Internet Technology Use in The Value chain of Ethiopian Small & Medium Size Enterprises: The Benefits, Problems & Prospects

A Thesis for
Master of Science in Business Administration [MSc]
Strategy and Management in International Organizations [SMID]

By

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Abstract

Title: Internet Technology Use in The Value Chain of Ethiopian SMEs: The Benefits, problems & Prospects.
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Date: September, 2012

Background: Major attention in researches within the field of internet technologies and its usage in service providing Small and medium Enterprises has been devoted in the developed countries. Little or almost no attention or studies have been given on most of the developing or third world countries specifically, Ethiopia which can be considered as a black hole in related researches. Recently there are some encouraging signals here and there, with a hopeful transition to the digital era and utilization of internet technologies, in the service providing small and medium enterprises businesses. The area of attention here is directed to Ethiopia, in the existing internet technologies usage in SMEs with the prospects, benefits and problems of utilization in the business operations.

Aim: The purpose of this thesis is to find out the benefits, prospects and utilization problems of internet technologies in small and medium size service enterprises in Ethiopia. The study discusses the service business operations and their internet usage in the small and medium enterprises value chain activities theories.

Definitions: The term SME (Small and Medium size Enterprises) generally refers to, in most developing economies, the following broad categories: For this research purpose UNIDOs quantitative and qualitative SMEs definition criterions will be used:
- Micro enterprises: employment level below 10; Registered Capital < $ 42,000
- Small enterprises: employment level from 10 to 49; Registered Capital > $ 42,000
- Medium enterprises: employment level from 50 to 249. Registered Capital > $ 42,000

Internet Technology: is all about connectivity, accesses and utilization of internet.

Realization: This study is based on multiple case study of 5 small and medium sized service enterprises’ using internet in their business activities. Unstructured interview was handled with managers in the business, for this purpose qualitative research method is applied with an inductive approach more dominantly.

Completion and Results: A qualitative multiple case studies on SMEs businesses in Addis Ababa, Ethiopia was carried out and the results revealed that:

The Benefits of Internet Technologies as:
- The falling costs and increasing utility of cutting edge technologies without bearing the high costs of discarding older legacy systems and carrying massive cost of technological R & D,
- Historic opportunity for SME’s to create new information rich industries and competitive entrepreneurship of global reach with no abstraction/ marketing chains or less capital,
- Provided Product/service and Operation / Processes Efficiency for SMEs, - Enhanced the businesses’ value proposition, quality and flexibility, - SMEs are better positioned to participate in global value chains, with minimal capital , R&D and Technology cost .

**The Problems of Internet Technologies as:** - Poor literacy, both computer based and formal education, - Lack of good infrastructure, both physical and regulatory - lack of access to technology in rural or remote areas with lack of content in local languages settings (Language & Diversity Barriers), - Service interruptions in basic infrastructure such as telecoms and electricity interruptions, - And lack of expertise in IT.

**The Implications and Conclusion as:** The utilization of internet technologies and the growing number of entrepreneurial firms(SMEs) signals the way forward in Ethiopia is with a lot of prospects among them are opportunities of participating in the global market arena, strategic alliances with local and foreign firms that creates huge possibilities of exploring and exploiting information, knowledge and culture industries on which the country is endowed with, provided that the above mentioned impediments are addressed. The theoretical issues in this research indicates that unlike the developed economies perspective on the value activities of firm which states the primary activities as a critical and detrimental activity in the value chain, in this research the support activity is found to have an equivalent, if not, a greater influence in the value activities of Ethiopian or developing country context that challenges the pre-established theoretical concept (Porter, 1985)in the matured and developed economies giving much of the credit to primary activities. The underlying conclusion in this research is that, the support activities mentioned on Porter (1985) and (Rayport &Sviokla ,1995) as in both cases (physical and virtual SMEs presence) are found to be equivalently critical/determinant as it is analyzed in the cases and shortly portrayed in the conclusive table, where the support activities are found to be playing a significant role and contribution even in the sustenance of the primary value activities and further to the whole value system as far as the internet connectivity to business presence/ [VISIBILITY, MIRRORING CAPABILITY& NEW DIGITAL VALUE] (Rayport &Sviokla ,1995) is taken in to consideration. Therefore an adapted / amended model to the context of developing countries/Ethiopia is suggested based on the empirical findings and analysis.

**Search Terms:** - Internet Technologies (ICT), Small & Medium Service Enterprises (SMEs), Infrastructure, Human Resources, Primary and Secondary Value Activities, Physical &Virtual Value Chain, Search, Evaluation Problem Solving & Transaction.
Preface

Starting from the beginning of, Strategy and Management in International Organizations [SMIO] program in, the 2010 academic year, I was thinking of Title/ideas for the Master Thesis. Then, I started to search for titles to work on in the consecutive courses periods even though I didn’t have by that time the first hand idea of what I was going to write about. I have undergone through various ideas and concepts while attending various course that we have been going through in the academic year, and then I thought of writing something on developing countries related to Internet Technology, especially of mine, which is related to the recent digital phenomenon. Despite the fact that working a thesis on underdeveloped countries is a challenge, I decided to contribute something in this regard. I have chosen the title, Internet technologies and its usage in small and medium size enterprises (SMEs) with the benefits and problems in the value chain. Finally I decided to make case study on service providing private SMEs in Ethiopia, Addis Ababa, my home town, and continued with the research in exploration.

“Internet, Africa, Ethiopia, Addis Ababa, Small & Medium Size businesses etc. . . . .” Author
Acknowledgement

First, I would like to thank all managers and employees [Ermias, Hilina, Yon et.al] who took their precious time to answer the interview questions for this research. Without their commitment, I would not have been able to finalize it. Greatest thanks to my supervisor Malin Tillmar [Asso. Proff] who always is available to answer my questions and solve my puzzles; it’s a pleasure working with YOU.I am grateful for the magnificent Linkoping University education environment, diligent and compassionate academic staff especially [SMIO] program which made my study stay in Sweden HOME from HOME. Thank you very much! the university community in general and Jörgen Ljung [PhD] and Marie Bengtsson [Asst. Proff] in particular for the enormous knowledge, experience and compassion you uncovered to me, which helped me shine even in moments of uncertainties. I also would like to thank my families in Addis Ababa, Ethiopia [Emach, Tigi, Ante, Kedmu and Emu] who financially and morally supported me throughout these two years study at Linkoping University. And finally thanks to all my friends in Sweden, Stockholm, Linkoping University / City & elsewhere.

Love & Respect to you ALL

Linkoping, September 2012.

Asamnew Dessie
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
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<tbody>
<tr>
<td>A.A</td>
<td>Addis Ababa</td>
</tr>
<tr>
<td>CIA</td>
<td>Central Intelligence Agency</td>
</tr>
<tr>
<td>EC</td>
<td>European Commission</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>ETA</td>
<td>Ethiopian Telecommunications Agency</td>
</tr>
<tr>
<td>ETC</td>
<td>Ethiopian Telecommunications Corporation</td>
</tr>
<tr>
<td>ECA</td>
<td>Economic Commission for Africa</td>
</tr>
<tr>
<td>EPRDF</td>
<td>Ethiopian People's Revolutionary Democratic Front/Party</td>
</tr>
<tr>
<td>FDRE</td>
<td>Federal Democratic Republic of Ethiopia</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>ISP</td>
<td>Internet Service Providers</td>
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<tr>
<td>ITU</td>
<td>International Telecommunications Union.</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technologies (Internet Tech.)</td>
</tr>
<tr>
<td>NTO</td>
<td>National Tour Operation Enterprise</td>
</tr>
<tr>
<td>MPCICs</td>
<td>Multi-Purpose Community Information Centers.</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>PADISNET</td>
<td>Pan African Documentation and Information Service Network</td>
</tr>
<tr>
<td>SAP</td>
<td>Structural Adjustment Program</td>
</tr>
<tr>
<td>SMB</td>
<td>Small or Medium sized Business</td>
</tr>
<tr>
<td>SMIO</td>
<td>Strategy and Management in International Organizations</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and/or Medium Enterprises</td>
</tr>
<tr>
<td>SMMEs</td>
<td>Small, Medium, and Micro-sized Enterprises (SMMEs)</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>UNECA</td>
<td>United Nation Economic Commission for Africa</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organization</td>
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<tr>
<td>WIPO</td>
<td>World Intellectual Property Organization</td>
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ETHIOPIA

Figure 1. Map of Africa & Ethiopia

*Country Wide Statistics*:

**Country Name:** Federal Democratic Republic of Ethiopia, F.D.R.E (ETHIOPIA)

**Nationality:** Ethiopian

**Area (Total):** 1,104,300 sq km (27th in Country Comparison worldwide)

**Population:** 93,815,992 (July 2012 est.) (13th in the world & 2nd in Africa Ranking)

**Capital City:** Addis Ababa: Meaning 'New Flower' (Pop. 5 Million people)

**Language:** Amharic (Working) 32.7%, Oromigna (Working) 31.6% & others

**Religions:** Orthodox Christians 43.5%, Muslim 33.9%, & others (2007 Census)

**Literacy:** Male:- 50.3%, Female:- 35.1% (2003 est.)

**Mortality:** 10.79 Deaths/1,000 Population (July 2012 est. 44th in World Ranking)

**Life Expectancy:** Total Population: 56.56 years, : Male: 53.99 years, Female: 59.21

(2012 est. 195th in World Ranking)


*last Reviewed: June 03, 2012 01:16 PM, Accessed July 10, 2012 3:55 PM
Chapter – 1

1. Introduction

1.1 Background

Ethiopia is situated in the eastern part or Horn of Africa, (CIA, World Fact book Ethiopia, 2012). Unique among African countries, the ancient Ethiopian kingdoms, monarchy maintained its freedom from colonial rule by defeating the Italian colonial force 1896, at the battle of Adwa (Brown & Yirgu, 1996).

In 1974, a military junta, the ‘Derg’, deposed Emperor Haile Selassie the last king of the monarchy who had ruled since 1930, and established a socialist state. Torn by guerrilla warfare’s, uprisings, wide-scale drought, the regime was finally toppled in 1991 by a coalition of rebel forces, the Ethiopian People's Revolutionary Democratic Front (EPRDF) and a constitution was adopted in 1994. Since 1990s as a whole, reform process started. A program of privatizing state-owned enterprises had been underway and was beneficial; government revenue has risen, and outlays have been redirected from defense to education, health, and infrastructure. Still, economic performance suffers from hindrances such as State ownership of farmland, low levels of investment and dependence on foreign aid (Country Profile, 2005)

This background information about the socio-economic and political state of the country is essential to well understand the thesis subject and business context and is meant to serve as a basement knowledge to proceed with the whole research subject.

Industry and Manufacturing sector constitutes about 4 percent of the overall economy, although it has shown some growth and diversification in recent years. Much of it is concentrated in the capital, The country derives about 90 percent of its electricity needs from hydropower, which means that electricity generation, as with agriculture, is dependent on abundant rainfall, Ethiopians rely on forests for nearly all of their energy and construction needs; the result has been deforestation of much of the highlands during the last three decades. Electricity production by source: Fossil fuel: 1.3%, Hydro: 97.6%, other: 1.2% (CIA, World Fact book Ethiopia, 2012). Aside from wholesale and retail trade, transportation, and communications, the services sector consists almost entirely of tourism. Developed in the 1960s, tourism declined greatly during the later 1970s and the 1980s under the military government. Recovery began in the 1990s, but growth has been constrained by the lack of suitable hotels and other infrastructure, despite a boom in construction of small and medium-sized hotels and restaurants. The total productive labor force according to UN mid-2002 report reaches to 30 million people.
Transportation and Telecommunications; by any measure, Ethiopia’s transportation and telecommunications networks are inadequate. For a country of its size (comparatively in land mass Ethiopia is three fold the size of Germany), the transport network is quite limited and needs both upgrades and expansion. The telecommunications system is similarly undeveloped, even by African standards. Service is unreliable and concentrated overwhelmingly in Addis Ababa. A bright spot is Ethiopian Air Lines, which delivers efficient and reliable service domestically and internationally.

The telecommunications industry has remained under Government control or monopoly* (Table Appendix 1) *; despite the gradual expansion and liberalization of various sectors. The Ethiopian Telecommunications Corporation (ETC) is the only provider of fixed and mobile telephone, facsimile, and ISP, telegraph and telex services.

“Ethiopia is one of the last countries in Africa allowing its national Telecom Company, ETC [Ethiopian Telecommunication Corporation] a monopoly on all telecom services including fixed, mobile, Internet and data communications. This monopolistic control has stifled innovation and retarded expansion. The government tries to encourage foreign investment in a broad range of industries by allowing foreigners up to 100% equity ownership. However, there is no official schedule for the privatization of the national carrier and the introduction of competition, but once this happens, the potential to satisfy unmet demand in all service sectors is huge. A management contract with France Telecom has led to dramatically improved performance by ETC, a step towards privatization of the sector.” (Budd.com, 2012)

The telecommunication law that favors Government monopoly* has caused inadequacy in telecom systems and has adversely affected the development of the internet or telecommunication infrastructure (CIA, 2012). “The long waiting time for fixed lines and mobile telephones and the complaints of users about the quality of the services suggest that closed-market policies are inconsistent with the desire to expand the use of the new technology” (Mulat D. & Tadesse B. 2002 P.10). Computers are widely used as office assistant tools in institutions, and institutions with Internet connections mainly use the technology for email. No widespread practice of downloading / uploading information exists, and use of Internet for education purposes or procurement of materials is not significant (Mulat D. & Tadesse B., 2002).

The above and below mentioned facts and figures on the country’s infrastructure power supply communication outlets, industry/ business developments and other supportive information have a role to play in envisaging the capacity of the country in terms of handling businesses activities with in the economy.
Internet service Access and coverage in Ethiopia: Internet and mobile phone services were introduced in Ethiopia in 1997 and 1999 respectively. The first use of internet-like electronic communication was in 1993, when the United Nations Economic Commission for Africa (UNECA) launched the Pan African Documentation and Information Service Network (PADISNET) project, establishing electronic communication nodes in several countries, including Ethiopia. PADISNET provided the first store-and-forward email and electronic-bulletin board services in Ethiopia. It was used by a few hundred people, primarily academics, and staff of international agencies or nongovernmental organizations. (Freedom on the Net, 2012 P-185). The country has one of the lowest rates of internet and mobile telephone penetration on the continent. Despite low access, the government maintains a strict system of controls and is the only country in Sub-Saharan Africa to implement nationwide internet filtering, (Freedom on the Net, 2012). Based on related data sources (Bloomberg, 2010; Fortune, 2010; Africapractice, 2007; ITU, 2012) In recent years, the government has witnessed an attempted to increase access through the establishment of fiber-optic cables, satellite links, and mobile broadband services. It has refused to end exclusive control over the market by the state-owned Ethiopian Telecommunication Corporation (ETC). However, in December 2010 France Telecom took over management of ETC for a two-year period, renaming it Ethio Telecom in the process. China has also emerged as a key investor and contractor in Ethiopia’s telecommunications sector. Given allegations that the Chinese authorities have provided the Ethiopian government with technologies that can be used for political repression, such as surveillance cameras and satellite jamming equipment, some observers fear that the Chinese may assist the authorities in developing more robust internet and mobile phone censorship and surveillance capacities in the coming years(Freedom on the Net, 2012). Ethiopia’s telecommunications infrastructure is among the least developed in Africa and is almost entirely absent from rural areas, where about 85 percent of the population resides, serving a population of 83 million for a penetration rate of less than 1 percent, according to the International Telecommunication Union (ITU, 2012). Ethiopia’s internet coverage seems to grow gradually even though it is one of the lowest penetrations as compared to many developing countries.

Internet Penetration in Ethiopia recent: * Estimated market penetration rates in Ethiopia’s telecoms sector, the recent coverage of internet and others, (Budde. Com, 2012)

<table>
<thead>
<tr>
<th>Market</th>
<th>Penetration rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile</td>
<td>20%</td>
</tr>
<tr>
<td>Fixed</td>
<td>1.0%</td>
</tr>
<tr>
<td>Internet</td>
<td>1.5% (of 92 Million People)</td>
</tr>
</tbody>
</table>
The combined cost of purchasing a computer, initiating an internet connection, and paying usage charges places internet access beyond the reach of most Ethiopians. A 2010 study by the ITU found that Ethiopia’s broadband internet connections were among the most expensive in the world when compared with monthly income, second only to the Central African Republic, and merely 27,000 broadband subscriptions were recorded in 2011. “Prices are set by Ethio - Telecom and kept artificially high. In April 2011, Ethio Telecom announced a new set of pricing packages, reducing the subscription charge from US$80 to US$13 and the monthly fee from over US$200 per for unlimited usage to fees of between US$17 and US$41 for between 1 GB and 4 GB of use. By comparison, the annual gross national income (GNI) per capita at purchasing power parity was US$1,110 (or US$92.50 per month) in 2011. Although the new tariffs have rendered the service slightly more affordable—though still relatively expensive—for individual users, cybercafé owners have complained that the lack of an unlimited usage option could hurt the financial viability of their business. Furthermore, an adult literacy rate of 30 percent means that the majority of Ethiopians would be unable to take full advantage of online resources even if they had access to the technology.”(Freedom on the Net, 2012, P-186)

Internet / Telephone coverage in Ethiopia & other African countries:
In order to be able to see the telecom standard of Ethiopia it will be relevant to see the regional suitable level of comparison, internet access or services in Ethiopia are directly related to the availability of telephone lines as described earlier. According to ITU’s (International Telecommunications Union ) World Telecommunication Indicators Database 2005 the highest main telephone line per 100 inhabitants (fixed telephone density of Africa) is registered in Botswana which was 7.60% followed by Namibia 6.36%. The main telephone line density of Ethiopia in year 2004 was 0.83% which is below the average telephone density (1.77%) for the selected Sub-Saharan African countries ITU (1998). In Africa 50 of 53 African countries (Figure Appendix 3) now have direct Internet access ECA (2001). Note* Internet Connectivity is directly related to the availability of Telephone lines or cables(CIA,2012)

There is no doubt that the communications and information infrastructure in Africa has improved dramatically over the past few years. Satellite television, the Internet, cellular phones are now widespread on the continent. But what might have been unthinkable a decade ago is still a dream for the majority of Africans - those who do not live in the capital cities and are not part of the privileged few.

Access to telephones is still extremely scarce. There are only about 14 million lines on the continent - less than the number of phones in Manhattan or Tokyo - and if North
Africa and South Africa are not counted, there are only 3 million lines to be shared amongst the remaining 600 million people. Furthermore, most of the lines are concentrated in urban areas while over 70% of the population is rural. (ECA, 2001) as a result most Africans have never even made a phone call, let alone surf the web there are only about 100 000 dialup Internet accounts for 750 million people (excluding South Africa) and because Internet Service Providers are usually concentrated in the capital cities, even if there is a computer available, it is usually a prohibitively expensive long distance call to the Internet. At the same time, most of the available information on the Internet is oriented toward western and urban populations, with few applications relevant to the average person in Africa ECA (2005). Internet accesses and communication has grown relatively fast in the country due to the global impact and which can be describes as ‘Leapfrogging’ the word which most technical people would use to describe the advancement, at least in infrastructure, that has occurred in Ethiopia in less than 10 years (Mulat D. & Tadesse B., 2002). The challenge now is for the government to effectively co-ordinate the implementation of the strategy (WB, 2007). The World Bank, the African Development Bank, and the International Monetary Fund has established a state-of-the-art multimedia broadband backbone infrastructure (Fiber Optic Undersea cables in the East coast of Africa) (Figure Appendix 1&2 )with a core nucleus of 4,000 kilometers of optical fiber circling the African continent, (ASB, 2005). Web presence is higher in some sectors, particularly those involved in tourism and foreign investment, and these often have more mature sites, aimed at developing an international market presence (Mulat D. & Tadesse B., 2002). While most ministries and national research centers may have access to electronic mail, very few have a web site. Reflecting the limited resources of the public sector, the ECA survey found that government employees made up only one percent of users in Ethiopia (ECA, 2001).

For the purposes of this paper 'information infrastructure' is defined as the means by which ICT applications are made available - telecommunications facilities, the Internet, broadcast networks, computers, software and (Local Area Networks (LAN) – locally networked computers). Of crucial importance to this physical infrastructure are the human resources required to install, use and maintain it, and the linked infrastructures - the transport and power supply networks.

1.2 Internet/web use in Ethiopian businesses,

In Ethiopia, majority of internet users rely on cybercafés to access the web, though connections there are often slow and unreliable. Internet access via mobile phones has grown over the past year, particularly in semi-urban areas, but slow speeds are a constant problem. A 2010 study commissioned by Manchester University’s School of Education found that accessing an online email account and opening one message took six minutes in a typical Addis Ababa cybercafé with a broadband connection. The
number of cybercafés has grown in recent years and continues to expand in large cities, after a brief period in 2001–02 during which the government declared them illegal and forced some to shut down. Since July 2002, the Ethiopian Telecommunications Agency (ETA) has been authorized to issue licenses for new cybercafés. (Andenet, 2009) The authorities have placed some restrictions on advanced internet applications. In particular, the use or provision of Voice over Internet Protocol (VoIP) services or internet based fax services—including at cybercafés—is prohibited, with potential punishments including fines and up to five years in prison. (Telecommunication Proclamation No. 281/2002, Article 2(11) and 2(12)) The government instituted the ban on VoIP in 2002 after it gained popularity as a less expensive means of communicating and began to drain revenue from the traditional telephone business belonging to the state-owned Ethiopian Telecommunication Corporation (ETC), or Ethio-Telecom. Despite the restriction on paper, many cybercafés offer the service with few repercussions. Social-networking sites such as Facebook, the video-sharing site YouTube, and the Twitter micro blogging service are available, though very slow internet speeds make it impossible to access video content. International blog-hosting websites such as Blogger have been frequently blocked since the disputed parliamentary elections of 2005, during which the opposition used online communication to organize and disseminate information that was critical of the ruling Ethiopian People’s Revolutionary Democratic Front (EPRDF) (Bogdan, 2007).

The internet technology/web has given to the empowerment and flourishing of individual awareness, entrepreneurships, and small businesses in Ethiopian context too, small businesses are taking initiative on involving in internet based business. It proved very difficult to find reliable and consistent data on the extent of ‘internet use’ for business in Ethiopia, but the secondary sources, (Web Index, 2012) shows the extent to which the web affects the economic activities and business of 61 countries. The indicators are on how governments and organizations disseminate information to farmers, the extent of business Internet use, and the extent to which people trust the Web as a means of buying and selling goods and services. On the report Ethiopia ranks 55th of the 61 countries experiencing business or economic impact as a result of the web and internet in the businesses. According to the index, 30% of countries worldwide face moderate to severe government restrictions on access to websites, while about half of them show increasing threats to press freedom. It highlighted censorship and high broadband prices as barriers to a "web for all". Using data from the past five years, it scored nations in seven different categories. These were: communications infrastructure - the state and availability of web-enabling infrastructure; institutional infrastructure - education, laws, regulation and censorship; web content - what relevant and useful content is available; and from the charts and statistical figures and ranks Ethiopia is found on the bottom list (see ranking, Web Index, 2012 below)
Small and Medium Enterprises [SMEs]
Small and Medium Enterprises Nature and Definitions:

In order to understand and well identify the most suitable definition of the small and medium enterprises applicable to Ethiopian SMEs, it will be necessary to discuss the world wide definitions applicable in different parts of the world, economic situations and other circumstances. And it is very essential to identify and understand the level/state of the small and medium enterprises condition when it comes to the utilization of internet technologies in their business activities or value chain.

Small and Medium Enterprises International Definitions: Small and Medium Enterprises have no common or standard definitions applicable everywhere uniformly. According to the Organization for Economic Cooperation and Development (OECD), the characteristic of SMEs not only reflects the economic patterns of a country but also the social and cultural dimensions. These differing patterns are noticeably reflected within different definitions and criteria of SMEs adopted by different countries: whereas some refers to the number of employees as their distinctive criteria for SMEs, others use invested capital, and some other use a combination of the number of employees, invested capital, sales and Industry type. Here I will examine the different definitions of SMEs among various institutions. Small and medium enterprises or SMEs are companies whose headcount or turnover falls below certain limits. The abbreviation SME occurs commonly in the EU and in international organizations, such as the World Bank, the United Nations International Development Organization (UNIDO) and the World Trade Organization (WTO). The term Small or Medium sized Business or (SMB) has become more standard in a few other countries. In most economies, smaller
enterprises are much greater in number. In the EU, SMEs comprise approximately 99% of all firms and employees significant number of employees from the economy.

Various SMEs’ Definitions:

(I) European Commission (EC) Definition EU (2012):
The definition of the EC takes into consideration, three different indicators: - staff headcounts, annual sales and assets. Though it is mandatory to abide by the staff headcount’s threshold, however, an SME qualifies by falling under either the sales or the assets ceilings. This definition was introduced to ensure that eligible enterprises engaging in different types of economic activities do not lose their status as SMEs. This definition allows enterprises to be treated fairly, as enterprises in the manufacturing industry for example, have lower sales figures than those in the trade and distribution industries.

