

European Journal of
Business and Strategic Management
(*EJBSM*)

Strategy

**COMPUTER TECHNOLOGY AND COMPETITIVE
ADVANTAGE OF SELECTED MEDIA HOUSES IN
KENYA**

Emma Waeni Ngutu and Dr. Jane Wanjira

COMPUTER TECHNOLOGY AND COMPETITIVE ADVANTAGE OF SELECTED MEDIA HOUSES IN KENYA

^{1*} Emma Waeni Ngutu

Post Graduate Student: School of Business
Kenyatta University

*Corresponding Author's E-mail: engutu@googlemail.com

² Dr. Jane Wanjira

Lecturer, School of Business
Kenyatta University

Abstract

Purpose: The main objective of the study was to establish the influence of computer technology on the competitive advantage of selected media houses in Kenya.

Methodology: The study adopted a descriptive research design.

Findings: Results revealed that adoption of computer technology influenced the competitive advantage of selected media houses in Kenya. Therefore, the study concluded that computer technology influenced the competitive advantage of selected media houses in Kenya. The conclusion was informed by the realization that computerized software adoption, online mobile application and use of internet influenced the competitive advantage of selected media houses in Kenya. The study also concluded that staff training had a moderating effect on the relationship between technology and competitive advantage of selected media houses in Kenya.

Unique contribution to theory, practice and policy: The study would be of value to the media industry in Kenya. This is due to the fact that the media industry has experienced increased competition from new media such as the internet and social media making the competition stiffer and survival harder. The study would therefore provide relevant information to these media houses on how computer technology affects their competitive advantage. Hence, this information can give the media houses insight on which strategies to adopt so as to ensure competitiveness. Consumers of media would benefit from this study as the study creates awareness that use of new media is cheaper. This would also assist to increase the adoption of technology in Kenya. The findings of this study would also be significant to academicians in that it will add to the body of knowledge of the researchers in this field of study.

Keywords: *Technology, Competitive Advantage, Computerized Software's, Online Mobile Applications, Internet and Staff Competence*

INTRODUCTION

Background

Media companies worldwide are struggling to understand and adjust to wide ranging external and internal changes that are altering their operations. These changes have altered their modes of production; eroded their traditional audience and advertiser bases; altered established market dominance patterns, increased competition and changed the potential of the firms. Hence, the need for media companies to understand and adjust to the new conditions because such changes can lead to failure of both existing and new products and ultimately, the loss of value or collapse of firms (Jennifer, 2011).

The past stability of the media industry is a legacy that all media houses are struggling against in the new environment. The newspaper and magazine industries have existed for three centuries, the motion picture and radio industries for about a century, and television industry for half a century. Due to favorable governmental policy choices and operational conditions, the media industry has been relatively stable without much competition (Jennifer, 2011). However, technology advancement and change of government policies has resulted to the emergence of new media.

The advent of new media has brought forth a set of opportunities and challenges for new media (Garrison, 2010). The presence of new media and the internet in particular, has posed a challenge to traditional media, especially the printed newspaper (Domingo & Heinonen, 2011). In a bid to remain competitive, the traditional media houses have taken drastic measure. These measures include creation of new and diversified products to suit the current new market.

The concept of globalization and technology advancement has influenced the media industry all over the world in a significant manner. Especially, in the last decade the media, information and communications landscape has changed decidedly. Technological and demographic developments, deregulation and the convergence of different media, information and communications markets have left an important mark on the configuration of the traditional markets (Wirtz, 2011; Picard, 2013). These developments have not only posed threats to companies operating on these markets, but they have also created new opportunities for companies to engage in new ventures and businesses that are profitable both in home markets and abroad.

Wirtz (2011) argues that compared to other forms of mass media, the internet offers low barriers to access and was designed to work without the kind of gatekeepers that exist in traditional print or broadcasting media. A computer and an internet connection are far less expensive than a printing press or other mechanized media for reaching large audiences offline. Radio and television technology are limited technically by the capability to exploit the electro-magnetic spectrum. Government regulation of airwaves has generally been found necessary as a way of managing this scarce resource. The internet, by contrast, can accommodate essentially an unlimited number of points of entry and speakers (Kihuga, 2010).

