#### **3.1 Definition of terms**

Doing business electronically has come to replace the traditional ways of doing business and this is even gradually sweeping into domestic markets. This had also brought about a new language in today's business life. Some words are used interchangeably to mean the same thing. But as businessmen, it will do as a lot of good to really know some, if not all, of these jargons and this will create the opportunity for us to understand today's business very well because whether we like it or not we will be coming across some of these jargons.

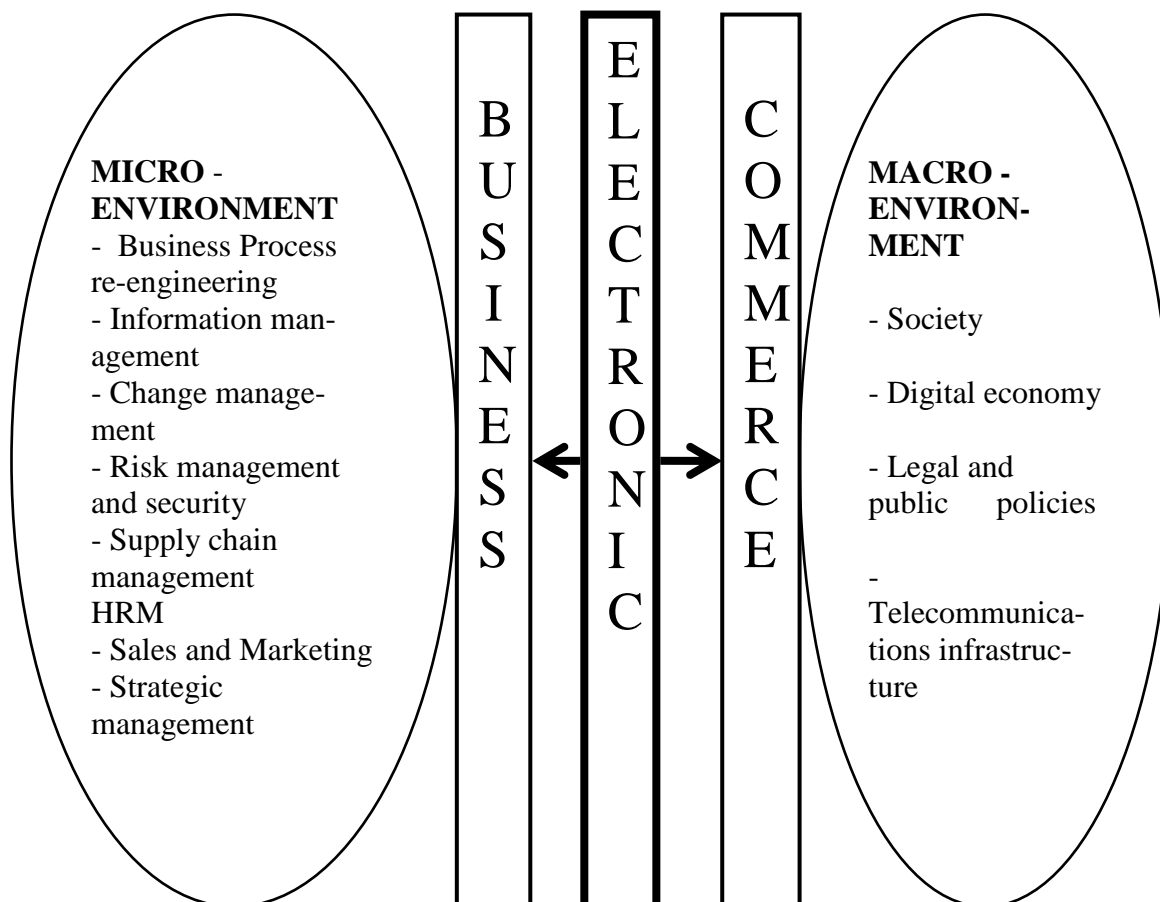
##### **3.1.1 E-commerce and E-business and the Internet**

There are many definitions from many books and articles in an attempt to define and draw a line between e-commerce and e-business. The sixth edition of the Oxford Advanced Learner's dictionary defines "business" as "the activity of making, buying, selling or supplying goods or services for money" and this same dictionary defines "commerce" as "trade, especially between countries; the buying of goods and services". Hence e-business can be defined as running the day-to-day activities of a company by electronic means. This in my opinion takes place in micro-environment because a company cannot survive without these mechanisms (production, buying, selling, and supply) in place. On the other hand, e-commerce can be defined as buying and selling of goods and services between countries electronically, via the internet. The medium here is the internet because the buying country or company will see information about the product being sold and the company and selling the product by means of the platform created by the internet. These activities take place in the macro-environment because the company selling or buying has to deal with different social, political, economic and other factors that are different from the local factors.

However, some books have defined e-business to have a broader scope than e-commerce. Two examples are below

- **E-business** is similar to e-commerce but broader in scope and refers to using digital technology to manage business processes incorporating the sell-side and buy-side e-commerce (Chaffey, Ellis-Chadwick, Mayer, & Johnston 2009, 16)
- **E-business** refers to a broader definition of e-commerce , not just the buying and selling of goods and services , but also servicing customers, collaborating with business partners, and conducting electronic transactions within an organization (Turban & King 2003,**page number missing**)

However, the definition by Rana Tassabehji is what I recommend to readers of this thesis. He defined e-commerce and e-business based on the respective terms business and commerce and did not restrict his definitions. His definition is illustrated by the diagram below;



**Figure 1. Electronic commerce and electronic business (Re-designed)**

(Tassabehji 2003, 7)

In brief, the internet is a medium through which we are able to access information on the World Wide Web (www).

The diagram above suggests that e-commerce activities take place in the macro-environment. In the anticipation of companies to utilize e-commerce in their international business transactions, they are going to encounter different stages of advancement in e-commerce. The diagram makes mention of society, digital economy, legal and public policies, and telecommunications infrastructure as elements that exist in the macro-environment of e-commerce. The key drivers of e-

commerce in the macro-environment are technological factors, political factors, social factors, and economic factors. (Tassabehji 2003, 8)

### **3.2 Benefits of the internet and e-commerce**

- **International marketplace**

The popular sentence that people use nowadays is “the world has become a global village” is indeed very true. In the business world, this sentence is manifested by e-commerce. A company seeking to get buyers or suppliers from another country or continent does not have to travel to that country. Instead the company leaves information on the internet and everybody around the world sees that information by the click of a computer mouse. This is good news for smaller companies. For example the information of small company in Ghana that has a webpage can be viewed by a potential customer or supplier in Finland and this brings business transactions.

- **Saves time and money**

It is popularly said that time is money. This is very common among business people. I can confidently say that the internet and e-commerce save time and money. Some decades ago, all business letters were sent via postal mails. This can take several days or even weeks before they arrive to the receiver. This means that companies have to wait for many weeks before transacting business. But because of the improvement in technology which has brought about development in e-commerce, business letters, no matter the length or size can be sent and receives within seconds. This has facilitated the efficiencies and transformed many companies worldwide many companies. In my own personal example, I have transacted some profitable business transactions and I am going to do more. Thanks to the brains behind the internet and e-commerce.

- **Mass customization**

Some few months ago, I bought an Ipod from the USA and I requested that they write my name on the Ipod. I received it within five working days as promised and my name was on it. I would not have done this if it had not been through the



internet. E-commerce has revolutionized the way consumers buy goods and services.

- **Reduced inventories**

The introduction of the internet and e-commerce has ease companies of thinking of how to manage their inventories. Gone are the days when some products get out-dated in warehouses and have to be thrown away and this brought about big losses for companies. Today, companies especially those in the high technology sector, are able to take orders from customers, transmit them electronically to the manufacturing plant where they are manufactured according to the customer's specifications.

- **Reduce telecommunication cost**

The internet usage as a means of communication to stakeholders of a company is relatively cheaper than telephone lines and other communication apparatus and postal mails. A lot of useful information can be found on the internet free of charge. By using search engines on the internet, information about every sphere of life be it business, academia, health, education, and many others can be tapped from the internet without any charge. I was once asked in Business Factory to print out all business letters I have sent and received and keep them in my "Must Have Book". I could count at least 40 sent letters. If I were to be sending postal letters, I would not have been able to send that much.

- **Digitization of products and services**

Software and videos or music products can be downloaded or e-mailed directly from the internet and this has much positive impact on our daily lives.

- **No more 24-hour-time constraint**

When one wants to send a business letter via e-mail, the time of sending is not considered.

(Tassabehji 2003, 12-13)

### 3.3 Limitations of the internet and e-commerce

- Lack of sufficient system security, reliability, standards and communication protocols

There is much insecurity in the use of internet and this poses a great threat to its users. There have been many reported cases of people's computers being hacked into to retrieve certain personal information. In addition to this, the many software programmes that had been generated as a result of the use of the internet might have some holes in them and might leak out secret information without the users knowing that. This happens in some cases as a result of technical oversight

- **Under pressure to innovate**

In the quest to be innovative as result of the everyday new invention of technologies, some companies take decisions that are detrimental to the company in future.

- **Increased competition**

With the increase in the usage of the internet and e-commerce, companies compete with both national and international competitors. For example, instead of buying shoes and clothes from a shop here in Vaasa, I rather buy them online from a shop in the UK. This is because it is cheaper for me to buy from there. If the internet and e-commerce had not been there, I would have no option than to buy it from that shop in Vaasa. And this is definitely not good news for the shop that is operating here in Vaasa

- **Problems with compatibility**

Improvement in this technology always means high cost for companies. In some cases the old versions are not compatible with the newer versions and this sometimes serve as exit points for smaller and new companies since they are not able to financially afford the newer versions of the facilities that they use.

