

Determinants for Profitability of E- Commerce Operations of Companies in the Communication Sector in Nairobi County, Kenya

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ABSTRACT

Selling and buying through electronic media is one of the fastest growing methods of trading worldwide. Organizations are engaging in Business to business (B2B) trading where companies trade and exchange information using the World Wide Web. Organizations and consumers are transacting through Business to consumer (B2C) or Consumer to Consumer (C2C) where companies deal directly with customers through electronic media. This study sought to determine the effect of e-commerce on business profitability in the communication sector. The population of the study was 218 firms as listed by CCK. The data was gathered using a questionnaire and this analyzed using a combination of descriptive, inferential and relational statistics. The findings of the study indicate that e-commerce leads to an increase in turnover and customers which ultimately leads to an increase in profitability. Further the studies pointed out that focus on having an online presence, online lead generation and online sales led to increased business profitability. This information is useful to both the Government and businesses keen on adopting e-commerce. The study further recommends faster adoption of 4G networks and also laying of sea cables to make internet charges competitive and affordable to both businesses and consumers.

Keywords

E-Commerce, Profitability, Communication Sector, Business to Business, Business to Consumer, Consumer to Consumer, Online Sales, Competitive Advantage

1. Introduction

In the emerging electronic environment, knowing how to create customer-centered web sites is of great importance. Web sites are being widely deployed throughout industry, education, government, and other institutions. In practice, the importance of the use of Web technology for electronic commerce (EC) activities has been discussed widely. Electronic Commerce is a way of conducting business by companies and their customers performing electronic transactions through computer networks. EC can help business organizations cut costs, interact directly with customers, run more smoothly and in a timelier manner, and even better, it can help an organization outperform its competition. In the Internet era, users experience an organization's Web site's quality before they decide whether to commit themselves to the organization (Nielsen 1999). Further, Nielsen (1999) notes that the Web site functions as a "window" through which users have their initial interaction with the organization. Evans (1999) asserts that its design crucially affects their perception and attitude toward the organization.

In the last ten years, studies have focused on the design of Web sites for general information seeking and for electronic commerce purposes. In the Web environment for general information seeking and business-to consumer electronic commerce, users are customers. Understanding their expectations and how they feel about the Web sites they use is becoming a very serious concern. A company's continued success comes from two groups: new customers and repeat customers. Since it always costs more to attract new customers than to retain current customers, customer retention is more critical than customer attraction

The key to customer retention is customer satisfaction. Delighting customers goes beyond satisfying them. Delighted customers are more effective advocates for a company than all the paid advertisements it places in the media. While the success of a company or an organization is dependent on many factors, its Web site plays a central role. In the Internet era, users experience an organization's Web site's quality before they decide whether to commit themselves to the organization. The Web site functions as a "window" through which users have their initial interaction with the organization. Its design crucially affects their perception and attitude toward the organization (Nielsen, 2000).

According to Nielsen (2000), web site simplicity should be the goal of web page design because users always focus on the contents and interface. Therefore, it is important to ensure that web page design can work with different platforms. In addition, since users in the developing countries are still using low bandwidth telecommunication media, analog modems and low specification computer hardware, the web page design should allow for traditional or old technology access.

Nielsen, (2000) explains that content is the vital part of web sites due to the first appearance to users. Quality of the content is one of the two most important determinants of e-commerce web usability. Quality of production (e.g. well-crafted writing, beautiful pictures and multimedia) is graded in the second rank. Therefore, content developers should take the following questions into account: "What is relevant for me?" and "How does this web site help me to solve the problems or answer the questions?" Furthermore, since web users are goal driven and impatient, the provided content needs to be focused towards speedy answers and usefulness to the users.

In general, the e-business systems published on the Internet should be matched for the paradigm of the universal design highlighting on user contexts of anyone, anywhere and anytime. If a business

wants to be successful, a good website is probably a good place to start first, and it seems the opposite is true as well. Across the globe there are over two billion internet users and this number grows by two hundred million annually hence the need to evaluate the benefits of using internet and specifically for the ecommerce, the benefits of using the website in relation to the business performance (Schneider 2003).