According to Ohmae (2005), an organization with effective strategic thinking will gain competitive advantage with the resultant outcome of better satisfied customers. Better satisfied

customers lead to bigger market share leading to increased revenue (Evans & Lindsay, 2011) while the effectively developed and executed strategy should be one that has marshaled the organization's resources to a unique posture that can take advantage of internal resources (Ohmae, 2005). This taking advantage leads to better productivity, while the productivity will only come about when there is reduced waste, coupled with satisfied customers; employee satisfaction increases (Evans & Lindsay, 2011).

Thompson and Strickland (2003) observed that a company has competitive advantage whenever it has an edge over its rivals in securing customers and defending against competitive forces. Sustainable competitive advantage is born out of core competences that yield long term benefit to the company. Prahalad and Hamel (2009) define a core competence as an area of specialized expertise that is the result of harmonizing complex streams of technology and work activity. They further explain that a core competence has three characteristics: it provides access to a wide variety of markets, it increases perceived customer benefits and it is hard for competitors to imitate.

Media industry in Africa report has also revealed that despite the fast rising usage of the Internet and social media across Africa the traditional media remains the most trusted and stronger than digital media. The research claim that although conventional media was still on the rise in most African countries as a developing continent, so was the new media and the African media industry is developing very quickly (Contador, 2013). For instance, in Malaysia, the effect of the new media on conventional media is still manageable. Newspapers in particular are not as hard hit as their counterparts in the USA. Malaysians still prefer to get their news through the print newspaper, radio and television. The Bahasa Malaysia newspapers, for example have had an increased in circulation now compared to two decades ago. However, some scholars here are of the opinion that Malaysians should opt for online digital newspapers as well as look at the opportunities to increase their advertising revenue through the concept of free newspaper (Yap, 2010). The expansion of the new media in Malaysia has been so extensive that, in a recent comment, the then-Home Minister Syed Hamid Albar stated: "The Internet news media cannot be called an "alternative media" any more as it is a more popular medium than the traditional mainstream media in Malaysia...I think we have to call the alternative media the mainstream. This has led to mainstream papers trying to emulate them and be as critical as they can in selling their papers" (Straits Times, October 22, 2008).

The media industry in Kenya has grown tremendously in the last two decades more or less in parallel with the expansion in democratic space, which in itself evokes the close linkage between media and democratic tenets. Before the 1990s both broadcast and print media were severely constrained (Saurombe, 2006). However, the number of broadcast outlets and the quality and vibrancy of print media have risen steadily with the last two decades being definitive for the media in Kenya. This can be attributed to increased freedom, liberalization and more competition in the media industry (Ogola, 2011). In addition, the environment in which the media houses are operating in today is characterized by advanced technology, the use of the internet as well as mobile telephony which has impacted on their operations in a significant manner (Ogola, 2011).

New media such as the internet and the use of the mobile technology also affects Kenyan media houses in terms of competition. Most mobile subscribers tend to use their internet enabled devices to access the news, entertainment and even the social media negatively affecting the growth of traditional media houses. It is therefore important that these media houses develop new operations strategies and implement them in the right manner in order to improve their competitiveness in the face of the new market dimensions (Deloitte, 2013).

Youth readership has contributed to a great extent the growth of new media in Kenya. The youths are evidently accessing their news online more than they are on hard copy newspapers and broadcasting stations. The youth are currently opting to access their news online, for free. They are also looking for a higher entertainment value than newspapers have been able to offer. This creates a need to review the product offering to appeal and recruit readers online as well as remain relevant on print to recruit new readers to the paper. Mobile penetration remains a key factor in the faster assimilation of the internet in East Africa. The youth do not therefore need an expensive gadget to access news. The newspapers come at a cost and price has also been seen as a hindrance, with most youth stating that their ideal price of a newspaper is 40/=. This is supported by a University Students study conducted in 2013. Results revealed that most the youth that access news online.

