2016 E-Commerce Sub-Sector Assessment Report for Kenya

by

Peter Misiani Mwencha, (Ph.D.)

ABSTRACT

E-commerce has changed the way of doing business across the world. In Kenya, the impact of e-commerce on social and economic structures has also been significant. In many spheres and sectors, e-commerce has now become an integral part of day-to-day activities and its relevance is expected to continue growing in the coming years as mobile internet continues to spread, a proposed national addressing system comes into existence, and people become more comfortable with digital transactions.

While the rise of this medium has attracted increased attention in business as well as policy circles, not much sector-specific research has been carried out on the various economic processes that currently take place in this area, making business as well as policy decisions all the more difficult. To address this gap, this study sought to carry out in-depth research into the current state of the e-commerce sub-sector in the country, highlighting the progress so far made, the prevailing challenges and the remaining gaps. The study is intended to add to the existing knowledge base on e-commerce in Kenya and contribute to the growth of this nascent industry by providing e-commerce stakeholders with insights that will inform sound decision-making while serving as input for further research.

This study was exploratory in nature and employed online desk research method to source for existing literature on the e-commerce sub-sector in Kenya. The data was sourced from an array of secondary data sources from the internet including market studies, published company reports, peer-reviewed journals, newspapers, magazines, and blog postings. This extensive literature review provided background knowledge on e-commerce and allowed the researcher to paint a general picture of the e-commerce sub-sector in the country. The data collection took a period of three months, followed by another 2 months of analysis, editing, design, and reporting.

The report is divided into eight sections: The first section is the background. The second provides an introduction to electronic commerce, which looks at the origin, definition, typologies as well as the common forms of e-commerce businesses. The third section discusses the economic contribution of e-commerce. The fourth looks at the various drivers of electronic commerce growth in Kenya. The fifth section provides an overview of the electronic commerce sub-sector in Kenya. The sixth section examines the barriers to electronic commerce growth in Kenya. The seventh section conceptualizes the electronic commerce value-chain in Kenya. The eighth and final section of the paper gives a summary of important e-commerce facets and draws conclusions on five key areas: tends, infrastructure, value chains, markets and rules and regulations.

TABLE OF CONTENTS

SECTION	PAGE NO

DEFINITION OF KEY TERMS

Convergence	A hybrid business model whereby two sector specific industries are merged to provide a service e.g mobile money
Cross-border e-commerce	The shopping from the website of a foreign e-retailer.
Digital/Internet Economy	An economy based on online transactions. It includes digital wireless communications networks (Internets, intranets, extranets and VANs), computers, software, and other related information technologies.
Drop-shipper	A firm offering e-retailers the ability to market products via the firm's website and ship products to final consumers
E-commerce	Defined in this study as: B2C sale of goods requiring physical delivery to the buyer, conducted via the internet, excluding orders via manually typed e-mails
E-commerce ecosystem	The network of actors, institutions and infrastructure that forms the environment required for effective e-commerce
Electronic payment	Exchange of money electronically
eGDP	Share of e-commerce in the GDP of country
E-retailer	A firm selling goods online
Logistics intermediary	A specialised firm supplying software solutions or logistics services to firms willing to outsource logistics functions
Integrator	Multi-national delivery operator with world-wide presence, providing time-defined delivery through own integrated network or through local business partners
Omni-channel retailing	A multichannel approach to retailing that seeks to provide the customer with a seamless shopping experience, whether the customer is shopping online from a desktop or mobile device, by telephone or in a bricks and mortar store.
Over the Top Services	Video, voice and other services provided over the Internet rather than solely over the provider's own managed network.
Pure play online firms	Firms that provide their services only via online/internet channels e.g. internet retailers.
Retailer	An entity that sells products and services directly to the final consumers for their personal use, be it online, offline or both.

ABBREVIATIONS AND ACRONYMS

ACMA: Australian Communications and Media Authority

ATM: Automated Teller Machine

AU: African Union

B2B: Business to Business

B2C: Business to Consumer

B2G: Business to Government

C2B: Consumer to Business

C2C: Consumer to Consumer

CAK: Communications Authority of Kenya

CCK: Communications Commission of Kenya

CIAK: Courier Industry Association of Kenya

CoD: Cash on Delivery

eGDP: Electronic Gross Domestic Product

GDP: Gross Domestic Product

EC: European Commission

GOK: Government of Kenya

GSMA: GSM Association

ICT: Information and Communications Technology

IDC: International Data Corporation

IoT   Internet of Things

ITC   International Trade Centre

IXP   Internet Exchange Points

KENET: Kenya Education Network

KENIC: Kenya Network Information Centre

KICA: Kenya Information and Communications Act

KICTA: Kenya ICT Authority

OECD: Organisation for Economic Co-operation and Development

OTT: Over the Top

PCI: Payment Card Industry

POS: Point of Sale

SMEs Small and Medium Enterprises

SSL: Secure socket layer

TESPOK: Telecommunications Service Providers Association of Kenya

UPU: Universal Postal Union

WSIS: World Summit on the Information Society

WTO: World Trade Organization

UNCTAD: United Nations Conference on Trade and Development

LIST OF TABLES

LIST OF FIGURES

I. BACKGROUND OF THE STUDY

In the last decade, Kenya has undergone a significant transformation in its information and communication technology (ICT) sector which has significantly impacted its social and economic structures. During this time, electronic commerce (e-commerce) has become an integral part of everyday life and its relevance is expected to continue growing. While the rise of this medium is attracting increasing attention in business as well as policy circles, not much sector-specific research has been carried out on the general economic processes that currently take place in this area, making business as well as policy decisions all the more difficult. This report therefore presents the result of in-depth research into the current state of the e-commerce sub-sector in the country, highlighting the progress so far made, the prevailing challenges and the remaining gaps. The study is intended to add to the knowledge base on e-commerce in Kenya and contribute to its growth by providing insights that will inform sound decision-making while serving as input for further research.

Methodology

With the boom in e-commerce, practitioners and researchers are increasingly generating marketing and strategic insights by employing the Internet as an effective new tool for conducting well-established forms of qualitative research. In the same vein, this exploratory study employed online desk research to study existing literature on e-commerce sub-sector in Kenya. The data was sources from an array of secondary data sources from the internet including market studies, published company reports, peer-reviewed journals, newspapers, magazines, and blog postings. This extensive literature review provided background knowledge on e-commerce and allowed for the painting of a general picture of the e-commerce sub-sector in the country. The data collection took a period of three months, followed by another 2 months of analysis, editing, design, and reporting.

Objectives

The main objective of the study was to generate a high-level picture of the e-commerce sub-sector in Kenya as part of the backdrop for future research and analysis.

The specific objectives of the study were to:
- Gain some understanding of the e-commerce concept;
- Appreciate the importance of e-commerce in the global economy;
- Generate an overview of the e-commerce industry in Kenya;
- Provide an outline how e-commerce works;
- Assess the drivers in e-commerce in Kenya;
- Identify the prevailing barriers of e-commerce in Kenya;
- Document the findings of the study in a report.

II. INTRODUCTION TO ELECTRONIC COMMERCE

This section provides an overview of the e-commerce phenomenon, now an integral part of day-to-day economic and social activities. It starts by briefly examining its genesis and its growing role in the economy. It subsequently defines what it is, outlines the various typologies and concludes by describing the common forms of e-commerce businesses.

Background

The emergence of a global, expansive public network in the form of the Internet in the 1990s greatly enabled the mainstreaming of electronic commerce (e-commerce), which takes place with a buyer initiating a transaction by computer over the Internet or proprietary network[1]. By generating and delivering timely and relevant information through computer networks, e-commerce creates new opportunities for conducting commercial activities online and fostering cooperation between different groups[2]. In line with its growing importance, e-commerce is expected to become significant in terms of overall economic activity as the number of firms carrying out business transactions over the Internet has increased steadily over the last two decade[3] and the e-commerce market continues to grow[4]. Available information shows that the global ecommerce market was worth US $1,713 billion in 2012 and is growing rapidly, with global online transactions rising by 16% in 2013[5].

Table 1: Top 10 E-commerce Markets by Countries

Rank	Country	Sales ($) (Billions)	Top Online Retailer	eCommerce sales as % of total retail sales
1	China	$426.26	Alibaba	10.1%
2	United States	$305.65	Amazon	6.5%
3	United Kingdom	$82.00	Amazon	13.0%
4	Japan	$70.83	Rakuten	4.9%
5	Germany	$63.38	Amazon	7.3%
6	France	$38.36	Odigeo	4.6%
7	South Korea	$33.11	Coupang	9.0%
8	Canada	$24.63	Amazon	5.2%
9	Russia	$17.47	Ulmart.ru	2.2%
10	Brazil	$16.28	B2WDigital Inc	3.8%

Source: E-Marketer.com (2015)[6]

---

[1] Visa International. "Electronic payments, economic growth, and financial efficiency." Paper presented at UNCTAD "E-finance for Development" side event, 2002. http://www.unctad.org/ecommerce

[2] Hossein Bidgoli. *Electronic commerce: Principles and practice*. San Diego, California: Academic Press, 2002.

[3] OECD (2013)

[4] United Nations Conference on Trade and Development. *Information economy report 2015: Unlocking the potential of e-commerce for developing countries*, Geneva: United Nations Conference on Trade and Development, 2015b, http://unctad.org/en/PublicationsLibrary/ier2015_en.pdf, (Accessed 16 June, 2016).

[5] WorldPay, *Your global guide to Alternative Payments*, 2nd ed. Worldpay, 2014. http://*offers.worldpayglobal.com/.../worldpay/.../worldpay-alternative-payments-2nd-edition...*

[6] Data courtesy of emarketer.com. All sales are for 2014.

Africa remains the region with the lowest e-commerce penetration, with about 2.2 % of global business-to-consumer (B2C) e-commerce as of 2013[7]. However, the African e-commerce market is projected to soar to US$ 50 billion by 2018, from just US$ 8 billion in 2013[8].

Definition of E-Commerce

E-commerce has been defined in various ways[9]. For instance, Zwass[10] defined e-commerce as "the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks" while African Union (AU) has described electronic commerce as "all economic activity by which goods and services are offered or provided remotely or by electronic means." According to the AU, e-commerce comprises services such as those providing information online, commercial communications, research tools, access, data retrieval and access to communication or information hosting network, even where such services are not remunerated by the recipients[11]. On the other hand, the OECD defines e-commerce as 'the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing or orders'. Under this definition, 'the goods or services are ordered electronically, but the payment and the ultimate delivery of the goods or services do not have to be conducted online'[12]. For purposes of this study, e-commerce is defined as a system of conducting business activities using the internet and other information technologies (i.e. computer networks such as Internet, intranets and extranets)[13]. The business activities include buying and selling online, electronic funds transfer, business communications, and other activities associated with the buying and selling of goods and services online. By this definition, e-commerce includes all inter and intra company functions, such as marketing, finance, manufacturing, selling and negotiating[14].

---

[7] According to McKinsey Global Institute (2013), e-commerce can be a powerful driver of economic growth, inclusive trade, and job creation across the African continent. Research shows a strong correlation between the increased use of digital technologies and greater productivity, and a resultant impact on competitiveness and economic growth.

[8] International Trade Center. *International E-Commerce in Africa – The way Forward*. Geneva: International Trade Center, 2015, http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/International%20E-Commerce%20in%20Africa_Low-res.pdf, (accessed on 26/10/2016).

[9] Much of the debate on definitions is concerned with quantification – what transactions to include or not to include. This gives rise to broad and narrow definitions, distinguished by whether they focus solely on Internet-generated transactions, or include computer networks more generally (Humphrey, Mansell, Paré & Schmitz; 2003).

[10] Vladimir Zwass (1996). "Electronic Commerce: Structures and Issues," *International Journal of Electronic Commerce*, 1, Iss. 1, (Fall 1996), 3 – 23.

[11] African Union, *Draft African Union convention on the establishment of a credible legal framework for cyber security in Africa*. Addis Ababa: African Union, 2011, http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/events/2011/WDOcs/CA_5/Draft%20Convention%20on%20Cyberlegislation%20in%20Africa%20Draft0.pdf , (Accessed 23/05/2016).

[12] Organization for Economic Corporation and Development. Electronic and Mobile Commerce, *OECD Digital Economy Papers*, No. 228, 2013, Paris: OECD Publishing, Paris. http://dx.doi.org/10.1787/5k437p2gxw6g-en,

[13] Zonqing Zhou. *E-commerce and Internet technology in hospitality and tourism*. New York: Delmar Learning., 2004

[14] Zhou, 2004, p. 57.

Classification of E-commerce

E-commerce is classified into various categories based upon the entities involved in a transaction. They include business-to-business (B2B), business-to-consumer (B2C), consumer-to-business (C2B), consumer-to-consumer (C2C) and business-to-government (B2G) e-commerce (Bhasker, 2009).