Good websites not only attract and sale to customers, but also increase the potential of return visits. This raises important implications for organizations thinking of making an appearance on the internet (as well as presenting them with pertinent issues to keep in mind when designing their websites) Lyer et al. (2000). Also, high quality websites lead to a favorable attitude towards the websites and products and services offered (Liu et al., 2001). A web site can improve communications with other organizations, thus improving the efficiency of business processes by increasing direct sales and reducing costs (Zona Research Inc, 2000). Schneider (2003) suggests that the benefit of improved communication extends also to the businesses customer base, in that the organization can receive feedback directly from customers. Zona Research Inc. (2000) states that poorly constructed web sites can lead to lost revenues from non-realized transactions and negatively affect organization image. Harley et al., (1998) concluded that poorly designed web sites can lose 50 per cent of potential sales when people cannot find what they are looking for, and that 40 per cent of users do not return to web sites who uttered negative first experience.

E-commerce continues to grow in leaps and bounds and some of the latest trends aimed at making it a powerful domain adopted from the Netcraft Survey (2012) include;

Personalized services may not be new but it is definitely going to be one of the popular trends in e-commerce. By continuously monitoring the buying pattern of consumers using the newest technologies, the content of the site can be designed to meet the needs of target audience. The main focus here is to provide personalized products and services on the site.

One of the spreading trends m-commerce and e-commerce alignment. Apart from the site being mobile compliant it will also offer highly engaging shopping experience by making it more interactive. This integration of web and mobility will provide a deeper connect with the product or the service the customer wants to buy. Apart from e-commerce being more personalized and mobile, technology will be playing an important role in making it more realism based.

Cross channeling is definitely one of the trends that will grip e-commerce. Social media is one of the reliable methods to market products and services. Channels like Facebook and Twitter are just getting better along with some new additions like Pinterest which helps in establishing a foothold for business benefit. In 2013 the integration between e-commerce and social media is all set to become more intense.

Customization is integral in making the consumer the in-charge of his purchase. Design your own t-shirt, add personalized message to your jewellery are some of the sides e-commerce is set to experiment with as the end product he/she will readily buy. Now, the merchants will allow the target customers to tailor-make a product as per their specifications. E-commerce is all set to go through a major change.

What you say about the product is about to get more and more crucial. With increase in competition, the need for accurate information has become of utmost importance. The significance now lies in the way the content is presented, how authentic the information is, the form, style, tone and facts. Content will decide the sale of the product and services.

Every business targets the global market but the key lies in focusing on the local market first. People will keep searching for products and services as niche oriented e-commerce will rule. So basically marketing needs to be focused on specific regions by targeting different markets with

interesting campaigns keeping in mind the preferences, tastes and buying activities of the local population.

According to the Netcraft survey of March 2012, there are over 224 million organizations and company domain names worldwide. This indicates that the internet is growing in leaps and bounds. Kenyan Internet users increased by 95.63 % in the 2011 showing a tremendous growth in the country's technology fuelled by high number of mobile phone usage, reveals the Communication Commission of Kenya, CCK, 2011/2012 sector report. The report, second quarter of 2011/2012, indicates the number of Internet users grew to 17.38 million as at December 2011 compared to 8.89 million users in 2010.

According to Hinge survey (2011), high growth firms secured 64% of leads online, while average growth firms obtained only 12% of leads online, showing how a bigger engagement of online tools equals faster growth. Further the greater a company's online lead generation, the greater the total firm's profitability. Firms generating 60% or more of their leads online are two times more profitable than those generating less than 20% of online leads. In Kenya most firms profitability is driven by sales, product diversity and pricing. However more and more firms are increasingly beginning to rely on the web to generate sales. This study aims to investigate the effects of e-commerce on business profitability in the communications sector and also to identify areas of focus to make e-commerce useful to business performance.

2. Literature Review

In the emerging electronic environment, knowing how to create customer centered web sites are of great importance. Employer branding has gained in strength and popularity since its first appearance in business communication in the early 1990's (Rosethorn, 2009). This field of branding originates from the recognition that people are extremely valuable to an organization. Philip Kotler was one of the first people, to focus on people in marketing and proposed to regard current and future employees as consumers consuming a job (Rosethorn, 2009).