Problem Statement

Organizations achieve competitive advantage by providing their customers with what they want or need, better or even more effectively than competitors and in ways which competitors find difficult to imitate. The emergence of new media due to technology advancement has challenged the competitiveness of media houses in Kenya. In a bid to sustain their competitiveness, the media houses have to adopt new strategies. However, these houses face many pressures and constraints which have dampened their performance and thus lowering their level of competitive advantage. These pressures and constraints are caused by factors such as inadequate financial resources, lack of skilled manpower and government regulations (Nyabuga, 2011). A good example is the decline in the readership of newspapers. KARF data indicates that there was an almost 60% drop in readership of newspapers between 2007 and 2014 (Millward Brown, 2015).

Kranenburg (2004) evaluated the strategic options for the newspaper publishing companies. The study noted that traditional publishing markets are undergoing a fundamental transformation. The study concluded that media companies have to find their way in the turbulence landscape. This study revealed a conceptual gap since this study focused on the influence of technology on competitive advantage. This study also revealed a contextual gap as it focused on newspaper publishing companies only while this study focused on 4 media houses in Kenya. Hence, this study sought to fill this gap by establishing the influence of computer technology on the competitive advantage of selected media houses in Kenya.

Research Objective

General objective

The main objective of the study was to establish the influence of computer technology on the competitive advantage of selected media houses in Kenya.

Specific Objectives

- To establish the influence of computerized software adoption on the competitive advantage of selected media houses in Kenya.
- To assess the influence of online mobile application on the competitive advantage of selected media houses in Kenya.
- To determine the influence of internet on the competitive advantage of selected media houses in Kenya.
- To investigate the moderating effect of staff training on the relationship between computer technology and competitive advantage of selected media houses in Kenya.

THEORETICAL REVIEW

This study was guided by the Porter's five forces competitive model, Schumpeter theory of innovation and resource based view theory.

Porter's Five Forces Competitive Model

The model of the Five Competitive Forces was developed by Porter (1980) in his book "Competitive Strategy: Techniques for Analyzing Industries and Competitors". Since that time it has become an important tool for analyzing an organizations industry structure in strategic processes. According to Porter (1980), a firm develops its business strategies in order to obtain competitive advantage (increase profits) over its competitors. It does this by responding to five primary forces: (1) the threat of new entrants, (2) rivalry among existing firms within an industry, (3) the threat of substitute products/services, (4) the bargaining power of suppliers, and (5) the bargaining power of buyers.

A company assesses these five competitive forces in a given industry, then tries to develop the market at those points where the forces are weak (Porter 1980). For example, if the company is a low-cost producer, it may choose powerful buyers and sell them only products not vulnerable from substitutes. The company positions itself so as to be least vulnerable to competitive forces while exploiting its unique advantage (cost leadership). A company can also achieve competitive advantage by altering the competitive forces. For example, firms establish barriers to deter new entrants from coming into an industry by cultivating unique or capital-intensive resources that new firms cannot easily duplicate. Firms also increase bargaining power over their customers and suppliers by increasing their customers' switching costs and decreasing their own costs for switching suppliers. The five competitive forces model provides a solid base for developing business strategies that generate strategic opportunities.

Advanced technology has resulted to emergence of new media which has introduced substitute products/services in the media industry. In a bid to remain competitive, media houses have come up with new products such as online mobile applications. In addition, the media houses have had to develop computerized softwares to enable which help them keep pace with new technology. Hence, this theory was relevant to this study.

Schumpeter Theory of Innovation

The Schumpeter theory of innovation was developed by Joseph Alois Schumpeter in the year 1928. Schumpeter (1928) argued that entrepreneurs can create the opportunity for new profits with their innovations. In turn, groups of imitators attracted by super-profits would start a wave of investment that would erode the profit margin for the innovation. Schumpeter (1934) emphasized the role of entrepreneurship and the seeking out of opportunities for novel value generating activities which would expand and transform the circular flow of income, but it did so with reference to a distinction between invention or discovery on the one hand and innovation, commercialization and entrepreneurship on the other. This separation of invention and innovation marked out the typical nineteenth century institutional model of innovation, in which independent inventors typically fed discoveries as potential inputs to entrepreneurial firms. The author further saw innovations as perpetual gales of creative destruction that were essential forces driving growth rates in a capitalist system.