(Tassabehji 2003, 14-15)

### 3.4 Types of e-commerce

The various types of e-commerce are

- Business-to-business (B2B) e-commerce
- Business-to-consumer (B2C) e-commerce
- Business-to-government (B2G) e-commerce
- Consumer-to-consumer (C2C) e-commerce
- Mobile commerce (m-commerce)

(Andam 2003, 9)

In reference to the purpose of this thesis in chapter 1, the emphasis is on B2B e-commerce.

### 3.5 B2B e-commerce

In traditional B2B markets, business marketers face have to be very professional because they face much smaller number of customers. Losing a reliable or potential customer has much effect on the firm. The number of customers is small because fewer organizations exist and these organizations differ greatly in terms of what they do and how they do it. (Vitale & Giglierano 2002, 16).

B2B e-commerce, on the other hand, refers to the exchange of products, services or information between business entities by electronic means. In 2000, Gartner group, a research and consultancy firm published an article to confirm that B2B e-commerce is becoming more global. The article said that worldwide B2B e-commerce reached \$145 billion. It continued to say that the strongest regional growth in B2B e-commerce can be found in Europe and that the largest European companies such as BMW, KLM, Swissair, British Telecom, and Deutsche Telekom are aggressively adopting B2B e-commerce in their business operations. (Gartner Group 2000)

B2B e-commerce includes

- **Direct selling and support to business**

Some companies operating in the B2B market sell directly to customers and they also offer after-sale support by electronic means, especially those who sell digital products or services.

- **E-procurement**

This is also known as industry portals. A purchasing agent shops for items from vendors, request proposals, and sometimes bid to buy the product at his best price.

- **Information sites**

Most companies in B2B markets have web pages where they provide information about the products and/or services that they offer. In this way, they easily attract customers. In addition to this, some web sites provide information about a particular industry, the companies that operate in that industry, and sometimes information about employees. These include specialized search sites and trade and industry organizations.

(Tassabehji 2003, 20)

B2B markets have components namely e-Frastructure and e-markets. E-frastructure is the bedrock or architecture of B2B. E-frastructure consists of the following;

- “Logistics - transportation, warehousing and distribution (e.g., Procter and Gamble)
- application service providers - deployment, hosting and management of packaged software from a central facility (e.g., Oracle and Linkshare)
- outsourcing of functions in the process of e-commerce, such as Web-hosting, security and customer care solutions (e.g., outsourcing providers such as e-Share, NetSales, i-XL Enterprises and Universal Access)
- auction solutions software for the operation and maintenance of real-time auctions in the Internet (e.g., Moai Technologies and OpenSite Technologies)

- content management software for the facilitation of Web site content management and delivery (e.g., Interwoven and ProcureNet) and
- Web-based commerce enablers (e.g., Commerce One, a browser-based, XML enabled purchasing automation software).”

(Andam 2003, 9)

E-markets are websites that brings buyers and sellers together for the purpose of business transaction. (Andam 2003, 9). Like traditional markets, e-Marketing takes place in a certain space and this can be described as e-marketplace. (Chaffey et al 2009). E-marketplace is further explained in chapter 4.

### **3.6 The framework of the internet**

The table below defines the frame work of e-commerce into seven levels with each level delivering an important functional support to the level that comes after it. These seven levels are further categorized into three meta-levels namely infrastructure, services, and products and structures. (Zwass 1996)

<b>Level</b>	<b>Function</b>	<b>Examples</b>
<b>Infrastructure</b>		
<b>1</b>	Wide-area telecommunications infrastructure	Guided and wireless-media networks
<b>2</b>	Public and private communication utilities	Internet and value-added networks (VANs)
<b>3</b>	Hypermedia/multimedia object management	World Wide Web with Java
<b>Services</b>		
<b>4</b>	Secure messaging	Electronic data interchange, Electronic mail, Electronic funds transfer
<b>5</b>	Enabling services	Electronic catalogs/directories, smart agents,  Electronic money, digital authentication services  Digital libraries, copyright- protection services  Traffic auditing, Smart-card systems
<b>Products and structures</b>		
<b>6</b>	Products and systems	Remote consumer services (shopping, banking, stock brokerage)  Infotainment-on-demand (fee-based content sites, educational offerings)  Supplier-consumer linkages  Online marketing, Electronic benefit systems, Internet based collaboration systems
<b>7</b>	Electronic marketplaces and electronic hierarchies	Electronic auctions, brokerages, dealerships, and direct-search markets  Interorganizational supply-chain management

**Table 1. The Hierarchical Framework of Electronic Commerce (Rearranged)  
(Zwass 1996)**

- **Infrastructure**

Infrastructure is the bedrock on which e-commerce is built. This include the hardware, software, databases, and telecommunications that support Electronic Data Interchange (EDI), support the World Wide Web to function over the internet, and support other forms over the internet or over Value Added Networks (VANs).

- **Services**

The development of good infrastructures paves way for efficient services and this brings about new and effective innovations. In fact, the way of rendering service to customers has changed, and will continue to change, since the introduction of e-commerce to the market place. From the table above we see that there is secure messaging such as electronic mail, electronic fund transfer, and EDI. If the messaging in the market place is secured, it enables services such as smart-card systems, electronic money and many others. Gone are the days when business negotiations has to take many weeks or even months to be concluded, today e-commerce has made it possible to conclude even international business transaction in some few minutes.

- **Products and structures**

The development of necessary services via e-commerce to consumers further paves the way for bigger and better innovations. Sometimes we are overwhelmed by some new added technologies to some products that we usually buy or some services that we seek sometimes. This is because of the improvement of e-commerce in our everyday life. The manager of a multinational company in Finland will have an online conference meeting with his colleagues in China and Ghana right from the comfort of their respective offices. I am able to buy jeans from [www.republic.co.uk](http://www.republic.co.uk) and track the parcel as it is transported from a warehouse in Leeds, then to Leicester, then to Copenhagen, down to Vantaa and afterwards transported to the warehouse of a shipping company in Seinajoki. The following day, a courier transports the parcel to my students' apartment in Vaasa.

The interesting part is that I pay less than 10 € for the shipping from Leeds through all those places to Vaasa. This has been possible because of e-commerce.

In addition to the above, electronic marketplaces had now made it possible for electronic auctions, brokerages, dealerships, and direct-search markets and inter-organizational supply-chain management.

(Zwass 1996)



#### 4 INTERNET MARKET AND MARKETING IN B2B

In chapter 2, the timber trade procedures and guidelines used by the wood export firms in Ghana are described. It is clear that there are much bureaucracies involved in the procedure. In order for these firms to benefit from the use of the internet in their business transactions, they have to understand internet marketing in B2B markets. The invention of the internet has created a very different trading environment. Businesses are no more limited to physical locations or geographical areas. Many businesses, because of this, have introduced new processes, new technology, and new business models to suit the new online method of doing business. (Vaidyanathan & Devaraj 2003) B2B firms that are new to the online businesses or aspiring to improve their efficiency in online business have to understand the e-marketplace and the e-marketing alternatives. The chapter tells about the market and the factors firms can consider when drawing up business models.

Organizational markets that make use of internet marketing are

- Industrial markets: organizations that produce tangible goods but depend heavily on raw materials.
- Reseller markets: organizations that buy products and services and resell them.
- Government markets: government agencies and bodies that buy goods and services to undertake specific functions and provide specific services in a country.

(Chaffey et al. 2009, 650-651)

Fortunately, the wood export firms in Ghana need not to buy raw materials from abroad. Instead, they get the raw materials from within the country and so the concern for them is how to ensure increase in sales by engaging in internet marketing. By the classification above, these firms fall under “industrial markets”. There has been the invention of many innovative business models because of the widespread adoption of internet technologies in B2B marketing. One prominent example is that General Electric (GE) uses e-auction in its industrial market to

transact business with both established and non-established suppliers. (Chaffey et al. 2009, 652)

“It is assumed that B2B e-commerce is predominantly organized around e-marketplaces in which decisions to buy or sell can be made online” (Humphrey 2002)

This chapter focuses on B2B e-marketplaces and some business models that B2B firms are using to catch up with the new online method of doing business.

## **4.1 The e-marketplace**

It has been explained earlier in chapter 3 that e-markets are websites that brings buyers and sellers together for the purpose of business transaction. Therefore e-Marketplace is the environment that ensures the smooth running of these websites. This involves the main strategies that internet marketers use to ensure that their objectives are met.

### **4.1.1 Types of e-marketplaces**

Chaffey et al. (2009) classifies e-marketplaces by type of user;

- **B2B independent e-marketplace**

This is an online platform that is created by a third party which seeks to bring together buyers and sellers in an industry for the purpose of business transaction. Nowadays, it is possible to access products from many industries in the same e-marketplace. If a firm registers on an independent e-marketplace, it is able to access many potential business partners and other stakeholders. In most cases, the registered companies receive e-mails occasionally that contain advertisement from other businesses. An example is [www.alibaba.com](http://www.alibaba.com).

- **Buyer-oriented e-marketplace**

Many businesses are not able to purchase raw materials or other resources to help them stay in business. In order to stay in business, many businesses come together to form a consortium of buyers in order to establish an efficient purchasing environment. By signing on to this marketplace, the firms are able to lower administrative cost and improve bargaining power with suppliers. Suppliers are also encouraged to do business in this market because e-marketplaces are effective and trustworthy. Suppliers usually advertise their products in this market.