(II) United Nations Industrial Development Organization Definition:
According to UNIDO’s the definition of SMEs is a significant issue for policy development and implementation and depends primarily on the purpose of classification. Hence, SME definitions vary among various countries as well as within the country over a period of time. For the purposes of policy development, UNIDO generally advises countries to take into account the quantitative and qualitative indicators for SME definition. The following table summarizes the main qualitative indicators that may be used in order to differentiate between SMEs’ and others. For this research purpose as a developing country the definition suitable to this research activity falls to UNIDO’s quantitative and qualitative range which most developing countries are using with some other contingencies.

UNIDOs Quantitative & Qualitative criterions of SME’s definition:
The quantitative criterion of the businesses will provide a relative picture, scope and ability of the firms/SMEs in utilizing various technologies in the value/business activities.

UNIDOs Quantitative criterions (Table Appendix 2)
- Micro-sized enterprises are those employing between 1 and 9 employees and/or have a registered capital of less than $42,300
- Small enterprises employ 10 to 49 employees and have a registered capital of more than $42,300
- Medium enterprises employ 50 to 249 employees and have a registered capital of more than $42,300

Large enterprises, on the other hand, are those employing more than 250 employees and have a registered capital of more than $42,300

Definition of SMEs in selected developing countries UNIDO as a frame of instance: _

UNIDOs Qualitative criterions (Table Appendix 3 (Column-1))
The purpose of taking in to consideration the qualitative criterions of the small and medium enterprises in this regard is to serve the purpose of investigating Technological capability of the firms and human resource competence of the SME’s in business activities in particular and the overall value system in general. Firms have varying capabilities; Small and Medium Enterprises as a specific category have the understated
identifying characters in terms of resources, activities and other indicating criterions which makes easier to identify them in comparison to other categories. This categorical identification will be used to identify the SMEs value activities in a more suitable way that can show the value activities and contribution level in relation to the main activities in focus. Based on UNIDO’s definition of SMEs for the Micro-small and medium enterprises the qualitative criterions (Table Appendix 3 (Column-1)) and for quantitative criterions (Table Appendix 2) are chosen for this paper as relevant to explain or categories the Ethiopian SMEs. The quantitative and qualitative SMEs’ categorizing criterion are the two major categorizing dimensions of these sectors which will enable this research scope to be bounded with in the capacity of the firms in terms of both human and non-human (technological or financial resources) This will finally shape the research scope through eliminating discrepancies in SMEs definition.

**SMEs as Drivers of Economic & Business Growth:** SMEs are significant drivers of economic growth for almost all nations (Kotelnikov, 2007). In many countries, SMEs represent the majority of enterprises (90% and above) European Commission, 2008; Taylor & Murphy, 2004). SMEs are essential to economic development in developing countries (Nguyen and Bryant 2004). In fact, in many developing countries, SMEs are seen as the engines through which economic growth objectives can be achieved, a healthy SME sector contributes prominently to the economy through creating more employment opportunities, generating higher production volumes, increasing exports and introducing innovation and entrepreneurship skills. (Lee and Rondinelli 1993; Kaya Nula and Quartey2000). SMEs In the recent business context are primary utilizers of internet in the value activities. Information and communications technology has been defined as the convergence of telecommunications and computing (Gibbs and Tanner, 1997). For many years ICT has been recognized as a critical factor in the effective operation and prosperity of modern organizations. ICTs, which include the telephone, cellular technologies, Tele-fax, e-mail and the Internet, are rapidly transforming business practices across the world and provide new enhanced business opportunities for both industrialized and developing countries. The past decades have seen the infiltration of ICTs into all aspects of the global economy. (Lefebvre & Lefebvre, 1996) argued that the combination of technology with local human capacity and firms can be instrumental in achieving major changes in the organization and operation of economic activity. Various researches have been made on internet and communication technologies and small and medium size enterprises. (Pilat, (2003); Schreyer, (2000); Ihlstrom & Nilsson, (2003); Taylor & Murphy, (2004); Tucker & Lafferty, (2004); Burke, (2005); Levy & Powell,( 2003); Taylor & Murphy, (2004). Taylor, (2009); Elliman & Orange, (2000); Waldt et al., (2002))
Brief Critical Review of Related Literatures in this research area

The transition to an economy and society increasingly shaped by digital information and Communications technology presents profound opportunities and challenges for all industries and organizations (Pilat, 2003; Schreyer, 2000). The key characteristics of this included exploring and exploiting ICT to enhance communication and information exchange between firms and Individuals. Even though the researches made in these areas highlighted the changes brought about by the infiltration and application of internet in the smaller firms, little has been done to identify specific economic and industry aspects, contexts. No emphasis is given to the value activities of the smaller firms and in relation to the extent of opportunities and challenges with in the firm value chain. In a similar context (Ihlstrom & Nilsson, 2003; Taylor & Murphy, 2004; Tucker & Lafferty, 2004) stated the adoption of ICT by SMEs as an area of focus for many researchers worldwide. In another research SMEs because of limitations in their financial power, technical knowledge and human resources seems to less utilize the benefits of technological innovations (Burke, 2005; Levy & Powell, 2003; Taylor & Murphy, 2004). In a critical view of this idea the definition of SMEs is so unclear that even though the arguments look logical from a general point of view, the question of which SMEs at what category (quantitative & qualitative criterion), economic condition and level of development arises, besides the generalization may be invalid in case of successful small businesses in technology utilization.

In other researches made related to internet, SMEs and Online businesses: the access and demography of internet coverage in the developing world is increasing, in Ghana ICT infrastructure is slowly extended into poorer areas Taylor (2009), internet cafes become an important players in the provision of connectivity. In a similar literature, however, empirical studies have so far mainly focused on the extension of connectivity via nonprofit and donor organizations, so that local, small-scale commercial provision has been neglected Taylor (2009). Taking this in to account, the influence of internet technologies on small and medium size enterprises is still not as significant as it could have played a big role in the developing world. This research has tried to study the general situation but did not dissect the value activities of the small business deeply rather took a general glimpse of the internet service giving businesses and the overall connectivity of the society to the information arena. In a similar context Taylor (2009) underlined that these small scale entrepreneurs and enterprises encounter various challenges in providing access and connectivity, chiefly in the areas of infrastructure, policy and resources besides the basic shortage or lack of expert and skills.

In another research made related to the transition of the business models from the traditional to the virtual platform, In the digitalizing world of the 21 century Internet and Web-based technologies are being in use by small- and medium-sized enterprises (SMEs) though the rate varies among the size of the businesses so to gain a competitive
advantage in their respective marketplaces. Today the connectivity standards and the
Internet technologies are redefining the way organizations conduct their business
activities. E-business is the point where economic value creation and information
technology (IT) come together and enable inter organizational connectivity. The
concept of e-business is not just about buying and selling products on-line. It is an all-
encompassing business activity that embraces relationships with clients, contractors,
suppliers, installers, designers, and other partners (Elliman & Orange, 2000). The
interaction includes many stakeholders in the business. It also includes service
infrastructure, and multiparty, multidisciplinary (business-to-business) transactions. E-
business (or business processes conducted over the Internet or Intranets) is becoming
integral part of many SMEs business activities. But to the contrary, many small- and
medium-sized enterprises (SMEs) have been slow, and in some cases reluctant, to
embrace electronic information standards and Internet technology (Waldt et al., 2002).
According to (Love et al., 2001) many SMEs often cannot afford the complicated
conversion from paper to electronic processes, which often require expensive
information and communication exchange technologies. Africa’s or Ethiopian
information access is growing, the technological expansion and information economy
present unique opportunities with its challenges together in order to capitalize on these
opportunities, tremendous challenges must first be overcome in terms of access, use and
further developments (ECA, 2001).

1.3 Problem Statement

The paper primarily deals with the usage of internet in small and medium size service
Enterprises of Ethiopia, the in firm business activities/value chain and the study of the
benefits and problems laying on the path of embracing the internet and related
technologies in the SMEs business operations. The need to deal with this title arises
from the fact that there is only little research made in these areas as far as the issue of
internet connectivity and usage in Ethiopian service SMEs is concerned, besides I, as a
citizen of the country, am interested in doing the research on the benefits and the
problems, associated with the utilization of this technologies in the existing SMEs,
which I believe will provide a clearer picture of the interaction between internet
technologies and the existing service SMEs business operations in the country and to
adapt theories to a developing country context. Change is occurring in nearly every area
of human existence and affecting the underlying structure of most types of
organizations, including small and medium enterprises in the developing economies
(UNECA,2000) but the change brought both opportunities and problems with in
harnessing the virtue of the material and human wealth of this nations.

The major problem areas or theoretical gap in this case will be with the strength of
the value chain activities and which one is more determining, when economic condition
and other factors are taken into consideration? How will the theoretical application or practice in developing countries/Ethiopian context be varied in comparison to the developed countries context? Porter (1985) & Amit & Zott (2001) have described the theory this way: value chain analysis explores the primary activities, “which have a direct impact on value creation, and support activities, which affect value only through their impact on the performance of the primary activities” (Amit & Zott, 2001). Effort will be made in this research is to adapt theories to the Ethiopian business context using the case study findings, if any. To what extent and what level does the two value creating activities (Primary & secondary) are determinant in the firms’ activities and how strong are their impact in the context of Ethiopian SMEs.

In particular, prior research argued that theories developed in the context of mature markets and industrialized countries need to be reexamined/adapted to the context of developing countries because these countries may have very different economic and regulatory environments. Despite the fact that the Internet is a global platform and e-business is an international phenomenon, most of the existing studies in this area have focused on developed countries.

**1.4 The purpose of the study**

Theoretical Purpose: is to adapt/mend the theory of Porter’s value chain model to SMEs in developing countries/Ethiopian context.

Practical Purpose: is to identify the benefits and problems of internet use in Ethiopian SMEs so as to add on the available knowledge in this regard from the developing world perspective.

**1.5 Research question**

The main concepts in this research will be internet technology usage in small and medium service enterprises in Ethiopia the benefits and the problem encounters to utilize it.

The major questions I propose to explore in this paper are: -
- How are internet technologies being utilized in small and medium size service firm’s business activities/value chain activities in Ethiopia?
- What are the benefits of internet technologies and the problems to utilize this technology in the business activities/value chain of the small and medium service enterprises of Ethiopia and its future potentials?
1.6 Delimitation

This study is geographically limited to Addis Ababa City (below referred to as A.A) due to limited amount of time, resources and physical distance reason (between Sweden & Ethiopia). The research is narrowed down to five company case studies, of service Small and Medium Enterprises belonging to modern Ethiopian private sector.

1.7 Definition of Terminology

‘Information infrastructure’ is defined as the means by which ICT applications are made available - telecommunications facilities, the Internet, broadcast networks, computers, software and (Local Area Networks (LAN) – locally networked computers). ‘Physical infrastructure’ is the human resources required to install, use and maintain it, and the linked infrastructures - the transport and power supply networks.

Throughout the thesis, the word Information and Communication Technology (ICT) is synonymously used as or with Internet technologies based on (Gibbs and Tanner, 1997) definition of Information and communications technology (ICT) as the convergence of telecommunications and computing. ICTs, here is also meant to include the telephone, cellular technologies, Tele-fax, e-mail and the Internet, (Lefebvre & Lefebvre, 1996). Similarly Value activities as synonym with business activities (Interlinked value-adding activities that convert inputs into outputs which, in turn, add to the bottom line and help create competitive advantage, (Porter,1985). Moreover SMEs (Small and Medium Enterprises) and SMMEs (Small, Medium, and Micro-sized Enterprises) might be used interchangeably denoting one on the other as Small and Medium Enterprises. SMEs quantitative and qualitative criterion definition for this research purpose is displayed on (Table Appendix 2 & 3). The term SME (Small and Medium size Enterprises) generally refers to, in most developing economies, the following broad categories: for this research purpose UNIDO's quantitative and qualitative SMEs definition criterions will be used:

- Micro enterprises: employment level below 10; Registered Capital< $ 42,000
- Small enterprises: employment level from 10 to 49; Registered Capital> $ 42,000
- Medium enterprises: employment level from 50 to 249. Registered Capital> $ 42,000
Chapter – 2

2. Methodology

Methodology is an important part of an academic thesis, a tool, set of methods and principles to organize and interpret information, which will help authors to solve problems and achieve the purpose of work or a thesis (Longman, 2012). I have hold the view that the case study can offer a holistic and deeper understanding of a specific problem - internet usage in small and medium service enterprises in Ethiopia, with the benefits and problems. Even though case study is always criticized for the generalization of its result due to the sample size of the candidates, in this research the candidate case study SMEs businesses are chosen and are meant to represent the service sector SMEs with the variety of the service they are providing in the economy and are relevant to serve in getting the empirical findings, with depth and substance and will contribute to the development of theory (Yin, 1994).

2.1 Method Philosophy

Among the method philosophies in action in the field of research are *Positivism*, emphasizing objectivity, orthodoxy and investigation which are free from subjective interpretation of the researcher, with a quantitative and experimental fundamentals which give rise to similar outcomes irrespective of the researcher interpretation (Bryman & Bell, 2007). *Hermeneutics /science of interpretation* is “a theological term imported into the social science, which is concerned with the theory and method of interpretation of human action” (Bryman & Bell, 2007 P.17). The Hermeneutics study, interpret and understand the behavior or pattern of people or object of study from an open, subjective, and dedicated point of view and approaches the object of study from his/her pre-understanding interpretation (Bryman & Bell, 2007) *i.e.* Thought of the researcher, the impressions, feelings, and knowledge of the object is considered as an asset than an object. The researcher will have a comprehensive approach to the problem with no limited/definite starting and ending points, rather a growing picture that develops all the time. The Hermeneutic approach is considered as relevant to this thesis since the purpose of the thesis is not to give a definite measurement of Internet technology usage in SMEs but rather to analyze and create an understanding of this phenomenon. In connection to this concept the most important input to this understanding is the basic knowledge of me in the research area (as a member of the society Ethiopia: the study is to be undertaken on), pre understanding and perceptions that I have gained in advance relevant to this research will help to develop a new knowledge and understanding enabling the creation of a knowledge base larger than the sum of the different parts.
2.2 Method of Investigation/Research Strategy

2.2.1 Inductive or Deductive

A researcher moves in different level of abstraction throughout the thesis, where the general (Theory) and the Concrete (reality) constitute the ends (see Fig. below) (Eriksson & Wiedersheim-Paul, 1997, P229; Translated). In using Deduction the researcher begins with Theory and forms hypothesis in order to apply these to reality. Induction implies that the researcher observes the reality and tries to see patterns, which can be summarized in models and theories. (Bryman & Bell, 2007)

![Diagram of Inductive and Deductive Approaches](image)

**Figure, 2. Inductive Approach and Deductive Approach**  
(Eriksson & Wiedersheim-Paul, 1997, P229; Translated)

In this research inductive approach, which implies the researcher’s observation of the reality, and patterns which can be summarized or adapted to contexts, in models and theories is used for the purpose of mending/adapting of Porter’s value chain model to Ethiopian business context. The Inductive approach is completely used to be able to study, explain and understand the reality on the ground and provide a theoretical adaptation on Porters value chain model to the Ethiopian or developing countries service SME’s business context, if any.

2.2.2 Quantitative and Qualitative

In conducting a research its very essential to show distinctively on which path of research method or strategy the study is proceeding, by definition the two strategies differ one another shortly with the fact that quantitative research strategy emphasizes quantification in collection and analysis of data whereas qualitative research strategy can be construed to emphasize subjective issues or words rather than quantification in
the collection and analysis of data (Bryman & Bell, 2007).

For this research purpose the Qualitative research strategy was chosen as the most compatible strategy. (Bryman & Bell, 2007) the qualitative strategy was chosen as fit to this thesis with the facts that it predominantly emphasizes theory and research to the generation of theories, it emphasizes on a contingent individuals interpretation of their social world. This strategy will be used to serve the purpose of analyzing and creation of an understanding of how internet technologies are being utilized in the small and medium enterprises service business activities of Ethiopia, the benefits and the problems to use internet. The strategy tactics were carried through involvement, interaction and the direct interview of the (SMEs) business community in qualitative terms (an understanding of the reality, the subjects the thoughts, perception in the business environment) as relevant to the study other than quantified or objective measurements. This type of research could be categorized into qualitative research approach, which means that the focus of this research was on the questions characterized by "What?", "Why?" or "How?" leading to the understanding rather than measuring objectives statistically. According to (Gordon & Langmaid, 1988) the qualitative research is open-ended, dynamic, and flexible and of deep understanding, which is beneficial and fits the purpose of this research.

2.3 Company selection

The five service SMEs were purposefully chosen to represent a mix of different kinds of SMEs with in the services business context and taking in to account the internet utilization culture of the companies in the existing Ethiopian business environment. SMEs which provide Online Recruitment Services, Tour and Travel Services, Software solutions Services, small and medium size, Internet Café Services were chosen for the case study so as to reduce limitations and loose sample problems for the multiple case studies. These companies were pioneers in service operation with suitability for our studies as a case target group encompassing all the factors especially from the service providing SMEs and Internet usage history that makes them possible candidate for interview. These companies were considered as the most preferable and operational with vast involvement in providing internet related business services with overall representative features. Taking this in to account I chose them as my case study targets, because it fits the theoretical background and was worthy of investigation. Besides, these companies were easier for authors, to get access to. This convenience did not only contribute to the ease of gathering data and the extent of cooperation by target group, but also to the reliability and validity of the data due to the accessible direct contacts . In other words, these companies contribute to both the easy research process and the fine quality of data. Thus, the investigation in these services businesses were considered as fine choices concerning the feasibility and solidity of the research.
2.4 Data Collection

2.4.1 Primary Data

Primary data are original data relevant to the research to be collected by the researcher. In other words, according to (Bryman & Bell, 2007) it means that the data are collected directly from individuals or groups. Primary data collecting methods include observations, surveys (questionnaires) and interviews (Ghauri, Gronhaug & Kristianslund, 1995).

Taking into account the purpose of this research, the best way to collect the required data was through interviews based on the chosen research method for this purpose. In such a way a first-hand reports and information will be acquired and will help for an in depth research. (Ghauri, Gronhaug & Kristianslund, 1995 p.65) states that there are three types of interviews which include interview by mail, interview by phone and personal interview.

The reason behind the choice of the Skype interview for this thesis was due to the fact that the respondents were in Ethiopia and the geographical distance (between us) has influenced the choice, since the interview is semi structured and will be on Skype (face-to-face), it allowed us to have an intense interview and discussion on the research subject. The interviews with the small and medium service enterprises were done in May & June. For two consecutive weeks semi structured interviewee with relevant employees, entrepreneurs and managers operating in the business in the capital Addis Ababa was undertaken. The interviews were recorded and transcribed or translated (from Amharic to English) and sent to interviewees for their acknowledgement and approval.

One among the advantages in gathering these data was that the author of this thesis, I am an Ethiopian citizen with all the merits of speaking the business language, with a full understanding of the overall activities, culture and interaction of the business environment. The interviewees will be composed of managers of various levels based on the kind of data needed for this research purpose. A total of five on Skype (face-to-face) interviews will be conducted with the five representative officials in the case targeted SMEs firms as mentioned above. With these five interviews, all company background, activities, earnings, ideas, and perspectives, will be gathered and investigated for the research purpose. Besides, the interviews are divided into two steps. In the first step, five of them will be conducted. By the first step, the general frame of empirical findings will be generated. Based on this frame, the weak point of empirical study and the missing information, which is needed in analysis, can be figured out. And the task for second step is to adjust my method to get necessary information and fill the gap between what I need and what I have had. By this way of arranging interviews, the practicability and reliability of the empirical study can be enhanced.

“My personal account: in relation to access to internet and computer technology was better, I have managed to get computer training since the first year of my undergraduate studies in the university before eight years, even though the lectures were much of theory rather than physical contact to the computer technology itself, I remember most of the instructors, students and the community were less familiar to the technology”
2.4.2 Secondary Data

According to (Ghauri, Gronhaug & Kristianslund, 1995 p.54) secondary data are information collected by others for purposes which can be different from ours. There are some secondary sources could be important for our research including central and local government studies and reports; institutions studies and reports; organizational journals, annual report, newsletters; historical studies, reports, which could be used as the background information. The advantages of secondary data are obviously. First, it is easy to access secondary information and save time and money. Second, those secondary data can suggest some suitable methods to handle a particular research problem. Disadvantage of secondary data, are those collected data may not completely fit the research problem; plus the researcher need to take the responsibility of the data accuracy (Ghauri, Gronhaug & Kristianslund, 1995). In this research first, the various studies and survey induced by different individuals, institutions could be used as the secondary data so that through reviewing it, the background and general situation could be understood.

2.5 Case Study Design

More than one or multiple case study was applied for this research and it was not confined to one case research. Multiple case researches had been increasingly common in business and management research and are considered as extensions of the case study design (Bryman & Bell, 2007). Multiple cases design assists the researcher to consider what is unique and what is common across cases, and this is believed to assist in promoting theoretical reflection on the findings (Bryman & Bell, 2007).

Some authors question the use of multiple case studies to draw general Conclusions on theories, to the contrary (Flyvbjerg, 2001) has underlined the advantage of case study in its depth advantage. Large samples have breadth but lack focus and depth, therefore observations entailed in the case study method enables us to study many different aspects, examine them in relation to each other, and view the process within its total environment. Consequently, case study research provides us with a greater Opportunity than other available methods to obtain a holistic view of a specific research project undertaking. (Flyvbjerg, 2001). The advantages of a case study according to (De Marrias & Lapan, 2004) is that case study can represent features of more than one research design and many kinds of research Can be run in case study form. Therefore for all the above reasons the multiple case study design was chosen for this research purpose taking in to consideration to the need for an in-depth study.

Looking into the criteria of reliability and validity it is important to take into consideration question whether the obtained results can be generalized and have
external validity outside of the current case. The answer for that is given by ‘Yin’ in (Bryman & Bell, 2007) the result of a single case study generally cannot be applied to other cases. However, according to (Bryman & Bell, 2007, p. 65) various researchers can “claim a degree of theoretical generalizability” through using details from a single case and not the whole application of the case. Therefore the aim of the research design in the current master thesis could not be to claim general applicability of the current case study to other cases as a whole. It was rather to extract details from the findings of the current case study which might apply to other cases to some extent. Taking into consideration the criterion of external validity it was crucial to distinguish between different types of cases made by different writers. Such as, for example, Yin in (Bryman & Bell, 2007) distinguishes five types of case studies. The critical case when the researcher choose the case based on the suitability to testify the primary defined hypothesis, so it can create good circumstances to analyze if the current hypothesis can be confirmed or not. The unique case has been defined by Yin (Bryman & Bell, 2007, p. 64) as “a common focus in clinical studies”. The revelatory case is described as “when an investigator has an opportunity to observe and analyze a phenomenon previously inaccessible to scientific investigation” (Bryman & Bell, 2007, p. 64). The representative or typical case offers analyzing situation common for every day organizational reality. The longitudinal case is concerned to analyze dynamics of situation in the organization changing over a period of time. Based on those descriptions the case study in the current master thesis can be defined as the critical case, for the reasons that it has been acknowledged in the frame of references chapter of the current thesis.

The companies for case study are selected with the aim of getting a representative figure of the business in the service providing SMEs, and it serves saving work by examining the case companies (Ghauri et al., 1995). The companies chosen for the case study are service businesses: from the tourism and recruitment sector; the two firms are operating virtually on tour and labor recruitment services serving both domestic and international clients. Small internet cafes, software and hardware solutions, are also included in the case study which are all targeted to provide a representative empirical pool of data for this particular research area.
2.6 Research Reliability, Validity and Limitations

Reliability and validity are the two important criteria in research, for primarily two reasons that should be taken into consideration. The first one was in the case, when other researchers for other study purposes want to rely on this research and need to quote the research results whereas the Second is, on the research outcomes validity or truthfulness (Bryman and Bell, 2007). The former was referred to as reliability, and the latter, was validity.

This thesis, as a qualitative research, and reliability criteria may not be fully ‘fit’ for it because, as (Bryman & Bell, 2007) states that such criteria were more applicable to quantitative researches. In other words, qualitative research are usually case study or particular observations, it is not easy to fully avoid the discrepancies. However, this thesis was made to be dependable. Accordingly the empirical case of this research was made thoroughly or carefully to avoid such discrepancies and was fairly suitable for relatively reliable and valid contribution. Meanwhile, I also believe that the data collection method was appropriate. (Lincoln & Guba, 1985) mentioned other criteria which were called research trustworthiness which can also be applied to a qualitative research. These research findings can provide some logical basis for other similar company and business context researches. For the readers information the results of this research was from a number of particular company case studies made and the interviews were more of open discussion based, the personal views, perceptions and interpretations having their own influence and to some extent became limitations to the research work.