The theory distinguished between the entrepreneurs whose innovations create the conditions for profitable new enterprises (Schumpeter, 1939). Schumpeter's brief discussions of historical episodes of innovations in the field of entrepreneurship might appear to suggest a positive role for innovations in growth of the entrepreneurial ventures that produce the primary wave growth spurts. For all his insight on the role of innovation, Schumpeter still did not really explain the source of innovation. He was able to point to its importance and its role but did not address its source. The importance of innovation was highlighted by researchers like Abramovitz (1956) and Solow (1957) who were able to demonstrate how little neoclassical economics explained it. Based on data on the United States economy from 1909-49, Solow showed that only 12.5 percent of the increase of per capita output could be traced to increased use of capital. This left a surprisingly large 87.5 percent residual that Solow attributed to technical change. Schumpeter's assertions have been supported by Porter (1992) that innovation is vital for a country's long-run economic growth and competitive advantage. Innovation and upgrading come from sustained investment in physical as well as intangible assets. Use of innovations such as online mobile applications and computerized softwares has helped media houses derive new profits as well as remain competitive. Thus this theory was linked to online mobile applications and computerized softwares.

Resource Based View Theory

The resource based view theory (RBV) was developed by Barney (1991). This theory argues that firms possess resources which enable firms to achieve competitive advantage and lead to superior long term performance. Valuable and rare resources can lead to the creation of competitive advantage. That advantage can be sustained over longer time periods to the extent that the firm is able to protect against resource limitation, transfer or substitution (Frawley & Fahy, 2006).

This theory receives great attention in the strategic management literature. Its orientation towards internal analysis of the firm offers to human resource strategic management a valuable conceptual framework, through which to analyze the ways in which firms try to develop their human resources with the aim of transforming them in a sustained competitive advantage

(Wright & McMahan, 1992). The idea that human resources can become a source of competitive advantage for the organization is not new (Huselid, 1995; Ordoñez de Pablos, 2004; Pfeffer, 1998; Schuler & Jackson, 1987; Wright *et al.*, 2005).

It is generally accepted that firms can create a competitive advantage from human resources and their management practices. Effective human resource management generates a higher capacity to attract and hold employees who are qualified and motivated for good performance. In addition, the benefits of having adequate and qualified employees are numerous. Some examples are higher profitability, less rotation, higher product quality, lower costs in manufacturing and a faster acceptance and implementation of the organizational strategy. This theory also informed this study as it focused on the resources necessary to develop and maintain competitive advantage implying that the theory is linked to competitive advantage which is the dependent variable in this study.

METHODOLOGY OF THE STUDY

This study utilized a descriptive research design. The target population comprised of all the 10,200 employees of Nation Media Group, The Royal Media Services, the Standard Group and Media Max. This study used a formula to calculate a sample size of 96 respondents. Hence, 24 employees from each of the four main media houses were selected using stratified random sampling technique. The study used primary data which was largely quantitative and descriptive in nature. Structured questionnaire containing both open and close ended questions were used to collect data. The questionnaires were self administered with the help of research assistant using a drop and pick later method. A pilot study was undertaken on 10% (10) of the employees of Nation Media Group to test the reliability and validity of the questionnaire. Before analysis, the completed questionnaires were checked for completeness and consistency. Before the final analysis, the study conducted diagnostic tests. This included the normality test and the multi-collinearity test. The data collected was then analyzed using descriptive statistics and presented in form of percentages and frequencies. Regression analysis was also used to establish the relationship between the independent variables and the dependent variable.