- **Supplier-oriented e-marketplace**

This is a market that is established by a group of suppliers who want to establish efficient sales channels through the internet so as to reach as many buyers as possible. It is usually very simple to access this type of web pages. This is also referred to as suppliers' directory. It is very instrumental for buyers because they are able to compare offers from many companies in order to make the right purchase decisions.

(Chaffey et al. 2009, 653)

#### **4.2 E-marketplace activities**

Like traditional marketplaces, there are some activities in the e-marketplace that can be of much benefit to firms. These are;

- **Post-sales customer relationship management**

First of all, the internet marketer has to understand the buyer-seller relation and also be careful of how to manage it. Most businesses are relaxed when it comes to online business, so it is very important for the marketer to be honest and reliable so that his customers will be willing to do more business online. Electronic billing is also very important. When sending bills, companies usually print the bills and pay for postage and it takes some days for the customer to receive it. But with electronic bill, the customer receives it instantly and it is safe. The company also does not print out the bills and this reduces administrative cost. So the marketer

has to work hard so that customers become comfortable with electronic bill system. Online technical support is also a very good marketing strategy. It is safe, easier, and less expensive. This is a very important tool especially in high-tech B2B markets.

- **Market research**

Most firms spend huge sums of money in marketing research. With the use of the internet, this cost can be reduced significantly. The need for data input personnel is no longer needed and the cost of transportation and material cost are also eliminated. So if an internet marketer is able to bring all his customers to the internet, it will be of much help to his firm. This will also create an avenue for more innovative products or services invention.

#### **4.3 E-marketplace versus traditional marketing methods**

There is a diminishing return from traditional marketing and an increase in technology-enabled marketing and this has some implication for marketers. Coupled with this is ever increasing competition in the marketplace and much of the power in the marketplace now belonging to customers. However, technology-enabled marketing alone is not the solution to a successful marketing campaign. The marketer has to be acquainted with both types of marketing environment and be aware of its implications. The table below compares traditional and technology-enabled marketing implications;

<i>Marketing area</i>	<b>Traditional marketing</b>	<b>Technology-enabled marketing</b>	<b>Implication</b>
<b>Segmentation</b>	Demographics	Behavioral	Database
<b>Advertizing</b>	Push	Pull	Interactive
<b>Promotion</b>	Mass	Tailored	Re-emergence
<b>Pricing</b>	Set by firm	Set by customer	Tailored pricing
<b>Sales management</b>	Data with sales	Data shared	- Partnerships - Multichannel
<b>New products</b>	Constrained	Customer driven	Market expansion
<b>Monitoring</b>	Share, profit	Retention, value	New metrics

**Table 2: Implications of Traditional versus New Marketing Methods**  
 (Source: Komenar 1997, pages 28-29)

#### 4.4 Business models in e-commerce

A business model is a laid down guidelines and principles that an organization uses to sustain it in the short-term, and develop and grow in the medium to longer term. A business model that has been planned well will in the longer term give the business a competitive advantage over its competitors hence more profits. One major factor that influence on business models relating to the internet and e-commerce is transaction costs. This means that the vital goal to implementing business models relating to the internet and e-commerce is to reduce transaction costs. A business model can be categorized into three major areas that affect the sustainability and growth of an online business. These are revenue stream, value stream, and logistical stream. All these three categories complement each other.

#### CLASSIFICATION OF BUSINESS MODELS Three Major Factors to Consider

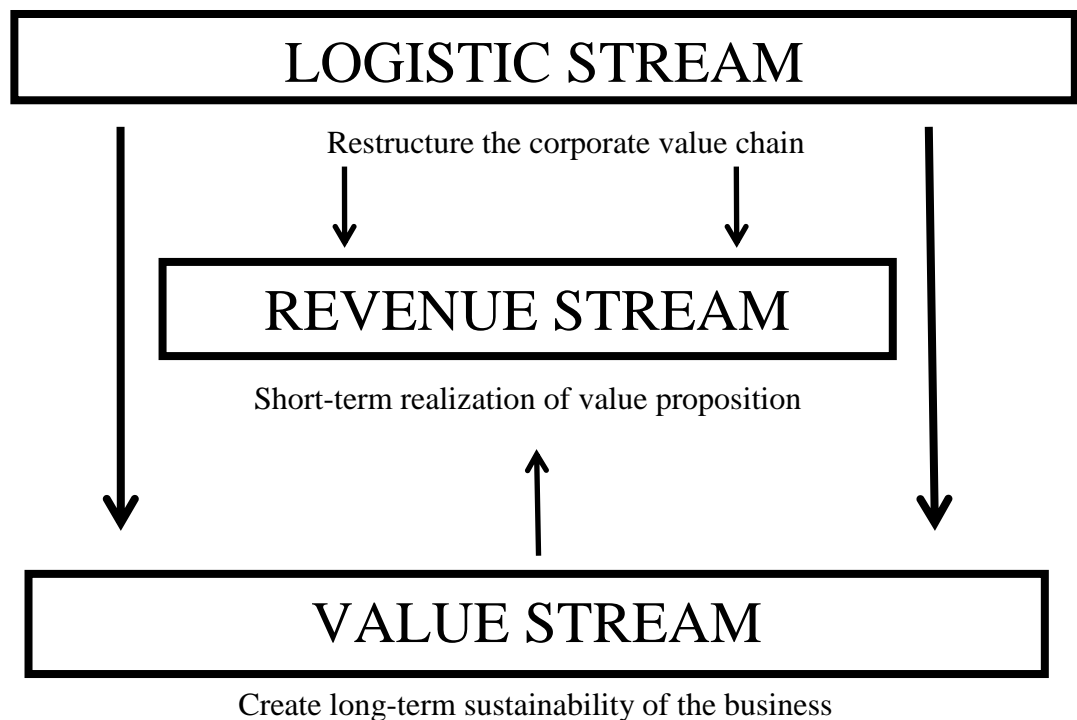


Figure 2. Components of a business model (Tassabehji 2003, 154)

The figure above illustrates some factors to consider when developing a business model in e-commerce. The internet and World Wide Web has a huge impact on transaction cost

#### **4.4.1 Value stream**

Value stream refers to the potential benefit for various business stakeholders of offering something different from what competitors have to offer. This is as a result of reduced transaction costs, lower product costs, improved product or service, brand name and reputation, and complementary products or services. Value stream can be achieved by;

- Creation or participation in an e-marketplace to reduce transaction cost. An example is [www.eshopafrika.com](http://www.eshopafrika.com).
- Creation or participation in virtual communities. This can be achieved by bringing together members of a community so that they can exchange ideas or information.
- Value stream can be achieved by adding value offers. This can be done by improving the product mix that is being offered by widening the concept of one-stop shop where buyers and/or sellers can access everything they might need from a single source. For example, a firm that a wood products oversees can also go into contract with a shipping agency so that it becomes easier for companies to handle purchase and transportation issues from one source.
- Value stream an also be achieved by exploitation of information. The e-commerce and internet economy is established on information. The collected information can be used in many ways for the benefit of the firm when the firm adds value to that information or data. The data can be consumed, collected, analysed, disseminated or manipulated in some way and used in a different way for the benefit of the company.

#### **4.4.2 Revenue stream**

Revenue stream refers to the persistent yearly financial realization of a firm. Online business provides both direct and indirect revenue for firms. Direct revenue is as a result of what the organization produces to sell and indirect revenue is as a result of facilities that provide an additional revenue source that are different from what the organization really does.

Many models or strategies exist for a firm to increase revenue from direct sales in doing business via the internet and utilizing other components of e-commerce. The first of which is the cost reduction strategy. Online businesses can save a lot of revenue when most or all their transactions are done via the internet. This is because there exist no middlemen in the supply chain and because of the digital nature of the market, inventories are efficiently controlled. Another strategy is an appropriate pricing strategy. In an online B2B market, dynamic price customization is a very important tool for profit maximization. The use of information that has been collected by the firm from its buyers allows the firms to charge different buyers different prices. Price customization includes offering prices based on buyer's web-purchase profile and using a price comparison site to develop a price-matching system. Some forms of indirect source of revenue for a firm are internet advertizing, where some firms place ads of other firms in their websites and this serves as a source of revenue for them, selling customer information and receiving micro-payments by joining affiliate schemes.

#### **4.4.3 Logistic stream**

Logistic stream is interconnected with both values stream and revenue stream. The way in which a firm must re-structure itself to deliver value streams and revenue streams are examined by the logistic stream. Issues addressed are organizational culture, communication and training systems especially when a new technology is to be introduced, and implementing information.

(Tassabehji 2003, 155-174)



## **4.5 Barriers to using the internet and e-commerce**

Firms face different barriers depending on their stage of use of the internet and e-commerce, their geographical location, and also the type of business. These barriers can be classified into physical, technical, cost, training, and trust barriers.

### **4.5.1 Physical barriers**

This refers to the unavailability of e-commerce infrastructure such as guided and wireless-media networks, internet and value-added networks (VANS), and World Wide Web with java. Some countries do not have these infrastructures or they have them in a limited capacity and this serves as a very major barrier to the use of e-commerce facilities. Another side of this barrier is that due to the economic situation in some parts of the world, some people of firms are not able to afford the purchase of enough computers and other accessories and this is a major physical barrier to get people to familiarize with the internet and to get firms to use the internet and e-commerce in their operations.

### **4.5.2 Technical barriers**

Technical barriers are as a result of the poor connectivity to the internet which hinders the speed and download time of internet pages. Because e-commerce infrastructures are not well developed in some countries, internet service providers in those countries are not able to render quality service. This mostly results in frequent cut-off of links and very slow speed of internet pages.