2.7 Research Ethics

This master thesis was written with the awareness of the researchers’ moral responsibility, and thus was aimed to provide honest, objective and accurate answers. Therefore, it was important that all the data collected were reliable and trustworthy. In coherence with this aim, the secondary data was collected from easily accessible official websites and scientific journals. The links for the websites can be found in the reference list. In addition, the transcripts of the interviews or findings could be handed out upon request. Regarding the conducted interviews and surveys, it was of importance to inform the respondents about the real purpose of the research and thus to provide a high level of transparency about the way the data was used. In addition, the interview questions had been sent out to the interviewees in order to provide enough freedom and preparation time. All the interviews were recorded with the awareness and permission of the interviewees. The anonymity being preserved throughout this research and thus won’t provide any inconveniences for the interviewee.
2.8 Analysis

To attain the research purpose stated in this research, reasonable level of analysis, objectivity and claims are made and the analysis process is done as an iterative one between theory and empirics. In order to weave them together, the case narrations AND the given theories in this research will be used for analysis.

Thus, the analysis of the qualitative data from the interviews(case studies made) will be conducted primarily based on Porters value chain theory (1985) and other given theories [Rayport & Sviokla (1995); Lumpkin & Dess (2004)] in this research. It will include a general analysis on both virtual and traditional Ethiopian SME businesses, and then continues with in-depth analysis of both Primary and secondary activities specifically (step by step and back and forth) considering the role and contribution/determine of either of the two activities in Ethiopian SMEs contexts, and simultaneously the analysis of SMEs over all benefits, problems and prospects from using internet in the Ethiopian SME business context will be carried on.

The Analysis also included the use of Word Cloud primary analysis tools in order to illustrate the analysis and support it in finding out the dominant words (value chain activity) or terms in the whole research and further strengthen the analysis and conclusion of this subject with ease and clarity. The analysis goes deep in to the primary and support activities of the businesses and tries to point out the relationships, the roles and contributions of the activities (Primary & Support) in the whole value creation process of the Ethiopian SMEs and at last is designed and believed to provide a basis in answering the research question.
Chapter – 3

3. Theoretical Frame of Reference

The theoretical frame of reference begins with a short introduction to the definition of the main theoretical concept for this research value chain, totally it contains three major topics, in the first section the theoretical definition of physical and virtual value chain and value system, in the second section the definition of e-business with value added and (the benefits, and impediments) will be provided and lastly the previous research made in this related subject areas will be discussed, in order to see the collective relationships or differences existing with in this theoretical issue and give the reader the background understanding of the previous literatures written in the subject area. The theoretical concepts and models explained in this section the value chain, e-business and other related theories will be used as tools or theories of analysis and are the central or core objects of these business research. These Theories or tools are well known, often cited theories to make an analysis on information technology oriented business research on the given topic And finally the theory and models functions as a frame, to which we can relate the theories to the reality on the ground.

3.1 Value Chain Theories

Theoretical concept, value chain is chosen here to serve the aim of visualizing and analyzing the activities of the service firms in their endeavor to ensure profitability in all the main activities. This theoretical concept is central to all businesses be it manufacturing or service providing. Value chain is a concept from business management that was first described and popularized by Michael Porter in his 1985 best-seller, Competitive Advantage: Creating and Sustaining Superior Performance. It is defined as an interlinked value-adding activities that convert inputs into outputs which, in turn, add to the bottom line and help create competitive advantage. One of the key aspects of value chain analysis is the recognition that organizations are much more than a random collection of machines, money, and people rather should be deployed in to activities and organized in to activities, routines or systems to ensure the products or services produced are valued by the final consumers (Porter, 1985). In other words, it is these competences to perform particular activities and the ability to manage linkages between activities which are the sources of competitive advantage.

A single organization undertakes rarely all the value activities from product/service design to delivery for final consumption. This conforms to the fact that there exists a role specialization of individual firms in specific value activities in the wider value system which creates a product or service. Similarly a firm’s performance cannot solely
be determined by its own value activities it is rather determined by the state of the other value activities in the wider value system.

**Figure. 3 Porter’s value chain Model [Primary & Support Activities](Porter, 1985)**

The Value Chain typically and briefly consists of (1) inbound distribution or logistics, (2) manufacturing operations, (3) outbound distribution or logistics, (4) marketing and selling, and (5) after-sales service in all the primary activities and are supported by (6) purchasing or procurement, (7) research and development, (8) human resource development, (9) and corporate infrastructure (Porter, 1985). The two basic separate activities (Primary and Secondary activities) according to (Porter, 1985) enable firms to assess the value added in each and every steps and its linkage to the firm’s creation and sustenance of competitive advantage.

### 3.1.1 Primary Value Chain Activities

**Primary activities** are ‘directly related’ with the creation or delivery of a product or service and can be grouped in to five main areas: Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales and Services (Porter, 1985). According to Porter's "value chain" M.E. Porter, Competitive Advantage, 1985:

- **Inbound logistics.** The activities concerned with receiving, storing and distributing the inputs in to the product and services.

- **Operations.** Transform these various inputs in to the final product or service

- **Outbound logistics.** Collect, store and distribute the products to customers or bringing customers to the services.

- **Marketing and Sales.** Provide the means whereby consumers/users are made aware of the product or service and are able to purchase it.
3.1.2 Secondary/Support Value Chain Activities

**Support Activities** ‘help to improve the effectiveness of or efficiency of primary activities’, these are:

According to Porter's "value chain" M.E. Porter, Competitive Advantage, 1985:

- *Procurement*. This refers to the process for acquiring the various resources inputs to the primary activities.
- *Technology Development*. All value activities have a ‘technology’, know-how, processes, value systems.
- *Human resources management*. This is an important area transcends all the primary activities, concerned with recruiting, managing and so on …..the human resources within the organization.
- *Infrastructure*. Refers to the structures and routines of the organization which sustains its culture like the system of planning, finance, quality control, information management Support Activities help to improve the effectiveness of or efficiency of primary activities, grouped as infrastructure, Human Resources, Technology development, procurement (supplying) (Porter, 1985).

In other words the support activities as mentioned under are the supportive activity to the value creation which porter underlined in its literature.

3.1.3 Value chain Analysis

Value chain Analysis describes the primary and secondary activities within and around an organization, and relates them to an analysis of the competitive strength of the organization (or its ability to provide value-for-money products or services. In essence, core competencies are unique resources of a firm based on collective learning and coordination of the Organization with regard to the workforce, facilities, market know-how and technology (Krajewski & Ritzman, 2007) Core processes such as inward logistics, production, outbound logistics, marketing efforts and sales services are essential to create a competitive advantage, dependent on industry uniqueness, in order to deliver value to external consumers. Firms also use the better fit of the firm’s strategy to its customers and prevent hazards of business, through utilization of operational efficiency improvements, consideration of the virtual value chain, or outsourcing of non-core weak links operations of the value chain (Guy 2011).

According to (Krajewski & Ritzman,2007) , processes are a firm's basic activities that take inputs, modify them and add value to them in order to create outputs aimed at the firm's end customer. It is important to utilize a process view of the firms since a firm's competitive success is positively correlated with the effectiveness of its internal processes. Thus a supply chain can be illustrated as a flow of inputs (at different
degrees) in a pipeline that conveys flows of resources, e.g. inputs such as raw materials, services, financial resources, information and logistics, that are processed and converted to outputs in an efficient manner. The process adds value, much like a relay race down to the end customer and back up too, by means such as information, capital and knowledge.

Similarly support processes, such as procurement of inputs like raw materials, in-house research and development of technology, human resources management and general firm infrastructure, furnish inputs to core processes and are vital to the management of firm. (Porter. M 1985;1996 & Krajewski & Ritzman, 2007). The central theoretical issue aimed to be challenged in this research is the idea that in the value chain concept the primary activity is the central and core, critical and determinant factor in the firms value activities whereas the support activity playing an indirect role or impact on the performance of the primary activities in the developed economies businesses as mentioned :Value chain analysis explores the primary activities, “which have a direct impact on value creation, and support activities, which affect value only through their impact on the performance of the primary activities” (Amit & Zott,2001 P.496). A value chain is a chain of activities for a firm/SMEs operating in a specific industry. The business unit or an SME is the appropriate level for construction of a value chain, Products/services pass through all activities of the chain in order, and at each activity the product gains some value.

The chain of activities gives the products more added value than the sum of the independent activities' values. The value-chain concept has been extended beyond individual firms. It can apply to whole supply chains and distribution networks. The delivery of a mix of products and services to the end customer will mobilize different economic factors, each managing its own value chain. The industry wide synchronized interactions of those local value chains create an extended value chain, sometimes global in extent. Porter terms this larger interconnected system of value chains as the "value system." A value system includes the value chains of a firm's supplier (and their suppliers all the way back), the firm itself, the firm distribution channels, and the firm's buyers (and presumably extended to the buyers of their products, and so on).

Figure 4. A Value System (Porter, 1985)
Firms to create value take on two basic activities primary and support activities (Porter, 1985). In this research the small and medium firms will be examined according to porter’s value activities definitions. The model is chosen as a frame of theoretical references in visualizing and discovery the critical business/value activities in the small and medium enterprises value creation effort in relation to the use of internet technologies or virtual operations. This will simultaneously enable the research endeavor to identify the benefits of internet technologies and the problems to utilize these technologies and finally, suggest a contingent theoretical model to developing countries or Ethiopian business context, if any.

3.2 E – Business or Virtual Market spaces

As we enter the 21st Century, business conducted over the internet (which we refer to as ‘e-business’), with its dynamic, rapidly growing and highly competitive characteristics, promises new avenues for the creation of wealth (Amit & Zott, 2001).

E-business has the potential of generating immense new power of wealth, mostly through entrepreneurial start-ups; it is also transforming the rules of competition or established businesses in unprecedented ways (Amit & Zott, 2001). Specifically, here in this research, the benefits and problems of utilizing the e-business potential will be discussed within the theoretical scope of the virtual value chain framework synonymous with the physical value chain (Porter, 1985) and also examine the applicability of these theories in the context of the emerging virtual markets in the developing countries or Ethiopian context as far as the determining strength or power of the two major activities (primary and support) is put in to question and is required to be studied in this country’s social-economic context.

3.2.1 The Virtual Market Value chain Activities

The advent of internet technologies has given to a rise of a new virtual value chain similar to the physical value chain. Unlike the physical value chain which emphasizes: the flow of firm resources, changing in to finished goods and the sale of the goods in the value chain to the final after services, the virtual value chain involves the flow of information in the value chain by Gathering, Organizing, Selecting, Synthesizing and distribution (Rayport and Sviokla, 1995). Value chain analysis can be helpful in examining value creation in virtual markets, (Stabell and Fjeldstad, 1998) found the value chain model more suitable for the analysis of production and manufacturing firms than for service firms where the resulting chain does not fully capture the essence of the value creation mechanisms of the firm. Citing the example of an insurance company, they ask: “What is received, what is produced, what is shipped?” (Stabell & Fjeldstad,
1998, P 414). Similar questions can be asked about the activities of e-business firms such as Amazon.com and about e-businesses whose main transactions involve the processing of information flows. Building on this insight, (Rayport and Sviokla ,1995) propose a 'virtual' value chain that includes a sequence of gathering, organizing, selecting, synthesizing, and distributing in formation. While this modification of the value chain concept corresponds better to the realities of virtual markets, and in particular to the importance of information goods (Shapiro and Varian, 1999), there may still be room to capture the richness of e-business activity more fully. Value creation opportunities in virtual markets may result from new combinations of information, physical products and services, innovative configurations of transactions, and the reconfiguration and integration of resources, capabilities, roles and relationships among suppliers, partners and customers.

**Figure 5. Physical & Virtual Value chain in parallel:**

**Self-Initiated diagram idea from: [Rayport & Sviokla, 1995]**

**Virtual Value chain Activities:**

- **Gathering:** stands for collecting and accumulating of information.
- **Organizing:** storing the gathered data in a way that makes later retrieval and analysis simple and effective.
- **Selecting:** stands for the identification and extracting of the needed information or data from the data repository.
- **Synthesizing:** stands for packaging information so that it can be readily used by the intended consumer for specific purpose to which it is directed.
- **Distributing:** stands for the transmission of the appropriately packaged information to its intended users or consumers.

**The three phases or strategic initiatives:**

That originate from the virtual value chain (Rayport & Sviokla, 1995) and are:-

- **Visibility:** the ability to visualize “see” through the organization process which was considered as a black hole/box (a clear view of the physical operations clearly)
- **Mirroring Capability:** the ability of transmitting physical activities (market places) in to information/data based ones (market space) or the location/representation of physical things and locations on the virtual market space.
- **New Digital Value:** creating of relationships with the customers & businesses or others virtually.
Virtual markets refer to settings in which business transactions are conducted via open networks based on the fixed and wireless Internet infrastructure. These markets are characterized by high connectivity (Dutta & Segev, 1999), with a focus on transactions (Balakrishnan; Kumara; & Sundaesan, 1999), the importance of information goods and networks (Shapiro and Varian, 1999), and high reach and richness of information (Evans & Wurster, 1999). Reach refers to the number of people and products that are reachable quickly and cheaply in virtual markets; richness refers to the depth and detail of information that can be accumulated, offered, and exchanged between market participants. Virtual markets have unprecedented reach because they are characterized by a near lack of geographical boundaries (Amit & Zott, 2001).

As an electronic network with open standards, the Internet supports the emergence of virtual communities (Hagel & Armstrong, 1997) and commercial arrangements that disregard traditional boundaries between firms along the value chain. Business processes can be shared among firms from different industries, even without any awareness of the end customers. As more information about products and services becomes instantly available to customers, and as information goods (Shapiro & Varian, 1999) are transmitted over the Internet, traditional intermediary businesses and information brokers are circumvented, and the guiding logic behind some traditional industries (e.g., travel agencies) begins to disintegrate. There are several other characteristics of virtual markets that, when considered together, have a profound effect on how value-creating economic transactions are structured and conducted. These include the ease of extending one's product range to include complementary products, improved access to complementary assets (i.e., resources, capabilities, and technologies), new forms of collaboration among firms (e.g., affiliate programs), the potential reduction of asymmetric information among economic agents through the Internet medium, and real-time customizability of products and services. Industry boundaries are thus easily crossed as value chains are being redefined (Sampler, 1998). This in turn may affect the scope of the firm as opportunities for outsourcing arise in the presence of reduced transaction costs and increased returns to scale. (Lucking-Reiley & Spulber, 2001). In summary, the characteristics of virtual markets combined with the vastly reduced costs of information processing allow for profound changes in the ways companies operate and in how economic exchanges are structured. Thus, conventional theories of how value is created are being challenged.
3.2.2 Value added in the Virtual Market Space

The internet has worldwide grown to evolve as a vital resource with which companies can upgrade their capabilities and grow their business, the shift from analog to a digital technologies has given an opportunity to the capabilities of firms to be enhanced, altering the way business is conducted “the technology driven initiatives – the internet, wireless communications, and other digital technologies – are having a significant impact on the economy by changing the ways business interact with each other and with customers” (Lumpkin & Dess, 2004) P.161. “In a virtual market space the content of transaction is information about goods and services instead of the goods and services themselves, the context of transaction is electronic, onscreen interactions instead of face-to-face interactions, and the infrastructure enabling a transaction consists of computers and communication lines instead of physical stores or service organization” (Rayport & Sviokla, 1994 cited from Grönroos, C, et al., 2000 P.243). Firms disregarding their size are conducting business on-line and are using digital technologies to streamline operations, and internet is assisting firms in the development of new value propositions by revolutionizing their capabilities /value activities in a way that enhances and create competitive advantage over the whole value chain process. Among the several strategies that provide a firm with new capability enhancing benefits in utilizing internet for value adding activities are: Search, Evaluation, Problem-solving and Transaction (Lumpkin & Dess, 2004).

Search Activities: refers to the process of gathering information and identifying purchase options which calls to the internet enhanced speed of information gathering, breadth of information that can be accessed, lowered switching in search cost(due to physical locations) which benefits both the buyers and suppliers by accelerating the search speed and depth.

Evaluation Activities: refers to the process of considering alternatives and comparing the costs and benefits of various options of services package or products based on merits.

Problem-Solving Activities: refers to the process of identifying needs or problems, generating ideas or programs/action plans to address those needs. This activity primarily and typically used in the context of services where individual customer needs are addressed or handled one at a time. This is more visible in the context of tour operation firms.

Transaction Activities: refers to the process of completing sale negotiating and agreeing contractually through reduced transaction process and cost to that of efficiently net-enabled payments and in exchange for product/service for consumption.

Figure 6. Internet Activities That Add Value, Organizational Dynamics
3.2.3 The Virtual Market Benefits and opportunities

3.2.3.1 Virtual Market & Differentiation advantages

Porter defines value as 'the amount buyers are willing to pay for what a firm provides them. Value is measured by total revenue ... A firm is profitable if the value it commands exceeds the costs involved in creating the product' (Porter, 1985: 38). Value can be created by differentiation along every step of the value chain, through activities resulting in products and services that lower buyers' costs or raise buyers' performance. Drivers of product differentiation, and hence sources of value creation, are policy choices (what activities to perform and how), linkages (within the value chain or with suppliers and channels), timing (of activities), location, sharing of activities among business units, learning, integration scale and institutional factors (see Porter, 1985: 124-127). Porter and Millar (1985) argue that information technology creates value by sup-porting differentiations strategies.

3.2.3.2 Virtual Market & Cost Reduction Advantages

Transaction cost economics identifies transaction efficiency as a major source of value, as enhanced efficiency reduces costs. It suggests that value creation can derive from the reduction of uncertainty, complexity, information asymmetry, and small-numbers bargaining conditions (Williamson, 1975). Moreover, reputation, trust, and transactional experience can lower the cost of idiosyncratic exchanges between firms (Williamson, 1979, 1983). Investments in information technology can reduce coordination costs and transaction risk (Clemons and Row, 1992). In general, organizations that economize on transaction costs can be expected to extract more value from transactions. One of the main effects of transacting over the Internet, or in any highly networked environment, is the reduction in transaction costs it engenders (Dyer, 1997). Hence, the transaction cost approach critically informs our understanding of value creation in e-business. Transaction costs include 'the time spent by managers and employees searching for customers and suppliers, communicating with counter parts in other companies regarding transaction details ... the costs of travel, physical space for meetings, and processing paper documents,' as well as the costs of production and inventory management (Lucking-Reiley and Spulber, 2001).

In addition to decreasing these direct costs of economic transactions; e-businesses may also reduce indirect costs, such as the costs of adverse selection, moral hazard, and hold-up. This may result from an increased frequency of transactions (because of open standards, anyone can interact with anyone else), a reduction in transaction uncertainty (by providing a wealth of transaction-specific information), and a reduction in asset
specificity (for example, through lower site specificity—the next site is only 'one click away'). The small-numbers bar-gaining condition may be relieved in the virtual market situation because of the possibility for large numbers of previously unconnected parties (e.g., buyers and sellers) to interact. Finally, Williamson (1983) implies that a transaction is a discrete event that is valuable by itself, as it reflects the choice of the most efficient governance form and hence can be a source of transactional efficiencies. However, in the context of virtual markets, considering any given exchange in isolation from other exchanges that may complement or facilitate that exchange makes it difficult to assess the value created by a specific economic exchange.

3.2.3.3 Virtual Market:
Business & Environment Sustainability Advantages

Sustainable enterprise resilience is the “capacity for an enterprise to survive, adapt, and grow in the face of turbulent change,” and at the same time, “to increase shareholder value without increasing material throughput” (Moore and Manring, 2009 Page 61). Sustainable enterprise resilience within the framework of industrial ecology creates multiple business opportunities through green technologies, reduction of raw material and energy use, and “discovering innovative pathways for recovery and reuse of waste streams in place of virgin resources” (Moore and Manring, 2009). This redefines growth in a more sustainable context, a context that is not foreign to SMEs, who have been operating for centuries within the context of limited local markets, and adapting to those conditions successfully. The strategy of a sustainable enterprise has been defined as “the process of aligning an enterprise with the business environment to maintain a dynamic balance”. By adding a sustainability lens within the framework of SME strategic planning, SME development seeks to balance resilience and growth so as to align the creation of abundance: economically, environmentally, and socially, and to.

A number of forces underscore the emerging opportunities for SMEs to become proactively involved in sustainable practices: (Moore and Manring, 2009)

- Accelerating cycles of technological innovation;
- Rapid globalization of networked communications;
- Extended and interconnected supply chains and rapidly changing markets;

A further important factor to bear in mind is the fact that at least 80% of all global enterprises are considered SMEs, having less than 250 employees; SME’s constitute 85% of USA business; 99% of the European Union business; over 99% of enterprises in the UK; and SMEs account for at least 70% of the world’s production. Possible scenarios of the future should be part of any lens for incorporating sustainable development within a planning process. Such lenses have led to the conception of “sustainable enterprises” i.e., enterprises that are robust and resilient in face of anticipated and unanticipated economic, environmental and social challenges. Scenarios
anticipating future market conditions predict that a sustainable enterprise growth will be enhanced by: (a) adapting to and diminishing the risk of exceeding social and environmental limits, and (b) meeting currently unmet market needs for the 2 billion potential consumers that do not currently participate in the global marketplace (Moore and Manring, 2009)

3.2.3.4 Virtual Market Benefits & Opportunities synthesis

The impact of the information technology revolution, has brought about new information technology capability Lumpkin& Dess (2004), as a result, the digital technology capabilities which, in essence, make the internet possible are changing the way business is conducted. Typically the benefits of e-business are evaluated by the cost of doing something and the net benefit it will provide (Cutler, 2000). E-business technology introduces an additional software layer and thus additional complexity, which must be offset against expected benefits. Among the most striking benefits of e-business technology is the potential of dynamic business Interoperability across enterprise boundaries.

According to the logics of value discussed above, there are three broad categories of benefits that should be distinguished in the context of the return-on-investment (ROI) analysis: business value, market value and technical value (Jenz, 2002).

I, Business value
E-business technology is a key driver for establishing inter organizational infrastructure. Some of the medium- and long-term business benefits that can be attained by organizations Include:

° Faster time to market with new and improved services;
° expanded service deployment at lower labor, process and channel cost;
° vastly improved business agility;
° increased process efficiencies; and
° reduced human error due to business process automation.

II, Technical value
From a technical viewpoint, e-business technology has the potential to rise distributed computing to a new level. From a medium- and long-term perspective, a highly standardized enterprise infrastructure may lead to cost reductions. Standardization will better meet the demands of Information Technology (IT) managers who require interoperable information systems. One of the important characteristics of a business-oriented architecture is the loose coupling between business processes. Loose coupling offers many benefits, most notably higher flexibility. Business services automation can evolve independently without affecting their ability to interoperate and significantly
reduce software maintenance time and costs. The infrastructure then only needs to provide the means to interact with business services. As the e-business technology matures, SMEs should achieve the following benefits:

° Lower integration costs, many attributable to a broad base of public standards;
° increased speed of deployment as a software services industry gains momentum; less Coding requirements at large, owing to the ability to license more services from third party Vendors; and
° less internal human resources required or reduced cost of labor and its management burdens.

III, Market value
E-business can enable new business forms that exploit greater levels of interactivity for clients and suppliers, increasing opportunities for uniting business and market logics. So clients and end users can become more directly active in value proposition the web content of customer feedback or the customers’ self-initiated testimonials of the services consumed which makes the online experience more tangible. In addition, e business increases a given product’s cost efficiency by reducing transaction costs.

E- Business Determinant factors of success, challenges & Impediments

E-business in recent years has emerged as one of the most controversial research areas. Many companies continue to deploy e-business extensively in their enterprise value chains .significant number of businesses have achieved tangible improvements in operational efficiency and customer intimacy by integrating e business into their business models. At the same time, many firms, concerned about falling behind on the technology curve, engage in e-commerce initiatives without deriving any business value. Indeed, firms face a series of obstacles in adopting e-business, particularly their ability to transcend significant technical, managerial, and cultural issues. Puzzled by the mixed evidence, researchers and practitioners are struggling to determine whether e-business delivers value to firm performance, and if so, what factors contribute to e-business value. Grounded in the technology-organization-environment (TOE) framework, a research model for assessing the value of e-business at the firm level, Based a framework, with six hypotheses and six identified factors (technology readiness, firm size, global scope, financial resources, competition intensity, and regulatory environment) that may affect value creation of e-business. Survey data from 612 firms across 10 countries in the financial services industry were collected and used to test the theoretical model. To examine how e-business value is influenced by economic environments, we compare two subsamples from developed and developing
countries. Based on structural equation modeling, our empirical analysis demonstrates several key findings: (Moore and Manring, 2009 Page 231) (1) within the TOE framework, technology readiness emerges as the strongest factor for e-business value, while financial resources, global scope, and regulatory environment also significantly contribute to e-business value. (2) Firm size is negatively related to e-business value, suggesting that structural inertia associated with large firms tends to retard e-business value. (3) Competitive pressure often drives firms to adopt e-business, but e-business value is associated more with internal organizational resources (e.g., technological readiness) than with external pressure to adopt. (4) While financial resources are an important factor in developing countries, technological capabilities become far more important in developed countries. This suggests that as firms move into deeper stages of e-business transformation, the key determinant of e-business value shifts from monetary spending to higher dimensions of organizational capabilities. (5) Government regulation plays a much more important role in developing countries than in developed countries. These findings indicate the usefulness of the proposed research model and theoretical framework for studying e-business value. They also provide insights for both business managers and policy-makers.