RESULTS OF THE STUDY

Response Rate

The number of questionnaires that were administered to the employees was 96. A total of 82 questionnaires were properly filled and returned. This represented an overall response rate of 85.4% as shown on Table 1.

Table 1: Response Rate

Response	Frequency	Percent
Returned	82	85.4%
Unreturned	14	14.6%
Total	96	100%

Reliability

The cronbach alpha was calculated in a bid to measure the reliability of the questionnaire. This was done by subjecting the questionnaire to 10 employees. All the variables were reliable since their cronbach alpha was above 0.7 which was used as a cut-off of reliability for the study. Table 2 shows the reliability results.

Table 2: Reliability

Variable	No of Items	Respondents	α =Alpha	Comment
Competitive Advantage	3	10	0.741	Reliable
Computerized Software	3	10	0.722	Reliable
Online Mobile Applications	3	10	0.736	Reliable
Internet	4	10	0.713	Reliable
Staff Training	7	10	0.731	Reliable

Demographic Characteristics

Results showed that 68% of the respondents were male while 32% were female. This implies that most of the employees in the four big media houses in Kenya are male. Results also revealed that 32% of the respondents indicated that they were aged between 36-45 years, 30% of the respondents were aged between 26-35 years, 23% of the respondents were aged between 46-55 years, 10% of the respondents were aged below 25 years while only 5% of the respondents indicated above 55 years. The results also revealed that 74% of the respondents had attained education up to the university level, 13% of the respondents had attained education up to college level, 9% of the respondents had attained education up to post graduate level while only 4% of the respondents had attained education up to secondary level. Further, results showed that 41% of the respondents indicated more than 7 years, 32% of the respondents indicated 5-7 years, 17% of the respondents indicated 2-5 years while only 10% of the respondents indicated less than 1 year. Results also revealed that 68% of the respondents were in the supervisory level of management, 23% of the respondents were in the middle level of management, while only 9% of the respondents were in the top level of management.

Descriptive Statistics

Computerized Software's Adoption

The first objective of the study was to establish the influence of computerized software adoption on the competitive advantage of selected media houses in Kenya. Results in Table 3 reveal that majority (62.2%) of the respondents agreed with the statement that their media house has invested financially towards the development of computerized softwares, 30.5% were neutral while 7.4% disagreed. Results also revealed that majority (91.5%) of the respondents agreed with the statement that their media house has hired skilled personnel to develop computerized softwares, 4.9% were neutral while 3.6% disagreed. Further, results reveal that majority (63.4%) of the respondents agreed with the statement that computerized software's in their media house are easy to use, 35.4% were neutral while 1.2% disagreed. On a five point scale, the average mean of the responses was 4.0. This means that majority of the respondents were agreeing to the

statements on computerized software adoption. These results are consistent with those of Chukwunonso, Omoju, Ikani and Ribadu (2011) who investigated the linkages between information and communication technology and firm performance. The findings showed that adopting information technology has positive effects on innovative practices, which increases the competitive advantage of firms.

Table 3: Computerized Software’s Adoption

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Our media house has invested financially towards the development of computerized softwares.	3.7%	3.7%	30.5%	40.2%	22.0%	3.7
Our media house has hired skilled personnel to develop computerized softwares.	1.2%	2.4%	4.9%	35.4%	56.1%	4.4
Computerized software’s in our media house are easy to use.	0.0%	1.2%	35.4%	52.4%	11.0%	3.7
Average						4.0

Online Mobile Application

The second objective of the study was to assess the influence of online mobile application on the competitive advantage of selected media houses in Kenya. Results in Table 4 reveal that majority (72%) of the respondents agreed with the statement that their media house has invested financially towards the development of online mobile applications. Results also reveal that 87.8% of the respondents agreed with the statement that their media house has hired skilled personnel to develop online mobile applications. Results also reveal that 63.5% of the respondents agreed with the statement that online mobile applications in their media house are easy to use. On a five point scale, the average mean of the responses was 3.8 which is approximately 4.0. This means that majority of the respondents were agreeing to the statements on online mobile applications. These findings are consistent with those of Ogina (2013) who focused on the three dimensions of information systems and how these are managed to build competitive advantage. The study concluded that technology should result in factors that build competitive advantage with resources and capabilities in business processes being strategically flexible and costly for imitation by competitors.