### **4.5.3 Cost barrier**

Most people consider using the internet because of the relative low cost and time-saving benefits, but in situations where the cost of connection and other charges are expensive, individuals or firms are not able to use it.

#### **4.5.4 Lack of training**

The know-how about the internet technology that an individual or a firm has will tell the extent to which that individual or firm utilizes the internet and e-commerce. Some countries and firms lack the resources to train people in information and communication technology and this result in limited skilled labour. Because of this, there is no awareness to use the internet and e-commerce in that country or firm.

#### **4.5.5 Trust barrier**

Security problem is something that the usage of the internet and e-commerce has not been able to fully address and this has made people lose trust in its use. The internet spans the globe within seconds and information being sent via the internet does not pass through any customs inspection before reaching the recipient. This limits the ability to ensure legal regulation regarding the use of the internet and hence individuals and firms are prone to the abuse of internet fraudsters.

(Netstarter 2009, Sue et al. 1999)

## **5 RESEARCH METHODOLOGY**

This chapter provides a clear framework on how empirical work has been conducted and how the data has been reported analyzed and generalized. The main components of this chapter are the different approaches to research strategy, research design, and data collection methods. My chosen research strategy, design, and data collection methods are also mentioned in addition to issues of research validity and reliability.

### **5.1 Research strategy**

According to Yin, there exist five research strategies namely case study, experiments, surveys, histories, and archival analysis. Each strategy has some positives and shortcomings dependent on the type of questions that the researcher wants to ask, the control the researcher has over actual behavioural events and the focus on contemporary versus historical phenomena. Each of these five research strategies can be used for three purposes namely exploratory, descriptive, or explanatory. Case studies have distinctive advantage in situation when a “how” or “why” question is being asked about a contemporary set of events in real-life situations that the researcher has little or no control of. (Yin 1994, 1-9)

Case study, as a research strategy has encountered many criticisms as a less desirable form of research than experiments and surveys. First, like all non-experimental approaches, they merely describe what occurred, but they cannot tell us why it occurred. Second, they are likely to involve a great deal of interviewer bias. Although no research design, including the randomized experimental designs, is immune to interviewer bias, some, such as the case study, are at greater risk than others. The reason why case study is more at risk with respect to interviewer bias is that it involves considerably more interaction between the researcher and the participant than most other research methods. In addition, the data in a case study come from the researcher’s observations of the participant. Although this might also be supplemented by test scores and more objective measures, it is the researcher who brings all this together in the form of a descriptive case study of the individual(s) in question. Finally, the small number of indi-

viduals examined in these studies makes it unlikely that the findings will generalize to other people with similar issues or problems. (Yin 1994, 9-11)

Still, the overall contributions of case study cannot be ignored regardless of its non-experimental approach. In fact, because of its non-experimental approach, it has substantially informed theory, research, and practice, serving to fulfil the first goal of science, which is to identify issues and causes that can then be experimentally assessed. The important thing to look at is that the researcher is as objective as possible. (Yin 1994, 11)

My research goal is to identify the barriers that wood export firms in Ghana faces in their use of the internet and e-commerce in their international business transactions and discuss about the way forward for these firms. Therefore, my case study is both explorative and descriptive.

In general, there are two research methods. These are qualitative and quantitative research methods. Qualitative research method covers several inquiry forms making it easier to understand. The research is interpreted or explained by the use of non-mathematical procedures. A major concern here is that, it is difficult to generalize findings because few samples are chosen out of many firms or people to interview. With quantitative research method, results are shown in numerical values and mathematical and statistical interpretations are used in evaluation. (White 2000, 24-25)

In respect to my research issues, my research design was case study. I used qualitative method to understand the barriers that the wood export firms face in using the internet and e-commerce. I chose two case companies for interview and used quantitative method to seek the opinions from thirty other companies in the wood export business.

## 5.2 Research design

A research design is the logic linking the data that has been collected by the researcher to the initial questions of the research and to the conclusions of the research. There are five components of research design namely its study questions, its propositions, its units of analysis, the logic linking data to propositions, and the criteria for interpreting the findings. Study propositions places emphasis on the specific thing to examine within the scope of the study. The unit of analysis refers to the problem that defines the case and the specific limitations within which the case should focus on. The research design should be able to tell the next thing to do after data collection. According to Yin, there is the need whether a single case study or multiple case studies would be used to tackle the research questions. Single case studies are justified the case presents a critical test of existing theory, a rare or unique circumstance, a representative or typical case, revelatory, or longitudinal purpose. Multiple cases are also justified when they follow a replication, not a sampling logic, and the researcher has chosen each case carefully. (Yin 1994, 18-32)

In respect to my thesis, I chose single case design because the research represents a critical test of existing theory, research about the internet and e-commerce are very rare in the Ghana wood industry and the intention of the thesis is to reveal the reality of the chosen subject in the industry.

### 5.2.1 Theory

Development of theories is very important in shaping a research. An importance of theory in a research design is that the researcher's knowledge of the theory shapes the research process to produce relevant findings. Another issue that cannot be ignored is the theory's relationship to the topic or content of the research. (Merriam 1988, 53)

An excellently developed theory does not only define a research design but also it is a tool to generalize the results of a case study. Throughout my literature review, I did not find any previous research on my chosen subject in the timber industry

of Ghana. I rather found similar research done in the agricultural and banking industries.

### **5.2.2 Selection of case firms**

Firms in the timber export industry can be classified into two broad groups. There are those that are into export of semi-finished wood products such as veneer and plywood, and those that export finished wood products such as furniture. As a result, a pattern matching procedure was used to select two companies for study, one from each group. This will enable contrasting of results from the two groups. Besides, the two cases will increase the reliability of theoretical propositions. The cases were picked from a comprehensive list of timber export companies obtained from the London office of Ghana's Forestry Commission after a careful review of their background information. The selected companies are typical cases of companies in the two segments of the timber export industry in terms of the level of use of internet based e-commerce.

The hint that I got from Mr. Zormelo, a timber exporter, was that the companies export semi-wood does not pay much attention to sales and marketing because orders are brought to them via TIDD and the government of Ghana. These orders are so huge that they do not meet the market demand in most cases. In addition to that, there are very strict regulations concerning felling trees in the country and that makes it difficult to produce the timber to commensurate the market demand. So this category of wood export companies has very little interest in attracting new customers. Since they sell only to businesses, they receive very huge orders.

However, the second category, which is those that export finished wood products are always looking for new customer since they mostly sell to final consumers and very few sales to businesses.

### **5.2.3 Data collection**

There are six important sources of data used in case study, according to Yin. These are documents, archival records, interviews, direct observation, participant observation, and physical artifacts. (Yin 1994, 79)

The strengths and weaknesses of each of the sources of data for case study are found below;

<b>Source of evidence</b>	<b>Strengths</b>	<b>Weaknesses</b>
Documentation	<ul style="list-style-type: none"> <li>i. Stable- can be reviewed repeatedly</li> <li>ii. Unobtrusive-not created as a result of the case study</li> <li>iii. Exact- contains exact names, references, and details of an event</li> <li>iv. Broad coverage- long span of time, many events, and many settings</li> </ul>	<ul style="list-style-type: none"> <li>i. Retrievability- can be low</li> <li>ii. Biased selectivity, if collection is incomplete</li> <li>iii. Reporting bias- reflects(unknown) bias of author</li> <li>iv. Access- may be deliberately blocked</li> </ul>
Archival records	(Same as above for documentation) <ul style="list-style-type: none"> <li>i. Precise and quantitative</li> </ul>	(Same as above for documentation) <ul style="list-style-type: none"> <li>i. Accessibility due to privacy reasons</li> </ul>
Interviews	<ul style="list-style-type: none"> <li>i. Targeted- focuses directly on case study topic</li> <li>ii. Insightful-provides perceived casual inferences</li> </ul>	<ul style="list-style-type: none"> <li>i. Bias due to poorly constructed questions</li> <li>ii. Response bias</li> <li>iii. Inaccuracies due to poor recall</li> <li>iv. Reflexivity- interviewee gives what the interviewer wants to hear</li> </ul>
Direct observations	<ul style="list-style-type: none"> <li>i. Reality- covers events in real time</li> <li>ii. Contextual- covers context of event</li> </ul>	<ul style="list-style-type: none"> <li>i. Time consuming</li> <li>ii. Selectivity- unless broad coverage</li> <li>iii. Reflexivity- event may proceed differently because it is being observed</li> <li>iv. Cost- hours needed by human observers</li> </ul>
Participant observation	(Same as above for direct observations) <ul style="list-style-type: none"> <li>ii. Insightful into interpersonal behaviour and motives</li> </ul>	(Same as above for direct observations) <ul style="list-style-type: none"> <li>ii. Bias due to investigator's manipulation of events</li> </ul>
Physical artifacts	<ul style="list-style-type: none"> <li>i. Insightful into cultural features</li> <li>ii. Insightful into technical operations</li> </ul>	<ul style="list-style-type: none"> <li>i. Selectivity</li> <li>ii. Availability</li> </ul>

**Table 3: Six Sources of Evidence: Strengths and Weaknesses (Yin 1994, 80)**



Information gathered directly from a certain source for a certain purpose is called a primary data. It is either internal or external. Internal primary data is collected within a company and external primary data is collected outside the company. According to Yin (1994), most important sources of primary data are interviews, direct observations and participant observations.

Information that has been collected from already existing sources of information for another purpose is called secondary data. Usually, secondary data is used in the beginning of a research to get a better understanding of the subject.

The sources of data for my study includes primary data such as interview with some managers of my case companies and secondary data such as company information brochures, websites, books, articles, and others.