Employer loyalty has become increasingly difficult to retain and studies (Rosethorn, 2009) show that people are more loyal to colleagues than to an organization. This has made the study and practice of employer branding even more important and communicators have taken up the use of various persuasion strategies in order to achieve their goal of attracting, engaging and retaining the best candidates and attracting new business.

Today, employer branding is becoming a common phenomenon through websites and social media platforms such as Face book, Twitter and LinkedIn. The social media sites provide a multi-functional medium in a less formal tone with the potential to reach an unbelievably large audience (Hunt, 2010). In this kind of medium, marketing is often presented in short text segments, images and through video clips. Employer branding theory suggests that employee and customer testimonials and video material are effective methods of communicating with potential clients. Furthermore, companies are recommended to include social media in general to strengthen the ecommerce brand (NAS, 2010). In this study we will review the various literature that exist on effects of e-commerce on business profitability and those on the independent and dependent variables leading to formulation of the conceptual framework.

Unlike accounting, profit, economic profit takes into account both the explicit costs and implicit or imputed costs. The implicit or opportunity cost can be defined as the payment that would be necessary to draw forth the factors of production from their most remunerative alternative use or employment. Opportunity cost is the income foregone which the business could expect from the

second best alternative use of resources. The foregone income includes interest, salary, and rent, often called transfer costs. Economic profit also makes provision for (a) insurable risks (b) depreciation (c) necessary minimum payment to shareholders to prevent them from withdrawing their capital investments. Economic profit may therefore be defined as 'residual left after all contractual costs,' including the transfer costs of management, insurable risks, depreciation, and payments to shareholders having been met.

Although the income statement allows us to estimate how profitable a firm is in absolute terms, it is just as important that we gauge the profitability of the firm in comparison terms or percentage returns. The simplest and most useful gauge of profitability is relative to the capital employed to get a rate of return on investment. This can be done either from the viewpoint of just the equity investors or by looking at the entire firm.

One of the widely known theories of profit was stated by F. A. Walker who theorized 'profit' as the rent of "exceptional abilities that an entrepreneur may possess" over others.

He believes that profit is the difference between the earnings of the least and the most efficient entrepreneurs. Walker assumes a state of perfect competition, in which all firms are presumed equal managerial ability. In Walker's view, under perfectly competitive conditions, there would be no pure or economic profit and all firms would earn only marginal wages, which is popularly known in economics as 'normal profit'.

The J. B. Clark's theory is of the opinion that profits arise in a dynamic economy, not in a static economy. A static economy is defined as the one in which there is absolute freedom of competition; population and capital are stationary; production process remains unchanged over time; goods continue to remain homogeneous; there is freedom of factor mobility; there is no uncertainty and no risk; and if risk exists, it is insurable. In a static economy therefore, firms make only the 'normal profit' or the wages of management.

A dynamic economy on the other hand, is characterized by the following generic changes: (i) population increases; (ii) increase in capital; (iii) improvement in production technique; changes in the forms of business organizations; (v) multiplication of consumer wants. The major functions of entrepreneurs or managers in a dynamic environment are in taking advantage of the generic changes and promoting their businesses, expanding sales, and reducing costs. The entrepreneurs who successfully take advantage of changing conditions in a dynamic economy make pure profit. From Clark's point of view, pure profits exist only in the short-run. In the long-run, competition forces other firms to imitate changes made by the leading firms, leading to a rise in demand for factors of production. Consequently, production costs rise, thus reducing profits, especially when revenue remains unchanged.