Table 4: Online Mobile Application

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Our media house has invested financially towards the development of online mobile applications.	6.1%	1.2%	20.7%	65.9%	6.1%	3.6
Our media house has hired skilled	2.4%	0.0%	9.8%	32.9%	54.9%	4.4

personnel to develop online mobile applications.

Online mobile applications in our media house are easy to use.	11.0%	9.8%	15.9%	53.7%	9.8%	3.4
Average						3.8

Internet

The third objective of the study was to determine the influence of internet on the competitive advantage of selected media houses in Kenya. Results in Table 5 reveal that majority (64.7%) of the respondents agreed with the statement that their media house has invested financially towards use of internet, 25.6% were neutral while 9.8% disagreed. Results also reveal that 50% of the respondents agreed with the statement that their media house has hired skilled personnel to assist in internet use, 30.5% were neutral while 19.5% disagreed. Results also reveal that 63.4% of the respondents agreed with the statement that the internet used in their media house is stable, 28% were neutral while 8.6% disagreed. Further, results reveal that most (76.9%) of the respondents agreed with the statement that the internet used in their media house is reliable, 18.3% were neutral while 4.8% disagreed. On a five point scale, the average mean of the responses was 3.6 which is approximately 4.0. This means that majority of the respondents were agreeing to the statements on internet use. These results are consistent with those of Waema and Katua (2013) who analyzed the impact of fiber optic broadband Connectivity and related technologies on the tourism value chain in Kenya. The study established that broadband internet and related ICTs have brought about varying changes in the bargaining powers of both suppliers and customers, changed the basis of rivalry among existing competitors and reduced barriers to entry for new players.

Table 5: Internet Use

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Our media house has invested financially towards use of internet.	3.7%	6.1%	25.6%	47.6%	17.1%	3.7
Our media house has hired skilled personnel to assist in internet use.	12.2%	7.3%	30.5%	46.3%	3.7%	3.2
The internet used in our media house is stable.	4.9%	3.7%	28.0%	54.9%	8.5%	3.6
The internet used in our media house is reliable.	2.4%	2.4%	18.3%	61.0%	15.9%	3.9
Average						3.6

Staff Training

The fourth objective of the study was to investigate the moderating effect of staff training on the relationship between computer technology and competitive advantage of selected media houses in Kenya. Results in Figure 1 show that over the years the number of staff trainings conducted by the media houses was increasing.