### **5.3 Quality of the research design**

Generally, four tests are used to prove the quality of any empirical social research. These tests are construct validity, internal validity, external validity, and reliability. (Yin 1994, 32-37)

Construct validity is used to establish correct operational measures for the concept that is being studied. The tactics used in construct validity are the use of multiple sources of evidence, the establishment of a chain of evidence, and using a key informant to review the case study report. In my study, I believe that the different books, articles and websites I used, the interview some managers of my case companies, and a third interview with an internet service provider are the right measures to find out the barriers to the use of the internet and e-commerce by wood export firms in Ghana.

Internal validity is used for explanatory or casual studies only, and not for descriptive or exploratory studies. This is proven by establishing a casual relationship, whereby conditions are shown to lead other conditions, as differentiated from spurious relationships. My research is explorative and descriptive and there are no casual relationships needed. Due to this, there are no any internal validity problems with my research.

External validity is used to establish the domain to which a study's findings can be generalized. The external validity problem is a major barrier to doing case studies and it has attracted many criticisms. Most critics say that a single or few cases offer a poor basis for generalization. In a case study, the researcher strives to generalize a particular set of results to some broader theory. My research aims at doing the same. I chose two case firms from the long list of companies' directory that I received from the TIDD office. My opinion is that the answers I will obtain from interviewing these two firms can be generalize and so applies to all the other firms in the industry. To prove this, base on the answers I receive from these case firms, I will design a quantitative questionnaire for about thirty other firms in the industry to prove the external validity of my research.

The reliability of a research design demonstrates that the operations of a research such as data collection procedures can be repeated and the same results would be retrieved. Throughout the whole data collection process, I have tried hard to focus on the purpose of the research. So I believe in the reliability of my research.

## **6 EMPIRICAL STUDY**

This chapter includes wood export statistics from the Ghana timber industry, introduces the case firms and the extent to which they use the internet and e-commerce in their business processes and some answers I got from a meeting with an expert is also found in this chapter, in addition to the answers to the research questions. I will also construct a quantitative questionnaire for thirty other companies in the wood industry to prove the external validity of the research findings. The results from the quantitative questionnaire would be illustrated using SPSS.

### **6.1 The internet and e-commerce in the Ghana wood industry**

The use of the internet and e-commerce in the Ghana wood industry is on the lower side. My effort to arrive at some books or articles that has some information on the subject proved futile. The little observation I made showed that very little or no attention has been given to this subject in the wood industry. The marketing and sales practice in the industry is still heavily dominated by the traditional methods.

### **6.2 Export statistics January to August, 2009**

Ghana realized €12,756,543 from the export of 44,889 cubic metres of wood products in August 2009. The corresponding figures for the same period in 2008 were €14,838,489 and 50,047 cubic metres showing decreases of 14.03% in value and 10.31% in volume respectively.

Figures for January to August 2009 were €86,123,725 and 279,577 cubic metres compared to €126,755,838 and 379,800 cubic metres in January to August 2008, representing decreases of 32.06% in value and 266.65% in volume over the same period last year.

The decline was due largely to a drastic global economic downturn which has generally affected the cash flow of most buyers of wood products. Of the total value of €86,123,725 for January to August 2009, primary products (poles and

billets) accounted for €8,761,001 as compared to €14,570,418 from the total value of €126,755,838 in January to August 2008.

Tertiary products registered €5,332,344 in January to August 2009 and €9,475,694 in January to August 2008.

Secondary products fetched a total of €72,030,380 in January to August 2009 and €102,709,726 in January to August 2008 respectively.

On the direction of trade, Africa recorded €36,571,108 and 130,944 cubic metres (42.46% and 47.00%) in value and volume of total wood exports for January to August 2009. Europe accounted for €26,180,370 and 69,889 cubic metres respectively of total wood exports for January to August 2009. Key markets included Italy, France, Germany, UK, Belgium, Spain, Ireland, and Holland.

The emerging markets in Asia and Far East: India, Malaysia, Taiwan, Singapore, and Thailand together contributed €12,293,006 (14.75%) to the total of wood export value in January to August 2009. India continues to be the leading importer of teak poles, billet and teak lumber (AD).

The US accounted for 5.68% and 4.39% of the total export value and volume respectively of Ghana's wood export for January to August 2009 as compared to 12.66% and 8.95% in January to August 2008. The US market recorded a revenue decline in terms of wood import from Ghana.

The ECOWAS market (mainly Nigeria, Senegal, Niger, Gambia, Mali, Benin, Burkina Faso, and Togo) absorbed €29,972,638 (81.96%) of Africa's €36,571,108 wood imports from Ghana in January to August 2009. Plywood and air-dried lumber (Afram/Ceiba Species) continue to interest this market particularly the Nigeria and Niger markets.

The Middle East countries, notably Saudi Arabia, United Arab Emirates, Lebanon, and Israel together contributed €5,891,033 (5.68%) to the total export value of January to August 2009.

Wood products exported to Finland were rotary veneer, sliced veneer, processed lumber (kiln-dried), and moulding.

(Report on export of wood products August 2009)

### **6.3 Case firms introduction**

#### **6.3.1 Yenok Wood Products Limited**

Yenok Wood Products Limited was established 20 years ago as a purely artisanal workshop. The company has customers both in Ghana and abroad and has seen a tremendous growth over the years of its establishment. The company has been able to successfully satisfy all types of wood product requirements because the technical know-how of its 40 employees commensurate its traditional craftsmanship. The basis of the company's present success stems from production and design efficiency, a dedicated process of cultural and traditional methods, and continuous product research. The company has good business relationship with real estate developers, interior developers, and home owners. YENOK specializes in the design and manufacture of bedroom furniture, outdoor furniture, living room furniture, dining room furniture, and home and office furniture, all of which has an authentic Ghanaian or African design.

Yenok Wood Products Limited has a website where all necessary information about the company can be found. All the different kinds of wood products manufactured by the company can be found there. The company has a professional e-mail address that is used for sending and receiving e-mails. There is a broadband internet connection at its manufacturing and administrative premises. The internet service provider for this company is Internet Ghana Limited, an internet service company located in Ghana. The internet and e-commerce facilitates the company's banking needs including payments, and market and information search. The company has also signed up onto a fair trade e-commerce website based in Accra where they market their products. The website is [www.eshopafrika.com](http://www.eshopafrika.com).

The marketing manager of the company said that she and her company are aware of the many benefits that can be derived if the company pays much attention to the use of the internet and e-commerce in its operating activities.

### **6.3.2 Coppon Wood Processing Limited**

Coppon wood processing is a saw milling and wood processing company located off Akim Oda to Swedru trunk road in the eastern region of Ghana. The company was incorporated on 21<sup>st</sup> September 1987 and started production on 23<sup>rd</sup> September 1987 as wood processing company. It processes about 16 000 cubic metres of timber logs into over 8 000 cubic metres of various wood products annually. The range of products manufactured by the company includes lumber, doors, floor parquets, ceiling battens, T & G, and corner mouldings for both local and export markets. The company has recently acquired the necessary machinery and equipment to start the production of plywood of various dimensions as an expansion to the existing factory.

Coppon Wood Processing Limited does not have a website and the e-mail address they use is not a professional one. It is a yahoo mail account. The company does not have a broadband internet connection at their premises. Instead they have three internet modems that were bought from an internet service provider called Zain. This makes access to internet accessibility limited in the administrative premise of the company. These modems are used by the manager, secretary, and accountant. Most of the products produced by these companies are exported and so some level of the use of the internet and e-commerce still exist in this company in respect of its situation. The manager told me that orders are mostly received via e-mails.

#### **6.4 Why these research questions**

The research questions that were addressed by this study are

- How has your company attracted new customers abroad?
- What are the barriers to adopting the use of the internet and e-commerce?
- Is your company willing to improve upon the usage of the internet and e-commerce?

The major question is the second question and the main basis around which this thesis was written. The answers that would be derived from this question would serve as the bedrock to formulate business models for the firms in the wood industry and also make the research meaningful.

The first question would be used in order to know how the companies have attracted their current customers. All the firms in the wood export business have in one way or the other been involved in export business and this means that they have some buyers outside of Ghana. Since my thesis is limited to the sales and marketing aspect of e-commerce, I am interested to find out what the firms have done already to attract customers abroad.

As good as the use of the internet and e-commerce in businesses might be, there are also some good reasons why some firms would not be ready to use them. I have already made mention in chapter 5 that some firms get orders through the government of Ghana and TIDD, and so they do not pay any attention to marketing. In order to verify the truth of what I was told, I have decided the case firms whether they are willing to improve upon the usage of the internet and e-commerce.

#### **6.5 Answers to research questions**

I had a face-to-face interview with representatives of Yenok Wood Products Limited and Coppon Wood Processing Limited in Ghana on 15<sup>th</sup> and 18<sup>th</sup> December 2009 respectively. They interviewees accepted that I record the interview and so I

did. This made the interview more fun and relaxes because I did not have to write what they were saying. I printed the three questions and gave a copy to them so that they can also read and understand the questions very well before answering them. After the interview, I did transcription of the recorded conversation. It was quite difficult to find information for the company introduction, so I added two more questions apart from the research questions and that helped me to write about the company.

### **6.5.1 Yenok Wood Products Limited**

- **How has your company attracted new customers abroad?**

At the moment our customers are in America. And we sell to them, or we came into contact with them through trade shows that we attended in America. Apart from that, we have a website so there are others who have contacted us via the website. Probably they were browsing and they saw our website and the products that we have.