The risk theory of profit was initiated by F. B. Hawley in 1893. According to Hawley, risk in business may arise due to such reasons as obsolescence of a product, sudden fall in the market prices, non-availability of crucial raw materials, introduction of better substitutes by competitors, risk due to fire, war and the like. Risk taking is regarded as an inevitable accompaniment of dynamic production, and those who take risk have a sound claim of a separate reward, referred to as 'profit'. Hawley simply refers to profit as the price paid by society for assuming business risk. He suggests that business people would not assume risk without expecting adequate compensation in excess of actuarial value, that is, premium on calculable risk. Risk can arise from a strategy that changes the basis of competition to a company's disadvantage (Vitale, 1986). When a company embarks on an electronic commerce initiative, its profits and customer base expands

Frank Knight treated profit as a residual return to uncertainty bearing, not to risk bearing as in the case of Hawley's. Knight divided risk into calculable and non-calculable risks. Calculable risks are those risks whose probability of occurrence can be statistically estimated on the basis of available data. Examples of these types of risks are risks due to fire, theft, accidents, and the like. Calculable risks are insurable. Those areas of risk in which the probability of its occurrence is non-calculable, are certain elements of production cost that cannot be accurately calculated and are not insurable. This theory is directly applicable to some of the risks faced in e-commerce. The risk of Internet fraud is calculable based on level of technology adopted. Some e-commerce risks can be calculated easily based on the available data supporting this theory and this can be factored in calculation of profitability.

The innovation theory of profit was developed by Joseph A. Schumpeter. Schumpeter was of the opinion that factors such as emergence of interest and profits, recurrence of trade cycles are only incidental to a distinct process of economic development; and certain principles which could explain the process of economic development would also explain these economic variables or factors. Schumpeter's theory of profit is thus embedded in his theory of economic growth. In his explanation of the process of economic growth, Schumpeter began with the state of stationary equilibrium, characterized by equilibrium in all spheres. Under conditions of stationary equilibrium, total receipts from the business are exactly equal to the total cost outlay, and there is no profit. According to the Schumpeter's theory, profit can be made only by introducing innovations in manufacturing technique, as well as in the methods of supplying the goods.

According to Mckinsey survey (2011) two billion people are connected to the Internet. Almost \$8 trillion exchange hands each year through e-commerce. In some developed markets, about two-thirds of all businesses have a online presence of some kind, and one-third of small and medium-sized businesses extensively use Web technologies. The Internet has transformed the way we live, the way we work, the way we socialize and meet, and the way our countries develop and grow. In two decades, the Internet has changed from a network for researchers and geeks to a day-to-day reality for billions of people. Our research sheds new light on this revolution and helps explain the direct link between the Internet and economic vitality. Its impact on economic wealth reaches well beyond pure players in the industry. Indeed, the brunt of its economic contribution derives from established industries that in the shadow of the Internet, have become more productive, have created more jobs, have increased standards of living and have contributed more to real growth. Our research shows that more than 75 percent of the value added created by the Internet is in traditional industries (Mckinsey 2011)

Also, as with electricity, the Internet has influenced every corner of the world, not just those countries that pushed its original development or were instrumental in its growth. As Internet usage spreads to even the most remote communities—where gas-powered generators and satellite links make the connection—its observable positive effects grow. As evidence, the United Nations in its Millennium Development Goals lists Internet penetration as a key metric in efforts to reduce poverty and encourage rational development (Rugero 2003). Many have compared the dawn of the Internet to another communications game changer, the introduction of the Gutenberg press five centuries earlier. But a comparison with the development and commercialization of electric power may be more appropriate. Among its many other consequences, electricity changed the landscape of cities around the world, allowing elevators that can travel great heights and heralding the dawn of massive skyscrapers. As with electricity, the Internet has changed the global landscape. The Internet

bridges vast distances have made the world flatter by allowing instant access to an almost endless stream of information. New McKinsey research (2011) has shown that the Internet not only delivers value to companies and users but also astonishing value to national economies. Using an approach based on Internet-enabled consumption patterns by individuals, businesses, and governments, we found that in a broad range of countries the Internet contributes more to GDP than agriculture, energy, and several other traditional sectors do. In addition, it is a critical component of economic growth, especially in those countries that embrace its utility and encourage usage at all levels.

Companies keep costs down in many ways, including tapping into a broader range of suppliers for their needs and optimizing myriad processes. They have also changed the way they target customers: online marketing represents 15 percent of total marketing spending. Companies are also able to bring their goods and services to markets around the world much more easily. The Internet has also enabled a new wave of business models and made possible a new type of entrepreneurship. For instance, in the United States, Internet-specific venture capital deals represent around 20 percent of total deals in terms of both numbers and investments.