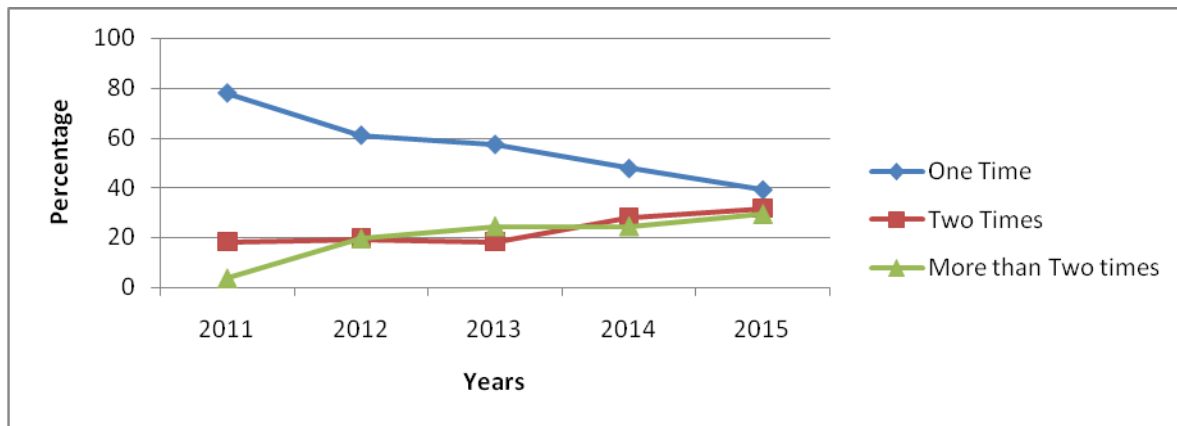


Figure 1: Number of Staff Trainings

The respondents were also asked to respond to statements on the moderating effect of staff training on the relationship between computer technology and competitive advantage. Results in Table 6 reveal that majority (59.8%) of the respondents agreed with the statement that staff training influences the relationship between computer technology and competitive advantage in their media house, 30.5% were neutral while 9.8% disagreed. Results also reveal that most (87.8%) of the respondents agreed with the statement that the number of trainings in ICT in their media house has increased, 4.9% were neutral while 7.3% disagreed. On a five point scale, the average mean of the responses was 4.0. This means that majority of the respondents were agreeing to the statements on the moderating effect of staff training on the relationship between computer technology and competitive advantage. These findings are consistent with those of Aswathappa (2005) who reiterated that every organization needs to have a trained workforce to enable it achieve its set objectives. An organization cannot meet its profit targets if its workforce is not trained.

Table 6: Staff Trainings

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Staff training influences the relationship between computer technology and competitive advantage in our media house.	3.7%	6.1%	30.5%	37.8%	22.0%	3.7
The number of trainings in ICT in our media house has increased.	1.2%	6.1%	4.9%	31.7%	56.1%	4.4
Average						4.0

Competitive Advantage

The respondents were asked to respond to questions on the competitive advantage of their media houses. Results in Table 7 reveal that majority (76.8%) of the respondents agreed with the statement that use of computer technology in their media house has influenced the customer

loyalty, 9.8% were neutral while 13.4% disagreed. Results also reveal that most (69.5%) of the respondents agreed with the statement that use of computer technology in their media house has influenced the staff competence, 17.1% were neutral while 13.4% disagreed. Further, results reveal that most (72%) of the respondents agreed with the statement that use of computer technology in their media house has influenced the supplier relationship, 13.4% were neutral while 14.6% disagreed. On a five point scale, the average mean of the responses was 3.8 which is approximately 4.0. This means that majority of the respondents were agreeing to the statements on competitive advantage of their media houses. These findings are consistent with those of Bhatt and Grover (2010) who framed a discussion in terms of ICT capabilities, and argued that managing ICT is a capability that can create uniqueness and provide organizations a competitive advantage.

Table 7: Competitive Advantage

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
Use of computer technology in our media house has influenced the customer loyalty.	2.4%	11.0%	9.8%	48.8%	28.0%	3.9
Use of computer technology in our media house has influenced the staff competence.	0.0%	13.4%	17.1%	50.0%	19.5%	3.8
Use of computer technology in our media house has influenced the supplier relationship.	2.4%	12.2%	13.4%	59.8%	12.2%	3.7
Average						3.8

Diagnostic Tests

As mentioned in chapter three, the data was tested for conformity to the assumptions of the classical linear regression model by performing a multi-collinearity test and a normality test.

Multi-collinearity test

According to William et al. (2013), multi-collinearity refers to the presence of correlations between the predictor variables. In severe cases of perfect correlations between predictor variables, multi-collinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). Multi-collinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley et al., 1980). Correlation analysis was used to conduct the multi-collinearity test. The rule of the thumb is that a correlation between independent variables of more than 0.8 is an indicator of serious multi-collinearity. The results are as shown in Table 8.