There are others who have also visited Ghana during one of the trade shows that we have taken part in Ghana and probably they live abroad already and are interested to promote our products at where they live. For instance, there is a gentleman I am talking to currently in Holland. He is a Ghanaian and wants to do business promoting Ghanaian products and he has contacted us to include our company in promoting our products out there.

- **What are the barriers to adopting the use of the internet and e-commerce?**

The major problem is that the link is sometimes slow, very slow, so it makes sometimes trying to get information difficult. You sit behind a computer, something that you have to be able to do in a short-while will take too much of your time. And then you have to send an important e-mail that is when the link is down. So in fact, for the past weeks, we have had to go to town to cyber cafes in order to send e-mails because you are able to receive e-mails but you are not able



to send. And up to now, our service provider has not been able to spot out the problem. So now we send business e-mails through our personal e-mail addresses which are yahoo. "Outlook", our official e-mail as has a problem. So the main problems are the slowness of the link and the frequent cut-offs.

Another problem is that internet services all over the country are very expensive. So we are not able to go in for the very efficient services which are very expensive. With the internet, we are able to reach more people. For instance we are sitting here, we are able to send photos of our new products to customers locally and abroad. Some come back to order. But if the internet service is expensive, then we will decide that we are not going to use it. We will wait until we meet them at the trade fair.

- **Is your company willing to improve upon the usage of the internet and e-commerce?**

Yes. We are willing to accept any idea, training, offer in the field of internet and e-commerce.

### **6.5.2 Coppon Wood Processing Limited**

- **How has your company attracted new customers abroad?**

TIDD markets our company through exhibitions. We also attract new customers, maybe through friends, because you know these buyers who come from European countries, they sell to other individuals. So maybe through their inquisitive and things like that they get to know of us. Because they also buy in large quantities and intend selling to maybe whatever individual that maybe in need of the product.

- **What are the barriers to adopting the use of the internet and e-commerce?**

Basically, there are two main barriers when we are trying to use in the internet, which are high cost of the service and poor connectivity. We had a webpage before but the cost involved was expensive so we closed it.

- **Is your company willing to improve upon the usage of the internet and e-commerce?**

Not really. At the moment we do not have problems with sales. Actually, we are not able to meet demand. What we might need is an internet connection in our offices so that we can easily access the internet.

## **6.6 Meeting with an expert**

The two firms that I interviewed gave almost the same answers when talking about the barriers they face in their use of the internet and e-commerce. They talked of the problems of poor connectivity leading to slow link and high cost of internet services. I therefore decided to interview an expert to answer the reasons why those barriers exist in the whole country. I interviewed Gideon Tetteh, who is the head of the IT department of Ghana Centre for Democratic Development, a research institution. The meeting took place on 10<sup>th</sup> January, 2010. I could not talk with him for a long time because of time constraints. He granted me the opportunity to record the conversation and so I did the transcription afterwards.

I simply asked him why those barriers exist. He told me that those problems exist because of lack of telecommunications infrastructure. He continued to say that currently Ghana depend on only one SAT3 submarine fibre optic cable that links West and South Africa and Europe to USA and Asia, and a satellite, which is very slow. The SAT3 cable is owned by a consortium of 36 companies worldwide and there is only one company from Ghana in this consortium of companies. This means that all the internet service providers in Ghana have to purchase their bandwidth from this one company. This implies that the company has monopoly and so the prices are very expensive.

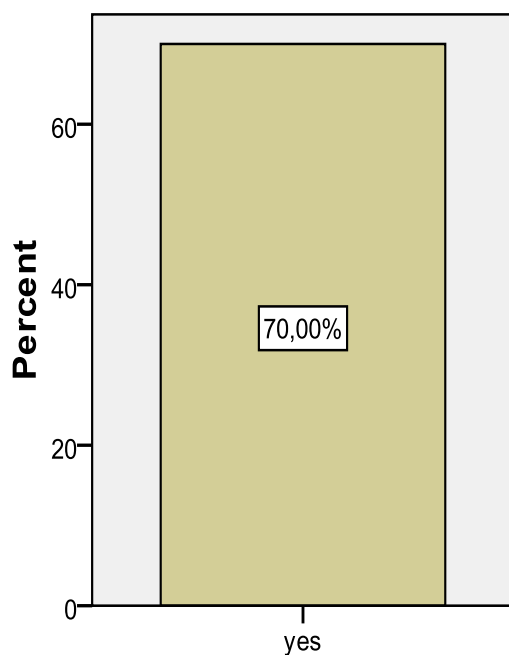
He was quick to add that since the beginning of 2009, another telephony company had been given license to operate in Ghana and that company has started laying underground fibre optic cables in almost all over Ghana for broadband internet. The underground fibre optic cables will be connected to a 200-million undersea fibre optic cable that originates from and is intended to reach Nigeria via Ghana. It has been predicted by analysts that when this project is completed it will reduce the cost of internet access in the country because competition will set in.

## **7 ANALYSIS**

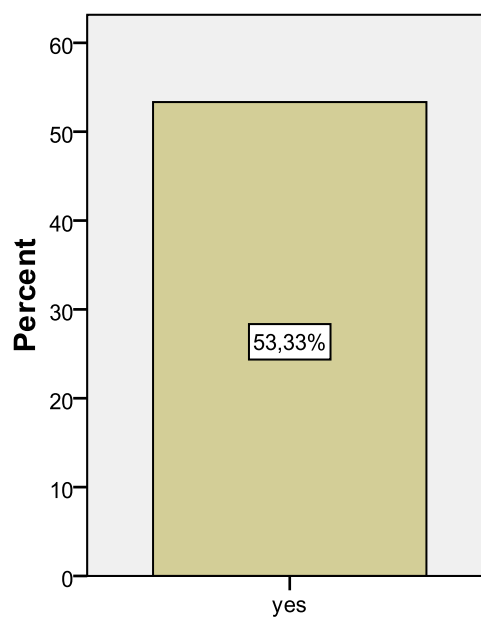
In this chapter, the results from the quantitative research would be discussed in reference to the theoretical part and the result from the interviews. I will add my own understanding and reflections. This chapter would be concluded by discussing the way forward for these firms in the wood industry, recommendation for the case firms, and suggestions for further research.

### **7.1 Summary of quantitative questionnaire**

In order to prove the external validity of the research findings from the qualitative research, I went ahead to construct a quantitative questionnaire for thirty other export firms in the Ghana timber industry the major questions in my qualitative research questionnaire. I designed the questionnaire based on the theory about the barriers to the use of the internet and e-commerce in chapter 4 and the research findings from chapter 6. I was not in Ghana myself during the time so my cousin who studies marketing in a polytechnic in Ghana made the interviews for me. He went to some firms personally to submit the questionnaires and received the responses instantly. This is because the questions were not many and they were straight forward and easy to understand. So it took the each respondent less than five minutes to answer them. Location of some firms was far away from where he lived and he interviewed those firms via telephone. He did not have any difficulties in getting to interview the firms. The analyses of the findings are illustrated in the figures below;



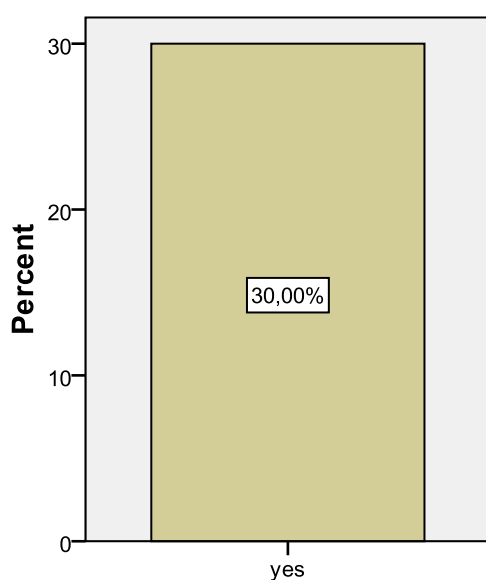
**Figure 3. High cost of internet services as a barrier**



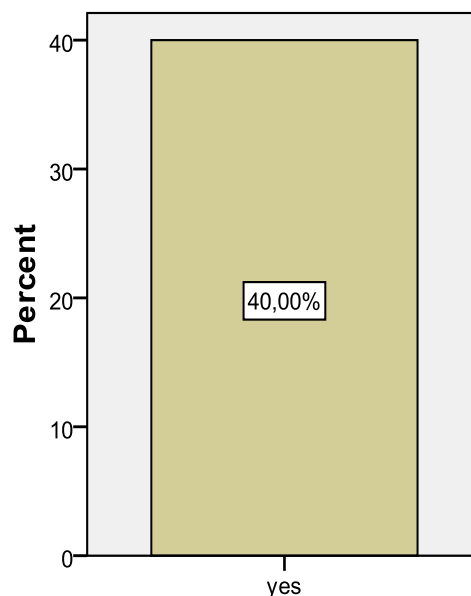
**Figure 4. Low or poor connectivity as a barrier**

Figures 3 and 4 above show the percentage of firms that think that the cost of internet services and poor connectivity are barriers that they face when using the internet and e-commerce. 70 percent of the firms complained of high cost of internet services in the country. It has been established in the theory that using the internet and e-commerce will reduce the costs that firms incur in their business operations. In the case of these wood export firms, their costs will rather increase. This will not encourage the firms consider the use of the internet and e-commerce in their major business decisions. 53.33 percent of the firms complained of low or poor connectivity as a barrier to their use of the internet and e-commerce. This means that they experience frequent cut-offs of the internet link and also it takes relatively a longer time for internet pages to load. This affects their efficiency because they are not able to produce expected working results on time. This was the main case of the marketing manager of Yenok Wood Products Limited. She said that they even have to leave their office premise and go to cyber cafes in the town before they are able to send e-mails. Percentages from the two figures were on the

high side and this means these barriers can be generalized to all the firms in the industry.