- *B2B is e-commerce* is carried out between businesses such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. This is the exchange of products, services, or information between businesses rather than between businesses and consumers. Global B2B transactions comprise 90 per cent of all e-commerce[15].
- *B2C e-commerce* entails businesses selling to the general public, typically through catalogues that make use of shopping cart software. Although B2C e-commerce receives a lot of attention, B2B transactions far exceed B2C transactions[16].
- *C2B e-commerce* can be described as a form of electronic commerce where, the transaction, originated by the customer has a set of requirements specifications and specific price for the commodity, service or item. It is upon the e-commerce entity to match the requirements of the customer to the best possible extent[17].
- *C2C e-commerce* is the e-commerce activity that provides the opportunity for trading of products and/or services amongst consumers who are connected through the internet. This is where individuals transact with each other with the help of an e-commerce platform[18].
- *B2G e-commerce* is generally defined as e-commerce between companies and the public sector. It refers to the use of the internet for public procurement, licensing procedures, and other government related operations[19].

In addition to these categories, subsumed within the definition of e-commerce are mobile commerce (m-commerce) and social commerce (s-commerce):
- *M-commerce* is e-commerce conducted over mobile devices and networks[20].
- *S-commerce* is e-commerce promoted over – or potentially even conducted via – social networking platforms, such as Facebook[21].

E-commerce can also be divided into domestic and cross-border e-commerce.
- *Domestic e-commerce* refers to shopping from the website of a domestic e-retailer or a foreign e-retailer with a local web shop in the e-shopper's country.
- *Cross-border e-commerce* is the shopping from the website of a foreign e-retailer without a local web shop[22]. It involves the delivery of goods and services across borders from a supplier in one country to a consumer in another country[23].

---

[15] World Trade Organization. *Summaries of the Workshop on e-commerce, development and SMES - 8 and 9 April 2013.* Geneva: World Trade Organization, 2013. https://www.wto.org/english/news_e/news13_e/summary_rep_e.pdf, (accessed on 26/10/2016).

[16] Ibid.

[17] Ibid.

[18] Bharat Bhasker. *Electronic Commerce: frameworks, technologies and applications.* 3rd ed. New Delhi: Tata-McGraw-Hill, 2009.

[19] World Trade Organization., 2013

[20] United Nations Conference on Trade and Development. *Information economy report 2015: Unlocking the potential of e-commerce for developing countries,* Geneva: United Nations Conference on Trade and Development, 2015b, http://unctad.org/en/PublicationsLibrary/ier2015_en.pdf.

[21] Ibid.

Forms of E-Commerce Organizations

Businesses involved in e-commerce can take various forms. The following table describes some of the common forms[24]:

Table 2: Forms of E-commerce Organizations

No.	Business Type	Description/Nature	Examples
1	Brick & Mortar	Old-economy/traditional businesses that perform most of its business offline. They sell physical products using physical delivery agents.	Walmart Sears Home Depot
2	Click & Mortar	Non-traditional organization that conduct some of their business activities online but do their primary business in the physical world[25]	Argos Apple Stores
3	Virtual Business (Pure Play)	Organizations that conduct their business activities solely online	Amazon, Alibaba Netflix
4	Electronic Markets (E-Marketplaces)	An online electronic market where buyers and sellers meet to exchange goods, services, money or information.	Ebay OLX

Source: Manzoor (2010)

[22] Copenhagen Economics. *Principles of e-commerce delivery prices*. Copenhagen: Copenhagen Economics, 2013. https://www.copenhageneconomics.com/publication/principles-of-e-commerce-delivery-prices.
[23] International Trade Centre (2016). Bringing SMEs onto the e-Commerce Highway. ITC, Geneva.
[24] Manzoor (2010). *E-commerce: An Introduction*. p.10.
[25] Due competitive pressure from the internet, many brick & mortar business are converting into click & mortar and now have a significant and growing online presence.

III. THE ECONOMIC CONTRIBUTION OF ELECTRONIC COMMERCE

E-commerce already plays a pivotal role in economic activity and its impact is being felt across a number of sectors globally. The benefits of e-commerce accrue to both organisations and individuals and contribute to the overall economic potential of the economy. This section highlights some of the benefits and impacts of e-commerce on organisations and individuals.

Contribution to GDP

In line with its increasing importance, the share of e-commerce in the global GDP (eGDP) has continued to increase in recent years. From 1.34% in 2011, the eGDP has grown steadily to reach 3.11% in 2015. In terms of the regions, Asia-Pacific is the clear frontrunner with eGDP rate of 4.48% which is significantly above the global average of 3.11%. With an eGDP of 0.77% and 0.71% respectively, Latin American and the Middle East and Northern Africa are at the bottom of the list. Still, these figures grew significantly as well compared to 2014, when they amounted to 0.51% and 0.54% respectively, implying a growth potential[26]. However, the lack of comprehensive official data on the value of domestic and international e-commerce poses a major challenge for measuring its contribution on GDP in Africa.

Reduced costs of doing business

E-commerce offers numerous benefits to businesses, key among them the reduction of operation and transaction costs at all steps of the seller-to-buyer relationship. For instance, at the stage of information gathering, e-commerce offers relatively inexpensive solutions for making information available to a large number of customers via the web, including social networking platforms, that today complement (or sometimes even substitute for) traditional communication channels, such as newspapers, radio or television advertising campaigns[27]. Also, suppliers using e-commerce may be able to reduce investments in physical infrastructure (such as buildings in expensive locations)[28]. Additionally, there may be ways to reduce the delivery costs especially for digital products, and to use innovative ways of delivering physical products through dedicated e-fulfillment services[29]. These potential savings are available across sectors. A good example is e-procurement systems which can greatly reduce the costs incurred by governments in the traditional offline procurement process. They also reduce the time and expenses incurred by firms in submitting their bids. This is particularly important for small local firms, which often find the traditional procurement process too expensive and time-consuming, given their limited resources[30].

---

[26]E-Commerce Foundation. *Global B2C E-commerce Report 2016*, 2016 Amsterdam: E-Commerce Foundation,https://www.ecommercewiki.org/wikis/www.ecommercewiki.org/images/5/56/Global_B2C_Ecommerce_Report_2016.pdf.

[27] OECD (2013).

[28] United Nations Conference on Trade and Develeopment. *Cyberlaws and regulations for enhancing e-commerce: Case studies and lessons learned*, Geneva: United Nations Conference on Trade and Development, 2015a. http://unctad.org/meetings/en/SessionalDocuments/ciiem5d2_en.pdf.

[29] Ibid.

[30] International Trade Center (2015).

Larger market scope

Businesses also benefit from the larger market access that is possible with e-commerce because a simple website can advertise goods throughout the world to interested parties. This is the direct consequence of the Internet as a "borderless" communication medium[31]. E-commerce also opens new possibilities to reach markets that were traditionally beyond the scope of smaller firms[32], particularly those serving niche markets that may be too narrow to be sustained by a domestic market alone[33] .The positive effects that e-commerce has on market scope were confirmed by several empirical studies[34].

Customer choice

Furthermore, e-commerce provides the customer with more choices and customization options by better integrating the design and production processes with the delivery of products and services[35]. Consequently, when e-shoppers buy products online, they have almost infinite choice in terms of what they can buy, where they can buy it, and when they can buy it[36]. In other words, the consumer also enjoys a wider choice of products and services at lower prices, as well as certain convenience (no unnecessary trips, no restricted business hours). E-commerce also allows businesses to tailor goods and services to fit the needs of smaller, less affluent consumer bases such as those in developing countries[37].

Job creation

As direct employers, e-commerce entrepreneurs and enterprises play a fundamental role in supporting job creation and economic growth[38]. E-commerce firms also stimulate employment and entrepreneurship through the demand for new skills that companies lack, particularly smaller firms. New skills are required not only for specialized designers of technical e-commerce platforms but also for skilled employees to implement and use these solutions[39]. These new jobs in the ICT sector could be related to software development, information technology (IT) consultancy services, web hosting and, of course, in enterprises that become more successful thanks to expanded online sales[40].

---

[31] The downside of this is that businesses that once competed with the shop in the next town now find themselves competing on a global scale.

[32] According to the WTO (2013), e-commerce presents great opportunities for SMEs in developing countries. As producers they could access new markets both domestic and foreign, overcome distance, interact with governments and ensure a greater participation in B2B value chains (B2B).

[33] Organization for Economic Corporation and Development, 2013.

[34] For example Lendle *et al.* (2012) established that physical distance is much less important for e-commerce than for regular commerce. Similarly, Cowgill and Dorobantu (2012) found that cross-country borders tend to have much smaller impact on e-commerce than on off-line trade.

[35] Richardson, 2007

[36] Copenhagen Economics. *Principles of e-commerce delivery prices*. Copenhagen: Copenhagen Economics, 2013. https://www.copenhageneconomics.com/publication/principles-of-e-commerce-delivery-prices.

[37] Mann, Eckert & Knight, (2000).

[38] Several studies suggest that introducing ICTs, of which e-commerce is part, results in a high demand for new competencies in businesses (OECD, 2010).

[39] Organization for Economic Corporation and Development , 2013.

Reduced barriers to entry for new businesses[41]

E-commerce reduces entry barriers through two main channels. First, the Internet significantly reduces the costs of information search and exchange, which in turn leads to a disintermediation of traditional commerce channels. Suppliers can now by-pass retailer agreements, which in turn, lead to the disintermediation of classical channels of commerce. A number of traditional intermediaries have found themselves bypassed, across a range of sectors. This could consequently lead to a resetting of traditional of economies of scale and thus to a change in the existing market landscape. Second, the Internet helps firms overcome conventional barriers such as the high capital requirements that were previously necessary to start an off-line business. The costs to develop web store fronts based upon e-commerce platforms are relatively low compared to traditional brick-and-mortar retail outlets. Therefore, one could expect a growth in the number of firms serving markets if e-commerce makes market entry easier[42].

Stiffer competition

Because the Internet reduces traditional barriers to entry to many marketplaces, the result is an environment of higher risk to many traditional businesses due to the resulting entry of new and often non-traditional entrants to their marketplaces[43]. Moreover, e-commerce reduces the cost of searching for product information (e.g., sellers, models, prices, etc.), frequently to almost zero. This can significantly impact competition, enabling customers to find cheaper (or better) products and forcing sellers, in turn, to reduce prices and/or improve customer service.

---

[40] United Nations Conference on Trade and Development, 2015b,

[41] According to HemyH. Perritt, Jr. (2000), declining prices for basic components of networked computing combined with increasing speeds of data transfer and the wide scale acceptance of universal, mostly non-proprietary layered' technical standards, allow for lower economic barriers to entry for merchants and consumers. This means businesses can set up shop with little more investment than that required of a consumer.

[42] OECD, 2013

[43] See the Trinidad and Tobago National Electronic Commerce Policy Committee Report titled "Preparing Trinidad and Tobago for Doing Business in the Internetworked Global Digital Economy".

IV. THE ELECTRONIC COMMERCE SUB-SECTOR IN KENYA

This section of the study provides an outline of the current situation in the e-commerce sub-sector in Kenya. Without aiming to provide exhaustive or even comprehensive coverage of the issues, it will address several prominent aspects of e-commerce that will influence its development in coming years.

Market size estimates

Comprehensive, up-to-date data on the magnitude of e-commerce trade in Kenya is currently not available. However, as of 2014, information by the Communications Authority of Kenya (CAK) put the value of B2C e-commerce in Kenya at Sh4.3 billion, in comparison to South Africa's Sh54 billion, Egypt's Sh17 billion and Morocco's Sh. 9.6 billion[44]. This figure shows that the e-commerce market is still quite small even by regional standards, and that its role in the Kenyan economy remains relatively low, especially when compared to total retail sales of Sh1.8 trillion ($17.62 billion) in 2016[45]. Nonetheless, there is a growing consensus that e-commerce in Kenya will continue to develop based on the current trends especially when one considers the impressive numbers of internet users, the growing smartphone penetration rate, the massive number of mobile money subscribers ubiquitous mobile payment services as well as millions of courier items sent locally per quarter. A selection of the main aspects regarding the e-commerce market in Kenya as of 2016 is presented in table 3.

Table 3: 2016 E-Commerce Fact Sheet for Kenya

No.	Country Statistics	Value
1.	Country population	48 Million
2.	Number of unique internet users	22 million
3.	Internet penetration rate	49%
4.	Broadband penetration	27%
5.	Smartphone penetration rate	44%
6.	Mobile money subscribers	31.0 million
7.	Online orders placed from mobile devices	Not available
8.	Online shopping value (e-tailing)	Not available
9.	Average value of online shopping/day	Not available
10.	Average number of online purchases/year	Not available
11.	Value of cross-border e-commerce	Not available
12.	Value of online card payments	Not available
13	Courier items sent locally/quarter	1.3 million

Source: CAK, 2016; Google Consumer Barometer, 2016

---

[44] Mark Okuttah, 2014.