3.3 Theoretical Summary & Specification of Research Question

Firms to create value take on two basic activities primary and support activities (Porter, 1985) in this research the SMEs will be augmented according to porter’s value activities which is chosen as a relevant model or frame of theoretical references to visualize the critical or detrimental value activity(primary or support?) in the Ethiopian SMEs operations.

Internet technologies have given to a rise of a new virtual value chain similar to the physical value chain, unlike the physical value chain which emphasizes: (the flow of firm resources, changing in to finished goods and the sale of the goods in the value chain to the final after services) the virtual value chain involves the flow of information in the value chain by( Gathering, Organizing, Selecting, Synthesizing and distribution) (Rayport and Sviokla, 1995). How would the patterns of internet use in the value activities with regards to the critical nature of the activities on over the other during value creation vary across different economic/business environments? (e.g., developed versus developing countries)? In particular, prior research argued that theories developed in the context of mature markets and industrialized countries need to be reexamined / adapted in the context of developing countries because these countries may have very different economic, business and regulatory environments. Despite the fact that the Internet is a global platform and use of internet in business, e-business is an international phenomenon; most of the existing studies in this area have focused on few
countries. So far, no or little international studies have been conducted based on firm-level data from developing countries. I believe it is important to add an international dimension to the investigation of e-business value, extending beyond the developed world to encompass the experience of organizations in developing/underdeveloped countries.

Michael Porters, in his value chain framework underlined that, among the two primary and secondary/support, value activities, the determinant activity is the primary activity where the secondary activity serves the purpose of supporting the primary activities, the main argument hear lies with the fact that SMEs/firms in the developing world may have the supporting activities as an essential determining factors in the value activities as far as the issue of Human Resources, Technology development and Infrastructure is concerned especially in the developing world context, so what does this have as an implication on the theoretical framework of Michael Porter explained and portrayed on (Porter 1985 cited from Amit & Zott, 2001), “primary activity are given greater influence on the businesses and are positioned in the literature as having “a direct impact on value creation, and support activities, which affect value only through their impact on the performance of the primary activities” (Amit & Zott, 2001 p. 496). Even though porter named the two major activities as primary and supportive from the developed world perspective! But does these theoretical frame work functions to the SMEs in developing countries context with regard to priority in influence of the primary activity in comparison to support activities? This is a relevant question necessary to be answered, considering internet technology capability and utilization in areas of very poor economic conditions and infrastructure development. This paper will try to find an answer to this question through investigating the benefits of internet technologies and the problems to utilize these technologies using the above stated theory and if any, or tries to adapt (Porter 1985) model to Ethiopian business context.
Theoretical summary Concept Map

Firm Infrastructure

Human Resource Management

Technology Development

Procurement


Internet Benefits, Prospects & Problems in Ethiopian SMEs?

Adapted/Amended Value chain, Model to Ethiopian Context?

Internet Environmental Advantages in SMEs?
- Cost Reduction
- Differentiation
- Sustainability

Figure 7. Theory Concept Map
Chapter – 4

4. Empirical Findings

4.1 Introduction to the Empirical Findings

This section contains the description of the multiple qualitative case study data findings collected from the small and medium size internet utilizing physical and virtual businesses in Ethiopia. The Empirical data begins with the overview information table of the companies Name [Website] of the business, the Interviewee Name [Anonymous Code], the job title plus details of activities in the firms. The next section describes the body of the interview detailing the value activities, the benefits/opportunities and the problems/challenges in utilizing internet technologies. The interview is made with the SME businesses in the capital Addis Ababa, in the month of May & June with the various employees, entrepreneurs and managers of the business.

Multiple Case study data findings from Ethiopian SMEs utilizing Internet in their value chain: The Benefits, Problems & Opportunities

Figure 8. Company Overview, Tabular/Text display of data & Cases:

<table>
<thead>
<tr>
<th>No</th>
<th>Company Name</th>
<th>(Interviewed) Employee Name &amp; Position Title</th>
<th>Size of Business</th>
<th>Internet Technology Capacity &amp; Use</th>
<th>Over all Human Resource Capacity</th>
</tr>
</thead>
</table>
| 1  | Ethiojobs.net Online Recruitment Services [http://ethiojobs.net/](http://ethiojobs.net/) | Hilina Legesse  
Client, Relations Officer  
(B.A) Economics  
Ongoing MSc | 15-20 people & $50,000 | Mixture of both category features Column-1 & More of Column-2 features Table Appendix 3 | Broad Band: Web Site, E-mail, Skype, transactions etc.  
Well qualified in Business & IT skills |
Entrepreneur Mgr.  
(B.A) Business Admin (Diploma) Tour operations. | 10 people & $ 100,000 | Proportional Mixture of both category features Column-1 & 2 Column-1 & 2 Table Appendix 3 | Broad Band: Web Site, E-mail, G-Talk Skype, transactions  
Well qualified in Business & IT skills |
| 3  | ABC. Co. Hosting service and website/web application design and development | Mr. A  
Client Relations & Web content Management officer  
(B.A) Business & IT Certificate | 25 people & $ 80,000 | Mixture of both category features Column-1 & More of Column-2 features Table Appendix 3 | Broad Band: Web Site, E-mail, Skype, G-Talk, VOIP transactions etc.  
Well qualified in Business & IT skills |
| 4  | Professional Business center / Internet Café & Others | Yohannes Ameha  
Entrepreneur Mgr.  
(Diploma) in IT & Entrepreneurship skills | 3 people & $ 15,000 | Fully categorized features in Column-1 Table Appendix 3 | Broad Band: E-mail, Skype, transactions  
Partially qualified in Business & IT skills |
| 5  | XYZ Co. Software & Hardware solutions | Mr. X  
Manager/ Entrepreneur  
BSc. Mathematics & Computer Science | 21 people & $ 120,000 | Mixture of both category features Column-1 & More of Column-2 features Table Appendix 3 | Broad Band: E-mail, Skype, G-Talk Skype, VOIP, transactions  
Well qualified in Business & IT skills |
4.2 The companies’ Cases:
Narration of Internet use in the SMEs value chain: Benefits, Problems & prospects

Case – 1
Ethiojobs.net /http://ethiojobs.net/ Online Recruitment Services company

Ethiojobs.net™:

On August 2004, a recruitment service business was fully launched with an initial capital of $ 50,000, employing 15 – 20 Employees. Miss Hilina, the client relations officer described the company as “the premier online recruitment service in Ethiopia with an HR bank of more than 20,000 CVs, where job seekers and employers find each other virtually without leaving their home or office at ease, least cost and optimum efficiency.” Plus CVs are stored on the database, for easy accesses, self-editing, self-update and print out by the potential recruit on the job search process. Further the company earns average revenue of $ 3,500 on monthly basis, the website value/Worth ranges from Max- $12,797 – Min $ 6,480 on average it worth $4,160 USD. Cash and online payment systems are used for payment processing in case of local and international transactions with employers respectively. “The Internet in use in our business is now broad band, until recently it was dialup”, the firm’s partners are, in house intensive recruitment and development section namely “Talent Search”, jobseekers [potential employees / recruits], employers, other recruitment firms and HR consultancy services on both virtual and traditional business settings.

“Our employees are relatively better qualified in the market with business, basic computer skills and IT competence. Internet is in use for official e-mail exchanges or communication, database/web update and management. In general it serves internal
and external communication, at speed with no hierarchy or barriers, at lower cost and plus serves in leveraging the transaction between employer and employees. Eases communication among various stakeholders and enhances operation capacity of the firm in terms of time and cost efficiency. In the business context of less financial and infrastructural backing, virtually operating significantly reduces capital cost of transaction, labor salary, office rental expenses and other administrative and overhead costs” as Hilina . L, the client relation officer underlined the merits of the technology.

Besides all activities (communication, transaction and all operations) are internet supported, except for few employee development works at office with the ‘Talent search’ section potential recruits training and development activities at office. The ‘Talent Search’ section serves clients by providing short listed potential employees with an appropriate training and development after rigorous interviewing and screening of the required potential employees for hire, and it also provide consultancy services to employers and other HR related services. In terms of competitiveness she said. “Our strength comes from our database storage and management capacity, client relations and HR service options and quality. The number of people visiting our site and the pool of employers’ access to our database relative to other e-recruiting businesses in Ethiopia is much higher. This is due to the competitive list of local and international vacancies (Web page-Link here under Figure 10.) posted on our website plus the link to other job recruitment firms made it easy for our customers to easily evaluate and choose job opportunities virtually, unlike other virtual businesses the website is updated timely and an instant response system is in place for customer or client enquires via our e-mail and website. The internet has enabled easy and speedy accesses of huge amount of data/ CVs for all parties’ employers, clients, customers, partners with clarity, comparability and customized options with no hierarchy go between, transactions and switching cost or biases.”

Figure 10. Ethiojobs.net, Local & International Job Vacancy Lists web page Local & International Advertisement web contents and Registered Jobseeker & Employer login Interfaces.
The Major Benefits the business gain from utilizing internet technologies:

The client relations officer of the business has described the benefits in this manner:

“Internet is the soul and flesh of our business, almost all activities is carried out through the use of internet technologies the virtual operation of business is almost impossible without the presence of this technology and all the related required accessories and qualified labor.”

Adding on this the major benefits the business gain from utilizing internet technologies in her words are described as: The Reduced extra expenses(cost),delays and even risks of business, saying “while doing business in a country where communication, power supply and transportation infrastructures are very weak to support small businesses the contribution of internet is paramount in reducing all the extra expenses(cost),delays and even risks of the business undertakings” Moreover in the service activities as she pointed it out as “the reduction of process and operation costs from direct and indirect expenses in communication, service operation and transaction with immense pool of information flowing in the wider data base leverages the business growth by enhancing service process efficiency and customization options to both employers and employees in addition to the significant reduction in labor, finance, direct and indirect expenses”

Environmental benefits as she described it: “Eco-friendly business undertaking through reduction of paper wastage and transportation carbon emission reduction which bears a lot of contribution to the national and global environment friendly businesses through saving forests, reducing carbon emission.”

Major problems/ Impediments to utilize internet technologies:

The client relations officer in a similar manner, pointed out the Major problems / Impediments to utilize internet technologies: Technology phobia, or fear on technological innovations in the society, which is: “awareness related technology phobia, fear on technological innovations in the society has hampered the possible growth of virtual market size, lack of basic computer skills, knowledge, loose trust on the system and resistance to change or new ideas form the society has highly affected the development of this sector” she underlined this saying: “lack of exposure to technological innovation in a long generation time have resulted in suspicion, phobia and resistance to change the old routines to a new one hampering the pace of change in utilizing the internet among wider section of customers, clients, business partners and government officials too”, “for this reason” “Government officials as part of the society, are affected by this mental paradigm in addition to the lack of knowledge and skill that have a direct and indirect influence on the formulation and development issues of internet and e-business related legislation and infrastructure respectively.”
Further she mentioned Expensive internet service fee, high computer hard and software prices as problems: “Expensive internet service fee, computer hard and software prices, added to the lack of maintenance services makes the sector prohibitively expensive and luxury to the huge potential clients/customers although ICTs reduce some transaction costs for businesses, they also introduce new costs arising from the use, maintenance and utilization of computers and high connectivity charges for our businesses” besides this Lack of up to date legislative/institutional will to facilitate internet access and e-business transaction are included in the problem: “Lack of up to date legislative/institutional will to facilitate internet access and e-business transaction options with regards to online payment systems and absence of policy and technical support for the sector with lesser priority given to it the information technologies are the other problems pausing a challenge to the business endeavors”

In summary she added to the statements saying: Weak ICT infrastructure, little basic computer and IT skills, “Weak ICT infrastructure, little basic computer and IT skills resulting in the inability to utilize the existing hardware and software resources virtually, which is expressed in the inability/ incapability of the job seekers to ‘SELECT’ a particular job post ‘EVALUATE’ and at lastly ‘APPLY’ in the final decision to be recruited, thus the client fail to qualify for the opportunity and the business fail to gain the margin for the interrupted full value activity cycle of the online/virtual recruitment service which hampers the business growth and applicability in the wider less educated and less skilled customer business context”

Low level of computerization, due to inflated prices and Custom barriers, explaining “Ethiopia’s level of computerization is very low, primarily because of the high cost of equipment relative to the low levels of economic development and lack of skills to make effective use of computers. Computer equipment is essentially unaffordable by individuals as a result of the continued high level of import taxes on computers which become a barrier to accelerate the computerization process. Although prices in Ethiopia have decreased as markets grow and greater competition has ensued, prices are still inflated as government custom’s/Tax’s offices still treat ICTs as luxury items, which makes these imported items all inevitably expensive, and thus even more unobtainable for significant portion of potential customer population.” Little internet coverage and frequent power cuts, she said “Due to high international tariffs and lack of circuit capacity, obtaining sufficient international bandwidth for delivering web pages over the Internet is still a major problem in the country.” And “Lower proportion of reach and visibility, due to no or little internet coverage and frequent power cuts that basically hinders the e- recruiting business almost excessively.”

Low telephone (internet) penetration rates, slow network growth, outdated systems, explaining “The Ethiopian information and communications environment can be characterized by low telephone(internet) penetration rates, slow network growth,
outdated systems, high pricing of private facilities, poor inter-city telephone(internet) links, and widely varying national network infrastructures between Urban and rural centers which hindered our e- recruitment and virtual operation activities at higher rate.”

**Poor infrastructure and less pool of expertise in ICTs**, explaining “Poor physical facilities and human resources; No well-established centers dedicated to developing software, poor or non-existent procedures for equipment procurement, Inadequate maintenance of hardware, Limited IT industrial base and less pool of expertise in ICTs in the country (from policy making down to use), which contributes to the limited deployment of infrastructure and the high price of access” Low levels of education and basic literacy/English Language, she said “Low levels of education and literacy are crippling the ability of Ethiopians to exploit the e-business potentials. Limited use of English has been cited by the company as a constraint. Although increasingly multilingual, the Internet is still largely an English-language medium. It may be that the long-term deployment and exploitation of the Internet by developing countries will depend less on technology and costs and more on their capacities to educate their young populations in basic literacy, a prerequisite for using text-based web contents in order to enable customers operate and transact on the web interface independently and in an appropriate manner.”
Figure 11. 13Suns Tour’s Company Web Page

[13Suns is equivalent to Thirteen months of sunshine]  
“Blessing of the Thirteen months of sunshine” Ethiopians

“አስራ ከፆት ወር ከፆት ክፋል ይበለ ይት በኢትዮጵያ” ኢትዮጵያዊያን

“The Company is named after the thirteen months of sunshine the country enjoys:  
Ethiopia is one among the few countries of the world which possesses its own calendar. The Ethiopian calendar is composed of twelve months, having thirty days each-and a final month called "Pagume”, with 5 or 6 days to compensate for the deficit. The calendar counts its new year from September and is behind the Gregorian calendar by 7 or 8 years”

Mr. Ermias S Degefa, Co. Manager

13suns Tours P.L.C: A Professional online Tour operation business was, established on Nov, 2002, by a group of 10 educated Ethiopian youths even though nine of them didn’t last long with the business for too long. Since its establishment, with startup capital of 2,000,000 Birr/ $100,000, Mr. Ermias S Degefa unlike his former partners persisted on struggling with the seemingly adventurous route of virtual business in the midst of so many uncertainties. Now the business is earning around 7000
Birr/$350 on daily basis and employed 10 people with a relevant tour operation knowledge and basic computer skills (Refer from Figure 12). The company is equipped with logistics/facilities for tour operations, and it is the pioneer virtual private tour operation firm after the privatization of the tour operation activities in the country which used to be solely carried out by the government owned monopoly National Tour Operation Enterprise (NTO) since 1982. 13Suns, unlike others who had followed the usual traditional business model/tour operators, had had designed its own online business (E-tourism initiative) model without duplicating the usual trend of copying the traditional NTOs business model which other tour operators have followed and still following in the sector. The firm has individuals, groups, NGOs as customers and other tour operators as partners. The international partners are called “Out bound Agents” who will work, on a commission bases in partnership, and the firm (13Suns “In bound Agent”) serves the tourists coming from abroad with all the details of activities, through international technical and financial transactions in terms of the Technology tools involved to communicate and exchange payments.

This firm has unique competence in virtual tour operations relative to its competitors; the web site content is rich and is updated timely (See Figure 11, 12 &13). The manager underlined this statement in his say, “Strong effort is made in the firm to narrow the gap between the virtual and the on ground tour operations/activities of the business considering the infrastructure [Legal, Regulatory, Transportation, communication and others] inadequacies’ of the country in general.” Mr. Ermias S Degefa

[Figure 12. Professional experience and computer skills of employees
http://13suns.com/Our-Guides-Profile.html /]
The company uses an internet connection speed of 3.1Mb/E-Video “which is considered as a better internet speed option to carry on businesses in the country context compared to the dial up option. The internet fee is now relatively decreasing, for this reason for the past 2 years more customers are coming, but the monthly payment of the internet fee depends on the type of activity the firm carries on.”

Adding on this Mr. Ermias S Degefa said “Ethiopian Telecommunication Corporation which is the sole controller and operator of the internet service has a fixed allocated fee for the internet services excluding activities related to the use of video and other content operation which will exceed the fixed allocated quota per month causing the firms to incur extra variable fee for the excess amount used in that specific month”.

“The firm uses e-mail, Google talk (for text & audio chat to avoid extra variable cost of video use by employees which makes it costly and difficult to control), Skype (rarely, only by the manager) and Social Networks (Facebook, Twitter, . . .).”

Internet is also used to exchange information, ideas, tour package programs and customers/ client feedbacks (See Figure 13) which provides customers and our business to have a common place of interaction. *Customer/Client Testimonials: On the Web Page & through official mails Web Page: http://testimonial.13suns.com/ [Figure 13. Feedback &Testimonial of customers/clients exchanged virtually http://testimonial.13suns.com/]
As the manager of the firm underlined it, internet is “the pillar / life blood of the firm or the tour operation as the model of the business mandates it so. Almost all activities in the tour operation business are directly or indirectly related to internet use. Starting from the Website management or the main office of our business or the interface through which all the continuous activities of the value activities are carried on through internet which makes it difficult to separately see where, when and at what rate internet is used in the business activities of the firm tour operation activities.”

**Major Benefits of Internet technologies:** The Major benefits of internet in the business: As the manager described it “I spend 90% of my advertisement on Google sense search engine to enable the business be accessed and found on top of customer screen all over the world, this has helped my business to grow with the number of clients and get a share of the international tourists stake on the virtual market.” And he also said “My firm has also succeeded in identifying the variety of client/customer needs using internet, through generating programs or tour action plans customized to specific client needs, which enhanced the businesses’ value proposition quality and flexibility.” Mr. Ermias S Degefa pointed out the merits as “reduced cost of operations, communication and transactions while carrying on tour services in the business besides shorter marketing chain, no abstraction (direct to end users with no go between) and less misconception serves the efficiency in management and control activities and resources of the business virtually.” . . . in other words “Reduced costs (increased competitiveness), wider reach and rich data that can be processed and be in use in couple of seconds with the unlimited number of visitors, young and enthusiastic users with untapped e-business potential and leveraging of skills, time and knowledge makes the possibilities enormous.”

In addition to this: “E-commerce is transforming the global marketplace, and its impact is being felt in diverse areas such as production, distribution of products and services. These forms of business-to-consumer, e-commerce is becoming more beneficial to our tour operation businesses, particularly in the cultural industries of mine, it enables us to be able to take advantage of global markets share of much greater size as a result of the opening up of the information platform.” For this reasons the manager said through the development of the complex mix of skills required for e-commerce, our services are being better positioned to participate in global value chains for knowledge-based enterprises through creating mutual partnerships and alliances. These forms of “business-to-business” partnerships are providing opportunities for competent business like ours to increase market share globally as well, far beyond the national borders and for these reasons new trading frontiers for cottage, small and medium-scale enterprises in the developing is on the increase.”
Major problems/ Impediments to utilize internet technologies: The Manager in a similar manner, pointed out the major problems/ Impediments to utilize internet technologies: “there is almost no legislative backing for e-business in general and online tour operations in particular which makes it challenging and even riskier to carry on business with international customers or clients especially regarding online digital payment systems. Digital payments or credit card system is not at all operational in the country as result, handling financial transactions is difficult since there is no legislation and payment system operational for individuals and business transactions, rather the firm is forced to transact through the few banks (Dashen Bank, Zemen Bank ...) working with credit card systems which have the legal permission and international agreements to carry on transactions with digital means” plus he said “Frequent country wide electricity disruptions and total unavailability of internet services in far urban and rural areas” in a similar manner the other problems the Manger described are: “Technology inefficiency, high rate of customer and human resource illiteracy & Infrastructure Challenges, While internet technology is a new potent tool, its adaptation and utilization in Ethiopia is constrained by among other problems inadequate infrastructure, limited clients and human resource knowledge and skills including end user/customers illiteracy and inability to accesses and use technology, the absence of national regulations / policy and low IT literacy.”

Internet Service Providers (ISPs) & Ownership of Operators: Adding on this the Manager tried to show his knowledge of the pattern of ownership of operators in Ethiopian context saying Issues such as “publically owned operator in Ethiopian case governments’ direct revenues from the telecommunications sector is still an important part of the general revenue base and it is often one of the largest single contributors to the national GNP, this usually means that public network operators are not free to reinvest their profits in network development. These funds must ultimately be recovered through higher tariffs charged for internet service, which will be counterproductive to the internet service development causing internet service to be prohibitively expensive to end-users/customers, hampering its growth indirectly in qualitative and quantitative terms.” And the “Excessive charges on African/ Ethiopian Internet Service Providers (ISPs), - high international tariffs charged by telecom operators discourage Internet Service Providers from establishing multiple international links. As a result ISPs are forced to consolidate all of their traffic over a single high cost international circuit. This means that significant and rapidly increasing capital outflows from the region are occurring for Internet traffic between African countries/Ethiopia which is paid to US or European service providers. Furthermore, ISPs must foot the entire cost of the connection to Europe or the US, which effectively gives the developed country ISPs free access to the continent’s network and further increases the costs that ISPs in Africa must bear and high internet fees/expenses.
The Managers additional descriptions on some of the problems to mention:

**International tariffs and lack of circuit capacity:** “Due to high international tariffs and lack of circuit capacity, obtaining sufficient international bandwidth for delivering web pages over the Internet is still a major problem in our country. The total international outgoing Internet bandwidth installed in Africa is about 50Mbps. However this means that on average about 5 dialup users must share each 1Kbps of international bandwidth, making connections too slow for remote sites as a result a growing number of African websites are hosted on servers that are in Europe or the U.S including ours which is in the United states of America from distance.”

**Monitoring & Restrictions Difficulties:** “Monitoring & Restrictions are difficult to apply selectively, with no national boundaries, the legal implications of the Internet or virtual businesses are immense. Copyright, privacy and accountability have to be weighed against the speed; access and freedom of expression; monitoring and law enforcement making difficult for governments in the developing world/Ethiopia to formulate legislation selectively on their own territories, with no real national boundaries, the legal implications of the Internet and the World Wide Web are immense.”

**Technology Impacts on legislation, regulation and policy Areas:** “Internet & Internet Telephony: Consumer Privacy, Intellectual Property, Encryption, Authentication, and Admissibility of electronic evidence in the courts, International connectivity costs, Postal services (email boxes), International accounting rate issues, Competition policy and operator exclusivity, Quality of service requirements, Convergence between Broadcasting and Telecommunication , Internet Structure of the communications regulatory authority and its objectives, primacy of content versus carriage regulation, massive cost reductions for transmission of voice and multimedia, International accounting rate application across boundaries, Price controls on international tariffs ,Competition policy and operator exclusivity and finally a blurred boundary between local and international calls makes it a lot challenging for the government to enact legislations more efficiently making the regulation, legislation and authorization process more complicated, intercepting and difficult.

**Content & diversity challenge:** “Content development is at the heart of the complex issue of language and culture, the multi-lingual, multi-cultural setting in Ethiopia adds to the complexity of the problems making the challenge daunting. Linguistic differences still represent substantial barriers to communication and knowledge/ information sharing in Ethiopia/Africa. Although ICT applications are being developed that will help to improve information access and interchange across language barriers, this is a technology largely confined to the industrialized world at present. Consequently, language and cultural barriers remain a problem to the development of web content by virtual firms using the undocumented/unstudied oral traditions and local languages with appropriate applications.
Primary and Support Activities in Ethiopian SMEs

Summary Table: Traced Case SMEs' Primary & Support Activities

<table>
<thead>
<tr>
<th>Primary Activities[+Virtual SMEs]</th>
<th>Support Activities</th>
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<tr>
<td>‘directly related’ with the creation/delivery* of a product or service’ (Porter, 1985) &amp; (Rayport &amp; Sviokla, 1995)</td>
<td>‘improves the effectiveness/efficiency* of primary activities’ (Porter, 1985) &amp; (Rayport &amp; Sviokla, 1995)</td>
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- **Gathering (Inbound Logistics)**
  - Collect, Receiving, storing and distributing virtual information/data/Tangible inputs to the service value proposition line/system

  (Ethiojobs.net: Virtual HR database bank of more than 20,000 CVs, enabled easy accesses, self-editing, self-update and print out by a potential recruit Employee.