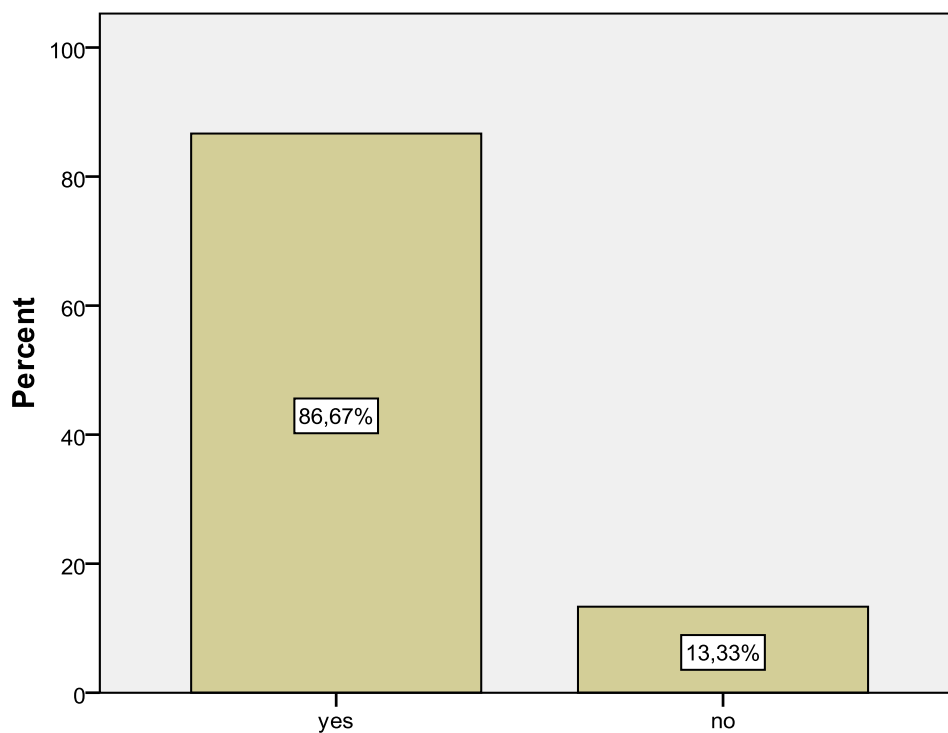
**Figure 5. Lack of knowledge about the usefulness of the internet and e-commerce**



**Figure 6. Lack of skilled Labour as a barrier**

Figures 5 and 6 above show the percentage of firms that think that lack of knowledge about the usefulness of the internet and e-commerce and lack of the skilled labour in the country to manage the internet and e-commerce technology are barriers. 30 percent of the firms complained of lack of knowledge. This means that they do not know much or are not aware of the benefits that they can derive from using the internet and e-commerce. 40 percent of the firms complained of lack of skilled labour. This means that the general education in the country in relation to the internet and e-commerce is on the low side and so they do not get employees who will function as agents of change in their firms and implement. Percentages from the two figures are low and this might mean that these two barriers cannot be classified as major barriers to the use of the internet and e-commerce by the firms. However, I think that these barriers are major barriers. Due to the high costs of

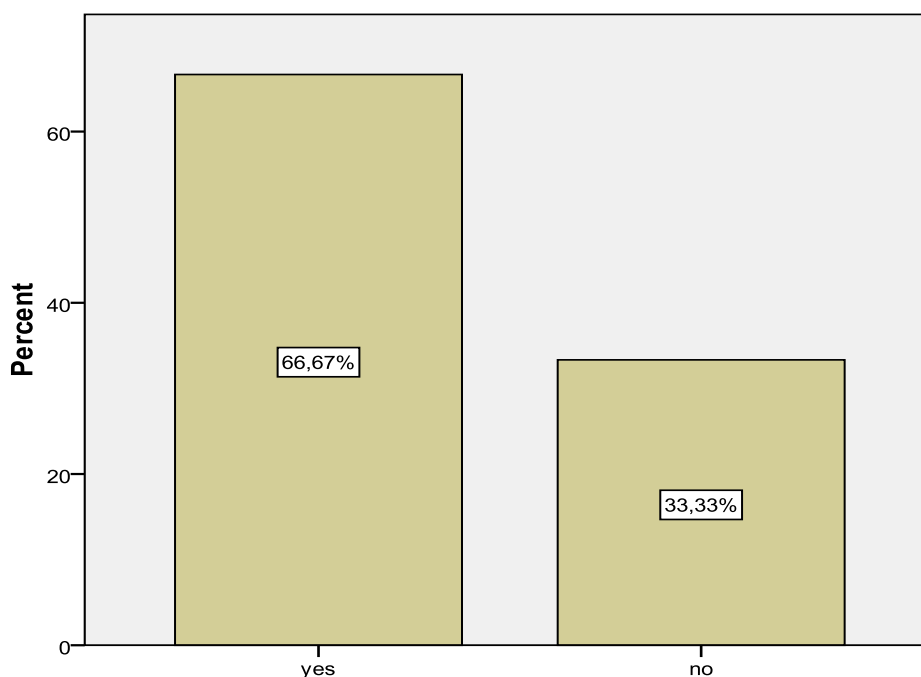
internet services in the country, the firms do not use the services and so they are not faces with challenges when using it. Also, there is only one university in the country that has major courses in information and telecommunication technology and so the number of employees or managers who will make major decisions for firms are in short supply.



**Figure 8. Willingness of the firms to accept any idea, training, or offer in the field of internet and e-commerce**

Figure 8 above shows the percentage of firms that are willing to accept any idea, training, or offer in the field of internet and e-commerce. 86.67 percent of the firms that that they are willing to do that and 13.33 percent said they are not. This means that the firms have now become aware of the e-commerce age of today's business world and are willing to pay something to learn more about how to get involved. This is even attested by the marketing manager of Yenok Wood Prod-

ucts Limited. In the interview, she said that her firm is always ready to accept any idea, training, or offer in the field of internet and e-commerce.



**Figure 9. Willingness of the firms to improve upon the use of the internet and e-commerce**

Figure 9 above shows the willingness of the firms to improve upon their use of the internet and e-commerce in their international business transactions. 66.67 percent of the firms said they are willing to improve and 33.33 percent said that are not. This means provided the information and telecommunication infrastructure would be developed in the country, companies that provide internet and its related services have good market potential in the country. This is because the improvement in technology will mean that the cost of internet services will go down and the firms would be ready to seek internet services.

Findings from figures 8 and 9 testifies that internet and its related service providers have bright future in excelling in the Ghanaian market in the next few years. This is because the infrastructure in the country will be in place soon and results from these figures shows that are aware of the internet and e-commerce ans are willing to improve upon its usage.



## 7.2 The way forward

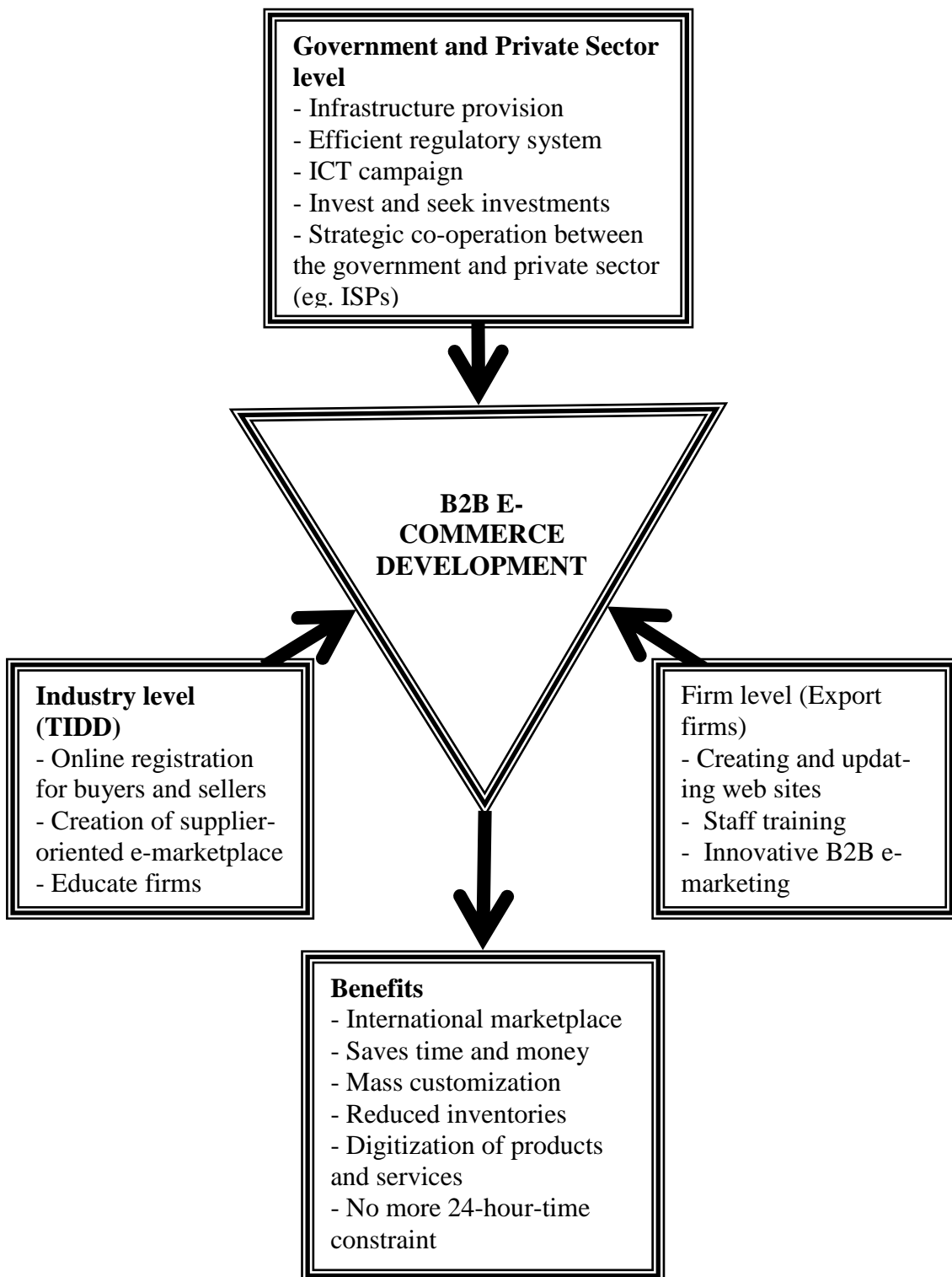
From Vladimir's hierarchical framework of e-commerce, it can be firmly concluded that the Ghana wood industry is still hovering around the first meta-level which is the infrastructure level. This level is further divided into wide-area telecommunication infrastructure, public and private communication utilities, and hypermedia/multimedia object management. Examples of this infrastructure level are guided and wireless-media networks, internet and VANs, and World Wide Web especially with Java. This is what the country as a whole lacks. That is why the firms are complaining of major barriers such as poor connectivity and high cost of internet services. This is further confirmed by the interview I had with the expert, in reference to chapter 6.