[45] Brian Ngugi, "Kenya's retail spending hits Sh1.8 trillion, says P&G report," *Daily Nation*, February 7 2017, http://www.nation.co.ke/business/Kenya-retail-spending-hits-Sh1-8-trillion/996-3804314-djv0n9/index.html2017,

Industry growth

E-commerce in Kenya has immense growth potential, as the internet population had grown to an estimated 37.7 million users in June 2016 from 12.5 million in 2011[46]. Moreover, there has been a surge in e-commerce activity with mobile money services and applications coming into the market[47] and online purchase-based enquiries in Kenya increasing by 33% in 2015 according to Google Consumer Barometer[48]. The upward trend has been aided by the increasing number of young people who prefer to access information via their mobile phones, coupled with the declining prices of internet connectivity costs as well as the high uptake of mobile payment services, proving the opportunity for online trading platforms such as N-Soko, OLX, Jumia and Rupu, among others. In spite of these positive developments, there is a concern that e-commerce industry growth in Kenya is being hampered by the relatively slow uptake and continued use of e-commerce services by online users, more so when it comes to online retailing services. These two elements deprive the e-commerce firms of a critical mass of people that are required to make their services profitable, thus leading to closure of a number of online retailing services over the years[49].

Contribution to GDP

According to McKinsey[50], the internet sector contributed 2.9% of Kenya's GDP in 2012. However, this figure should be treated with some caution as accurate statistics of ICTs contribution to GDP in Kenya are hard to come by since ICT (and e-commerce in particular) is not yet considered as a sector in the yearly economic survey reports. Instead, it is classified under 'Transport, Storage and Communications'. It therefore becomes very difficult to track the contribution of ICT to development as a single sector unlike in many countries where ICT is defined as a stand-alone sector. For this reason, the new Kenya National ICT Master Plan for 2013/14 - 2017/18 recommends that ICT be set up as a stand-alone sector and comprehensive ICT indicators be used to monitor the growth of the sector.

Supporting institutions

The e-commerce landscape has a number of support institutions that play an important role in the development of the industry. However, the crucial role of various supporting institutions, such as government regulators, fulfilment and logistics services, and financial and payments support providers is rarely considered in-depth in developing countries. If e-commerce is to achieve its potential in developing countries, there's need to

---

[46] Communications Authority of Kenya, *First Quarter Sector Statistics Report for the Financial Year 2016/2017*, (July-September 2016), http://www.ca.go.ke/index.php/statistics

[47] Jane Kiringai & Wolfgang Fengler. *Kenya economic update: Kenya at the tipping point? with a special focus on the ICT revolution and mobile money*. Kenya economic update; edition no. 3. Washington, DC: World Bank Group, 2010. http://documents.worldbank.org/curated/en/849841468286307168/Kenya-economic-update-Kenya-at-the-tipping-point-with-a-special-focus-on-the-ICT-revolution-and-mobile-mone

[48] See James Burry. *The future of e-commerce in East Africa*. https://www.linkedin.com/pulse/future-ecommerce-east-africa-james-bury, 2015.

[49] Peter Mwencha. *Customers' perceptions and usage of online retailing services in Nairobi County, Kenya*. Unpublished PhD Thesis. http://ir-library.ku.ac.ke/handle/123456789/13275. 2015.

[50] McKinsey Global Institute. *Lions Go Digital: The Internet's Transformative Potential in Africa*, Brussels: McKinsey Global Institute, 2013. http://www.mckinsey.com/industries/high-tech/ourinsights/lions-go-digital-the-internets-transformative-potential-in-africa.

pay greater attention to the institutions that are needed for e-commerce growth[51]. In Kenya, one of the most important support institution in the e-commerce sector is the Communications Authority of Kenya (CAK), the regulatory authority responsible for facilitating the development of the Information and Communications sectors including broadcasting, multimedia, telecommunications, electronic commerce, postal and courier services. The CAK's mandate includes facilitating the development of e-commerce in the country, development and implementation of the national cybersecurity framework as well as overseeing the management of critical Internet resources such as Internet Exchange Points (IXPs), and Internet Numbering Resources (IP addresses and domain names), among others[52]. Another important regulator is the Central Bank of Kenya (CBK) which governs the payment infrastructure in the country. The mandate the Central Bank of Kenya Act under Section 4A(1)(d) is to 'formulate and implement such policies as best promote the establishment, regulation and supervision of efficient and effective payment, clearing and settlement systems'[53]. Due to the convergence of the telecommunications and finance sectors, these two bodies play a key role in facilitating the growth of e-commerce components such as mobile money services.

Competitive landscape

The remarkable growth in Kenya's ICT sector has been characterized by introduction of various e-commerce products and services into the market, which target Kenya's rapidly growing internet population that stood at an estimated 29.6 million users in June 2015[54]. The question of competition therefore promises to be increasingly important due to the fact that as the e-commerce market grows, it becomes more attractive to companies based both inside and outside the country. Indeed, consumers today can purchase products online from a wide range of shopping platforms and entities. These new shopping platforms include traditional online retail stores, consumer-to-consumer sites, cloud–hosted e-shops, and social media[55]. The most commonly used sites for online retailing in the country are jumia.com (general shopping), cheki.co.ke (cars), olx.co.ke (similar to eBay or Craigslist), and rupu.co.ke (general shopping). Global sites such as Amazon and Alibaba also are gaining popularity. When it comes to services, tourism and hospitality sector websites such as tripadvisor.com and sleepout.co.ke are major sites that provide online hotel booking services. Financial services products include online-banking products as well as customer operation of accounts via their mobile phones and devices. In the education sector, distance learning is available at the graduate level through virtual classrooms, video conferences, and online blackboards[56]

---

[51] Gopalkrishnan Iyer R. & Lifan Yang "Internet Product Prices in Emerging Economies." In *The Sustainable Global Marketplace*. Edited by Mary Conway Dato-on. Developments in Marketing Science: Proceedings of the Academy of Marketing Science. Springer, Cham, 2015. https://doi.org/10.1007/978-3-319-10873-5_121.

[52] CAK works closely with KICTANet, a forum for dialogue between civil society and private sector actors in the Kenyan ICT sector, which has become an influential forum for discussions about the role and nature of regulation and the development of market competition. In recent years, participation in KICTANet has broadened further, to include government representatives (see Souter & Kerrets-Makau, 2012).

[53] Stephen M. Nduati, Cyberlaws And Regulations For Enhancing E-Commerce: Including Case Studies And Lessons Learned. *Presentation made at UNCTAD Expert Meeting on E-commerce*. Wednesday, 25th March 2015. http://unctad.org/meetings/es/Presentation/CII_EM5_P_DKibirige_en.pdf, p.14.

[54] Communications Authority of Kenya. *Fourth Quarter Sector Statistics Report for the Financial Year 2014/2015* (April-June 2015)

[55] OECD, 2013

[56] This information is from "Preparing Your Business for Global eCommerce" prepared by *the International Trade Administration of the U.S. Department of Commerce*, the U.S. Commercial Service for exporters. It's available at https://www.export.gov/article?id=Kenya. Last published on *7/15/2016*

Table 3: Major B2C E-commerce Platforms in Kenya

No.	Business Type	Description/Nature	Domain
1	OLX	Online market place where individuals or companies can sell their new or used items.	www.olx.co.ke
2	Jumia	B2C online retailer that offers a wide assortment of products.	www.jumia.co.ke
3	Cheki.co.ke	Online classifieds platform for cars that connects buyers and sellers. It is backed by network of dealers, importers and private sellers who post their cars for sale.	www.cheki.co.ke
4.	Kilimall	B2C online shopping mall that offers a range of products including phones, computers, clothing, shoes, home appliances, books and much more	www.kilimall.co.ke
5.	VituMob	Cross-border online platform that enables Kenyans to shop from leading international e-commerce websites.	www.vitumob.com

Source: Research data (2016)

V. DRIVERS OF ELECTRONIC COMMERCE GROWTH IN KENYA

Based on extensive literature review, a number of factors influencing the development of e-commerce in Kenya were identified. These can be grouped under six closely inter-linked and sometimes overlapping drivers. This section looks at what these drivers are:

Connectivity

Globally, the level of connectivity has greatly improved, mainly as a result of the widespread uptake of mobile telephony and rising levels of Internet use enabled by deployment of international and national fibre-optic networks[57]. In the case of Kenya, the country has gone from relying on satellite for international capacity, to having access to almost four terabits over fibre from three undersea cables combined[58]. The availability of the three submarine fibre-optic cables has resulted in increased internet speeds and increased amounts of broadband available at a slightly reduced, In addition the undersea fiber cables which have facilitated global interconnection for the country, the completion of national optic fibre backbone infrastructure (NOFBI) Phase 1 has provided connection within the country. As at October 2012, the NOFBI was being used by Telkom Kenya, Safaricom, Jamii Telkom, Bandwidth and Cloud Services, Kenya Education Network (KENET), and the DEG in different locations in 37 counties[59]

Access

Unlike in many African countries, access to the internet in Kenya is relatively high, with statistics showing that Kenya's Internet penetration stands at 82.6% of the population with 35.5 million users at the start of 2016[60]. With seven out of 10 Kenyans using the Internet, the country has the best penetration in Africa according to the data aggregation website InternetWorldStats.org[61]. Studies have shown that most Kenyans access the Internet primarily through mobile phones and cybercafés[62]. Cybercafés are a particularly significant group of businesses that supply the Internet in Kenya, particularly to lower-income groups. They offer customers different models of Internet use from those available on mobile phones – for example, they are more suitable for watching video and for large downloads – and so remain significant modes of access for mobile Internet users as well as those who do not use mobile Internet. However, their business model is increasingly under threat as more people afford internet at home or on their phones due to falling prices[63].

---

[57] UNCTAD, 2015a

[58] Mandla Msimang, *Broadband in Kenya: build it and they will come*, an InfoDev Publication, Washington, DC: The World Bank Group, 2011.

[59] Waema & Ndung'u, (2012).

[60] Communication Authority of Kenya *Q1 2016 statistics report for the period between July and September 2015*. 2016. According to the report, the total internet user figures represent the total number for mobile subs, fixed, satellite among other offerings.

[61] See http://www.internetworldstats.com/af/ke.htm

[62] Kenya ICT Authority, (2014).

[63] Souter & Kerrets-Makau, (2012).

For all forms of e-commerce, access to competitive payment solutions is a critical facilitator as few enterprises or people are willing to sell online without some indication of payment by the buyer. Payment systems are rapidly evolving, expanding the possibilities for consumers and corporate buyers to pay for products or services bought online[64]. Currently, a variety of electronic payment tools are available to e-commerce merchants. They include credit card payment, postal payment, credit transfer, electronic cheque, direct debit, smart cards, prepaid schemes and mobile phone schemes[65]. While credit cards still account for the lion's share of global retail e-commerce settlements, it is expected that by 2017 other (alternative)[66] payments will make up for the majority of all retail e-commerce payment. In several African countries, mobile payment solutions represent the most viable infrastructure for e-services due to high degrees of financial exclusion, limited availability of fixed lines, cost of fixed lines and cost of the card infrastructure[67]. In Kenya, Madagascar, Tanzania and Uganda, there are more mobile money accounts than bank accounts (Amadeus, n.d.). As of 2011, 90% of Kenyans could not buy and sell online because they did not have credit cards and were unbanked. However, this is gradually changing as new mobile payment services enter the market. By 2012, online purchase payments from mobile phones accounted for 19 per cent of total e-commerce transaction value in in Kenya[68]. In October 2013, the value of mobile payment transactions stood at $68 million as compared with only $12 million for card payments[69]. M-PESA, the mobile payment system by Safaricom, makes domestic payments easy as it allows simple funds transfers between people. In 2013, Safaricom enhanced M-Pesa to offer easier online integration and transactions through 'Lipa Na M-PESA online', a payment service that will allow customers to pay for goods and services online[70]. Interestingly, majority of Kenyans buying items online prefer to pay for goods upon delivery despite the option of paying via the widely used mobile money or credit cards[71].

Cross-border trade

Cross-border e-commerce has opened up a new, more efficient way to connect producers and merchants directly to customers around the world, bridging the gap between demand and supply. It opens new opportunities by providing new markets, products and services but also by reducing the role of intermediaries, which can result in substantial purchasing discounts[72]. Cross-border e-commerce also provides a unique opportunity for SMEs in countries and regions that may traditionally have found it difficult to reach regional

---

[64] UNCTAD, 2015b

[65] Universal Postal Union, 2016

[66] According to WorldPay (2014), alternative payment is one that doesn't use a credit or debit card. They include bank transfers, direct debits, e-wallets, mobile and cash-on-delivery.