  (XYZ.co: Email and the virtual features are used for communication, general correspondence and document exchange, technical advice, managing projects, arranging meetings, and exchanging research ideas, although its use is still limited for accessing formal information resources.

- **Firm Infrastructure**
  - Regulatory, Legal & Technical Infrastructures
  - Governmental, Unions & Businesses Legislation & Policies
  - Infirm & Out firm Infrastructures
  - Information & Value systems

  (Ethiojobs.net: Weak ICT infrastructure, little basic computer and IT skills, resulting in the inability to utilize the existing hardware and software resources virtually, which is expressed in the inability/ incapability of the job seekers to ‘SELECT’ a particular job post ‘EVALUATE’ and at lastly ‘APPLY’ in the final decision to be recruited, thus the client fail to qualify for the opportunity and the business fail to gain the margin for the interrupted full value activity cycle of the online/virtual recruitment service which hampers the business growth and applicability in the wider less educated and less skilled customer business context”

  (Ethiojobs.net: Low telephone/internet penetration rates, slow network growth, outdated systems. “The Ethiopian information and communications environment can be characterized by low telephone/internet penetration rates, slow network growth, outdated systems, high pricing of private facilities, poor inter-city telephone/internet links, and widely varying national network infrastructures between Urban and rural centers which hindered our e-recruitment and virtual operation activities at higher rate.”

  (13Suns.com: “Technical inefficiency, high rate of customer and human resource illiteracy & Infrastructure Challenges (Power & Transportation). While internet technology is a new potent tool, its adaptation and utilization in Ethiopia is constrained by among other problems inadequate infrastructure, limited clients and human resource knowledge and skills including end user/customers illiteracy and inability to accesses and use technology, lack of national regulations/policy and low IT literacy.”

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<tr>
<th>Firm Infrastructure</th>
<th>Technology Development</th>
<th>Procurement</th>
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<tr>
<td><strong>Organizing (Operations)</strong></td>
<td><strong>Human Resource Management</strong></td>
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<tr>
<td>- <em>Transformation of the Data/Tangible Inputs to services and outputs</em>&lt;br&gt;- Makes retrieval and analysis data/Information Inputs</td>
<td>- Possession, Management and sustenance of HR IT skills &amp; Experiences * (Qualified IT Experts/employees, Consultants /Partners, Entrepreneurs, Customers/End-Users literacy and competence . . . )</td>
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(Ethiojobs.net: unlike other virtual businesses the website is *updated timely* and an *instant response system* is in place for customer or client enquires via our e-mail and website.  
(ABC.co: The business is competitive in balancing creativity with technology, delivering manageable, contextually accessible websites that create a *positive user experience*. The company design and build websites and contents for a variety of market sectors with the available breadth of knowledge and expertise mixing creativity and innovative technology together on the basis of customer needs and demand diversity.)

<table>
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<tr>
<th><strong>Selecting (Outbound Logistics)</strong></th>
<th><strong>Technology Development</strong></th>
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</table>
| - Identify and extract data /Information to customers or bringing customers to the services.  
(Ethiojobs.net: Competitive *list of local and international vacancies* (Web page -Figure 10.) Posted on our website plus the *link to other job recruitment firms* made it easy for our customers to easily evaluate and choose job opportunities virtually.  
(PBC.Co: The business unique strength compared to others in competition is the way customers *c are handled sometimes support and maintenance for no fees to maintain customer relation or business reputation. (See Figure-15),  
| - Information Technology Know-How (Knowledge, Creation, Storage & Utilization, Management & Control)  
(Availability of basic computer skills & Experience, IT professionals/Entrepreneurs from university & Training centers, web Technologies, Software & new application and programs, Broadband connectivity, Information systems & Data bases<sup>1</sup>  
[Ethiojobs.net: (SMEs‘ Web page & Employee CV & Tour Data bases ‘http://ethiojobs.net/’, http://13suns.com/ & others See Figure 8)<sup>2</sup> Ethiojobs.net: Broad Band Internet is in use for official e-mail browsing database/web update and management.]  
(13Suns.com: Technology Impacts on legislation, regulation and policy Areas: “Internet & Internet Telephony: Consumer Privacy, Intellectual Property, Encryption, Authentication, and Admissibility of electronic evidence in the courts, International connectivity costs, Postal services (email boxes), International accounting rate issues, Competition policy and operator exclusivity, Quality of service requirements, Convergence between Broadcasting and Telecommunication , Internet Structure of the communications regulatory authority and its objectives, primacy of content versus carriage regulation, massive cost reductions for transmission of voice and multimedia, International accounting rate application across boundaries, Price controls on international tariffs . Competition policy and operator exclusivity and finally a blurred boundary between local and international calls makes it a lot challenging for the government to enact legislations more efficiently making the regulation, legislation and authorization process more complicated, intercepting and difficult.  

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<sup>1</sup>Ethiojobs.net: Employees are relatively better qualified in the market with business, basic computer skills and IT competence.)  
(Ethiojobs.net: “Our strength comes from our database storage and management capacity, * client relations * and HR service options and quality.”)  
(Ethiojobs.net: less pool of expertise in ICTs, Low levels of education and basic literacy/ English Language, she said “Low levels of education and literacy are crippling the ability of Ethiopians to exploit the e- business potentials. Limited use of English has been cited by the company as a constraint. Although increasingly multilingual, the Internet is still largely an English-language medium.)
• Synthesizing (Marketing & Sales)

- Consumers are made aware* of the service to purchase/Transaction and services are packaging based for specific purposes/End-user
  (ABC.co: “Our business is better at the technology and IT specialized human resource competence in addition to the quality of work and customized client handling services, delivering web and web applications solutions on time, as needed or complete to specification.” Mr. A.)
  (PBC.co: Internet services, software and other technical solutions provided to walking customers with customized options. The business provides Internet café simple support and a maintenance service to customers. The business utilizes e-mail, Skype, and social Networks and other software packages to run the business.
  (PBC.co: The business unique strength compared to others in competition is the way customers are handled sometimes support and maintenance for no fees to maintain customer relation or business reputation. [See Figure-15].
  [13Suns.com: ” I spend 90% of my advertisement on Google sense search engine to enable the business be accessed and found on top of customer screen all over the world. this has helped my business to grow with the number of clients and get a share of the international tourists stake on the virtual market.” And he also said “My firm has also succeeded in identifying the variety of client/customer needs using internet, through generating programs or tour action plans customized to specific client needs, which enhanced the businesses’ value proposition quality and flexibility.” Mr. Ermias S Degefa

• Distributing (After Sales Services)

- Stands for the *transmission** of the appropriately packaged information to its intended users or consumers & customization, upgrade, and/or other after sales services
  (Ethiojobs.net: Low level of computerization, due to inflated prices and Custom barriers, explaining “Ethiopia’s level of computerization is very low, primarily because of the high cost of equipment relative to the low levels of economic development and lack of skills to make effective use of computers. Computer equipment is essentially unaffordable by individuals which become a barrier to accelerate the computerization process.)

• Procurement

- Acquisition of various Items, Hardware & Software Accessories (Computer, Modem, Broad Band connection)
  (Ethiojobs.net: Cash and limited online payment systems are used for payment processing and Transactions.
  (13Suns.com: Internet is also used to exchange information, ideas, tour package programs and customers/ client feedbacks which provides customers and business to have a common place of interaction.
  *Customer/Client Testimonials: On the Web Page & through official mails (Figure 13. Feedback & Testimonial of customers/clients exchanged virtually WebPage: http://testimonial.13suns.com/)
  (PBC.co: The Internet Services, software solutions and hardware accessory sales to customers and one-to-one basic computer training and support services to customers at their home or in the offices.


The three phases or strategic initiatives: That originate from the virtual value chain (Rayport & Sviokla, 1995) are:-

* **Visibility:**
  The ability to visualize “see” through the organization process which was considered as a black hole/box (a clear view of the physical operations clearly)

* **Mirroring Capability:**
  The ability of transmitting physical activities (market places) in to information/data based ones (market space) or the location/representation of physical things and locations on the virtual market space.

* **New Digital Value:**
  Creating of relationships with the customers & businesses or others virtually.

*a,b & c “Internet is the soul and flesh of our business, almost all activities are carried out through the use of internet technologies the virtual operation of business is almost impossible without the presence of this technology and all the related required accessories and qualified labor.” Hilina L from Ethiojobs.net

*b,b & c “Internet is the pillar / life blood of the firm or the tour operation as the model of the business mandates it so. Almost all activities in the tour operation business are directly or indirectly related to internet use. Starting from the Website management or the main office of our business interface through which all the continuous activities of the value activities are carried on it, internet makes it difficult to separately see where, when and at what rate internet is used in the business activities of the firm tour operation activities.”

  Mr. Ermias S Degefa from 13Suns.com:

*c,b & c “Since the business of web site development and hosting are totally related and based on the availability of internet and communication, the role of connectivity is irreplaceable to the business”

  Mr. A from ABC.co

*a,b & c “The business is totally dependent on the availability of internet connection since most of the services provided in the business are directly or indirectly sourced and related to the connectivity of the hardware available. The business makes money on the services it gives to customers: Internet service connection fee charged on minute rate basis, with a fixed per minute fee on the length of the time used on a particular access to Internet and from the software solutions and hardware accessory sales to customers.”

  Mr. Yohannes. A from PBC.co

*a,b & c “Among the major services the business is providing are hardware maintenance, Web Design and Development, Search Engine Optimization, Logo Design, Advertising, Hosting, Posters, Business card design, the business is getting more profitable recently with the advance and improvement of connectivity and the increasing number of internet and web content user customers. Our business is making effort to unlock the potential. The Manager said “businesses report that email/connectivity has increased efficiency and reduced the cost of communication but as yet it is used almost exclusively for contacting individuals/firms in other regions. The Web is still a relatively under-utilized resource though.”

  Mr. X from XYZ.co
Case 3
ABC. Co,
Hosting service and website design & development

ABC. Co, is an I.T. Technology company based in Addis Ababa Ethiopia. The business is privately owned and managed by a group of five youths who have a very good IT background and business practices. The business was launched at the west coast of the capital [Figure Appendix 4] with an initial capital of $80,000, on June 2002; the business is now providing services of hosting company web sites, websites and web content design and development. The business started by providing webhosting and domains as a reseller. Since 2008 the company has been making considerable investment to its own core technology, making sure of releasing the best solutions for the market. “Despite our young age we have secured many high-profile contracts with well-known organizations including government, organizations, private businesses and individuals” Mr.A. The business is profitable and the level of competition in the field is very minimal due to the small number of businesses involved in IT and technology oriented businesses, rather working in close partnership, the business have employed a total of 25 employees [See Figure- 14] with an IT and business background performing web content design, IT related works, web site development and other administrative activities. In the late 2010 the company succeeded in helping over 1,200 Ethiopian Websites become online and developed over 320 websites for the domestic and international market the major services of the company are Website Development, Website Hosting and content development Solutions, and I.T. Consultancy to local and international companies. Since its incorporation ABC, Co has now grown into a profitable company providing the majority of its services to the Ethiopian market.

The company develops and maintain small to enterprise size web and web application projects for companies of all shape and sizes across the world. We see outsourcing as a means of providing our customers the right resources and skills required to get the job done. The staff consists of highly and partially skilled dedicated professionals. The main body of our staff is skilled in Microsoft .NET platform and development in languages such as C#.net, Visual Basic .net and PHP coding technologies which serves the purpose of our web content design and software solution services. ABC. Co invests in people, and in doing so provides training, materials to its staffs which is very essential to survive in the technologically cold business environment mainly due to the weak link between the partners and the level of technology in the region in terms of technology access and technological knowhow. The training of the staffs in return improves the skills and self-confidence of the company and increases our customers’ productivity by delivering web and web applications solutions on time, as needed or complete to specification.
Technology & IT expert in ABC., Co: The firm provides better technology to Ethiopian business and qualified IT expert services that are not easily accessible in the local market. The business is competitive in balancing creativity with technology, delivering manageable, contextually accessible websites that create a positive user experience. The company design and build websites and contents for a variety of market sectors with the available breadth of knowledge and expertise mixing creativity and innovative technology together on the basis of customer needs and demand diversity.

The company uses broadband internet technologies for all the business activities from exchanging routine e-mail to that of advanced software, web design and development activities. The use of internet in our context is of paramount importance as there are no as such physical goods or services moving in our business activities rather it’s of software oriented activities. "Our business is better at the technology and IT specialized human resource competence in addition to the quality of work and customized client handling services.” Mr. A. The design of websites and customized software solutions is primarily an iterative work of contact and participation of customers. Therefore the importance of internet tools for communication vocally and visually plays a lot of role in the business process reducing cost of communication, time and transportation caused pollution and expenses to customers and the company, making the business more profitable.

The business earns on average 8000 Birr / $ 400 on daily basis it is profitable due to the fact that the companies involved in this business are too minimal and “our business has been consistently working in the area for the past years persistently, despite the cold technological and human resource situations.” Mr.A. The Manager adding on the above issues underlined the role of the business in terms of contributing to the enhancement of the customers (end user firms) in undertaking their business using the customized software solutions and web features the company is producing for them, this has reduced a lot of advertisement and paper/stationary costs, finally adding value to the sustainability of the businesses and the environment simultaneously.

Figure.14 IT Officers/Employees at work & office Picture
Major Benefits of internet technologies for ABC.co:

The major Benefits the business enjoys are that, the business in itself is centrally positioned on the availability of connectivity thus; it makes it almost impossible to think of business existence without internet. The ease in communication, efficiency of operation in software development and exchanges, the transfer of knowledge with the developed world makes internet the best tool in the survival and continuation of the business. “Since the business of web site development and hosting are totally related and based on the availability of connectivity, the role of connectivity is irreplaceable to the business” Mr.A

Major problems/ Impediments to utilize internet technologies

The Manager (Mr., A) in a similar manner, has well described and explained the major problems or impediments to utilize internet technologies: These are:

Electricity interruption or Power outage: “Irregular or non-existent electricity supplies are a common feature of the Ethiopian business land scape and are a major barrier to increased use of internet technologies, including major cities. Power sharing (regular power outages for many hours) is a regular occurrence.”

Lack of Transport Infrastructure: “The level of development of the transport networks in Ethiopia usually follows the same weak pattern of limited distribution seen in the telecommunication and power networks. This results in further barriers to the increased movement of people and physical goods useful for technology utilization and others”.

Intellectual Property Rights (IPR) Protections challenges: “issues relating to the “Intellectual Property Rights (IPR) While not strictly an infrastructural issue, the ease with which the Internet allows copying of intellectual property means that IPR issues, the infrastructure and regulatory requirements in areas such as taxation, digital signatures and authentication, public privacy, intellectual property and encryption are becoming increasingly important as use of the Internet grows. Protection of intellectual property is a complex issue that is often insufficiently dealt with at the national level with respect to new technological developments this problem directly affects our business and is still a very critical problem in moving the business forward at a better position”

Adding on this issues Mr. A has given his additional emphasis on the infrastructure/legal issues: “thorny issues such as intellectual property protection, privacy, security, data protection, electronic payments and currency, and wide-ranging consumer protection issues have to be addressed in national legislation and regional strategies; each with tremendous social and economic implications. On one hand, appropriate legal and regulatory infrastructure will enhance a country's ability to attract investment and can help to stimulate local participation in the information
economy. On the other hand, an inappropriate legal and regulatory environment can disempower local entrepreneurs and cause international investors to look to other countries and take over the exiting opportunities.”

**Lack of international and regional collaboration:** “Lack of international and regional collaboration plus ill co-ordination between and among the various national ministries concerned in particular, the Ministries of Trade and Commerce and the Telecommunication ministries appeared to have little or no coordination in dealing with each other on the issue of connectivity and E- business in Ethiopian context.” . . . .

**Limited In firm and Out firm Capacities in Technology, HR and Knowledge:** “Limited in firm and out firm capacities in technology, knowledge and related skills which means that the low level of computer literacy evidenced in the majority part of the country’s wider population and plus even though access may be available to users, their lack of experience can tie up the facility for inordinate lengths of time. In addition, as users of the end products of the technology, developing countries are not in a position either to establish technological control or to engage in competitive R&D which ties these least developed countries left tide dependent on the technology from abroad”

**Lack of Public Sector ICT infrastructure Resources:** “Given the lack of public sector ICT infrastructure resources in Ethiopia, the penetration of computers is generally much lower in the country, with by far the majority of PC equipment being used by private companies. Computers are still mainly used for accounting and word processing, although spreadsheets are used to some extent for budgets and forecasting or as a simple database application. The limited number of database systems often use Ms-Access”

**Ethnic and Language Diversity:** ”Until recently English is used in almost 80 percent of Web sites, in graphics and instructions in the country, yet less than far fewer people for educational reason in Ethiopia speaks the English language. To make matters worse, there is massive societal inequities and diversity among the society with education and ethno-lingual strata, mainly men and major cities especially the capital, have significantly higher access to the Internet and the Internet sites are hosted on servers that are in Europe or the U.S including ours in the USA that makes the issues of diversity and content and feature customizability much deeper a barrier.”

**Limited Number of Local Websites:** “While increasing numbers of organizations have a Web site with basic descriptive and contact information, many are hosted by international development agency sites, and very few actually use the Web for their own activities. This is partly explained by the limited number of local people that have access/use on to the Internet, added to the limited skills and resources available for digitizing and coding web pages, and also by the high costs of local web hosting and design services making it more difficult to develop and use websites for local business services” . . . .
Case 4
Professional Business Center

On the summer of June, 2007, a small internet service business named as Professional Business Center (PBC) was established, in the North East of the capital [See Map on Figure Appendix 4], by two professional entrepreneurs, a university graduate and IT student with a combined startup capital of 250,000 Birr/ $15,000. The firm provides internet services, software and accessory sales, and related computer maintenance and support services for its customers. The business has succeeded in maintaining its earning of around 200-250 Birr/ $10-15 persistently on daily basis since after six months of it establishment. The company has employed 3 people; the internet connection in use is broad band, the business has walking local clients and tourists as its customer’s dues to its proximity to the main road to the major tourist destinations, the computers in the business center are with a locally home connected network Local Area Network (LAN) to enable efficiency, management, sharing and control of the hard and software resources on duty for the services. The major activities in the business supported by internet are communication with customers, partners and others.

The business is totally dependent on the availability of internet connection since most of the services provided in the business are directly or indirectly sourced and related to the connectivity of the hardware available. The business makes money on the services it gives to customers: Internet service connection fee charged on minute rate basis, with a fixed per minute fee on the length of the time used on a particular access to Internet and from the software solutions and hardware accessory sales to customers. In addition the business provides one- to- one basic computer training and support services to customers at their home or in the offices. The business unique strength compared to others in competition is the way customers [See Figure-15 below] are handled, the software and other technical solutions provided to walking customers with a customized options, sometimes support and maintenance for no fees to maintain customer relation or business reputation. The business provides simple support and a maintenance service to customers. The business utilizes e-mail, Skype, and social Networks and other software packages to run the business.

Figure 15. Internet-Café: Customers-in-Service
Major Problems/ Impediments to utilize internet technologies

The Manager has pointed out the major problems/Impediments to utilize internet technologies: saying “Although there has recently been a rapid increase in the rate of expansion and modernization of fixed telecommunication/internet networks, this is off a very low base and much of the growth is in the urban areas, and service interruptions in basic infrastructure such as telecoms and electricity interruptions (outage) are already common causing loss of customers and daily margins besides the long term adverse effect it pauses the quality of services we are providing to our customers.” And “Internet access in Ethiopia is scarce and expensive, even in the larger cities, let alone in rural areas which comprise 70-80% of the population.”

Besides to that the Entrepreneur Manager underlined these problems:

Coordination & Collaboration problem: “Coordination & Collaboration problem, Because of poor maintenance and insufficient skills to diagnose system problems and swap parts, there are many out-of-commission machines which could easily be re-activated, Underutilization of existing computer resources is also very common, caused by the preponderance of many standalone PCs in homes and businesses with no use of Local Area Networks (LANs): [home PC networks]. . . . The connectivity provided by a (LAN) dramatically increases the utility of the ICT infrastructure, especially if there is an Internet connection that can then be shared by all the users on the LAN. Often an office may have many machines, but only one with a modem connecting to the Internet. This usually means that there is competition for the machine and a shared email account, which is not conducive to effective use of the Internet.”

Scarce expertise in computer maintenance and software troubleshooting: “Rural areas in particular suffer with very scarce expertise in computer maintenance and software troubleshooting. With the very low pay scales in the African/Ethiopian civil service this problem is virtually insurmountable for government infrastructure operators who are continually losing their brightest and most experienced to the private sector. However this is simply exacerbating the situation in Ethiopia, because experienced technicians are easily able to find much higher paying jobs in Europe elsewhere.”
XYZ.Co Software & Hardware solutions: A company of two, fresh graduates of computer science and business entrepreneurship was established on the beginning of July 2007, north of the capital with an initial capital of $120,000 and 21 employees. XYZ.Co. provides hardware and software solutions, making considerable investment in both software and hardware solutions. Despite its young age the business is succeeding in maintaining many high-profile contracts with well-known organizations including government, organizations, private businesses and individuals. The business is privately owned and committed to building on the initial investment and success to make XYZ.Co, the technology partner of choice the firm is now earning around 8,500 Birr / $ 450 with a very good partners and client base in IT related services.

Among the major services the business is providing are hardware maintenance, Web Design and Development, Search Engine Optimization, Logo Design, Advertising, Hosting, Posters, Business card design, the business is getting more profitable recently with the advance and improvement of connectivity and the increasing number of internet and web content user customers. Email and the virtual features are used for communication, general correspondence and document exchange, technical advice, managing projects, arranging meetings, and exchanging research ideas, although its use is still limited for accessing formal information resources, our business is making effort to unlock the potential. The Manager said “businesses report that email/connectivity has increased efficiency and reduced the cost of communication but as yet it is used almost exclusively for contacting individuals/firms in other regions. The Web is still a relatively under-utilized resource though.” The manager of the business argues that “our business is still in its infant stage due to the technological lag and the human resource knowledge and experience gaps, mentioning the client’s knowledge incompatibility with the company provision which makes the business clumsier”.

The maintenance services and hardware solutions our firm is providing has also a paramount importance in contributing to the share of the computers and accessories serving the larger user of internet connectivity. Even though the level and standard of maintenance services our business is providing is of lower in its type, we are striving to cover the gap by bringing the broken computers back to service.

Benefits of Internet Technologies XYZ.Co: the benefits of internet technologies as mentioned by the Manager of XYZ.Co., is that: “Ethiopia like other developing countries is placed to benefit from the falling costs and increasing utility of cutting edge technologies without having to bear the high costs of discarding older legacy systems and carrying massive cost of technological R & D. The information economy provides
the country with historic opportunity to create new information industries and entrepreneurship like ours and participate in global strategic partnerships of other similar information enterprises. Given the richness and diversity of African culture, specific information industries built around strategies to harness these technologies and capitalize on this cultural richness could prove to be quite economically and socially beneficial.”

Besides to that he added “The Language engineering innovations are providing a basis for integrating written and spoken language processing techniques and improving their ease of use. New applications such as multilingual information services and computer assisted translation may provide greater possibilities for communication among the many dialects and linguistic traditions within or between diversified ethnic lines or groups that is enhancing and empowering the communication developments”

The major problems/ Impediments to utilize internet technologies XYZ.Co:

The Manager has explained the major Impediments to utilize internet technologies as:

Lack of good Infrastructure: “Both physical and regulatory infrastructure – lack of access to technology in rural or remote areas; to the poor and the underprivileged (generally women and minorities), Lower levels of literacy, both computer-based and lack of content in local languages settings further exacerbate the difficulties.”

Lack of maintenance service and insufficient skills to diagnose system problems: “Lack of maintenance service and insufficient skills to diagnose system problems and swap parts, there are many out-of-commission machines which could easily be re-activated and be used that are wasted only for lack of maintenance and average expertise plus the end users lack of awareness on the reuse of failed items and accessories.” Often an office may have many machines, but only one with a modem connecting to the Internet. This usually means that there is competition for the machine and a shared email account which is not conducive to effective use of the Internet.

Lack of pervasive low-cost telecommunications, broadcasting, Internet services and linked infrastructures: “The major barrier to increased use of ICTs is the lack of pervasive low-cost telecommunications, broadcasting, Internet services and linked infrastructures, especially in the rural areas. The cost of access is seen as a primary problem associated with the lack of ICT infrastructure - if costs are lower, there is increased demand for infrastructure and greater traffic, which in turn would lower the unit cost of delivering the service through the increased economies of scale.”