Individuals derive countless benefits. They compare prices. In France, the United States, and Germany, 40 percent of Internet users visit a price comparison Web site every month. They search for hard-to-find items or information (total search requests totaled more than 1 trillion in 2009). They communicate and play without leaving their keyboards as new means of communication replace traditional ones. While landline and mobile voice share of the communications portfolio decreased by 7 percent between 2008 and 2010, Internet users spent 11 percent more time using social networking Web sites. They now spend as much time on social network Web sites as they do writing e-mails. The way people learn is also changing. Online video classes have allowed teachers to remove the one-size-fits-all lecture from the classroom, enabling students to learn at their own pace with online content and using class time for exercises and interactive activities. The Internet also allows teachers to follow each student individually and spot difficulties more quickly.

Governments can serve citizens much more quickly and at a much lower cost with the development of e-government services such as online tax services or e-visas. In addition, a variety of government services can be delivered more cost effectively, and faster leveraging the Internet, examples range from public health and safety information to the renewal of driver's licenses.

There have been four eras in marketing history: the production era, the sales era, the marketing era and finally the relationship era. Up to the mid-1920s, production and operation were the major focus of business with the view that a good quality product would sell itself. From then till the early 1950s the emphasis changed to focus on effective sales forces to find customers. Personal and private selling and advertising was seen as the way to convince customers to purchase. Later, enhanced competition encouraged the need for marketing to play a part in the full life cycle of products from the planning through to purchases, distribution, and servicing. In the 1990s relationships with customers and suppliers became the focus (Boon and Kurtz, 1999). Utilizing of internet for marketing has been a natural progression and particularly matched the relationship marketing concept. The internet permits businesses to communicate with consumers more quickly, powerfully and sometimes more cheaply. It has also helped marketing firms to gather consumer data, customize production and target potential customers (Bush et al, 2000).

Spurred by the economic growth offered by the internet and related technologies, many organizations are engaging in e-commerce activities and internet marketing. E-commerce can be defined as any economic transaction whereby a buyer and seller come together through the internet or other technology, form and execute agreements regarding the pricing and delivery of products and services (Guay & Ettwein, 1998; Standifird, 2001). Whilst internet usage at all levels continues to grow, online purchases by businesses and consumers are booming (Sheehan & Doherty, 2000). One area of internet marketing which has exploded in sales and customer interest is online auctions. Consumers will spend about \$7 billion via online auctions in the next four years. In 2003 alone, auction sales among retail sites were projected to generate sales of \$2.1 billion (Collett, 2000).

Even more ambitious growth is predicted. They expect consumers to spend \$19 billion on online auctions by 2003 (Freedman, 2000). Where computer speed and capacity double every 18 months, the internet seems to double in capacity every 18 weeks (Mack, 2000). The extent of the use of the internet for marketing is growing at such a rate it is difficult to pin it down. A survey of U.S. online households found that 47% had made online sales within the previous six months (Abrahamson, 2000) and U.S. consumers spent at least \$2.3 billion over the internet during the 1998 Christmas season alone (Mack, 2000). The total 1998 e-commerce is estimated to have reached \$102 billion (Abrahamson, 2000).

With this much purchases activity online it is not surprising that the estimated number of Fortune 500 organizations with a Web presence enhanced in 1996 from 175 to 400 (Bush et al, 2000). The extent of internet marketing even includes those involved in traditional marketing areas, as approximately 88 percent of all publishers are now taking subscription orders via the Web (Harvey, 1999). Generally there are few areas of western society that have not been affected by internet marketing. There is definitely money to be made especially for the companies doing the marketing. In 1998, internet advertising, generated revenues of \$1.92 billion, compared to \$1.58 billion generated by traditional outdoor advertising (Abrahamson, 2000).

Lead generation is the process of creating sales leads. The leads may come from various sources or activities, for example, digitally via the Internet, through calls and list purchase. Companies may also rely on referrals, telemarketers, and advertisements to generate leads (David 2011). Online lead generation is a very rapidly growing and evolving arena as new methods for online lead generation are tested and other ones are refined to produce greater results. Online lead generation includes pay-per-click models; search engine optimization activities; video marketing; downloading free (or paid) information in exchange for lead info; responding to surveys; registering for online services; webinars; in short, any other way that you can observe or imagine how to inspire an individual to enter their name and email (or more info) online could be a component of lead generation (David 2011).