[67] UNCTAD, 2015b

[68] WorldPay, 2014.

[69] James Anyanzwa, "Use of plastic money surges to $11.6 million," *Standardmedia.co.ke*, 13 December 2013, http://www. Standardmedia.co.ke/business/article/2000099980/use-of- of-plastic-money-surges-to-11-6-million (accessed 26 May 2016).

[70] Dennis Mbuvi. "Safaricom enhances M-Pesa to offer easier online integration and transactions". *CIO*, 2013, http://cio.co.ke/news/main-stories/safaricom-enhances-m-pesa-to-offer-easier-online-integration-and-transactions, (Accessed on 18 May, 2016).

[71] David Okwii. "Cash on Delivery, not credit cards is the recipe for online businesses in Kenya." *Dignited.com*, 17 November, 2014, accessed 12 April 2016, http://www.dignited.com/10887/cash-delivery-credit-cards-recipe-online-businesses-kenya/

[72] International Trade Center, *Bringing SMEs onto the e-Commerce Highway*. ITC, Geneva. 2016.

and international markets to connect with potential buyers beyond their borders[73]. The major online platforms all function to bring consumers across the globe to a single virtual marketplace. These platforms have a network effect: once the number of users has surpassed a certain threshold, the marginal cost of attracting newcomers to a website is minimal. This is a benefit that users operating on the platforms can share[74]. In the area of services trade, cross-border e-commerce also brings new opportunities for professionals to offer their design, programming, consulting and marketing services to clients around the world, knowing that their payment will be secured. For example, online platforms such as Freelancer.com and Elance.com provide opportunities for professionals in developing countries to provide services online to customers around the world[75]. In Kenya, cross-border e-commerce is mainly driven by import and export of goods through online platforms that sell Kenyan products such as handicrafts, foods and other local goods to overseas customers while enabling the importing of electronics, cars, apparel and light machinery amongst others mainly from European and Asian countries. The adoption of cross-border mobile money services across the region allows not only Kenyans to make purchases in Kenya-based online stores using their mobile, but also shoppers from other countries in the region[76]. One of the leading cross-border e-commerce platforms in Kenya is VituMob.com, a website that enables Kenyans to shop online at some of the major ecommerce websites from around the world such as Amazon, ebay, Apple stores and Beauty.com amongst others using M-Pesa or a credit card. Once a customer has purchased a product online, VituMob delivers it to their doorstep[77].

Delivery solutions

E-commerce consumers and enterprises have become increasingly demanding concerning parcel delivery solutions offered by delivery operators, prompting both national postal operators and their competitors to innovate and propose new delivery solutions that offer convenient delivery options at reasonable prices and to compete more fiercely for business[78]. For both e-retailers and e-shoppers, some of the most important delivery aspects include low delivery prices, home delivery, access to electronic delivery notifications and track and trace, as well as convenient return options. Features considered less important are for example next day delivery, Saturday or evening delivery, and delivery to a post office or collection point[79]. There are scores of national, regional and international courier companies in Kenya, and the country boasts of several 24 hour parcels and logistics support services among them G4S Securicor Kenya, Wells Fargo, DHL and Postal Corporation of Kenya's EMS Service[80]. Moreover, global logistics companies DHL and G4S which have strong local presence now provide their customers with an inspection service for all online goods before payments are effected and real-time tracking ability to monitor movement of parcels from dispatch point to the delivery office.

---

[73] International Trade Center, 2016.

[74] Ibid. p. xi

[75] UNCTAD (2015).

[76] Fran Feinstein, "E-Commerce booming in Kenya." 2013, http://blog.directpay.online/e-commerce-booming-in-kenya

[77] See https://vitumob.com

[78] Copenhagen Economics, 2016

[79] See Copenhagen Economics, 2013

[80] James Kariuki. "E-commerce gaining popularity in Kenya as mobile phone technology grows." *Daily Nation*, Tuesday, 19 January 2016, accessed 12 April 2016, http://www.nation.co.ke/business/E-commerce-gaining-popularity-in-Kenya/996-3039162-d3q9j4/index.html

Regulations and governance

Legal and regulatory development acts as an enabler for the promotion of confidence in e-commerce solutions[81]. In a number of developing countries that have enacted legislation recognizing the legal value of electronic means of communication and the validity of electronic signatures, a certain degree of predictability and legal certainty has been achieved[82]. The lack of proper understanding amongst African parliamentarians, policymakers, and judicial officers of the legal issues surrounding e-commerce poses a significant barrier to the creation and adoption of a supportive regulatory framework for e-commerce[83]. In the case of Kenya, the legal regime for e-commerce incorporates internationally recognized legislative principles and standards[84]. Government regulation in form of the Kenya Information and Communications Act, Cap 411A, provides a legal framework for the provision of e-commerce services in the country. The Act seeks to address some of the challenges cited in the national ICT policy document.[85] One of the key sections of the Information and Communication Act is Part VII, on electronic transactions. In this part, the new Act, inter alia, gives legal recognition to electronic records; recognizes electronic messages (e-mail) as valid for the formation of contracts; and supports the use of electronic records and electronic signatures in government and its agencies. The new Act also deals with various aspects of cyber-crime[86]. The law thus creates the basis for e-commerce in Kenya and gives internet-based transactions legitimacy and avenues to grow. However, in the case of mobile payments, the hybrid business model has led to convergence of telecommunications and finance, giving rise to regulatory challenges[87].

Opportunities for increased business

With the growth and acceptance of e-commerce, businesses have become innovative in the online selling space. There are several ways a business can sell goods online including through its own website, specialized platforms providing aggregation and auction services, and through emerging channels such as social media[88]. A website helps a business increase its visibility, establish its credibility and build its reputation. Online presence also drives consumers to a business's physical store[89]. E-commerce platforms enable businesses to reach

---

[81] de Almedia *et al.* "Promoting E-Commerce in Developing Countries." *Internet Governance and Policy Discussion Papers.* 2007. https://www.diplomacy.edu/sites/default/files/IG2007_E_Commerce.pdf.

[82] According to UNCTAD (2003), legislation based on the 1996 UN Commission on International Trade Law (UNCITRAL) Model Law on Electronic Commerce, whose main objective is to offer legislators a set of internationally acceptable rules allowing some legal obstacles to be removed and a more secure legal environment to be created for e-commerce, has already been adopted by a number of developing countries. Unfortunately, many African countries continue to lag far behind, and several of them do not have any legislation accommodating e-commerce.

[83] UNCTAD (2015a)

[84] See Michael M. Murungi. *Cyber Law in Kenya.* Alphen aan de Rijn: Kluwer Law International, 2011.

[85] The growth in e-commerce raised concerns that existing legal and regulatory regimes were too inconsistent or inadequate in addressing e-commerce issues (Richards, 1997; Anil, 2001), leading to the establishment of regulations by governments. However, there is need to proceed with caution as new regulations could lead to unpredictable and costly consequences such as market failure or loss of innovation (Rubin & Lenard, 2002).

[86] See Waema, Timothy Mwololo & Ndung'u Margaret Nyambura. "Understanding what is happening in ICT in Kenya: A supply- and demand- side analysis of the ICT sector." *Evidence for ICT Policy Action*, 9, (2012). Nairobi: IDRC, ISSN: 2310-1156.

[87] Joy Malala (2016). *Consumer Protection for Mobile Payments In Kenya: An Examination Of The Fragmented Legislation and The Complexities It Presents For Mobile Payments.* KBA Working Paper.

[88] See the ACMA 2010-2011 Report 1 on "E-commerce marketplace in Australia: Online shopping"

[89] International Trade Center, 2016, p 13.

international masses through the ease of access and convenience offered by the platforms. The Kenyan e-commerce scene has been dominated by overseas players. Popular e-commerce platforms in Kenya include e-Bay, Amazon, Alibaba and Jumia. Recently, online e-commerce platform Jumia unveiled a programme that will see local manufacturers leverage on the firm's network and penetration to grow sales and consumption of their products. The partnership between the e-commerce platform and local manufacturers will see the traders products featured prominently under the Jumia Local feature[90]. In addition, group buying is becoming an increasingly attractive option for marketers in Kenya[91], while social media services have become crucial for marketing products and services that some SMEs may simply opt for social media rather than creating a website due to the convenience, reach and ease of use it offers. Despite the fact that they don't usually provide direct transaction services, they are used for advertising services directly or through 'word of mouth' among the social networking community. The main social media platforms used by Kenyan businesses include Facebook, Instagram and Twitter. Facebook is the biggest social media platform of all in Kenya by a large margin. As of January 2016, Facebook has approximately 5 million active users in Kenya and growing. Given its reach and uptake, it has become incredibly important for brands to build their communities and also for running digital advertising campaigns[92].

Consumer attitudes and habits

Consumers today can purchase products online from a wide range of shopping platforms and entities. These new shopping platforms include traditional online retail stores, consumer-to-consumer sites, cloud–hosted e-shops, and social media[93]. Consumers can also purchase directly from app developers, mobile operators, ISPs or others. For e-commerce companies, knowing what drives consumer behavior is vital to increased engagement since online shoppers exhibit a range of behaviors: While some shoppers treasure convenience and are less risk averse, others need research and reassurance before making a purchase. Still others are bargain hunters, always on the hunt for a good deal. And then there are the skeptics. For these cynical shoppers, overcoming negative online perceptions can be the difference between a doubter and a devotee[94]. With a plethora of Internet-connected devices to choose from, there is no shortage of ways for consumers to browse and buy online. And the device of choice is decidedly different around the world[95]. In Kenya, online shopping is primarily conducted through smartphones and is increasingly becoming popular due to the convenience it brings, the possibility of comparing various product descriptions and their

---

[90] Annie Njanja. "Jumia in pact to drive sale of 'Made-in-Kenya' goods," *Daily Nation*, March 16 2016, http://www.nation.co.ke/business/Jumia-in-pact-to-drive-sale-of-Made-in-Kenya-goods/996-3851966-nvqxjaz/index.html

[91] This is a retail model whereby websites offer online deals from other parties for a limited time on selected products. The websites use the power of bulk buying to negotiate significant discounts with retailers, receiving a commission based on the number of products sold to customers through the website.

[92] Moses Kemibaro, "The 5 Biggest Social Media Platforms in Kenya." Dotsavvy Africa. (January 21, 2016). http://www.dotsavvyafrica.com/the-5-biggest-social-media-platforms-in-kenya/

[93] OECD (2013).

[94] Nielsen. *Evolution or Revolution in the Fast-Moving Consumer Goods World?* 28 August 2014. http://www.nielsen.com /us/en/insights/reports/2014,

[95] According to a report by Nielsen (2014), computers are the favored device for online browsing and buying among respondents in all regions, but mobile phones are a close second pick for respondents in the Middle East/Africa region and growing in prominence in Asia-Pacific and Latin America. In developing markets, mobile is often the first-access device to the Internet. Tablets are used by nearly one-third (31%) of global respondents for online shopping.

prices before purchase and the wide range of products it allows buyers to choose from. Some of the popular online shopping platforms are Jumia, Kilimall, OLX and BidorBuy. Some of the most frequently purchased goods and services by Kenyans online include electronics such as mobile phones and accessories; clothing, shoes and personal items; travel goods, tickets and accommodation; motor vehicles, spares and accessories and event, concert and movie tickets.

VI. BARRIERS TO ELECTRONIC COMMERCE GROWTH IN KENYA

While the continued growth of e-commerce seems assured, significant barriers to increased e-commerce adoption, use and maximization of its potential benefits remain. They include lack of trust, online consumer privacy, security, content, dearth of special skills, e-commerce infrastructure and lack of e-commerce data. This section examines these bottlenecks to the development of e-commerce in Kenya.

Lack of trust

Lack of trust in online commercial transactions is an important barrier to the adoption of e-commerce[96]. For consumers, online fraud is a real concern that contributes to the lack of confidence in e-commerce, thereby impeding usage[97]. Locally, reports indicate that the main trouble with online businesses is that Kenyans are yet to trust online shopping.[98] Many go online to look for products that cannot be found physically in traditional outlets such as supermarkets, just as a last resort[99]. A past study confirmed that Kenyan consumers have low levels of trust in online services as customers constantly inquire about their existence and/or security of their information[100]. This has resulted in 'cash-on -delivery' (COD) as a preferred payment option of majority of the Kenyan buying online, forcing a number of firms to experiment with this payment model as a way of increasing online sales. For instance, G4S has partnered with OLX to enhance customer trust and reliability by ensuring payment is made once receipt of the goods for dispatch to the buyer is confirmed[101]. Another problem facing e-commerce companies is limited access to electronic trust tools and services, such as Qualified Digital Signature and EV SSL Certificates, which can reassure foreign customers that security is taken seriously[102]. It is encouraging to note that the success of mobile payments has rested in part on the trust that consumers have in Safaricom, the market leader in mobile payments in Kenya[103].