High cost of full Internet services and slow speed of the web: “In response to the high cost of full Internet services, slow speed of the web, and also because of the overriding importance of electronic mail, lower-cost email-only services have been launched by many ISPs and are continuing to attract subscribers. Similarly, because of the relatively high cost of local electronic mailbox and web services from African ISPs,
a large proportion of African email users make use of the free Web-based services such as Hotmail, Yahoo etc., most of which are in the US. But these services can be more costly in telephone time and more cumbersome than using standard email software, because extra online time is needed to maintain the connection to the remote site.”

Notoriously hard to gather statistics about internet coverage and use: “Although the very limited use of computers is readily apparent in Ethiopia, accurate estimates of their penetration are notoriously hard to gather. Especially with the high duties and sales taxes discouraging declaration of imports and transactions, In addition, technology convergence and rapid change in the technologies makes useful categorization of equipment types even more difficult and / or complicated for the software and hardware solutions we are providing.”

Infant stage of web and Software developments: “Local Ethiopian business, public academic and research web content development for the Internet is still at a very early stage of development. Only few universities have so far placed any significant quantity of material on the Web. Most of them are academic / research web sites simply detail the departments and activities of the institution concerned, although a few have developed some other applications and areas of content, across the region there are as yet few locally developed electronic information repositories of national or sub-regional significance, and none of the existing ones are currently available on the Internet. This is partly because national archives and library systems are extremely poorly resourced, and many have had little opportunity to obtain information technology skills or equipment that made the development clumsy.”

Access barriers or Incapability to utilize Technology: “Even if physical access could be provided, as is being done already in many parts of the country through Tele-centers, kiosks, and other media, many people cannot use/utilize ICT tools and features, an outcome of poor literacy, both computer-based and formal education. The access in capabilities and barriers can have especially a pernicious effect. Lack of Internet access to the less affluent exacerbates existing distortions in society - citizens with a higher socio-economic status, already overrepresented in the economic and political development process, building an even stronger lobby in the government and other merits”
Collective Opportunities With Internet Use From All Companies:
The five Case company managers described the major opportunities/ the prospects resting on the road of businesses in relation to internet use and developments. These are:

Growing internet media exposure, free ware and free communication: “growing internet media exposure, free ware and free communication and learning options, partnerships, multinational companies’ opening up and collaboration enhancements will pave the bumpy road to small and medium businesses in their effort to growth and success”

Development and Maintenance cost savings: “E-business and connectivity has the advantage of saving cost in copper cable spending, environmental pollution and destruction thus saves environmental and overall societal /public expenditure for development of infrastructure, its maintenance and management.”

Accurate and timely information on fair prices: “With the help of internet, rural and isolated communities can obtain accurate and timely information on fair prices and at speed for their products and services and can access regional and national job, business and related information from other markets and places at ease and timely.”

Falling costs and increasing utility of cutting edge technologies: “Gain Benefit from the falling costs and increasing utility of cutting edge technologies without having to bear the high costs of discarding older legacy systems.”

Business development based on specific business situation, histories and material conditions: “Ethiopia and other developing countries can strategically develop competitive advantages, without carrying the inertia of the previous industrial structure, based on their own specific situation, histories and material conditions.”

SMEs can sell their goods internationally: “Offering huge potential/ease to small and micro enterprises (SMEs) in Ethiopia and Africa willing to sell their goods internationally, Internet technologies can also make a significant contribution to the improvement of governmental business related services, revenues collection, management, adding to the growth of the technology and attitude towards it; helping to reduce corruption and to simplify trade. Ethiopian crafts and services are now being sold and exchanged through the Internet globally”

African / Ethiopian web-space is expanding rapidly: “In the area of Internet content development, African / Ethiopian web-space is expanding and growing rapidly and almost all countries have some form of local or internationally hosted web server, unofficially or officially representing the country with varying degrees of comprehensiveness and contents. However, there are still generally few institutions that are using the Web to deliver significant quantities of information.”

Ease in collection & processing of statistical information: “With the help of email and fax the collection of statistical information is no longer confined to the largest urban centers, and price indices now cover rural areas in some to some level.”
Network infrastructure roll-out and usage costs decrease: “Network infrastructure roll out and usage costs are gradually decreasing, and will continue to do so for the foreseeable future. This will be aided by the exploding quantities of fiber, wireless and satellite bandwidth which can make rural areas as easy to reach as urban ones”

Increasing number of Internet users/infrastructures in the continent & In Ethiopia: “There is increasing number of Internet users in the continent, and more Africa / Ethiopia -centered Web content, in local languages / contents, is being created with each passing day. Public access Tele-centers are springing up everywhere in the continent and in Ethiopia as sign of hope growing with greater quantity and type”

New Patterns of communication on Social Networks: “Emergence of new form of participatory communications or e-mail and social networks is precipitating a two-way communication based on exchange of ideas and information amongst ordinary and marginal society at large for almost no barrier opening up the media, liberating communication blockades and creating untraceable level of interaction podium and liberation of information sources, relative progress in opening up of communications (press, broadcasting and telecommunications) all are contributing to the change process.”

Growing culture and language, specific information industries: “Given the richness and diversity of African/Ethiopian culture and language, specific information industries built around strategies to capitalize on this enormous potential culture could prove to be quite innovative and economically beneficial due to the fact that oral tradition is a strong form of communication culture in Africa/ Ethiopia, communities need to be involved in the development of specialized applications, which could enhance indigenous knowledge and preserve local languages and identities. Through this form of business/ web content development, as well as other knowledge-based skills development,“

SMEs participating in global value chains: “African/Ethiopian entrepreneurs and businesses will also be more likely to be able to participate in global value chains “Business-to-business” e-commerce will provide opportunities for competent African businesses to increase their markets as well, beyond their national borders. Content development is critical, especially as the issue of bandwidth availability becomes less of an issue. Very small entrepreneurs like us( 13suns & Ethiojobs) , particularly in the cultural industries, will be able to take advantage of much larger niche markets globally by using e-commerce to communicate with consumers and finally in the global economy which is based on knowledge and information numerous opportunities are available for Ethiopia/developing countries that are willing to address them strategically.” And “Ethiopia or other developing countries can move to strategically develop competitive advantages within this new economy, based on their own specific histories, culture, material or economic conditions.”
SMMEs/SMEs usually have a tremendous flexibility and are able to produce new products quite quickly and can broaden their markets through co-operative arrangements: “The African private sector, which consists in large part of small, medium, and micro-sized (SMMEs) and the informal sector, which is widely regarded as a possible engine of growth in the information economy, will benefit from the connectivity developments. SMMEs usually have a tremendous flexibility and are able to produce new products quite quickly and can broaden their markets through co-operative arrangements that disseminate information on local or regional products and services using internet instantly. The success of these efforts depends on the ability of locally based trade and professional associations, chambers of commerce and grassroots organizations to develop demand-driven mechanisms for delivering these services in an integrated manner to domestic and international markets using the technologies.”

The formation of strategic alliances with strong foreign partners or distributors as a way of accessing new markets: “Potential opportunities within the information economy include the formation of strategic alliances with strong foreign partners or distributors as a way of accessing new markets, while at the same time improving the quality of their products and services.”
Summary Table:
Figure 16: Benefits, Problems and Opportunities of Internet use in Case SMEs.

<table>
<thead>
<tr>
<th>Company Name/ Internet use/</th>
<th>Benefits from using Internet</th>
<th>Problems / Impediments to use Internet</th>
</tr>
</thead>
</table>
| **Ethiojobs.net** (Online recruitment service) (Internal & external communication, email, database, web update, management) | -Reduced operating expenses, time and risks  
-Reduction of process and service costs  
-Environmental benefits in terms of stationary and fuel related pollutions and wastages | -Technology suspicion, phobia / fear to use internet technology  
-Lack of computer skill  
-Resistance to change habitual work patterns  
-Gov. official perceive this mentality  
-Expensive internet service fee  
-High computer hardware and software price  
-Lack of up to date legislative  
-Weak ICT infrastructure  
-Custom barriers and high level of import tax  
-Lack of sufficient bandwidth  
-Little internet coverage  
-Frequent power cut  
-Low internet/telephone penetration rate  
-Poor infrastructure and Inadequate expertise  
-Low level of education and English language |
| **13Sun’s Tours/ Online tour service E-tourism/ Exchange information, ideas, tour packages, customer/client feedback** | -90% of advertisement through Google  
-Enabled identifying customer needs  
-Reduce cost  
-Increased problem-solving competitiveness  
-Increased participation and global market share | -No legislative backings  
-Riskier online digital payment system  
-Electricity disruption  
-Unavailability of internet services  
-Low adoption of technology  
-Technical inefficiency and lack of computer skill  
-Customer illiteracy  
-Poor and malfunctioning infrastructure  
-Absence of national regulation in IT  
-Expensive IT accessories due to higher tariff  
-Lack of circuit capacity  
-Lack of sufficient bandwidth  
-Complex issue of multi-culture and multi-language |
<table>
<thead>
<tr>
<th>Company Name/ Internet use/</th>
<th>Benefit &amp; Prospect from Internet</th>
<th>Problems/Impediments to use Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Professional Business Center (PBC)/ Internet service provider</strong></td>
<td>Provide internet services, software, and accessory sales, computer maintenance and support services,</td>
<td>-Service interruption in basic infrastructure specially telecom and electricity -ill Coordination and collaboration (competition of machine and shared email account) -Scarce expertise in computer maintenance and software troubleshooting</td>
</tr>
<tr>
<td><strong>XYZ co. Software &amp; hardware solutions</strong></td>
<td>Hardware maintenance, web design and development, search engine optimization, logo design, advertising, hosting, posters, *New information industries *Language engineering innovations</td>
<td>-Inadequate and outdated infrastructure. -lack of maintenance service and insufficient skills to diagnose system problems. -Lack of pervasive low cost telecommunications, broadcasting, internet services and related infrastructure. -High cost of full internet services and slow. and retarded speed of connection. -Infant stage of web and software technology development. -Access barriers and incapability to utilize technology.</td>
</tr>
<tr>
<td><strong>ABC Co. IT technology company</strong> Provide services of hosting company website, web site &amp;content design and development, IT consultancy</td>
<td>-Reduce cost of advertisement, Paper &amp; stationary -Efficiency of process and operation -organized Transfer of knowledge</td>
<td>-Lack of infrastructure, maintenance service and insufficient skills to diagnose system problems -Lack of pervasive low cost telecommunications, broadcasting, internet services and linked infrastructure -high cost of full internet services and slow speed of the web -infant stage of web and software development -access barriers and incapability to utilize technology</td>
</tr>
</tbody>
</table>
Chapter 5

5. Analysis

5.1 Word Cloud Analysis on the Ethiopian SMEs Business Activities

Using Word Clouds to Analyze Empirical data: Word Cloud Analysis on the Internet Based Ethiopian SMEs to Trace the Critical /Determinant business Activity in Ethiopian business Context

Since the five empirical cases are fresh and recurring on the mind of the reader, this analysis will assist with a general overlook of all the five conducted interviews and here Word Cloud tool will be used to find out the most recurring activity in addition to the qualitative data analysis., using the method of Creating a word cloud (A tool: www.wordle.net) ‘Wordle’ is a word display primary analysis tool generating “word clouds” from texts that you provide. The word clouds display give greater prominence to words that appear more frequently in the source text. As McNaught & Lam (2010) suggested word cloud is the ‘fast and visually rich’ method which emphasizes often used words by making them occupy ‘more prominence in the representation’ and is recommended to be used for primary analysis. As the research have been carried on five companies it will be relevant to visualize the most repetitive word in the raw data collected and identify some patterns in those questions we asked and the answers received.

The procedures for preparing a visualization were: first, all answers were put together, general and major words as “SMEs”, “ICT”, “Developing countries”, “value Chain”, , “computers”, “information” and “people” were filtered out and the result was limited to 25 and 150 words respectively to contain variations, if any. For the rest of the texts, similar procedures were performed, filtering out frequently repeated words with less or balanced effect on the end result. The results can be seen in the word cloud result under, [Figure 17 A & B]. As a result, after removing some obvious words, we could see that there are some patterns in the picture. Some words were repeatedly used in the research and the dominance of these words entails that the Support activity has a determinant feature in the research discourse in the interviewer to interviewee dialogues or the empirical data, and in both [Figures 17 A and B] there exist a consistency in the dialogue between the researchers and interviewees.

The recurring words are: “Technology Development: ‘Internet/Web’, “Infrastructure development”, “Information/Internet services and “Business/Customer Services”. The main finding of word cloud visual method can be interpreted as follows – the researchers in these analysis have found out that the above two words dominantly from the support activities ‘Infrastructure’ and ‘Technology development’ are found to be the most frequently used words in response to the questions on the interview (these
two words are in the word clouds below: with a ‘Secondary large sized font’ next to the most common words like Business, value, Information, Activities etc. [N.B: The interviewer did not use those support activity words often in the interview and in the research discourses to avoid influence on the word/terminology recurring to keep the result fine and to maintain the research ethics].

In conclusion to this analysis, from the word cloud we can induced that there is a lower level of primary activities in the discussion and the support activities are repeatedly mentioned in the discussion considering the word cloud analysis result of the this research. Here the maximum number of words to be displayed is limited between 25 and 150 words. ‘Internet/Web’ Technology/ ‘Information service’ Development and Infrastructure’, which are the core of the support activities, are found to be dominant, excluding the repetitive common business terminologies in this research, Refer the figures below Word Cloud Analysis [Figure 17 A & B]

[ Figure 17 - A (25 Words) & B (150 words) ]

[Figure 17 - A (25 Words)] - Word Cloud Analysis 1

[Figure 17 - B (150 words)] - Word Cloud Analysis 2
5.2 General Analysis on the Virtual & Traditional Ethiopian SMEs with respect to the Value chain Activities

Ethiopian service business plays significant role in the economic activity of the country, after agriculture, though less efficient or unreliable and is almost entirely on tourism and related sectors (CIA, 2012). Among the reasons for this, as both the primary and secondary data’s showed especially for the internet oriented small and medium business, are due to inadequate transportation, power, communication and regulatory infrastructure among other human resource and technological development lags [Weak Support Activities: (See Figure 18; No.1,2,3,4)]. On the contrary despite the lack of basic infrastructure and weak penetration of technological accesses (CIA, 2012), internet technology using businesses are flourishing in many corners of the country and businesses are operating under circumstances of frequent power cuts, internet disconnections, cold technological / expert availabilities and IT related legislations.

Emphasis on the support Activities/Technical, HR &Legislative aspect :

The manager of the 13 Suns, Mr. Ermias have underlined the technical and regulatory infrastructure barriers in his tour business saying, In regulatory infrastructure . . . “there is almost no legislative backing for e-business in general and online businesses/tour operations in particular which makes it challenging and even riskier to carry on business with international customers or clients especially using online ‘digital payment systems’ [Weak Technology Development: failure in Support value activities, (See Figure 18; No.3)]. Digital payments or credit card system is not well operational in the country,. as result, handling financial transactions is difficult since there is no legislation and payment system operational for individuals and business transactions, rather the firm is forced to transact through the few banks (‘Dashen’, ‘Zemen’ Bank ...) working with credit card systems which have the legal permission and international agreements to carry on transactions with digital means”. Plus Mr. Ermias pointed out the technical inadequacies of Infrastructure [No Support Activities] as “Frequent country wide ‘electricity disruptions’ and total ‘unavailability of internet services’ in far urban and rural areas, as he said it while internet technology is a new potent tool, its adaptation and utilization in Ethiopia is constrained by among other problems inadequate infrastructure, limited clients and Human Resource knowledge and skills including end user / customers illiteracy and inability to accesses and use technology [Weak Support Activities: See (Figure 18; No.1,2,3) ], the absence of national regulations / policy and low IT literacy.” Similarly the rest of the internet utilizing businesses in this research had witnessed these infrastructural inadequacies as central in the service operation of the small and medium service enterprises, to mention some of them, Hilina L., Client relations officer of ‘Ethiojobs.com’ also strengthen it well,
since internet utilization in this business settings seeks for the full integration and /or combination of all the Technical and Regulatory aspects of Infrastructure (See Figure 18; No.1,2,3,4) it is of paramount to take in to consideration the issue, She discussed the infrastructure state: . . . “Low internet penetration rates, slow network growth, outdated systems, and Poor infrastructure and less pool of expertise in ICTs: The Ethiopian information and communications environment can be characterized by low telephone (internet) services penetration rates, slow network growth, poor and outdated systems/procedures, high pricing of private facilities, poor inter-city telephone lines (internet coverage ) links, and widely varying national network infrastructures between Urban and rural centers which hindered our e-recruitment services and virtual operation activities at higher rate.” (See Figure 18; No.1,2,3)

![Figure. 18 Virtual & Physical combined Value chain, (Primary (Physical & Virtual Chain) & Support Activities on (Porter, 1985) & (Rayport & Sviokla, 1995))](image)

The basic internet utilization activities of individual and collective physical and virtual firms is highly affected by the above mentioned technical knowhow, technological inadequacies (See Figure 18; No.1,2,3,4) which is putting direct and indirect impact on the utilization of the internet technologies to the SMEs. The inadequacies pose problems on visibility, mirroring capability, and establishing new customer relations (Rayport & Sviokla, 1995) hindering all other primary value activities: Virtual information exchange, processing and utilization. The physical value chain involves the flow of materials in the value process (Porter, 1985) and the virtual value chain involves the flow of information (through Gathering, Organizing, Selecting, Synthesizing and Distribution (Rayport & Sviokla, 1995). The inadequacies of the support activities (See Figure 18; No.1,2,3,4) due to the above technical and technological reasons have its own shadow on the value activity operation, growth and progress in the Ethiopian context making visibility, mirroring capability, and establishing new customer relations difficult. The firms will fail to be competitive
keeping all the digital values of visibility of SMEs operations by customers/end user, inability of mirroring/representation of the SMEs physical operations in to virtual or digital presence locally /globally. The manager of ABC.co Mr . A , explained the matter in this way : “While increasing numbers of businesses have a Web site with basic descriptive and contact information, many are hosted by international development agency sites, and very few actually use the Web for their own activities[No Visibility]. This is partly explained by the limited number of local people that have access/use on to the Internet, added to the limited skills and resources available for digitizing and coding web pages, and also by the high costs of local web hosting and design services making it more difficult to develop and use websites for local business services”

Taking all this in to consideration visibility, mirroring capability, and establishing new customer relations virtually which are the central virtual strategic business initiatives are almost difficult and this is ascertained by the inadequacy of the technical, humanitarian and regulatory support activity barriers[ Weak Support Activities: (See Figure 18; No.1,2,3,4 )]. The other empirical sources also show that the web content development and the internet accesses barriers makes the virtual business operation and the utilization of the benefits form the existing pool of digital resource a challenge.

The encouraging features in terms of both physical and virtual internet utilizing business undertaken in Ethiopia’s context is that the human and technological gaps are gradually decreasing as the developments is showing in the empirical findings, where most of the young Entrepreneurs and employees working in the SMEs are from IT and business background and the technological access is improving from dial up to broad band with diversity in relation to the business activity.[ Refer on Empirical tables summary]

**Internet value Added/ The primary Activities: Advantages in virtual operation**

The virtual market with a shift from analog to digital technologies has given an opportunity to the capabilities of firms to be enhanced, altering the way business is conducted. (Lumpkin & Dess, 2004) has asserted that the technology driven initiatives – the internet, wireless communications, and other digital technologies – are having a significant impact on the economy by changing the ways business interact with each other and with customers”. Compatible to these theory , SMEs in Ethiopian virtual business are changing the way they are interacting locally and globally with customers of diverse and distant locations at speed and low cost, as Hilina Legesse the client relations officer of Ethiojobs.net described it “The database storage and management capacity, the number of people visiting our site and the pool of employers’ access to our database , the competitive list of local and international vacancies (Web page-Link on Figure 10.) Posted on the website plus the link to other job recruitment firms enabled or made it easy for our customers to
easily ‘Search, Evaluate, Solve Problems, Choose and Transact’ (Lumpkin & Dess, 2004) on job opportunities virtually, the website is updated timely and an instant response and interactive system is in place for customer or client enquires via our e-mail and website. The internet has enabled ‘Easy and speedy’ accesses of huge amount of data/ CVs for all parties’ employers, clients, customers, partners with clarity, comparability and customized options[less hierarchy, transactions and switching cost]”

The virtual market space unlike the physical value chain, in its primary activities uses the digital instruments or tools (internet) to ‘Gather, Formulate, Store, Synthesize and Distribute’ information and Value added activities, [Primary Activities: shown on Figure 18, No. I,II,III,IV,V(Porter,1985) & Value added: Figure 19, A, B2,C (Lumpkin & Dess, 2004)], which in the due process of service business activities (Rayport & Sviokla, 1995) stated it as ‘Visibility’ ‘Mirroring Capability’ etc. that enables the virtual accessibility of firms “In a virtual market space the content of transaction is information about goods and services instead of the goods and services themselves, the context of transaction is electronic, onscreen interactions instead of ‘face-to-face’ interactions, and the infrastructure enabling a transaction consists of computers and communication lines instead of physical stores or service organization” (Rayport & Sviokla, 1994 cited from Grönroos. C, et al., 2000 P.243).

The SMEs use internet and all related technologies in the service activities despite the challenges from flaws in customer capabilities, Human Resource, internet Technologies, infrastructures and other related inadequacies, (See Support Activities Figure 18; No.1,2,3,4) and Major problems of Case SMEs, explained in the empirical findings. The acute lack of infrastructure and well trained IT professionals is a barrier to the developments. ‘13 Suns.com’ and ‘Ethiojobs.com’ majorly as virtually operating firms, disregarding there size and the existing challenges, are conducting business online and are using digital technologies to stream line operations, and internet is assisting these and the rest of the firms in the development of new value propositions by revolutionizing their capabilities /value activities in a way that enhances and create competitive advantage over the whole value chain process [See Benefits & Problems summary Tables].

**Emphasis on the Internet value Added :** Among the several strategies that provide a firm with new capability enhancing benefits in utilizing internet for value adding activities are: ‘Search, Evaluation, Problem-solving and Transaction’ (Lumpkin & Dess, 2004). In strengthening this theories to the empirical findings: the firms are benefiting in the ‘Search Activities’ referring to the process of gathering information and identifying purchase options which calls to the internet enhanced speed of information gathering, breadth of information that can be accessed, lowered switching in search cost (due to physical locations) which benefits both the buyers and suppliers by accelerating the search speed and depth at an incredible state. The case SME firms
had witnessed these benefits of reduced extra expenses(cost), delays and minimized risks of business, saying:

“while doing business in a country where communication, power supply and transportation infrastructures are very weak to support small businesses virtual service operations the contribution of internet is paramount in reducing all the extra expenses(cost), delays and even risks of losing transactions” moreover the client relations officer said in the service activities as she pointed it out as “the reduction of process and operation costs from direct and indirect expenses in communication, service operation and transaction with immense pool of information in the wider data base leverages the business growth by enhancing service process efficiency and customization options to employers and employees in addition to the significant reduction in labor, finance, direct and indirect expenses” Hilina. L (Ethiojobs.com).

The web/internet is enabling customers and/or businesses to ‘Evaluate and Solve Problems’ independently in the due process of service operations where ‘Evaluation Activities’ (mostly for products/non service options): refers to the process of considering alternatives and comparing the costs and benefits of various options of products.