Current marketing and sales practice and theory are undergoing unprecedented transformations that may be highly attributed to the adoption of new technology tools and marketing concepts, such as sales force automation tools, database marketing, relationship marketing, network marketing, electronic trading systems, and, finally, the Internet. Transferring the thought of the Harvard Business School marketing theorists, the main thrust of the transformation in marketing practice could be reduced to the shift from broadcast marketing to interactive marketing that introduces marketing concepts and practices that are more customized and responsive to the individual (Deighton 1996). In this context, the Internet has been characterized as the ultimate interactive medium. Appropriate performance measurement is an issue that has been extensively debated in marketing literature.

Specific conditions that characterize industrial markets, such as long-term buying processes and demand for quality customer service and closer relationships with the customers, often makes accountability (i.e., performance measurement) of certain sales management activities a quite stringent task. Upon this matter, Churchill et al. (1992) argued that performance is behavior evaluated in terms of its contributions to the goals and objectives of the organization. Thus, performance of selling and marketing efforts is often judged on the basis of not only sales but also on other criteria that are essential to business-to-business marketing, such as implementation of sales leads and improvement of customer relationships.

In the same spirit, Bondra and Davis (1996) state that the measures of IT (i.e., the Internet) performance should be closely linked to the objectives that were to be achieved through its applications by the sales and marketing departments. The Internet is an out-directed IT that can be used both as a direct sales channel and as an interactive communications tool (i.e., sales force and marketing tool). Thus, it may affect sales performance in two ways: (a) through achieving direct sales (i.e., via the WWW); and (b) indirectly, through enhancing interorganizational relationships and implementing sales leads (i.e., via e-mail communication), providing higher levels of productivity (i.e., increase of sustainable customer shares). Although the potential of the Internet, viewed as a direct sales channel, for company profitability is unquestionable.

Hoffman, Novak, and Chatterjee (1997) argue that there is lack of knowledge regarding this issue. Also, Thomson and Kaul (1995), referring to the WWW, suggest that success in the Internet can be measured by the number of site visits, though they note that very few companies report any significant sales. In addition, Kurlwich (1996) states that most companies generate very little business from WWW advertising at present and that in reality, the main advantage of the WWW, at this early stage, is the experience that they gain about the marketing strategies to be used when the network becomes a major commercial tool for everyone. Nevertheless, we should always remember that apart from direct sales, the development of successful interorganizational relationships is very critical in business-to business marketing and is mainly based in the quality and quantity of information exchanges (Hakansson 1982). In this spirit, recent surveys have stressed the ever-growing potential of the Internet to become a huge virtual market that connects organizations around the world, enabling expansion into new markets and improvement of customer relationships

3. Methodology

Research design refers to the blue print for collection, measurement and analysis of data. It is the plan and structure of investigating conceived as to obtain answers to research questions (Kothari, 2004). The study combined both inferential and descriptive design since the researcher intended to look at the problem at hand thoroughly to define it, clarify it, and obtain pertinent information that could be of use to policy makers in basic education. Dane (2000) has recommended it as the best for this kind of research. The target population was 218 companies doing e-commerce in Kenya as listed in CCK database 2012. The researcher targeted the managers and owners of businesses in the communication sector in Nairobi County, Kenya.

The study used random sampling method. The advantage of this method is that, it is free from error(s) (Darren's Starnes 2008). The sample size was thirty percent of the population as defined by Mugenda (2001). In this case, each individual was chosen randomly and entirely by chance such that each individual would have the same probability of being chosen at any stage during the sampling process. This method is good because it requires minimum advance knowledge of the population other than the frame. The method is also easy to interpret data collected. It further fulfills the requirements of efficiency, representativeness, reliability and flexibility because the size of the sample will be optimum; neither excessively large nor too small (Kothari, 2004).