---

[96] Leonard I. Rotman, "Trust, loyalty and e-commerce." In Ethical issues in e-business: models and frameworks, edited by Daniel E. Palmer (Hershey, PA: IGI Global, 2010) 58 – 79.

[97] Guilherme A. A. de Almeida, Alfonso Avila , & Violeta Boncanoska. "Promoting E-Commerce in Developing Countries." *Internet Governance and Policy Discussion Papers*. 2007. https://www.diplomacy.edu/sites/default/files/IG2007_E_Commerce.pdf

[99] Nyabiage, (2011).

[100] See iHubResearch. E-commerce research report: An exploratory study on e-commerce in Kenya, Uganda and Tanzania. *Afrikoin Conference Report*. Nairobi: iHub Research, http://www.mbuguanjihia.com/downloads/AfricoinReportpdf2014-2-6-13-57-16.pdf, (Access

[101] See James Kariuki, "E-commerce gaining popularity in Kenya as mobile phone technology grows," *Daily Nation*, January 19 2016, http://www.nation.co.ke/business/E-commerce-gaining-popularity-in-Kenya/996-3039162-d3q9j4/index.html.

[102] International Trade Center (2015). *International e-commerce in Africa: The way forward.*

[103] See Malala (2016). KBA WPS/02/14, p.40.

Online consumer privacy

Broadly speaking, privacy is the protection of personal information[104]. In e-commerce, privacy relates to a company's policies on the use of user data[105] – in other words, what the intentions of this use are or whether the customer can restrict the use of personal information. An important factor of privacy is the consumer consent – whether the consumer is given a choice to decide what the information can and cannot be used for[106]. Privacy has become an ongoing and increasing concern in e-commerce, as users are unwilling to provide private information or even to browse online if they believe their privacy is not protected. This can be attributed to the transactional context of B2C e-commerce, which provides special privacy challenges. Typically, consumers are not able to negotiate the range of personal data to be provided to an e-commerce platform. Clarity about the purposes for which the data is to be used, and with which third parties it may be shared, may be lacking[107]. Companies have different views on the management of user data – those that recognize the importance of privacy and will provide the users with the choice in deciding what the company can do with the information, and will in addition provide an opt-out clause, and some that view the information users have shared belong to them and feel no moral obligation not to make a profit by using such data[108]. The broad consensus is that e-commerce businesses should protect online consumer privacy by ensuring that their practices relating to the collection and use of consumer data are lawful, transparent and fair, enable consumer participation and choice, and provide reasonable security safeguards[109]. Due to the growing online privacy concerns, e-commerce companies in Kenya are also reviewing their privacy policies and investing in software tools so as to protect the privacy of their customers. Meanwhile, governments and other bodies have reacted to growing online privacy concerns by enacting legislation aimed at curbing privacy breaches[110]. The main legal protection to personal data seems to be the Kenya Information and Communications (Consumer Protection) Regulations Section 15, which is on confidentiality. However, Kenya does not currently have specific data protection legislation. A data protection bill that has been pending since 2013 was debated in Parliament in 2015 but has not yet passed into law.[111]

---

[104] Some of the personal data an e-commerce website is likely to obtain would include a customer's name, address, email address, and possibly their credit card and other types of financial information.

[105] See Arifin Angriawan and Ramendra Thakur. A Parsimonious Model of the Antecedents and Consequence of Online Trust: An Uncertainty Perspective, *Journal of Internet Commerce*, 7, No. 1, 2008, pp. 79.

[106] Zeinab Karake Shalhoub. Trust, privacy, and security in electronic business: the case of the GCC countries, *Information Management & Computer Security*, 14, No. 3, 2006, pp. 277.

[107] See OECD, 2013a

[108] Thomas, L., & Xiaodong, D. (2007). Building online trust through privacy practices, *International Journal of Information Security*, Vol. 6, No. 5, pp. 323.

[109] See OECD. *Consumer protection in e-commerce*. 2016. http://dx.doi.org/10.1787/9789264255258-en.

[110] See *The Cyber Security and Protection Bill, 2016*. The principal object of this this bill was to provide increased security in cyberspace and to provide for the prohibition of certain acts in the use of computers.

[111] Once law, the Bill would give effect to Article 31(c) of the Constitution, which outlines the right of every person not to have "information relating to their family or private affairs unnecessarily required or revealed" and Article 31(d), the right not to have "the privacy of their communications infringed". It would also regulate the collection, retrieval, processing, storing, use and disclosure of personal data

Security

E-commerce security, the most critical element of e-commerce, is defined as the protection of e-commerce assets from unauthorized access, use, alteration or destruction[112]. E-commerce security issues encompass the conventional information technology (IT) concerns to protect web and mobile sites from malicious attacks, viruses, or hackers, as well as safeguarding customer, payment, and transaction data. Consumer concerns about the security of Internet transactions continue to be a problem for businesses providing services online as attacks on computer systems are on the rise and the sophistication of these attacks continues to rise to startling levels[113]. In Kenya, cyber security is currently a major concern, as recent reports indicate that the country is losing close to 2 billion Kenya shillings annually to cybercrime[114]. To reduce the threat of fraud, the payment card industry (PCI) in Kenya is using EMV compliant infrastructure – cards, ATMs and POS with mixed success[115]. In addition, the Government of Kenya (GoK) developed the National Cybersecurity Strategy and Masterplan[116]. Further, the government through the CCK (now CA) established KE-CIRT, the Kenya Computer Incident Response Team Coordination Centre - which brings together government agencies, the Central Bank and Internet expertise (from KENIC, TESPOK and KENET) to address cyber-attacks[117]. The government has also taken a legal approach to combating cyber threats by enacting the Kenya Information and Communications (Amendment) Act 2014 that expanded the mandate of the Communications Authority with respect to electronic transactions to include cyber security[118]. Recently, the Computer and Cybercrime Bill 2016 was approved by the Kenyan government as part of its ongoing efforts to challenge cyber-crime in the country[119].

---

[112] Murthy M. Niranjana and Dharmendra Chahar (2013). The study of E-commerce Security Issues and Solutions, *International Journal of Advanced Research in Computer and Communication Engineering*, 2, Iss. 7, July 2013: 2885 - 2895, ISSN (Online): 2278-1021

[113] Kunal Sharma, Amarjeet Singh & Ved Prakash Sharma (2009). SMEs and cyber security threats in e-commerce. *EDPACS: The EDP Audit, Control, and Security Newsletter*, 39(5-6), 1-49.

[114] Ministry of Information, Communications and Technology, Kenya. *Remarks by ICT Cabinet Secretary Dr.Fred Matiangi while addressing the press during the Information security and Public Key Infrastructure Conference in Nairobi, Kenya*, http://www.information.go.ke/?p=241, Accessed 22/05/2016.

[115] Stephen Mwaura Nduati, Cyberlaws And Regulations For Enhancing E-Commerce: Including Case Studies And Lessons Learned. *Presentation made at UNCTAD Expert Meeting on E-commerce*. Wednesday, 25th March 2015. Nairobi: Central Bank of Kenya, http://unctad.org/meetings/es/Presentation/CII_EM5_P_DKibirige_en.pdf,

[116] Kenya ICT Authority. *National Cybersecurity Strategy*. Nairobi: KICTA, 2014b, https://www.enisa.europa.eu/topics/national-cyber-security-strategies/ncss-map/KE_NCSS.pdf (Accessed 23/07/2016).

[117] According to Souter & Kerrets-Makau, (2012). The National Cyber-Security Strategy and Masterplan are critical to securing the online environment for citizens, industry, and foreign partners; increasing the public's people's confidence in online transactions, data security, fraud protection, and privacy; encouraging greater foreign investment and enhancing trade opportunities; and enabling Kenya's broader economic and societal goals.

[118] Previously, the lack of specific cybercrime/cyber security legislation in Kenya made it difficult to punish those who use ICT tools to commit crime (Murungi, 2011).

[119] The Computer and Cybercrime Bill 2016 will target illegal access, online fraud, money laundering, phishing, cyber-stalking and child abuse, among other things. The Bill is also aimed at improving investigations into cyber-crimes by making provisions for procedural law tools and securing electronic evidence for effective national and international cooperation.

Local content

Local content can mean many things. It can refer to content that is in the local language, content that is created and hosted locally, or content that happens to be relevant to the local population[120]. Local content creation is an important part of the ecosystem as local developers will generally understand their target market much better and be able to generate content to suit local needs[121]. In addition, local hosting can bring speed and cost benefits for both end-users and content providers. However, the internet has changed the way in which content is produced, exchanged and consumed, with increased opportunities for both audience aggregation and content monetization[122]. Globally, the growth of digital content is driving the growth the digital economy, as content consumption shifts to popular digital platforms from traditional platforms such as tv and print. However, content from sub-Saharan Africa is often lacking, when measured by the number of Internet servers on the continent compared to other regions. In 2004, a total of 424 926 Internet servers were known to be located in Africa compared to 29 040 707 in Europe and 27 986 720 in Asia. Africa accounts for just 0.16 per cent of all servers worldwide[123]. This means that local content is sparse and generally hosted outside the continent. In Kenya, content is increasingly important as more and more people are using the internet for business and personal activities. However, the dearth of locally created content that can be easily monetized has also hampered the growth of e-commerce in Kenya for some time. Reports show that the most important local content providers on the Internet in Kenya are the country's leading newspaper groups, the Nation and the Standard whose websites both feature in the top fifteen sites accessed in Kenya, as do a growing number of other local sites. Other significant local content providers include websites concerned with the communications sector, entertainment, shopping and business services[124]. Recently, video-on-demand services such as Netflix and Showmax have been launched in the country. They hope to attract the Kenyan consumer with a mix of the right local and international content including movies and shows that are favored by many viewers[125]. The government's Open Data Initiative is as an example of ways in which more local content could be published online for purposes of spurring e-commerce activity. However, updating the available information that is online and provision of e-services is neither continuous, nor real time and therefore the expected benefits to users have been unsatisfactory[126].

---

[120] GSM Association, *Digital Inclusion*, London: GSM Association, 2014, http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/11/GSMA_Digital-Inclusion-Report_Web_Singles_2.pdf, (Accessed 9 June 2016).

[121] Ibid, p. 42.

[122] GSM Association. *The Internet Value Chain - A study on the economics of the internet*. 2016, London: GSMA, 2016, https://www.gsma.com/internet-value-chain (Accessed 9 June 2016).

[123] Abossé Akue-Kpakpo, *Study on international internet connectivity in sub-Saharan Africa*, Telecommunication Development Sector Report, Geneva: International Telecommunications Union, 2013. https://www.itu.int

[124] Souter & Kerrets-Makau, 2012.

[125] Emmanuel Chenze. Video on Demand Service ShowMax Takes on Netflix in Kenya with Support for M-PESA Payments, Optimizations for Low Data Consumption. Techweez.com, May 10 2015, http://www.techweez.com/2016/10/05/showmax-kenya-launch/

[126] Kenya ICT Authority, (2014).

Lack of a skilled workforce

Another area of concern is the lack of various skills and competent employees brought about by the growth of e-commerce. Managing e-commerce operations may require new skills and competencies that companies lack, particularly smaller firms[127]. This greatly disadvantages many SMEs that may be seeking to diversify or to branch out into e-commerce[128]. In Kenya for example, past studies[129] have shown that the country does not have sufficient local high-end ICT skills, resulting in the local industry importing such skills. [130]The local universities and tertiary colleges continue to develop ICT human capital and workforce that is neither guided by a human resource development policy nor well aligned to the industry needs, especially at the high end[131]. Therefore, making sure enterprises possess the required set of skills and capabilities to use relevant technologies productively is key to securing the economic benefits of e-commerce[132]. Towards this end, the new Kenyan ICT Master Plan lays out an elaborate plan to improve high end/professional ICT skills which are sought after in the industry. The private sector has also initiated programs to address the ICT skills gap. ICT companies have also partnered with institutions of higher learning in order to improve the technical skills and employability of graduates. A good example is the iLab Africa at Strathmore University which was established in 2011 to nurture quality IT skills.

E-Commerce Infrastructure

E-commerce requires a fast, reliable and affordable internet-related infrastructure[133] composed of intermediaries that allow sellers to transact business with buyers. Kenya, just like most developing countries, faces a number of challenges in developing and providing internet-related infrastructure across the country. A key challenge is the limited coverage of national fiber infrastructure and limited internet penetration, especially in the rural areas. A second challenge is the provision of last mile infrastructure connectivity to home, schools and business areas, which if appropriately addressed can leap frog the country into a knowledge economy. The government on its part has made attempts to address this issue. Infrastructure limitations in some areas have made the government to deploy VSAT to enhance internet connectivity to remote outpost schools and government centers that lack fixed line connectivity[134]. Another significant e-commerce infrastructure challenge that could also act as a barrier to growth in Kenya is the lack of an efficient national address system. According to the Courier Industry Association of Kenya (CIAK), majority of homes in Kenya do not have a name or number, rarely have a street name and definitely no national level

---

[127] New skills are required not only for specialized designers of technical e-commerce platforms but also for skilled employees to implement and use these solutions (OECD, 2013)

[128] OECD, 2013; WTO, 2013

[129] See Julisha (2011) and Haruta et al., (2011)

[130] While there has been substantial investment in the ICT infrastructure, there has comparatively been little investment in the human resources required to design, develop and operate this infrastructure and the associated e-applications.