The government, businesses, and the general public are now aware of the unlimited benefits that the internet and e-commerce would bring to the economy, when efficiently developed. In fact, there are many examples worldwide. Recent rumours that Google intends to leave China due to attempts of censorship and hacking coming from China has shaken the online business world in China. A group of 27 Chinese advertising agencies have sent a letter to Google to open talks on compensation for possible business losses if Google leaves China. The letter said that the companies are "worried and anxious". (CNN 2010) The question is why are these companies "worried and anxious"? This is because the success of their business operations depends on the use of the internet and e-commerce.

In my opinion, the success of the wood export firms in B2B e-commerce depends on contributions from three important levels. These levels are;

- Government and private sector level
- Industry level (TIDD)
- Firm level (Export firms)

The plans of action are addressed by the figure below;



**Figure 10: B2B e-commerce development for the Ghana wood industry**

The figure above illustrates how the Ghana wood industry can develop B2B e-commerce in their operations in order to reap the many benefits as shown in the diagram. Explanations of the benefits are addressed in chapter 3.

First of all, the government of Ghana, in collaboration with the private sector, has to provide the infrastructure since the costs involved are so high that the firms cannot do that by themselves. After all, there are many other industries in the economy that will benefit from the infrastructure. The government needs to put in place efficient regulatory system in place to tackle issues of security as the use of the internet in the country improves. If this is not done, internet fraudsters can do much harm than the good internet usage has to offer. There is also the need for the government to seek investments into the ICT sector of the economy. This can be done by reducing the long bureaucracy and red-tapeism involved when foreign investors are settling into the country. As was revealed in the research, there are more expectations expected in the country in regards to the internet technology. Prior to the 6<sup>th</sup> March 2010 independence day of Ghana, the minister of communication, Haruna Idrissu was noted in a report saying “Let me assure Globacom that government is doing everything within its reach to allow for your major launch to coincide with our Independence day celebration”. Globacom is the name of the new company and the company has been laying fibre optic cables in the country for its intended broadband service since 2008, when it was issued the permit to operate in Ghana. (Ghana Business News 2010)

The industry level refers to the Timber Industry Development Division (TIDD) in this context. The registration process for buyers and sellers is addressed in chapter 2 and it is coordinated by the TIDD. My suggestion is that instead of that long registration process, they should rather create an online registration process. This will open the doors for more players in the sector. Firms are easily attracted if they can sit in the comfort of their offices from any corner of the world and visit the website of TIDD to register instead of waiting for days or even weeks for the registration to be processed. TIDD should also create a supplier-oriented e-marketplace, as explained in Chapter 4. Out of the many wood exporters, only few

of them produce and export greater percentage of the total exports. This means that there are many firms producing on small scales. So if TIDD bring these smaller firms together, they would be able to combine their various manufactures to handle huge orders. The internet and e-commerce usage becomes cheaper because they will share the cost. The TIDD in collaboration with other stakeholders should educate the firms under its supervision about the essence of employing the internet and e-commerce technology in their business operations.

The most importance contribution to the development B2B e-commerce in the industry comes from the wood export firms. The firms have to train their employers and employees in order to familiarize them with the new way of doing business. In chapter 4, I wrote about some differences between the traditional marketing and technology-enabled marketing and their implications. This is what the modern day e-marketer has to be aware of and this demands staff training. The firms also have to be present on the World Wide Web. The various search engines should be able to locate them and when that is done, potential international customers will get to know them and the products that they can supply. The firms should create and update web sites to show the background of their operations and this can attract customers from all over the world. Fortunate for the firm, Google launched its product called Google Maps in Ghana on 18<sup>th</sup> February, 2010 in the country and this product makes it possible for firms that do not have web sites to have presence on the World Wide Web. The firms can create their own maps, put up a picture, the addresses of their firms and even pictures of their products on the internet and the product comes with no cost. (Ghana Business News 2010)

The firms also have to be innovative in their e-marketing activities. They have to construct and implement effective business models in order to derive much benefit from the use of the internet and e-commerce. As defined in chapter 4, a business model is a laid down guidelines and principles that an organization uses to sustain it in the short-term, and develop and grow in the medium to longer term. Three major factors that the firms have to consider when drawing up business models are also addressed. Another question can be directed to when the firms should begin with these plans. My suggestion is that they should begin it right now. As the

Ghanaian economy is receiving more and more foreign direct investments from major multinational companies in the oil field, there would be pressure on many firms to become global in their activities and this also increases the inter-industry transactions. As established in the theoretical part, apart from direct profit for the companies, the creation of website can also serve as another source of income for the firms because they can advertize information about other firms in their web sites and take a fee for that.

### **7.3 Recommendation for case firms**

This research has been limited to the international marketing aspect of defining the internet and e-commerce. In reference to chapter 5, I chose the case firms from two broad categories of wood exporters in the industry. The first category of firms export semi-finished wood products such as veneer and plywood, and the second export finished wood products such as furniture.

Coppon Wood Processing Company represents the first category. The research revealed that this category of wood export firms already has customers abroad and they have the government of Ghana and TIDD bringing orders to them. Hence they do not put much effort in looking for new customers but instead they try to meet the demand for their products. The respondent from this company told me that his firm is not really willing to improve upon their use of the internet and e-commerce. My recommendation is that they should still make efforts to use the internet and e-commerce. Even if they have enough customers already, customer service and customer satisfaction are other important issues in the business world. And this is something they can manage via the internet and e-commerce applications. This firm should also remember that they are not in a monopolistic market, so even if they have more demand for their products at the moment, they can also lose all customers in one day if something goes wrong. The wrong way they can recover from that situation is through a real relationship with the customers and this is something that should begin now.

Yenok Wood Products Limited represents the second category of wood export firms. The firm has a web site where all their products can be found, the web site

is quite attractive and paramount to these the firm is willing to improve upon their usage of the internet and e-commerce. However, my suggestion to the firm is that, they should re-design their web site to make it more professional than it is.

#### **7.4 Suggestions for further research**

I did not find any research that is related to my combination which includes B2B, e-commerce, and Ghana timber industry. I instead found many research about e-business and e-commerce in the Ghana banking sector. I suggest that future researches concerning the internet, e-commerce, and e-business should be directed to other sectors of the economy such as agriculture, mining, and tourism. These sectors are forgotten when it comes to research concerning the internet, e-commerce, and e-business. Researchers should understand that this new technology language can be spoken in all sectors of every economy.

## 8 CONCLUSION

In conclusion, the internet technology, which can be efficiently utilized to the benefit of business in their e-commerce activities, is no longer an option to consider but a factor to consider in any business. Like the product life cycle in international trade, the technology was invented in America, it spread through Europe in a very fast pace due to the similarity in infrastructure that both regions have. (Griffin and Pustay 2010) It took some time to penetrate the Asian market and now the China alone accounts for over 385 million internet users. The new region that internet use is gaining popularity is Africa. The growth is rather a dramatic one. Within five years, the penetration is increasing yearly at an increasing rate. In the case of Ghana and therefore the timber industry, this technology should be utilized efficiently to maximize profit from international business transactions.

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### **Interviews**

Stephen Dagbie, Coppon Wood Processing Limited. 15.12.2009

Mrs Diana Koney, Yenok Wood Products Limited. 18.12.2009

Gideon Tetteh, Ghana Centre for Democratic Development. 10.01.2010

## 10 APPENDIX 1

- What are the barriers to using the internet and e-commerce?

Cost ( )

Low or poor connectivity ( )

Lack of knowledge ( )

Lack of skilled labour ( )

Others. ....

- Is your company willing to improve upon the usage of the internet and e-commerce?

Yes ( )

No ( )

- Is your company willing to accept any idea, training, offer in the field of internet and e-commerce?

Yes ( )

No ( )