The procedure for data collection entailed using questionnaires to be administered through drop and pick method to the units of analysis who were web designers, web users, customers and owners of the businesses. One set of questionnaire was tailored for the categories of respondents shall be administered. The two methods were used to collect primary data. The data was collected by the researcher with the aid of a research assistant.

The researcher examined all the questionnaires for completeness and consistency, and then categorized all the items before coding. The collected data was analyzed using SPSS (statistical package for social sciences). It was presented in pie charts, bar charts and graphs. Descriptive statistics such as mean, mode, median was used to present the characteristics of data.

4. Results and Discussion

The data for this study was collected within the month of March and April 2013 using questionnaires. In total, 100 questionnaires were distributed to the various businesses. Of these 77 questionnaires were successfully completed and returned to the researcher by respondents giving a response rate of 77%, a figure considered substantially sufficient for the study. Analysis of the profiles of sample organizations was based on demographic characteristics of the respondents in terms of number of years in existence, gender and level of education.

The findings of the study indicate most of the business owners understand the effect of e-commerce on business profitability (93%) as shown in figure 4.1. Most of the respondents acknowledge that e-commerce if adopted and embraced in an organization can lead to profitability similar to other normal marketing operations. In general, the study gives a favorable picture concerning the effect of e-commerce on organizations. The study findings show that e-commerce has led to increase in turnover (33%) and increase in customers (28%) as shown in table 4.1

Table 4.1: How e-commerce has helped Organizations

Effect of e-commerce	Findings	Number of Respondents
Increase in profitability	20%	16
Increase in market share	5%	4
Increase in turnover	33%	26
Increase in customers	28%	22
Others	14%	10

Majority of the Organizations interviewed were experiencing between moderate effect due to e-commerce (38%) and no change (26%) as shown in table 4.2

Table 4.2: Level of effect on the business as a result of e-commerce

Level of Effect	Number of Organizations	Findings
High effect	17	21%
Moderate effect	30	38%
No Change	21	26%
Low effect	8	10%
No effect	2	5%

The study also sought to determine the views of the respondents in relation as to whether online business had proved as an advantage or disadvantage to the businesses across the border. The findings indicate that most of the businesses in Kenya (58%) view the online business as an advantage to their businesses while only 8% do not view online business as an advantage to their business especially in terms of profitability and performance. The authors argued that web based marketing activities and its site design are driven by interactions among firms market offering

Responses to various statements under each e-commerce indicator were collapsed and a composite index (mean score) computed for each function. Tabulated results showed that establishing online presence was rated highest on average with a mean of 4.18 with responses deviating from this mean by a standard margin of 0.80. This was followed closely by online lead generation with the mean of 4.00, with standard deviation (STD DEV) of 0.96, online sales generation (mean = 3.59, STD DEV = 0.78) and web marketing (mean = 3.46, STD DEV = 0.56) in that order. This ordering could be interpreted to mean that establishing online presence was considered the best factor that improved business profitability as on average respondents agreed to them. Conversely, online sales generation was lowest on the scale of effect on business profitability although it was still well above the average (mid-point), implying it was also used to a great extent. Developments in information and communications technology have fundamentally changed the way businesses sell and distribute their goods and services. New technology such as the internet and broadband has opened up a whole new world of opportunities for business.

Table 4.3: Ranking of e-commerce Indicators impact on Business Profitability as represented using mean and Standard Deviation

Variable (E-Commerce Indicator)	Mean	Std Deviation	Rating of impact of indicator on Business Profitability
Establishing online presence	4.18	0.80	1 (Highest impact)
Online lead generation	4.00	0.96	2
Online sales generation	3.59	0.78	3
Web Marketing	3.46	0.56	4

The study aimed to find out also which combination of e-commerce indicators had greatest impact

on business profitability as viewed by the respondents. This was tested using a multiple regression analysis. The results were presented in Table 4.7 for the combination that produced greatest effect. As evident in Table 4.8, the values of beta coefficient and R^2 for online lead generation and online sales generation were 0.3 and 0.1, respectively. This implied that for every unit increase in online lead generation, there was a corresponding increase in business profitability by 0.3. Beta coefficient is significant at $\alpha < 0.01$. Therefore, the best combination was online lead generation and online sales.