[131] Kenya ICT Authority (2014)

[132] World Trade Oraganization, 2013

[133] According to the OECD (1999), e-commerce infrastructure can be broadly classified into four: i) hardware (PCs, routers, servers, etc.); ii) network service providers (e.g. Internet access); iii) software to run the hardware and e-commerce packages; and iv) enabling services (e.g. e-payment, authentication/certification services, advertising, delivery).

[134] Stephen M. Mutula. "Digital divide and economic development: case study of sub-Saharan Africa", *The Electronic Library*, 26 Iss 4, pp.468-489, https://doi.org/10.1108/02640470810893738

post or zip code. This has presented numerous challenges in fulfilment and logistics management, making it difficult for couriers to deliver goods bought online to their customers. To address this challenge, the CAK has started to rollout a robust national address system of street names and property numbering[135].

Lack of E-Commerce Data

Last but not least, official and comparable statistics on e-commerce are lacking in most developing and transitional economies, making it difficult to assess the trends and developments surrounding e-commerce[136]. For the most part, the scant information available takes the form of forecasts or estimates published by market research or IT consulting firms that frequently limit their coverage to the largest B2C e-commerce markets[137]. In the case of Kenya, little sector-specific data exists about this nascent field that could be used to paint an accurate picture of the state of affairs. The scant e-commerce data that is available is mostly from reports on the latest developments in e-commerce by private sector companies. Unfortunately, the numbers differ considerably, depending on which methodologies, definitions and indicators are used.

[135] Mark Okuttah, CA rolls out address system to boost e-commerce. *Business Daily*. Monday, April 4th 2016.
[136] United Nations Conference on Trade and Development. *Information economy report 2015: Unlocking the potential of e-commerce for developing countries*, 2015b,
[137] United Nations Conference on Trade and Development. *E-commerce and Development Report 2003*, 2003.

VII. THE CYCLE OF B2C ELECTRONIC COMMERCE

The section looks at B2C e-commerce through a conceptualized chain of processes that are typical of both buyer and seller e-commerce transactions, regardless of whether they involve goods or services. It maps the e-commerce process into five key stages: information sharing; ordering; payment; fulfillment; and service and support. The conceptual framework offers a useful overview by clearly defining the key activities that illustrate the ideal product and information flows among the participants.

Figure 1: The cycle of B2C e-commerce
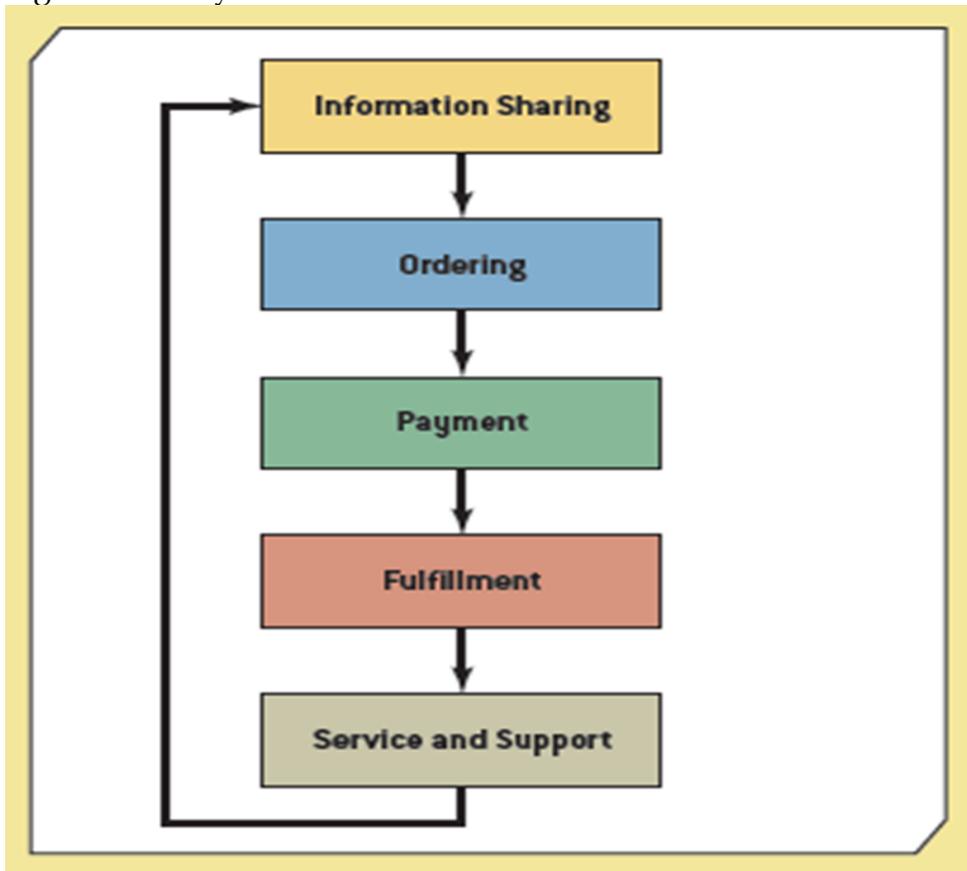
Source: Bidgoli, 2002[138]

---

[138] See Bidgoli Hossein. *Electronic commerce: Principles and practice*. San Diego, California: Academic Press, 2002.

Information sharing

As a communication platform, the Internet gives companies the opportunity to provide access to information, extending sales opportunities, and building better customer and value-chain relationships[139]. Because prospective online buyers seek out as much information as they can before making a purchase, e-commerce companies use various internet applications and technologies to share information online with potential customer: company website, online catalogs, email, online advertisements, multiparty conferencing, bulleting board systems, message board systems, newsgroups and discussion groups[140]. Consumer information can be imparted in a more comprehensive, comfortable, and customer-specific way than before since the Internet allows consumer education that is extensive, cost efficient and at the same time custom tailored to the interests of the target groups[141]. Tools like agents, robots, wanderers and spiders utilized in search engines and indexes, such as catalogues and directories, aid consumers in their information search activities. Nowadays, e-commerce businesses share information online through popular social networking mediums such as Facebook, Instagram and Whatsapp which enable group-specific mass communication made possible by the interactivity and individualization potentials of the Internet.

Ordering

Once a potential customer has found the website, they may want to order. A customer can use electronic forms or email to order a product they would like from a B2C website. A single click sends the necessary information relating to the requested item(s) to the B2C website[142]. Usually, firms have a number of systems for capturing customer orders, including manual processes. This multiplicity of systems results in higher costs and declining customer satisfaction due to redundant data entry and order errors. More sophisticated systems provide access to order progress information. Due to the rapid growth in the number of orders placed as well as the number of shipments made, a good order management system can help a retailer save a lot of time and make life much easier[143]. Returns are an inevitable part of taking orders; not every customer will be happy with the items once received and it is standard practice that retailers offer a refund once the goods are returned. Making goods easy to return is one way of putting customers' minds at rest and giving them the confidence to order, especially in cases when the item will be moving cross-border[144].

Payment

Payments are an integral part of the e-commerce value chain and are one of its most critical aspects[145]. Typically, the buyer arrives to payment activities after identifying products of services to be purchased. The buyer and seller then conduct a *mercantile transaction,*

---

[139] David Coleman & Stewart Levine, *Collaboration 2.0: Technology and Best Practices for Successful Collaboration in a Web 2.0 World*, California: Happy About, 2008, p.61.

[140] Bidgoli. *Electronic commerce: Principles and practice*. 2002.

[141] Klaus Fichter. "E-Commerce: Sorting out the environmental consequences," *Journal of Industrial Ecology*, 6, No 2, (2003): 25-41.

[142] Bidgoli. *Electronic Commerce: Principles and Practice*, 2002.

[143] Monisha Shetty, Waqaar Juned Shareef, Kanika Shetty, Savita Lohiya. B2B Order Management System, *International Journal of Computer Science and Information Technologies*, 6, No. 2, 2015, 1118-1122.

[144] International Postal Corporation, *Strategic insights: Best Practice in e-commerce websites*, Brussels: International Postal Corporation, 2012,. https://www.ipc.be/-/media/.../Strategic-Insights---E-commerce---May-2012.ashx, p. 32.

[145] Denis Abrazhevich, *Electronic payment systems : a user-centered perspective and interaction design*, (Eindhoven: Technische Universiteit Eindhoven, 2004), DOI: 10.6100/IR575913

whereby they exchange information followed by the necessary payment. The payment methods used should be mutually negotiated and agreed on[146]. Nowadays, the customer has a variety of options for payment including credit card payment, postal payment, credit transfer, electronic cheque, direct debit, smart cards, prepaid schemes and mobile phone schemes[147]. While credit cards have become the major payment instrument for e-commerce in developed countries, the weaknesses of credit and debit cards, and cheques are becoming more apparent. Concerns range from lack of trust in web merchants, to fear that their credit card details will not be secure, even extending to privacy threats surrounding their identities[148]. In recent times, the dominance of credit cards has eroded as various e-payment methods enter the market. For instance, in several African countries, mobile payment solutions represent the most viable infrastructure for e-services due to high degrees of financial exclusion, limited availability of fixed lines, cost of fixed lines and cost of the card infrastructure. Still, cash-on-delivery (CoD) remains a popular means of payment for online shoppers in many developing countries whereby the consumer's purchasing behaviour involves an initial inspection of the product upon delivery before paying for it.

Order fulfillment

Order fulfillment, "the last mile of e-commerce", is among the most crucial elements of e-commerce, and "the most expensive and critical operation" for companies engaged in e-commerce[149]. The fulfillment function could be very complex depending upon the delivery of physical products (e.g books, videos, CDs) or digital products (e.g. software, music, electronic documents). It also depends on whether the e-business handles its own fulfillment operations or outsources this function to third parties[150]. Delivery of services can be done by digital means. For physical products, delivery is achieved by air, sea or ground. How a business completes this section of cycle is dependent on the individual business and the industry and customer they serve. However, being profitable at e-commerce fulfillment is a significant challenge and is predicated on having an economically-sound logistics strategy. This is because fulfilment involves a number of different market players, including integrators, national postal operators[151], national delivery operators, parcel brokers, parcel and courier consolidators, fourth-party logistics providers, software solutions providers, and drop shippers[152]. Meeting delivery timelines, flexibility in handling orders, and dealing with each customer's unique set of order requirements are challenges that e-commerce firms and logistics service providers in particular are dealing with.

---

[146] Ravi Kalakota & Andrew B. Whinston, *A. Electronic commerce: a manager's guide*. Addison-Wesley, 1997.

[147] Universal Postal Union. *Boosting e-commerce: a how-to guide for postal operators*, 2015, Bern: UPU,http://www.upu.int/uploads/tx_sbdownloader/boostingECommerceAHowToGuideForPostalOperators En. pdf.

[148] According to Philippsohn & Thomas, (2003). there are cases when users' identities (i.e. personal data such as credit card numbers, names and addresses) were stolen when hackers break into websites' databases and obtain personal information of the customers. Fraudsters then attempt to use this information to open new credit and bank accounts using the stolen identity.

[149] Hau Lee & Seungjin Whang. *Winning the last mile of e-commerce.* Sloan Review, (July 15, 2001) http://sloanreview.mit.edu/article/winning-the-last-mile-of-ecommerce

[150] Bidgoli, *Electronic Commerce: Principles and Practice*, 2002.

[151] The postal system plays a key role in e-commerce logistics as the most cost-effective way to send parcels. Currently, handling of parcels has become important for the postal system in terms of volume and revenue. While the number of letters sent domestically and internationally has declined significantly, parcel traffic has surged by more than 30% since 2000, partly due to e-commerce (UNCTAD, 2015).

[152] Copenhagen Economics (2013).

Service and support

Service and support are even more critical in e-commerce than traditional businesses because e-commerce companies lack a physical presence and therefore need other ways to maintain current customers. For this reason, e-commerce companies employ a number of solutions and tools order to provide timely, high-quality service and support to their customers. Traditionally, customer service and support has been essentially achieved through communication channels like phone or email, however nowadays these channels have proven to be somewhat ineffective. In recent years, more and more customer service channels where the customers can engage in a two-way dialogue with the company have appeared. For instance, companies have developed virtual call centers that integrate companies' fan pages into social networking sites. These virtual call centers are then able to process the customer conversations and direct the conversation to the appropriate channel, but also identify customer service issues and act on them before they harm sales or the company's reputation[153].