‘Problem-Solving Activities’: referring to the process of identifying needs or problems, generating ideas or programs/action plans to address those needs. This activity primarily and typically is used in the context of services where individual customer needs are addressed or handled one at a time. This is more visible in the context of tour operation firms and empirically one of my respondents to the interview had witnessed that these activities are enhanced in the context of the SMEs virtually operating in tour operation and are fit very well. 13 Suns.com, Manager Mr. Ermias S Degefa said in line to the underlying theory that: “My firm has succeeded in identifying the variety of client/customer needs using internet, through generating programs or tour action plans customized to specific client needs, which enhanced the businesses’ value proposition quality and flexibility.” And the merits are “reduced cost of operations, communication and transactions while carrying on tour services in the business besides shorter marketing chain, and less misconception serves the efficiency in management and control activities and resources of the business virtually.” Which means that the Primary Value Activity [Figure 18, No. I,II,III,IV,V(Porter,1985)] of the business at this step seek for a value proposition that requires additional flexibility and customer relation activity which is: NEW DIGITAL VALUE (Rayport & Sviokla, 1995): the creating of relationships with the customers & businesses or others virtually. This also works for the value added ‘Transaction Activities’: which refers to the process of completing sale negotiating and agreeing contractually through reduced transaction process and cost to that of efficiently net-enabled payments and in exchange for product/service in consumption, in this activities indeed the businesses benefits in
case of shortening and speeding up the virtual contractual transactions processes in exchange of services and other terms but payment virtually is not well or totally enabled that is acting as a potential hindrance to the virtual operations of the SMEs in the sector the Manger of all most all businesses in the cases has underlined the absence of net-enabled payments as challenge: The Manager of 13 Suns, pointed out the Impediments to harness the merits of value added from internet technologies in Transaction completion activities: “in the context of Ethiopian SMEs there is almost no legislative backing for e-business in general and online tour operations in particular which makes it challenging and even riskier to carry on virtual net enabled payments with international customers or clients especially regarding online digital payment systems. Digital payments or credit card systems are not at all operational in the country, as result, handling financial transactions is difficult since there is no legislation and payment system operational for individuals and business transactions, rather the firm is forced to transact through the few banks (Dashen Bank, Zemen Bank ...) working with credit card systems which have the legal permission and international agreements to carry on transactions with digital means”

![Diagram](image)

**Figure 19. Internet Activities That Add Value, Organizational Dynamics**

5.2.1 Analysis on primary activities of Ethiopian SMEs: Virtual emphasis

Unlike the physical value chain which emphasizes the flow of firm resources, changing in to finished goods and the sale of the goods in the value chain to the final after sales services, the virtual value chain involves the flow of information in the value chain expressed as ‘Gathering, Organizing, Selecting, Synthesizing and Distribution’ (Rayport and Sviokla, 1995). A Value chain analysis can be helpful in examining value creation in virtual markets, (Stabell and Fjeldstad, 1998) found the value chain model more suitable for the analysis of production and manufacturing firms than ‘for service firms where the resulting chain does not fully capture the essence of the value creation mechanisms of the firm.’ Citing the example of an insurance company, they ask: “What is received, what is produced, what is shipped?” (Stabell & Fjeldstad, 1998, P 414). Similarly in this research the empirical cases of the two companies with a virtual presence of both an online recruitment and tour operations witnesses the difficulties in capturing the full value chain process/essence in their operations but the businesses value propositions are consumed and are expressed with a particular consumers involvement/action to create value on the virtual firm with the existing virtual presence of the SMEs. The Recruitment & Tour virtual value chain primary activities involves the participation of the particular Job seeker/Tourist SEARCHING and ‘SELECTION’ of a particular job post/tour package ‘EVALUATION’ plus (PROBLEM SOLVING from the firm) and lastly ‘APPLYING /SELECTION or (TRANSACTION)’ in the final decision to be recruited/Served. In confirmation of the primary activities of the value chain in the virtual presence of this firms building on this insight, (Rayport and Sviokla, 1995) as expressed in the theory the virtual value chain includes a sequence activities ‘Gathering, Organizing, Selecting, Synthesizing, and Distributing information (goods) by the company’ the two virtual companies, in the this research empirical cases, had set up web pages(Figure 9&11) with the required content through Gathering, Organizing(Figure 10,12&13) and Selection of the important web content ingredients with the aim of value proposition to customers.

Virtual/Physical Value chain: Self-Initiated diagram idea from: [Rayport & Sviokla, 1995]

- **Gathering**: stands for collecting and accumulating of data/information inputs,
- **Organizing**: storing the gathered data in a way that makes later retrieval and analysis simple and effective,
- **Selecting**: stands for the identification and extracting of the needed information or data from the data repository,
- **Synthesizing**: stands for packaging information, readily usable by the intended consumer for intended purpose,
- **Distributing**: stands for the transmission of the appropriately packaged information to its intended users or consumers.
The Case of Ethiojobs.net Primary value chain activity with value added:

As Hillina Legesse the client relations officer described it: “The competitive list of local and international vacancies served with our web presence (website) which means through the sequential activities of the virtual SMEs ‘Gathering, Organizing, Selecting, Synthesizing, and Distributing information goods (Rayport and Sviokla, 1995) plus the link to other job recruitment firms enabled or made it easy for the customers to easily [‘Search, Evaluate, Solve Problems( with the firm), Choose and Transact’] (Lumpkin & Dess, 2004) on job opportunities virtually, the website is updated timely and is with an instant response and interactive system in place for customer or client enquires via e-mail and website. Besides she explained the significance of internet connection, ‘enabling an ‘Easy and speedy’ accesses of huge amount of data/CVs for all parties’ employers, clients, customers, partners with clarity, comparability and customized options’ stressing on the essential/central role of the connectivity, communication, virtual transaction in creating the whole value chain which is expressed in (Rayport and Sviokla, 1995) as [VISIBILITY: the ability to visualize the service process flow on the web, MIRRORING CAPABILITY]: the ability of transmitting physical activities (market places) in to information/data based ones (market space) or the location/representation of physical things and locations on the virtual market space and NEW DIGITAL VALUE: which is the creating of relationships with the customers & businesses or others virtually.] . Taking this all in to consideration the primary activities are vastly influenced by the availability of internet connectivity, web/firm presences/interactivity and customer involvement in the value creation activities considering the issue of [VISIBILITY, MIRRORING CAPABILITY & NEW DIGITAL VALUE] which are the central structures or pillars of the Primary activities as the visibility, presence and accessibility of the business on the web is indispensable.

The Case of 13 Suns_tour.com, Primary value chain with value added:

In this case the primary activity of Synthesizing (Marketing and Sales) and Distribution (After or before Sales service of tour packages) are well expressed in the value chain activities of the virtual tour business, as the manager said the business do spend a significant amount of investment on the web sphere to increase its market in the value chain “I spend 90% of my advertisement on Google sense search engine [Synthesizing (Marketing and Sales)] ‘to enable the business be accessed and found on top of customer screen all over the world,’ this has helped my business to grow with the number of clients and get a share of the international tourists stake on the virtual market.” [VISIBILITY] And he also said “My firm has also succeeded in ‘identifying the variety of client/customer needs’ [Distribution (After / Before Sales service of Tour packages)] using internet [MIRRORING CAPABILITY], through generating programs or tour action plans customized to specific client needs, which enhanced the businesses’ value proposition quality and flexibility [NEW DIGITAL VALUE].” Mr. Ermias S Degefa
The primary business activities in a virtual SMEs settings are Gathering, organizing, selecting, synthesis and distribution of the information package in the course of value creation (Rayport & Sviokla, 1995). The Ethiopian SMEs in their value activities undertake these steps and are affected by the level, the quality or standard of internet connectivity and the know-how of the existing technologies. The managers of the SMEs in all the five case companies have said that the businesses are using broadband technologies (see Empirical Table) which makes the value activities attainable and feasible even though at the same time the human knowledge capacity of the firms and consumers is not advanced enough to carry on all this activities in a more efficient manner added to the insufficient technological facilities access and coverage despite the potential of diverse language and cultural background of the country or the region.

The managers of both Ethiojobs and 13 Suns stated that web design and development, posting and operations are at an infancy stage due to the absence of hosting companies in addition to the technological and know how limit, to mention some of the problems to date legislative/institutional will to facilitate internet access and e-business transaction are among the main list as Hilina. L from Ethiojobs said “Lack of up to date legislative/institutional will to facilitate internet access and e-business transaction options with regards to online payment systems and absence of policy and technical support for the sector with lesser priority given to information technologies are pausing a challenge to the business endeavors” adding to the statements she said, “Weak ICT infrastructure, little basic computer and IT skills resulting in the inability to utilize the existing hardware and software resources virtually, is expressed in the inability/ incapability of the job seekers (customer) to ‘SELECT’ a particular job post ‘EVALUATE’ and at lastly ‘APPLY’ in the final decision to be recruited, thus the client fail to qualify for the opportunity and the business fail to gain the margin for the interrupted full value activity cycle of the online/ virtual recruitment service which hampers the business growth and applicability in the wider less educated and less skilled customer business context”

Figure. 20 Primary Activity Chains Mix – [Porter (1985) & Rayport & Sviokla, (1995).]
In a similar manner Manager of 13Suns described the value activity problems in relation to the web content development, implementation, the legal and technical barriers which impedes the Visibility, Mirroring Capability and digital value of the virtual business activity (Rayport & Sviokla, 1995). Manager of 13 Suns said: “Web Content development is at the heart of the complex issue of language and culture, the multi-lingual, multi-cultural setting in Ethiopia adds to the complexity of the problems making the challenge daunting. Linguistic differences still represent substantial barriers to communication and knowledge/ information sharing in Ethiopia/Africa. Although ICT applications are being developed that will help to improve information access and interchange across language barriers, this is a technology largely confined to the industrialized world at present. Consequently, language and cultural barriers remain a problem to the development of web content by virtual firms using the undocumented/unstudied oral traditions and local languages with appropriate applications.”

In addition the manager mentioned the technical difficulties hindering the full cycle of the full value creation activities describing the existing transaction barriers saying “Digital payments or credit card system is not at all operational in the country as result, handling financial transactions is difficult since there is no legislation and payment system operational for individuals and business transactions, rather the firm is forced to transact through the few banks (Dashen Bank &Zemen Bank ...) working with credit card systems which have the legal permission and international agreements to carry on transactions with digital means in their banks”

All the above mentioned legal, technical, technological, diverse culture and linguistics circumstances have put a significant amount of pressure on the primary activity undertakings of all the business in the cases (see Imperial Findings)

5.2.2 Analysis on Support business activities of Ethiopian SMEs

Support Activities in Ethiopian business context shows a significant level of lagging from the data collected envisaged in the case companies. These shows that the support & primary activities are highly affected by the inadequacy of the firm and out firm infrastructure, qualified Human Resource, technological development and IT oriented logistics movement problems. The support activities of the SMEs are highly hindered by different factors; in the case companies the barriers are described.

<table>
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<tr>
<th>Firm Infrastructure</th>
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<tbody>
<tr>
<td>Human Resource Management</td>
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<tr>
<td>Technology Development</td>
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<td>Procurement</td>
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Figure: 21 Support / secondary Activities: [Human Resources, Technology development, procurement (Porter, 1985)]
In recent times there is an increment on the development of the IT infrastructure, Technology, qualified experts and entrepreneurs in this sector but the size of the problem seems to be overwhelming here under are few of the summarized restraints of support activities as mentioned by the SMEs managers:

The Manager of XYZ.Co. Mr. X said,

Lack of good Infrastructure: “Both physical and regulatory infrastructure – lack of access to technology. Lower levels of literacy, both computer-based and lack of content in local languages, diverse attitudinal and cultural settings further exacerbate the difficulties of the development.”

Lack of maintenance service and insufficient skills to diagnose system problems:
“Lack of maintenance service and insufficient skills to diagnose system problems and swap parts, out-of-commission machines which could easily be re-activated and be used that are wasted only for lack of maintenance and average expertise plus the end users lack of awareness on the reuse of failed items and accessories.”

Underutilization of existing resources:
“Underutilization of existing computer resources is also commonly caused by the multitude of many standalone PCs in the same office with no Local Area Networks. (LANs: office network of computers for coordination, sharing and efficiency advantage)

Manager of Professional Business Center, Mr. Yohannes said, “Although there has recently been a rapid increase in the rate of expansion and modernization of fixed telecommunication/internet networks, this is off a very low base and much of the growth is in the urban areas, and service interruptions in basic infrastructure such as telecoms and electricity interruptions (outage) are already common causing loss of customers and daily margins besides the long term adverse effect it pauses the quality of services we are providing to our customers.” And “Internet access in Ethiopia is scarce and expensive besides to that the Entrepreneur Manager added these problems:

“Rural areas in particular suffer from very scarce expertise in computer maintenance and software troubleshooting. With the very low pay scales in the African / Ethiopian civil service this problem is virtually going insurmountable for government infrastructure operators and Small business who are continually losing their brightest and most experienced to the private sector. However this is simply exacerbating the situation in Ethiopia, because experienced technicians are easily able to find much higher paying jobs in Europe elsewhere” which is affecting the speed of growth in the IT oriented business sector.
Internet use in SMEs for profitability and Environment sustainability:

This section covers on how internet is being used for profitability and sustainable business advantages from cost, differentiation and other perspectives in addition to the business and brief coverage of environmental sustainability. The SMEs in Ethiopian and developing countries have special advantages in cost reductions, differentiation, and sustainability which play a decisive role for their further development. As Porter defines it value is 'the amount buyers are willing to pay for what a firm provides them. Value is measured by total revenue ... A firm is profitable if the value it commands exceeds the costs involved in creating the product' (Porter, 1985: 38). In the value activities of the Ethiopian SMEs utilizing internet has benefited them in reducing cost in service operation processes and in related activities the Five managers of the Case SMEs have witnessed that the digital service operations with its challenge is opening up prospects for the SMEs to operate locally and globally for lower cost and capital investments. The cost reduction business and larger public advantages as directly quoted from the managers of the businesses randomly:

Manger of XYZ, Mr. X . . . .

“Ethiopia like other developing countries is placed to benefit from the falling costs and increasing utility of cutting edge technologies without having to bear the high costs of discarding older legacy systems and carrying massive cost of technological R & D’. And “The information economy provides the country with historic opportunity to create new information industries and entrepreneurship like ours and participate in global strategic partnerships of other similar information enterprises. Given the richness and diversity of African/Ethiopian culture, specific information industries built around strategies to harness these technologies and capitalize on this cultural richness could prove to be quite economically and socially beneficial.”

Manger of ABC.com, Mr. A ....

“Internet tools for communication vocally and visually play a lot of role in the business process, reducing cost of communication, time and transportation caused pollution and expenses to customers and the company, making the business more profitable. The business earns on average 8,000 Birr / $ 400 on daily basis it is profitable due to the fact that the companies involved in this internet oriented business sector are too minimal and “our business has been consistently working in the area for the past years persistently, despite the cold technological and human resource situations.” Mr.A. The Manager adding on the above issues underlined the role of the business in terms of contributing to the enhancement of the customers (end user firms) in undertaking their business using the customized software solutions and web features the company is producing for them, this has reduced a lot of advertisement and paper/stationary costs, finally adding value to the sustainability of the businesses and the environment simultaneously.”
In summary to the above mentioned empirical analysis with the theories, Transaction cost economics identifies transaction efficiency as a major source of value, as enhanced efficiency reduces costs. As (Williamson, 1975) suggests that value creation can derive from the reduction of uncertainty, complexity, information asymmetry, and small-numbers bargaining conditions. Moreover, reputation, trust, and transactional experience can lower the cost of idiosyncratic exchanges between firms (Williamson, 1979, 1983). Investments in information technology can reduce coordination costs and transaction risk (Clemons and Row, 1992).

In general, organizations that economize on transaction costs can be expected to extract more value from transactions. One of the main effects of transacting over the Internet, or in any highly networked environment, is the reduction in transaction costs it engenders (Dyer, 1997). Hence, the transaction cost approach critically informs our understanding of value creation in e-business. Transaction costs include 'the time spent by managers and employees searching for customers and suppliers, communicating with counterparts in other companies regarding transaction details as stated in the empirics, ... the costs of travel, physical space for meetings, and processing paper documents,' as well as the costs of production and inventory management as mentioned by (Lucking-Reiley and Spulber, 2001). In addition to decreasing these direct costs of economic transactions; e-businesses may also reduce indirect costs, such as the costs of adverse selection, moral hazard, and hold-up. This may result from an increased frequency of transactions (because of open standards, anyone can interact with anyone else, like [SMEs with Global clients]). Finally, Williamson (1983) implies that a transaction is a discrete event that is valuable by itself, as it reflects the choice of the most efficient governance form and hence can be a source of transactional efficiencies. However, in the context of virtual markets, considering any given exchange in isolation from other exchanges that may complement or facilitate that exchange makes it difficult to assess the value created by a specific economic exchange.

The differentiations advantages in the SMEs with an analytical support from Empirical findings from Ethiojobs.net and 13Suns.com

Porter in his theories both (Porter, 1985: 124-127 and Porter & Millar, 1985) argues that value can be created through differentiation along every step of the value chain, the theories had underlined fully here under “value can be created through differentiation along every step of the value chain through activities resulting in products and services that lower buyers’ costs or raise buyers' performance. Drivers of product differentiation, and hence sources of value creation, are policy choices (what activities to perform and how), linkages (within the value chain or with suppliers and channels), timing (of activities), location, sharing of activities among business units, learning, integration scale and institutional factors (see Porter, 1985: 124-127). And (Porter and
Millar, 1985) too argues that information technology creates value by supporting differentiations strategies. The SMEs create value through pursuing a differentiation strategy in their businesses under the existing circumstances the as the client officer of Ethiojobs.net mentioned the strength of the service in their businesses . . . . . “Our strength comes from our database storage and management capacity, client relations and HR service options and quality. The number of people visiting our site and the pool of employers’ access to our database relative to other e-recruiting businesses in Ethiopia is much higher.” She added “This is due to the competitive list of local and international vacancies (Web page- Figure 10.) posted on our website plus the link to other job recruitment firms made it easy for our customers to easily evaluate and choose job opportunities virtually , unlike other virtual businesses the website is updated timely and an instant response system is in place for customer or client enquires via our e-mail and website . The internet has enabled easy and speedy accesses of huge amount of data/ CVs for all parties’ employers, clients, customers, partners with clarity, comparability and customized options with no hierarchy go between, transactions and switching cost or biases. Taking all this in to consideration the SMEs are visibly carrying on activities that result in products and services that lower buyers' costs or raise buyers' performance which makes the theory of porter as viable.

13Suns.com in line with the theories of (Porter and Millar, 1985) which states that the sources of value creation, are policy choices (what activities to perform and how), linkages (within the value chain or with suppliers and channels), timing (of activities), location, sharing of activities among business units, learning, integration scale and institutional factors And also argues that information technology creates value by supporting differentiations strategies. In a similar manner this SME conforming to the before mentioned theories have the differentiation advantages in terms of harnessing the internet based business ,the company is equipped with logistics/facilities for tour operations, and it is the pioneer virtual private tour operation firm after the privatization of the tour operation activities in the country ,13Suns, unlike others who had followed the usual traditional business model/ tour operators, had had designed its own online business(E-tourism initiative) model without duplicating the usual trend of copying the traditional NTOs business model which other tour operators have followed and still following in the sector. This firm has unique competence in virtual tour operations relative to its competitors; the web site content is rich and is updated timely (See Figure 11, 12 &13). The manager, Mr. Ermias S Degefa underlined this statement saying, “Strong effort is made in the firm to narrow the gap between the virtual and the on ground tour operations/activities of the business and enhance the business operation activities.”
Virtual Market: Business & Environment Sustainability Advantages:
A further important factor to bear in mind is the fact that at least 80% of all global enterprises form the existing business are considered SMEs. A possible scenario of the future looks in to incorporation of sustainable development within a planning process. Such lenses have led to the conception of “sustainable enterprises” i.e., enterprises that are robust and resilient in face of anticipated and unanticipated economic, environmental and social challenges. Scenarios anticipating future market conditions predict that a sustainable enterprise growth will be enhanced by: (a) adapting to and diminishing the risk of exceeding social and environmental limits, and (b) meeting currently unmet market needs for the significant potential consumers that do not currently participate in the global marketplace (Moore and Manring, 2009) taking this in to consideration, the SMEs in the context of developing economies has also a lot to share to the sustainable enterprise resilience which is the “capacity for an enterprise to survive, adapt, and grow in the face of turbulent change,” and at the same time, “to increase shareholder value without increasing material throughput” (Moore & Manring, 2009 Page 61). Sustainable enterprise resilience within the framework of industrial ecology creates multiple business opportunities through green technologies, reduction of raw material and energy use, and “discovering innovative pathways for recovery and reuse of waste streams in place of virgin resources” (Moore and Manring, 2009). This redefines growth in a more sustainable context, a context that is not foreign to SMEs, who have been operating for centuries within the context of limited local markets, and adapting to those conditions successfully. SME development seeks to balance resilience and growth so as to align the creation of abundance: economically, environmentally, and socially, in a similar conformation to this in a developed countries SMEs business A number of forces underscore the emerging opportunities for SMEs to become proactively involved in sustainable practices: (Moore and Manring, 2009) in that case of environmental benefits as Hilina. Leggesse of Ethiojobs, described it: “Eco-friendly business undertaking through reduction of paper wastage and transportation carbon emission reduction bears a lot of contribution to the national and global environment friendly businesses through saving forests, reducing carbon emission.” And adding values of Accelerating cycles of sustainable technological innovation and efficient and environment friendly globalization of networked communications.

Figure: 22 - A self-generated diagram showing the relation between advantages from internet usage in the value chain or value system of businesses
Chapter 6

6. Conclusion

Figure 23: Conclusive Table Summary on Primary & Support activities

<table>
<thead>
<tr>
<th>Primary Activities</th>
<th>Support /Secondary Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gathering /Inbound Logistic</td>
<td>- Firm Infrastructure</td>
</tr>
<tr>
<td>Organizing /Operations</td>
<td>- Human Resource</td>
</tr>
<tr>
<td>Selecting/Outbound Logistics</td>
<td>- Technology Development</td>
</tr>
<tr>
<td>Synthesizing/ Marketing &amp; Sales</td>
<td>- Procurement</td>
</tr>
<tr>
<td>Distributing/After Sales services</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Support /Secondary Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Porter (1985) &amp; Rayport &amp; Sviokla (1995))</td>
<td>Firm Infrastructure</td>
</tr>
<tr>
<td></td>
<td>Human Resource Management</td>
</tr>
<tr>
<td></td>
<td>Technology Development</td>
</tr>
<tr>
<td></td>
<td>Procurement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case Firms</th>
<th>Support /Secondary Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Company Cases, Analysis Case of the virtual SMEs)</td>
<td>Legal &amp; Regulatory Infrastructure</td>
</tr>
<tr>
<td></td>
<td>ICT &amp; Network Infrastructure</td>
</tr>
<tr>
<td></td>
<td>Internet connectivity Infrastructure</td>
</tr>
<tr>
<td></td>
<td>Power &amp; Telecom Infrastructure</td>
</tr>
<tr>
<td></td>
<td>Payment &amp; Transaction</td>
</tr>
<tr>
<td></td>
<td>IT experts capacity &amp;</td>
</tr>
<tr>
<td></td>
<td>Users attitude, Capability &amp; Diversity</td>
</tr>
<tr>
<td></td>
<td>Information Technology Dev/t</td>
</tr>
<tr>
<td></td>
<td>Technological products</td>
</tr>
<tr>
<td></td>
<td>Procurement</td>
</tr>
<tr>
<td></td>
<td>Custom &amp; other procurement barriers</td>
</tr>
</tbody>
</table>

The Web presence has enabled [VISIBILITY, MIRRORING CAPABILITY & CREATION OF NEW DIGITAL VALUE] plus the sequential primary activities of the virtual and Traditional SMEs ‘Gathering, Organizing, Selecting, Synthesizing, and Distributing information goods (Rayport & Sviokla, 1995) For this reasons the primary activities are significantly influenced by the presence of ICT (connectivity), HR, legal, regulatory and other infrastructures, especially in the context of virtual value chain which is expressed in (Rayport and Sviokla, 1995) as:

- VISIBILITY: the ability to ‘visualize’ the service process flow on the web
- MIRRORING CAPABILITY: the ability of ‘transmitting physical activities’ (market places) in to ‘information / data’ based ones (market space) or the location / representation of physical things and locations on the virtual market space. And NEW DIGITAL VALUE: the creating of relationships with the customers & businesses or others virtually.
Adapting this theory contrary to the one mentioned on Porter 1985 cited from Amit & Zott, 2001, p. 496), “primary activity are given greater influence on the businesses and are positioned in the literature as having “a direct impact on value creation, and support activities, which affect value only through their impact on the performance of the primary activities” the primary activities here in this research on Ethiopian SMEs is vastly influenced rather by the availability of internet connectivity, legal, regulatory and Technical infrastructure, IT expert and other Support/Secondary activities and therefore the web/firm presences/interactivity and customer involvement in the value creation activities issues of [VISIBILITY, MIRRORING CAPABILITY & NEW DIGITAL VALUE] makes the role of the support activities very critical or determinant to carry on all the Primary value activities without inconvenience. Therefore we can say that the support and primary activities have equivalent influence in the Ethiopian business context [See Adapted Model Below: Primary Activity ≈ Support Activity].

The underlying conclusion in this research is that, the support activities mentioned on Porter (1985) and (Rayport & Sviokla, 1995) as in both cases (physical and virtual SMEs presence) are found to be equivalently critical/determinant as it is analyzed in the cases and shortly portrayed in the above conclusive table, where the support activities are found to be playing a significant role and contribution even in the sustenance of the primary value activities and further to the whole value system as far as the internet connectivity to business presence [VISIBILITY, MIRRORING CAPABILITY & NEW DIGITAL VALUE] is taken in to consideration.
6.1. The Benefits of using internet in the Ethiopian / Developing Economies SMEs

The Benefits of utilizing internet in the value activities of SMEs in Ethiopian and developing countries context are listed here under in a more conclusive and summarized form so to give a summed up picture of the merits in Ethiopian SMEs contexts.

- **The falling costs and increasing utility of cutting edge technologies without bearing the high costs of discarding older legacy systems and carrying massive cost of technological Research and Development**: Ethiopia and other developing countries are placed to benefit from the falling costs and increasing utility of cutting edge technologies without having to bear the high costs of discarding older legacy systems and carrying massive cost of technological R & D.

- **Historic opportunity to create new information industries and entrepreneurship**: The information economy provides the country with historic opportunity to create new information industries and entrepreneurship and participate in global strategic partnerships of other similar information enterprises. Given the richness and diversity of Ethiopian or African culture, specific information industries built around strategies to harness these technologies and capitalize on this cultural richness could prove to be quite economically and socially beneficial. Besides The Language engineering innovations are providing a basis for integrating written and spoken language processing techniques and improving their ease of use. New applications such as multilingual information services and computer assisted translation may provide greater possibilities for communication among the many dialects and linguistic traditions within or between diversified ethnic lines or groups that is enhancing and empowering the communication developments.