Table 4.4: Results of the Regression Analysis of the combination of e-commerce indicators on Business Profitability

Variable	Beta	t value	α value
EAC Combination of Indicators			
Online lead generation and online sales generation	0.3	4.0	<0.01
Online visibility and web marketing	0.2	2.3	<0.01
$R^2 = 0.2$			
Web marketing and online lead generation	0.3	3.3	<0.01
$R^2 = 0.1$			

Results of this study showed that e-commerce best predictors of business profitability were online lead generation and online sales generation. The variables explained up to 20% of business profitability ($R^2 = 0.2$) with online lead generation taking the lead. To this extent there was a relatively moderate support for the existence of a positive relationship between e-commerce indicators and business profitability in Kenya. A contribution of the present study corroborates these results in the context of effect of e-commerce in Asia and Europe.

However, the relationship between the e-commerce indicators and business profitability did not hold across all the variables considered to be indicators of successful e-commerce adoption. Surprisingly the findings of this study indicated that not all these indicators, specifically web marketing, affect business profitability. While online lead generation and online sales showed a significant correlation with firm performance ($r = 0.4$, $\alpha < 0.01$) and ($r = 0.3$, $\alpha < 0.01$) respectively, online visibility ($r = 0.2$, $\alpha < 0.01$), and web marketing ($r = 0.3$, $\alpha < 0.05$) showed positive but weak correlations with business profitability. Most commonly (in 48% of responses), firms generated less than 20% of total leads online, although almost a quarter generated no online leads at all. A significant number of firms, however, produce a high percentage of leads through online marketing. Approximately 15% of firms generate 40% or more of their new business leads online. Clearly, online lead generation can be an effective strategy in the modern professional services firm.

6. Conclusion and Recommendations

The study main objective was to determine the effect of e-commerce on business profitability in the communications sector in Kenya. This was done by studying a sample size of 58 firms in Nairobi. A set of questions on the indicators of e-commerce effect on business profitability was distributed and

the results analyzed. The findings depict a positive relationship between e-commerce indicators and business profitability with online visibility and online leads generation leading in terms of level of impact on profitability.

This study aimed to find out the effect of e-commerce on business profitability. The major findings of the study showed that: There was a moderate positive relationship between e-commerce indicators and business profitability; online visibility had the greatest impact on business profitability; and a combination of online lead generation and online sales generation led to the highest impact on increased business profitability compared to combination of the other indicators. The findings of this study indicated that not all these indicators, specifically web marketing affect business profitability.

The study findings also indicated that e-commerce lead to increase in turnover and increase in customers which ultimately leads to increase in profitability.

Though individual businesses with online presence in Kenya can benefit from the study's findings, practical implications resulting from this study are of particular relevance to the Government and ICT Sector who wish to improve on the level of e-commerce adoption. The following recommendations were made: The Government of Kenya and the ICT sector can focus on identified indicators namely; online visibility, online lead generation, online sales and web marketing to achieve the greatest impact in terms of business profitability.

They can also further improve on the costs of internet access thereby making it easy to host a website and also for users to access internet conveniently. The Government should also fast track the 4G licensing and spreading of the sea cables across all counties. In this respect, the Government of Kenya should come up with a workable plan on how to allocate funds specifically for supporting businesses that embrace e-commerce noting that the global economy is driven by technology and internet as evidenced by the phenomenal growth in internet penetration and usage in the world.

The results of this study suggest a variety of implications for future research. First, e-commerce indicators used in the study are not standardized. Future study may explore alternative bundles of e-commerce indicators which will provide a rich research base for researchers to compare the outcome with the results of this study. Secondly, it is further suggested that future researchers accommodate major differentiating factors, including economic, political, legal and historical environments instead of drawing conclusions from the findings of studies conducted in contrasting environments. It is also recommended that future researches try to include all the East African Community member countries in the scope of the study to give a more elaborate picture on the state of e-commerce adoption and effect to allow comparison. This should help to obtain more interesting and revealing results of business profitability. Research can also be done on resistance to change and lack of confidence in e-commerce.

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