Table 4: Classification of Consumer-Oriented E-commerce Applications by Industry

No.	Industry	Consumer Service	E-Commerce Service
1	Entertainment	Movies on Demand Video cataloging Music streaming Multi-user games	Netflix, Showmax Youtube Spotify, iTunes World of Warcraft
2	Financial Services	Banking Payment services Money transfer	Simple, Atom PayPal, Visa, Western Union, World Remit
3	Retail Services	Shopping Auction	Amazon, Alibaba eBay
4.	Education/Training	Distance Learning	Coursera, Udacity, edX,
5	Transport/Travel	Ride hailing Ticket Reservation Price comparison	Uber, Taxify Expedia Priceline.com
6.	Information	Search Directories Classifieds News	Google, Bing Yahoo Craigslist, OLX Huffington Post, Yahoo News
7	Accommodation	Hotel booking Lodging rental/lease	Trip advisor,Booking.com Airbnb
8.	Gambling	Gaming	888casino/poker/sport

Source: Researcher, 2016

---

[153] See Michaela Geierhos. "Customer Interaction 2.0: Adopting Social Media as Customer Service Channel." *Journal of Advances in Information Technology*, 2 no. 4, (2011): 222-233.

VIII. SUMMARY AND CONCLUSIONS

This report should be seen as a contribution to the debate concerning economic development in Kenya. As a premise, it recognizes the positive role that e-commerce phenomenon plays in economic development in Kenya. It also takes into account the specific issues and programmes intended to give momentum to the e-commerce sub-sector in Kenya. This section of the report summarizes key e-commerce aspects and draws conclusions on five key areas: tends, infrastructure, value chains, markets and rules and regulations.

Trends

A number of positive trends are shaping the e-commerce sector in Kenya. One of these is the rising internet penetration, which is driven by the increased investment in faster internet infrastructure by telecommunication operators, cheaper internet bundles by mobile operators and the increased use of smart mobile devices by consumers. Another encouraging trend is the adoption and use of innovative electronic and mobile payment systems, thereby expanding the possibilities for consumers and corporate buyers to pay for goods and services bought online. The third significant trend is the growing number of e-commerce platforms and online intermediaries offering a range of products and services from electronic goods to vehicles and online restaurant bookings. Reports indicate that electronic devices, cars and real estate comprise the highest number of items being traded online. A fourth trend identified by the study is the growth in cross-border e-commerce which has been fuelled by the demand for imported items from Asia, Europe and US. A fifth one is the growing use of mobile shopping applications by consumers. However, the report also observes that despite the positive trends and the opportunities that e-commerce offers, the uptake in Kenya and other African remains relatively low in comparison to more developed countries, depriving the e-commerce firms of a critical mass of people that are required to make their services profitable. Another worrying development is the lack of reliable official statistics/data for measuring trends in the e-commerce sector. Only a few countries - mainly developed ones – compile data on e-commerce revenue. The lack of reliable e-commerce data poses a challenge to sub-sector development since there are no comprehensive statistics on the value of domestic and international e-commerce. Also, far too few Kenyans can access fixed broadband internet, which is preferable to mobile broadband for certain applications that are vital for growing an innovation economy such as streaming, video conferencing, cloud computing and large file downloads. Last but not least, the trend towards "omni-channel" retailing is yet to catch on in Kenya as most traditional companies are just beginning to appreciate the value of e-commerce.

Infrastructure

Owing to the government's commitment and targeted investment in ICTs, Kenya is relatively better-off when compared to other African countries, where poorly developed infrastructure is still a barrier to e-commerce growth. The improved telecommunication infrastructure in the country has been critical for the growth of internet usage, making it possible for e-commerce firms to set shop in the country. Interestingly, mobile broadband is the fastest growing market segment as fixed broadband remains unaffordable to many users in the country. The country also has a fairly developed logistics network, especially in the major urban centres where the courier services are easily accessible. In some parts of the country however, supporting infrastructure such as logistics, transportation, and postal services remain significantly underdeveloped. However, the lack of a comprehensive address system of street names and property numbering was found to hamper e-commerce activity due to the challenges it poses for logistics management. In addition, the poor state of road and rail links in parts of the country also contribute to high costs of moving goods and lengthier delivery times.

Value Chain

When e-commerce is mentioned, what comes to mind are the popular online service providers such as online retailers and third-party marketplaces on which users can buy and sell an array of products and services. However, these platforms are just the "surface" of e-commerce. In fact, the value chain of e-commerce is much longer and many more key players are working in the background to enable and facilitate e-commerce. The various service-provides are part of an e-commerce value chain that provides essential functions such as payment, logistics, online marketing and data analytics, which all need to be coordinated to deliver an optimal customer experience. This study maps the e-commerce process into five key stages that illustrate the ideal product and information flows among the participants in the value chain: information sharing; ordering; payment; fulfilment; and service and support. By participating in e-commerce value chains, producer firms in developing countries can forge new trade relationships and integrate into the global economy. Some of the benefits include access to new markets - both domestic and foreign, reduction in business transaction costs, unrestricted business hours, faster sourcing of production inputs, and streamlining of supply chains. E-commerce users/consumers also benefit from having a wider choice of products and services that are difficult to get locally, access to goods and services at lower prices, and more convenience. It also allows businesses to tailor goods and services to fit the needs of smaller, less affluent consumer bases.

Markets

It is difficult to accurately estimate the size of the e-commerce sub-sector in Kenya due to the lack of up-to-date sectoral data. Nonetheless, while current estimates suggest that the Kenyan e-commerce industry is small relative to the rest of the world, it is is primed for growth as mobile internet performance continues to improve, a proposed national addressing system comes into existence, and people become more comfortable with digital transactions. As more and more Kenyans go online, thanks to better internet accessibility, cheaper smartphones and mobile data, this growing online market offers opportunities for revenue and profit growth to firms that are quickly to adopt e-commerce. But the growing digital marketplace also means intensified competition and significant threats from non-traditional sources, as new entrants challenge brick-and-mortar incumbents and empowered

consumers are able to search for products and compare prices online without restrictions across a variety of sellers both locally and outside the country. Competition is expected to further intensify as e-commerce companies experimenting with different ways to attract customers and increase online traffic. To remain competitive, e-commerce companies are relying on data on market growth, size and share in order to formulate strategies to tackle a hypercompetitive business environment. However, formulating and implementing successful strategies is perhaps the biggest challenge e-commerce firms face as they struggle to deal with rapidly evolving customer sentiments, broad product portfolios, multiple customer engagement platforms, and expansion into new geographies, brands and products. To benefit from e-commerce, a large number of traditional companies are adopting different innovative ideas and operating models including partnering with online marketplaces, setting up their own online stores as well as mobile shopping apps through which buyers can place orders, pointing to a gradual shift towards omnichannel shopping experience. Nonetheless, significant barriers to e-commerce barriers remain, as both industry players and stakeholders face new problems that did not exist or were less important in offline environment, thereby hindering the growth of the sector in Kenya. They include lack of trust, online consumer privacy, security, content, dearth of special skills, wanting e-commerce infrastructure and lack of e-commerce data. While they appear to affect small enterprises disproportionately, they have become more pressing as the benefits of e-commerce become clear and the number of firms involved in e-commerce keeps growing. But thanks to changes in the e-commerce ecosystem, some of these barriers can be addressed by policy makers through constructive engagement with industry players and stakeholders.

Rules and Regulations

There is increasing recognition amongst stakeholders that a favorable regulatory environment is key to unlocking the potential of e-commerce. Accordingly, the Kenyan government has put in place a number of rules and regulations governing e-commerce, helping to bring about growth and development in the sector. Taken together, a supportive regulatory framework plays a pivotal role in brokering trust and securing online transactions between enterprises, public authorities, and citizens. While no ideal legal framework for e-commerce exists, research shows that the availability of relevant laws and regulations in four key areas — e-transactions, consumer protection, privacy and data protection, and cybercrime — is necessary for boosting consumer confidence in digital transactions. It is also crucial that laws and regulations governing e-commerce are transparent, predictable, and encourage competition. While national governments are chiefly responsible for protecting vulnerable groups, all stakeholders must be involved in setting rules and regulations for dealing with the issues surrounding e-commerce. The challenge is to get the right mix between these complementary regulatory approaches while avoiding the stifling of innovation and creativity through new regulations. Kenya has already put in place a supportive legal framework for the provision of e-commerce services in the country that incorporates internationally recognized legislative principles and standards. Beyond having a basic enabling regulatory framework, the government is in the process of enacting legislation that addresses areas of law which affect cyber activities and raise broader issues of concern, such as intellectual property rights, competition, taxation, and information security.

BIBLIOGRAPHY

Abrazhevich Denis, *Electronic payment systems : a user-centered perspective and interaction design*, (Eindhoven: Technische Universiteit Eindhoven, 2004), DOI: 10.6100/IR575913, (Accessed 19/07/2016).

African Union, *Draft African Union convention on the establishment of a credible legal framework for cyber security in Africa*. Addis Ababa: African Union, 2011, http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/events/2011/WDOcs/CA_5/Draft%20Convention%20on%20Cyberlegislation%20in%20Africa%20Draft0.pdf , (Accessed 23/05/2016).

Akue-Kpakpo Abossé, *Study on international internet connectivity in sub-Saharan Africa*, Telecommunication Development Sector Report, Geneva: International Telecommunications Union, 2013. https://www.itu.int, (Accessed 30/07/2016).

Amadeus. *A Digital Savannah: Africa's e-commerce promise*. Amadeus. http://www.amadeus.com/web/binaries/1333083660383/blobheader. (Accessed 23/05/2016).

Angriawan Arifin and Thakur Ramendra A. "Parsimonious Model of the Antecedents and Consequence of Online Trust: An Uncertainty Perspective", *Journal of Internet Commerce*, Vol. 7, No. 1, (2008): 74-94.

Anyanzwa James "Use of plastic money surges to $11.6 million," Standardmedia.co.ke, 13 December 2013; available at http://www. Standardmedia.co.ke/business/article/2000099980/use-of- of-plastic-money-surges-to-11-6-million (accessed 26 May 2016).

Australian Communications and Media Authority. *Communications Report 1 – 2010-2011 Series Report 1 – E-commerce marketplace in Australia: Online shopping*. 2011, Canberra: Australian Communications and Media Authority, http://www.acma.gov.au/theACMA, (accessed on 28 April, 2016).

Bhasker Bharat. *Electronic Commerce: frameworks, technologies and applications*. 3rd ed. New Delhi: Tata-McGraw-Hill, 2009.

Bidgoli Hossein. *Electronic commerce: Principles and practice*. San Diego, California: Academic Press, 2002.

Communications Authority of Kenya, *First Quarter Sector Statistics Report for the Financial Year 2016/2017*, (July-September 2016), http://www.ca.go.ke/index.php/statistics (accessed on 17 May, 2016).

Coleman, David & Levine, Stewart. *Collaboration 2.0: Technology and Best Practices for Successful Collaboration in a Web 2.0 World*. Cupertino, HappyAbout.Info., 2012.

Copenhagen Economics. *Principles of e-commerce delivery prices*. Copenhagen: Copenhagen Economics, 2013. https://www.copenhageneconomics.com/publication/principles-of-e-commerce-delivery-prices. (Accessed 19 May 2016)

Copenhagen Economics. *Principles of e-commerce delivery prices*, Copenhagen: Copenhagen Economics, 2016, https://www.copenhageneconomics.com, (Accessed 11 May, 2016)

de Almeida Guilherme A. A., Avila Alfonso, & Boncanoska Violeta. "Promoting E-Commerce in Developing Countries." *Internet Governance and Policy Discussion Papers*. 2007. https://www.diplomacy.edu/sites/default/files/IG2007_E_Commerce.pdf. (Accessed 24 June, 2016).

E-Commerce Foundation. *Global B2C E-commerce Report 2016*, 2016 Amsterdam: E-Commerce Foundation,https://www.ecommercewiki.org/wikis/www.ecommercewiki.org/images/5/56/Global_B2C_Ecommerce_Report_2016.pdf, (accessed on 04 April 2016).

Fallon Nicole. "3 Big Challenges for Small E-Commerce Retailers (and How to Overcome Them)," *Business News Daily*, March 6, 2014, http://www.businessnewsdaily.com/6028-small-ecommerce-challenges.html. (accessed on 16/09/2016).

Fichter Klaus. "E-Commerce: Sorting out the environmental consequences," *Journal of Industrial Ecology,* 6, No 2, (2003): 25-41.

Geierhos Michaela. "Customer Interaction 2.0: Adopting Social Media as Customer Service Channel." *Journal of Advances in Information Technology*, 2 no. 4, (2011): 222-233.