- **Product/service and Processes Efficiency for Firms**: Ease in communication at all levels and Efficiency of operation and Enhanced product / service concept production, processing, dissemination and exchange of knowledge and information with the developed world at a cost almost close to Zero.

- **Enhanced the businesses’ value proposition, quality and flexibility**: as a result of reduced cost of operations, communication and transactions

- **Shorter marketing chain, No abstraction**: (direct to end users with no go between) and less misconception serves the efficiency in management and the control activities of the firms’ resources in circumstances of scarce resource and control systems in the Ethiopian and developing SMEs business contexts.

- **Reduced costs (increased competitiveness), wider reach and rich data**: that can be processed and be in use in couple of seconds with the unlimited number of visitors clients , young and enthusiastic users with untapped e-business potential and leveraging of skills, time and knowledge makes the possibilities enormous.”
- **SMEs, are better positioned to participate in global value chains**: and wider possibilities of creating mutual partnerships and alliances with knowledge-based enterprises through “business-to-business” which is providing opportunities for competent business in the developing countries to increase market share globally as well, far beyond the national borders and for these reasons new trading frontiers for cottage, small and medium-scale enterprises in the developing world or our context are undoubtedly on the increase.

- **The reduction of process and operation costs from direct and indirect expenses**: in communication, service operation and transaction with immense pool of information flowing in the wider data base leverages the business growth by enhancing service process efficiency and customization options to both firms and customers/clients in addition to the significant reduction in labor, finance, direct and indirect expenses.

- **Environmental benefits**: Eco-friendly business undertaking through reduction of paper wastage and transportation carbon emission reduction which bears a lot of contribution to the national and global environment friendly businesses through saving forests, reducing carbon emission.”
6.2. The Problems to Use Internet in the Ethiopian/Developing Economies SMEs

The problems to utilize internet in the value activities of SMEs in Ethiopian and developing countries context are listed here under in a more conclusive and summarized form so to give a summed up picture of how the impediments.

- **For poor literacy, both computer-based and formal education reasons:** the in capabilities to accesses and use internet, for business and information purpose, is causing barriers or a pernicious effect on individual entrepreneurs, businesses and the society growth in general especially with the affluent exacerbating existing distortions in society[to the poor and the underprivileged generally women and minorities] citizens with a higher socio-economic status, already are overrepresented in the business, societal and political development process, building an even stronger lobby in the government, in the overall system, the businesses and social merits.

- **Lack of good infrastructure – both physical and regulatory – lack of access to technology in rural or remote areas:** The cost of access is seen as a primary problem associated with the lack of ICT infrastructure - if costs are lower, there is increased demand for infrastructure and greater traffic, which in turn would lower the unit cost of delivering the service through the increased economies of scale.

- **Low levels of literacy, both computer-based and lack of content in local languages settings:** further exacerbate the difficulties, and for the reason of lack of maintenance service and insufficient skills to diagnose system problems and swap parts, there are many out-of-commission machines which could easily be re-activated and be used that are wasted only for lack of maintenance and average expertise plus the end users lack of awareness on the reuse of failed items/hardware and accessories.

- **Rural areas in particular suffer with very scarce expertise in computer maintenance and software troubleshooting:** With the very low pay scales in the African/Ethiopian civil service this problem is virtually insurmountable for government infrastructure operators who are continually losing their experienced to migration.

- **Service interruptions in basic infrastructure such as telecoms and electricity interruptions (outage):** are already common causing loss of customers and daily margins for the SMEs besides the long term adverse effect it pauses on the quality of services the business are providing to the customers.

- **Language & Diversity Barriers:** English is used in almost 80 percent of Web sites, in graphics and instructions in the country, yet less than far fewer people for educational reason in Ethiopia speaks the English language. To make matters worse, there is massive societal inequities and diversity among the society with education and ethno-lingual strata, mainly men and major cities especially the capital, have significantly higher access to the Internet and the Internet sites are hosted on servers that are in Europe or the U.S including ours [13 Suns Company] in the USA that makes the issues of diversity and content and feature customizability much deeper a barrier.
While increasing numbers of organizations have a Web site with basic descriptive and contact information, many are hosted by international development agency sites, or foreign web hosts and very few actually use the Web for their own activities. This is partly explained by the limited number of local people/customers that have access/use on to the Internet/Web site which is deterring the web presence of business firms. And further added to the limited skills and resources available for digitizing and coding web pages, the high costs of local web hosting and design services are making it more difficult to develop and use websites for local small business services.

6.3. The Potential Opportunities / Prospects Internet Holds To SMEs

The potential opportunities internet technology holds to the SMEs is enormous as it has been dealt with earlier in the empirical findings from the various firms, here under are the major opportunities the technology is holding to the small and medium size businesses operating in the Ethiopian business context which will also mostly work for other developing countries contexts. Here under are the bullet points of opportunities:

- Internet will enable SMEs to make strategic alliances with strong local or foreign partners or distributors as a way of accessing new markets and possibilities for further product or service developments or improvements.

- Local SMEs will develop tremendous advantage in terms of cost, differentiation and flexibility which will enable them to produce new products/Services quite quickly and broaden their markets through co-operative arrangements that disseminate information on local or regional products/services using internet instantly and enable them to develop demand-driven mechanisms for delivering these services in an integrated manner to domestic and international markets at ease and speed.

- SMEs in Ethiopia and elsewhere in other developing countries gain Benefit from the falling costs and increasing utility of cutting edge technologies without having to bear the high costs of discarding older legacy systems and R & D. Therefore the businesses develop competitive advantages, without carrying the cost and debt of the previous industrial structure, based on their own specific business situation, histories, values or culture, economy or material conditions.

- Particularly the information, knowledge and cultural industries, [Like 13 Suns & Ethio.jobs in the Case] will be able to take advantage of much larger niche markets globally by using e-commerce to communicate with consumers and finally take share in the global economy which is based on knowledge and information. Numerous opportunities are available if the countries and businesses address them strategically.

- Given the richness and diversity of African/Ethiopian culture and language, specific information industries built around strategies to capitalize on this enormous potential culture could prove to be quite innovative and economically beneficial due to the fact that oral tradition is a strong form of communication culture in Africa/Ethiopia. If
communities are involved in the development of specialized applications, which could enhance indigenous knowledge and preserve local languages and identities. It will leverage the business and web content development, as well as other knowledge and information based skills and businesses development effort.

- New Patterns of communication on Social Networks and other web features: Emergence of new form of participatory communications: e-mail and social networks is precipitating a two-way communication based on exchange of ideas and information amongst ordinary and marginal society at large for almost no barrier opening up the media for relatively lesser cost, liberating communication blockades and creating untraceable level of interaction podium and liberation of information sources, with a relative progress in opening up of communications (press, broadcasting and telecommunications) which all are contributing to the enhanced change process.

- Network infrastructure roll-out and usage costs decrease: Network infrastructure roll out and usage costs are gradually decreasing, and will continue to do so for the foreseeable future. This will be aided by the exploding quantities of fiber, wireless and satellite bandwidth which can make rural areas as easy to reach as urban ones and with the increasing number of Internet users in Ethiopia and African continent: There is a possibility of more Africa/Ethiopia -centered Web contents, in local languages/contents which will be accessible for both rural and urban markets at ease, as signs of hope.

- Offering huge potential/ease to small and micro enterprises (SMEs) in Ethiopia and Africa, to sell their goods internationally, Internet technologies is making a significant contribution to the improvement of governmental business related services, revenues collection, management, adding to the growth of the technology provision and authorities attitude towards it; helping to reduce corruption and to simplify trade. Ethiopian crafts and services are now sold through the Internet globally.

- E-business and connectivity has the advantage of saving cost in copper cable spending, environmental pollution and destruction thus saves environmental and overall societal/public expenditure for development of infrastructure, its maintenance and management in addition to the accurate and timely information for rural and isolated communities on fair prices and accessibility of their products and services to the wider market besides the rural community can also get regional and national job, business and related information from other markets and places at ease and timely.

- Growing internet media exposure, free ware and free communication and learning options, partnerships, multinational companies’ opening up and collaboration enhancements will pave the bumpy road to small and medium businesses in their effort to growth and success.
Chapter 7

7. Contribution

7.1 Knowledge Contributions: -

- On the Benefits of Internet Technology to SMEs and the General Public:

  - **Increasing utility of cutting edge technologies:** without high costs of discarding older legacy systems and carrying massive cost of infrastructure, research and development.
  - **SMEs Language engineering innovations, technology oriented information industries/ entrepreneurship and participation in the global strategic partnerships of other similar information enterprises:** Capitalizing on this cultural richness and diversity of Ethiopian or African culture, is proving to be quite economically and socially beneficial. Besides the Language engineering innovations are providing a basis for integrating written and spoken language processing techniques and improving their ease of use. New applications such as multilingual information services and computer assisted translation may provide greater possibilities for communication among the many dialects and linguistic traditions within or between diversified ethnic lines or groups that are enhancing and empowering the communication developments for further business undertakings.
  - **Shorter marketing chain, No abstraction:** [direct to end users, with no go between] and less misconception serves the efficiency in management and the control activities of the firms’ resources in circumstances of scarce resource and control systems in the Ethiopian and developing SMEs business contexts.
  - **Reduced costs [increased competitiveness], wider reach and rich data:** that can be processed and be used in couple of seconds with unlimited number of visitors clients leveraging their skills, time and knowledge makes the possibilities enormous.
  - **SMEs are better positioned to participate in global value chains:** possibilities of creating mutual partnerships and alliances with knowledge-based enterprises through “business-to-business” settings to increase market share globally, beyond the national borders and for these reasons new trading frontiers for cottage, small and medium-scale enterprises in the developing world or our context are undoubtedly on the increase.
  - **Product / service and Processes Efficiency for SMEs :** The reduction of process and operation costs: in communication, service operation and transaction with
immense pool of information flowing in the wider database leverages the business growth by enhancing service process efficiency and customization options to both firms and customers/clients in addition to the significant reduction in labor, finance, direct and indirect expenses these enhances the businesses’ value proposition, quality and flexibility.

- **Environmental benefits**: Eco-friendly business, reduction of paper wastage and carbon emission from transportation bears a lot of contribution to the national and global environment friendly businesses through saving forests, maintaining the ecology indirectly.”

- **On the Impediments to Use Internet Technology in SMEs and General Public:**

  - **Poor literacy, both computer-based and formal education** reasons, the in capabilities to accesses and use internet, for business and information purpose, is causing barriers or a pernicious effect on individual entrepreneurs, businesses.
  
  - **Lack of good infrastructure** – both physical and regulatory – lack of access to technology in rural or remote areas; the cost of access is seen as a primary problem associated with the lack of ICT infrastructure.

  - **Lack of content in local languages, of lack of maintenance** service and insufficient skills to diagnose system problems

  - **Service interruptions in basic infrastructure such as Telecoms and Electricity interruptions**: are already common causing loss of customers and daily margins for the SMEs besides the long term adverse effect it pauses on the quality of services the business are providing to the customers.

  - **Limited number of local people/customers that have access/use on to the Internet/Web site**: which is deterring the web presence of business firms and further added to the limited skills and resources available for digitizing and coding web pages, the high costs of local web hosting and design services are making it more difficult to develop and use websites for local small business services

  - **Language & Diversity Barriers**: English is used in almost 80 percent of Web sites, in graphics and instructions in the country, yet less than far fewer people for educational reason in Ethiopia speaks the English language. To make matters worse, there is massive societal inequities and diversity among the society with education and ethno-lingual strata, mainly men and major cities especially the capital, have significantly higher access to the Internet that makes the issues of diversity and content and feature customizability much deeper a barrier
- On the Prospects of Internet Technology to SMEs and the General Public:

- SMMEs/SMEs attainment of tremendous flexibility and ability to produce new products/services quite quickly plus expansion of their markets through co-operative arrangements or strategic alliances with strong foreign/international partners or distributors as a way of accessing new/blue ocean markets.

- SMEs participating in global value chains and attainment of the ability to strategically develop competitive advantages within this new economy, based on SMEs’ own specific histories, culture, material or economic conditions.

- Culture and language specific information industries enhancements and the SMEs ability/possibilities of harnessing the richness and diversity of African/Ethiopian culture and language, specific information industries through building strategies to capitalize on this enormous potentials, that will prove to be quite innovative and economically beneficial due to the fact that especially the oral tradition as an example of strong forms of communication culture.

- Increasing number of internet users and Emergence of new form of participatory communications or e-mail and social networks is precipitating a two-way communication based on exchange of ideas and information amongst ordinary and marginal society at large for almost no barrier, opening up the media, liberating communication blockades and creating untraceable level of interaction.

- Network infrastructure roll out and usage costs are gradually decreasing. This will be aided by the exploding quantities of fiber, wireless and satellite bandwidth which is making the rural areas as easy to reach as urban ones making collection of statistical information and businesses practices much easier than imagined.

- Accessibility of accurate and timely relevant information on fair prices rates, products, services and the ability to access regional and national job posts and needs, makes it better for the marginal society and the SMEs activities.

- Growing internet media exposure, free ware and free communication and learning options, partnerships, multinational companies’ opening up and collaboration enhancements, besides E-business and connectivity has the advantage of saving cost in copper, cable spending, transport fuel or environmental pollution and destruction thus saves environmental and overall societal/public expenditure for development of infrastructure, its maintenance and management in and out firm.
7.2 Theoretical Contribution

Business firms create value through two basic value activities Primary and Support activities (Porter, 1985) and in this research the SMEs are augmented according to porter’s value activities which is chosen as a relevant model or frame of theoretical references to ‘visualize the critical or detrimental’ value activity [primary or support?] in the Ethiopian or developing countries SMEs businesses operations / contexts.

Internet technologies have given to a rise of a new virtual value chain similar to the physical value chain, unlike the physical value chain which emphasizes: (the flow of firm resources, changing in to finished goods and the sale of the goods in the value chain up to the final after services) the virtual value chain involves the flow of information in the value chain by [Gathering, Organizing, Selecting, Synthesizing and distribution] (Rayport & Sviokla, 1995). How would the patterns of internet use, ‘value activities prioritization’ and e-business value creation vary across different economic/business environments? (e.g., developed versus developing countries)? This was the theoretical center of attention in this thesis. In particular, various prior researches argued that theories developed in the context of mature markets and industrialized countries need to be reexamined / adapted to the context of developing countries because these countries may have very different economic, societal, business and regulatory environments. Despite the fact that the Internet is a global platform and use of internet in business, e-business is an international phenomenon; most of the existing studies in this area have focused on few countries or economic regions, So far, no or little international studies have been conducted based on firm-level data from developing countries. And this research was conducted with the aim of adding or giving an international dimension to the investigation of e-business value, extending beyond the developed world to encompass the experience of organizations in developing or underdeveloped countries.

Michael Porters, in his value chain framework underlined that, among the two primary and secondary/support value activities, ‘the determinant activity’? is the primary activity where the secondary activity serves the purpose of supporting the primary activities. The main argument against this theory lies with the fact that SMEs/firms in the developing world have, as above seen on the empirical findings and analysis the supporting activities are found to be visibly or proportionally decisive as essential determining factors in the value activities, as far as the influence of Human Resources, Technology development and Infrastructure concerned even on the sustenance of the primary activities themselves. The theoretical framework of Michael Porter explained and portrayed on (Porter, 1985 cited from Amit &Zott, 2001): in this literature primary activities are given greater influence on the businesses described as having “a direct impact on value creation, and support activities, which affect value only through their impact on the performance of the primary activities” (Amit & Zott,2001 P. 496 ). Considering the points made in the empirics, analysis and conclusion Table; unlike (Porter 1985) stand on the determining or strong influence of primary activities on the value operation, the adapted model to the developing countries context suggests that both have at least proportional impact, if not, the support activities are given a much stronger or determining power on the value activities or business operations. And finally to sum it up in the context of developing countries, or
economies the determining strength of the supporting activities is much greater or at least proportional to the role or impact of the primary activities as far as Business context, Economic [Infrastructure, Human Resources and Technological developments are taken in to consideration]. Here under [Figure 24] is an adapted/ extended value chain model on Porters previous model, showing the equivalent determining power of both Primary & Secondary Value Chain Activities to the Ethiopian business context.

Porter’s value chain (1985)

Figure 24. * Value Chain Model Adapted to Ethiopian business context: Portrays Proportional role of both Primary and support activities in the SME business.

- Adapted extended value chain model on Porters existing model to the Ethiopian business context: showing the equivalent determining power of both Primary & support Value activities
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Appendix

List of Figure Appendix

The internet is only now arriving, and -- with a billion people on the continent still mostly offline -- there exists once-in-a-lifetime opportunity to build the next Zyngas, eBay's and Groupons for a huge untapped local market. You need only look at the map of huge broadband fibreoptic cables currently being laid on both east and west coasts, from Djibouti to Dakar, to understand how quickly and ambitiously an entire continent is being connected. It's like being back in 1995 again, and realizing there might just be a market for an online bookshop or auction website.


Want to become an internet billionaire? Move to Africa, Wired UK, By David Rowan [04 November 11, Accessed Jan 21, 2012. Figure Appendix 1]

http://www.wired.co.uk/magazine/archive/2011/08/features/switching-on/viewgallery#!image-number=7
[By Pete Guest,12 July 11, Accessed Jan 21, 2012. Figure Appendix 2]
Nevertheless Internet access in Africa has been largely confined to the capital cities, although a growing number of countries (currently Angola, Benin, Botswana, Ghana, Kenya, Mozambique, Namibia, Tanzania and Zimbabwe) do have Points of Presence (POPs) in some of the secondary towns, and South Africa has POPs in about 70 locations ECA (2001)
List of Table Appendix

Table Appendix 1


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<tr>
<td>Eritrea</td>
<td>300</td>
<td>29</td>
<td>0</td>
<td>N/A</td>
<td>0.60</td>
<td>3548</td>
<td>11,827</td>
<td>96</td>
<td>10</td>
</tr>
<tr>
<td>Sudan</td>
<td>300</td>
<td>128</td>
<td>1</td>
<td>No</td>
<td>28527</td>
<td>95,090</td>
<td>36</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>2,400</td>
<td>512</td>
<td>1</td>
<td>Yes*</td>
<td>2.60</td>
<td>62111</td>
<td>25,880</td>
<td>96</td>
<td>5</td>
</tr>
<tr>
<td>Djibouti</td>
<td>300</td>
<td>64</td>
<td>1</td>
<td>Yes</td>
<td>1.00</td>
<td>651</td>
<td>2,170</td>
<td>893</td>
<td>5</td>
</tr>
</tbody>
</table>

"Users / Int Kbps" is the number of Internet users for every 1 Kilobit per second of the total International bandwidth

"Population / User" is the number of people in the country per Internet User

"Call Cost" is converted to US$/hour
Table Appendix 2 – UNIDO’s Quantitative SMEs Definition Criterion

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Micro</th>
<th>Small</th>
<th>Medium</th>
<th>GNI per Capita ($)</th>
<th>Income Group</th>
<th>MSMEs per 1,000 population</th>
<th>MSMEs employment as a % of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>UNCDF</td>
<td>1-4</td>
<td>5-14</td>
<td>15-49</td>
<td>1,240</td>
<td>Lower Middle</td>
<td>26.8</td>
<td>73.5</td>
</tr>
<tr>
<td>Jordan</td>
<td>DOS</td>
<td>1-4</td>
<td>5-19</td>
<td>20-99</td>
<td>2190</td>
<td>Lower Middle</td>
<td>26.8</td>
<td>50.0</td>
</tr>
<tr>
<td>Tunisia</td>
<td>UNIDO</td>
<td>&lt;10</td>
<td>10-49</td>
<td>50-99</td>
<td>2080</td>
<td>Lower Middle</td>
<td>0.9</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note: Although it is not possible to have a micro enterprise with 0 employees, the range has been displayed within the table as provided by the source itself.

Table Appendix 3 – UNIDO’s Qualitative SMEs Définition criterion

<table>
<thead>
<tr>
<th>Category</th>
<th>Micro, Small &amp; Medium firms(Column-1)</th>
<th>Large Companies(Column-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Proprietor-entrepreneurship _ Functions linked to personalities</td>
<td>_ Manager-entrepreneurship _ Division of labor</td>
</tr>
<tr>
<td>Personnel</td>
<td>Lack of university graduates _ All-round Knowledge</td>
<td>_ Dominance of university graduates _ Specialization</td>
</tr>
<tr>
<td>Organization</td>
<td>Highly personalized contacts</td>
<td>_ Highly formalized communication</td>
</tr>
<tr>
<td>Sales</td>
<td>_ Competitive position not defined and uncertain</td>
<td>_ Strong competitive position</td>
</tr>
<tr>
<td>Buyer's Relationships</td>
<td>Unstable _</td>
<td>Based on long-term contracts</td>
</tr>
<tr>
<td>Production</td>
<td>Labor intensive</td>
<td>_ Capital intensive, economies of scale</td>
</tr>
<tr>
<td>Research Development</td>
<td>Following the market, intuitive approach</td>
<td>Institutionalized</td>
</tr>
<tr>
<td>Finance</td>
<td>_ Role of family funds, self-financing</td>
<td>_ Diversified ownership structure , access to anonymous capital market</td>
</tr>
<tr>
<td>No</td>
<td>Company Name</td>
<td>Interviewee Name, Position &amp; Qualification</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Ethiojobs.net</td>
<td>Online Recruitment Services <a href="http://ethiojobs.net/">http://ethiojobs.net/</a> Miss Hilina Legesse Client, Relations Officer (B.A) in Economics MSc</td>
</tr>
<tr>
<td>2</td>
<td>13suns Tours P.L.C</td>
<td>Online Tour &amp; Travel Services <a href="http://13suns.com/">http://13suns.com/</a> Mr. Ermias S Degefa Owner /Entrepreneur (B.A) Business Admin. (Diploma) Tourism operations.</td>
</tr>
<tr>
<td>3</td>
<td>ABC. Co, hosting service and website /web application design and development, Mr. A</td>
<td>Client Relations &amp; Web content Management officer (B.A) in Business and IT Certificate</td>
</tr>
<tr>
<td>4</td>
<td>Professional Business center Internet Café &amp; Others</td>
<td>Mr. Yohannes Ameha, Manager/ Entrepreneur (Diploma) in IT and Entrepreneurship skills</td>
</tr>
<tr>
<td>5</td>
<td>XYZ Co, Software &amp; Hardware solutions</td>
<td>Mr. X Manager/ Entrepreneur, (BA) Mathematics &amp; Computer Science</td>
</tr>
</tbody>
</table>
Figure Appendix 4 - : Map of Addis Ababa &
: The Location of Case SMEs, Addis Ababa, Ethiopia

[https://maps.google.com/maps?hl=en&gq=addis+ababa+ethiopia&ie=UTF-8]

Name & Location of Case Companies:-

- **Ethiojobs**: An Online Recruitment Services./ Website [http://ethiojobs.net/]
  Bole, Addis Ababa, Ethiopia ( South East )
- **13suns**: Tours Private Limited Company, / Website [http://13suns.com/]
  Bole Medhanialem, Addis Ababa, Ethiopia( East Central )
- **ABC. Co**: Hosting & Web Page design
  Kolfe Keraniya , Addis Ababa, Ethiopia ( West)
- **Professional Business Center**: Internet Café & Other.
  Kotebe, Abyssinia, Addis Ababa, Ethiopia( East )
- **XYZ.Co**: Software & Hardware solutions
  Gulele , Addis Ababa, Ethiopia( North )
Appendix - 1 Research Question & Interview Guide for Respective officials

Research Questions:

- How are internet technologies being utilized in small and medium size service firms’ value chain activities in Ethiopia?

- What are the prospects of internet technologies and the problems to utilize this technology in the value chain of the small and medium enterprises of Ethiopia and its future potentials?

Interview Guide for Respective officials:

- Interviewee Information
1. Would you please tell me about your background?
2. What is your main task in the company?

- Company Information
3. When was the company established?
   - No. of Employees?
   - Registered/Invested Capital?
   - Annual Turnover/Average Sales?
   - Technology capacity?

4. What is the company’s main area of business, its customers and partners?

5. How many employees are working & how is their educational & Technological skill?

6. How is your business using internet technologies in the businesses activities?
   - What kind of internet technology is in use in your company?
   - In what way is the technology being utilized?
   - What business activities of your firm are supported by internet technologies?
   - In what business activities in relation to internet utilization are you better than your competitors?
   - How do you make money or essentially which activity from in the business?
   - What are you best at?

7. What are the benefits/opportunities in utilizing internet technologies in relation to the business/value chain activities? How would you describe the benefits?

8. What are the problems to utilize internet technology in the business activities/ value chain of your businesses? How would you describe the problems? What are the dangers?

9. What potential advantage and challenge do you think the internet technologies hold to business like yours in the future? How would you describe it?

10. For what business activities do you use internet? How?

11. What potential advantage/disadvantage does internet use have on sustainability of the business and the environment in general?