GSM Association, *Digital Inclusion*, London: GSM Association, 2014, http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/11/GSMA_Digital-Inclusion-Report_Web_Singles_2.pdf, (Accessed 9 June 2016).

GSM Association. *The Internet Value Chain - A study on the economics of the internet*. 2016, London: GSMA, https://www.gsma.com/internet-value-chain (Accessed 9 June 2016).

Humphrey John, Mansell Robin, Paré Daniel & Schmitz Hubert. *The Reality of E-commerce with Developing Countries*. 2003, https://www.ids.ac.uk/ids/global/pdfs/e-commreport.pdf, (Accessed 24 July 2016).

iHubResearch. E-commerce research report: An exploratory study on e-commerce in Kenya, Uganda and Tanzania. *Afrikoin Conference Report*. Nairobi: iHub Research, http://www.mbuguanjihia.com/downloads/AfricoinReportpdf2014-2-6-13-57-16.pdf, (Accessed on 02/06/2016).

International Data Corporation. *Kenya ICT Board ICT Monitoring and Evaluation Indicators Study*, 2011. Nairobi: International Data Corporation, East Africa. https://www.icta.go.ke/pdf/Julisha%20Final%20Report%201.pdf, (Accessed 10 May 2016).

International Post Corporation. *Strategic Insights: Best Practice in E-Commerce Websites*, Brussels: International Postal Corporation, 2012, http://www.ipc.be/~/media/documents/public, (Accessed on 06 August 2016).

International Trade Center. *International E-Commerce in Africa – The way Forward*. Geneva: International Trade Center, 2015, http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/International%20E-Commerce%20in%20Africa_Low-res.pdf, (accessed on 26/10/2016).

International Trade Center. *Bringing SMEs onto the e-Commerce Highway*. Geneva: International Trade Center, 2016, http://www.intracen.org/publication/Bringing-SMEs-onto-the-e-Commerce-Highway, (accessed on 26/10/2016).

Iyer Gopalkrishnan R. & Yang Lifan. "Internet Product Prices in Emerging Economies." In *The Sustainable Global Marketplace*. Edited by Mary Conway Dato-on. Developments in Marketing Science: Proceedings of the Academy of Marketing Science. Springer, Cham, 2015. https://doi.org/10.1007/978-3-319-10873-5_121

Juma Victor, "Online shopping keeps consumers out of revenue authority's reach", Business Daily, August 16, 2010, http://all Africa.com/stories/201008160015.htm., (accessed September 14, 2016).

Kalakota Ravi. & Whinston Andrew B. *Electronic commerce: a manager's guide*. Boston, MA: Addison-Wesley Longman Publishing Co., Inc., 1997.

Kiringai Jane & Fengler Wolfgang. *Kenya economic update: Kenya at the tipping point? with a special focus on the ICT revolution and mobile money*. Kenya economic update; edition no. 3. Washington, DC: World Bank Group, 2010. http://documents.worldbank.org/curated/en/849841468286307168/Kenya-economic-update-Kenya-at-the-tipping-point-with-a-special-focus-on-the-ICT-revolution-and-mobile-money

Kariuki James, "E-commerce gaining popularity in Kenya as mobile phone technology grows", *Daily Nation*, January 19, 2016, http://www.nation.co.ke/business/E-commerce-gaining-popularity-in-Kenya/996-3039162-d3q9j4/index.html, (accessed June 14, 2016)

Kemibaro Moses, *The 5 Biggest Social Media Platforms in Kenya.* January 21, 2016. http://www.dotsavvyafrica.com/the-5-biggest-social-media-platforms-in-kenya, (accessed June 14, 2016).

Kenya ICT Authority. *Kenya National ICT Master Plan for 2013/14 - 2017/18*. 2014a, Nairobi: KICTA,https://www.kenet.or.ke/sites/default/files/Final%20ICT%20Masterplan%20Apr%202014.pdf (Accessed 12/06/2016).

Kenya ICT Authority. *National Cybersecurity Strategy*. 2014b, Nairobi: KICTA, https://www.enisa.europa.eu/topics/national-cyber-security-strategies/ncss-map/KE_NCSS.pdf (Accessed 23/07/2016).

Lee Hau. L. & Whang Seungjin. "E-fulfillment: winning the last mile of e-commerce," *MIT Sloan Management Review*, vol. summer, (2001), 54–62.

Malala Joy. *Consumer Protection for Mobile Payments In Kenya: An Examination Of The Fragmented Legislation and The Complexities It Presents For Mobile Payments*, KBA Centre for Research on Financial Markets and Policy, WPS/02/14, 2016.

Manzoor Amir. *E-commerce: An Introduction*. Saarbruecken: Lambert Academic Publishing, 2010.

Mbuvi Dennis. "Safaricom enhances M-Pesa to offer easier online integration and transactions". *CIO*, 2013, http://cio.co.ke/news/main-stories/safaricom-enhances-m-pesa-to-offer-easier-online-integration-and-transactions, (Accessed on 18 May, 2016).

McKinsey Global Institute. *Lions Go Digital: The Internet's Transformative Potential in Africa*, Brussels: McKinsey Global Institute, 2013. http://www.mckinsey.com/industries/high-tech/ourinsights/lions-go-digital-the-internets-transformative-potential-in-africa.

Murungi Michel M. *Cyber Law in Kenya*. Alphen aan de Rijn: Kluwer Law International, 2011.

Ministry of Information, Communications and Technology, Kenya. *Remarks by ICT Cabinet Secretary Dr.Fred Matiang'i while addressing the press during the Information security and Public Key Infrastructure Conference in Nairobi, Kenya*, http://www.information.go.ke/?p=241, (Accessed 22 May, 2016).

Msimang Mandla, *Broadband in Kenya: build it and they will come*, an InfoDev Publication, Washington, DC: The World Bank, 2011.

Mutula Stephen M.. "Digital divide and economic development: case study of sub-Saharan Africa", *The Electronic Library*, 26, Iss 4: 468-489, https://doi.org/10.1108/02640470810893738

Mwencha Peter. *Customers' perceptions and usage of online retailing services in Nairobi County, Kenya*. (PhD Dissertation, Kenyatta University, 2015). http://ir-library.ku.ac.ke/handle/123456789/13275.

Nduati Stephen Mwaura (2015). Cyberlaws And Regulations For Enhancing E-Commerce: Including Case Studies And Lessons Learned. *Presentation made at UNCTAD Expert Meeting on E-commerce*. Wednesday, 25th March 2015. Nairobi: Central Bank of Kenya, unctad.org/meetings/es/Presentation/CII_EM5_P_DKibirige_en.pdf, (Accessed on 02 August, 2016).

Brian Ngugi, "Kenya's retail spending hits Sh1.8 trillion, says P&G report," *Daily Nation*, February 7 2017, http://www.nation.co.ke/business/Kenya-retail-spending-hits-Sh1-8-trillion/996-3804314-

Nielsen. *Evolution or Revolution in the Fast-Moving Consumer Goods World?* 28 August 2014. http://www.nielsen.com /us/en/insights/reports/2014, (Accessed on 19 August, 2016).

Niranjana Murthy M. and Dharmendra Chahar (2013). The study of E-commerce Security Issues and Solutions, *International Journal of Advanced Research in Computer and Communication Engineering*, 2, Iss. 7, 2013: 2885 - 2895, ISSN (Online): 2278-1021

Njanja Annie. "Jumia in pact to drive sale of 'Made-in-Kenya' goods," *Daily Nation*, March 16 2016, http://www.nation.co.ke/business/Jumia-in-pact-to-drive-sale-of-Made-in-Kenya-goods/996-3851966-nvqxjaz/index.html, (accessed on 02/07/2016)

Okuttah Mark, "Report says Kenya lags behind peers in e-commerce," *Business Daily*, July 2014, http://www.businessdailyafrica.com/Report-says-Kenya-lags-behind-peers-in-e-commerce/-/1248928/2369806/-/y1m5jk/-/index.html, (Accessed on 13 May, 2016).

Okwii David. *Cash on delivery, not credit cards is the recipe for online businesses in Kenya*. Dignited.com, (17 November, 2014), http://www.dignited.com/10887/cash-delivery-credit-cards-recipe-online-businesses-kenya/ (Accessed 27 April 2016)

Organization for Economic Corporation and Development. Electronic and Mobile Commerce, *OECD Digital Economy Papers,* No. 228, 2013, Paris: OECD Publishing, Paris. http://dx.doi.org/10.1787/5k437p2gxw6g-en, (Accessed 23/04/2016).

Organization for Economic Corporation and Development, *Consumer Protection in E-commerce: OECD Recommendation, Pasis:* OECD Publishing, Paris, 2016. Retrieved online from http://dx.doi.org/10.1787/9789264255258-en.

Postal Corporation of Kenya. *Posta Kenya Jumia Partnership*. 2015, https://posta.co.ke/site (Accessed on 23/05/2016)

Perritt, Jr. Henry. "Economic and other barriers to e-commerce." *University of Pennsylvania Journal of International Law,* 21, Iss. 3, (2014), 563 – 584.

Rotman Leonard I. "Trust, loyalty and e-commerce." In *Ethical issues in e-business: models and frameworks, e*dited by Daniel E. Palmer (Hershey, PA: IGI Global, 2010) 58 – 79.

Shalhoub, Z. Karake. "Trust, privacy, and security in electronic business: the case of the GCC countries", *Information Management & Computer Security*, 14, No. 3, (2006), 270-283.

Sharma Kunal, Singh Amarjeet & Sharma Ved Prakash (2009). SMEs and cyber security threats in e-commerce. *EDPACS: The EDP Audit, Control, and Security Newsletter*, 39(5-6), 1-49.

Shetty Monisha, Shareef Waqaar Juned, Shetty Kanika & Lohiya Savita. "B2B Order Management System", *International Journal of Computer Science and Information Technologies*, Vol. 6 (2), (2015), 1118-1122.

Souter David & Kerrets-Makau Monica. "Internet governance in Kenya – an assessment for the internet society." 2012. London: ICT Development Associates Limited. http://www.internetsociety.org, (Accessed on 27 June 2016).

The Gilbane Report. "E-Commerce and Content Management: More Important than Ever." 12, No. 6, (2004). http://www.gilbane.com. (accessed on 26/10/2016).

Thomas Lauer. & Xiaodong Deng. "Building online trust through privacy practices", *International Journal of Information Security*, Vol. 6, No. 5, (2007), 323-331.

United Nations Conference on Trade and Development. *E-commerce and Development Report 2003*, Geneva: United Nations Conference on Trade and Development, 2003. http://unctad.org/en/docs/ecdr2003_en.pdf, (accessed on 26/10/2016).

United Nations Conference on Trade and Develeopment. *Cyberlaws and regulations for enhancing e-commerce: Case studies and lessons learned*, Geneva: United Nations Conference on Trade and Development, 2015a. http://unctad.org/meetings/en/SessionalDocuments/ciiem5d2_en.pdf.

United Nations Conference on Trade and Development. *Information economy report 2015: Unlocking the potential of e-commerce for developing countries*, Geneva: United Nations Conference on Trade and Development, 2015b, http://unctad.org/en/PublicationsLibrary/ier2015_en.pdf, (Accessed 16 June, 2016).

Universal Postal Union. *Boosting e-commerce: a how-to guide for postal operators*. Version 2.0, 2015, Bern: UPU, http://www.upu.int/uploads/tx_sbdownloader/boostingECommerceAHowToGui deForPostalOperatorsEn.pdf, (Accessed on 06/04/2016).

Visa International. "Electronic payments, economic growth, and financial efficiency." Paper presented at UNCTAD "E-finance for Development" side event, 2002. http://www.unctad.org/ecommerce (Accessed 22 September 2016).

Waema Timothy Mwololo & Ndung'u Margaret Nyambura. "Understanding what is happening in ICT in Kenya: A supply- and demand- side analysis of the ICT sector." *Evidence for ICT Policy Action*, 9, (2012). Nairobi: IDRC, ISSN: 2310-1156.

WorldPay, *Your global guide to Alternative Payments*, 2nd ed. Worldpay, 2014. http://offers.worldpayglobal.com/.../worldpay/.../worldpay-alternative-payments-2nd-edition. (Accessed on 26/10/2016).

World Trade Organization. *Summaries of the Workshop on e-commerce, development and SMES - 8 and 9 April 2013*. Geneva: World Trade Organization, 2013. https://www.wto.org/english/news_e/news13_e/summary_rep_e.pdf, (accessed on 26/10/2016).

yStats.com (2012). *Africa internet & b2c e-commerce report 2012*, Hamburg: yStats.com Gmbh. & Co. KG.

Zhou Zongqing. *E-commerce and Internet technology in hospitality and tourism*. New York: Delmar Learning, 2004.