Table 8: Multi-collinearity Test using Correlation Analysis

Variable	Competitive Advantage	Computerized Softwares	Online Mobile Applications	Internet
----------	-----------------------	------------------------	----------------------------	----------

Competitive Advantage	Pearson Correlation	1				
	Sig. (2-tailed)					
Computerized Softwares	Pearson Correlation	0.425	1			
	Sig. (2-tailed)	0.000				
Online Mobile Applications	Pearson Correlation	0.541	0.709	1		
	Sig. (2-tailed)	0.000	0.000			
Internet	Pearson Correlation	0.478	0.541	0.892	1	
	Sig. (2-tailed)	0.000	0.000	0.000		

** Correlation is significant at the 0.01 level (2-tailed).

Preliminary results indicate that there was no multi-collinearity between the independent variables and the dependent variable. This was supported by the fact that the pearson correlation coefficient for all the variables was less than 0.8. The pearson correlation coefficient for computerized softwares, online mobile applications and internet was 0.425, 0.541 and 0.478 respectively all the values were less than 0.8.

Test for Normality of Residuals

The test for normality was first examined using the graphical method approach as shown in the Figure 2 below.

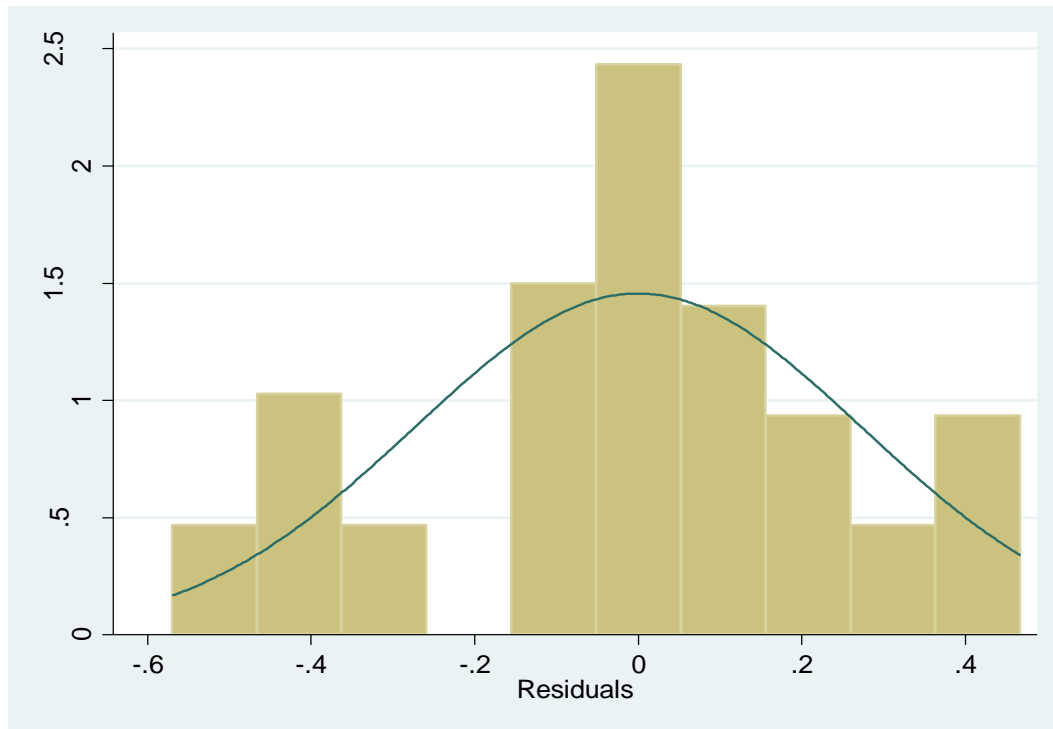


Figure 2: Graphical Examination of Normality of residuals

The results in the figure indicate that the residuals are normally distributed. These findings are consistent with Gujarati (2002) who reiterated that graphical representation is an appropriate method for testing the normality of residuals.

Inferential Statistics

Multiple linear regression analysis was conducted to generate the model of fitness, and analysis of the variance and regression coefficients.

Regression Analysis

Model Fitness

The results presented in Table 9 present the fitness of model used of the regression model in explaining the study phenomena. Computerized softwares, online mobile applications and internet use were found to be satisfactory variables in explaining competitive advantage. This is supported by coefficient of determination also known as the R square of 0.65 which means 65%. This means that computerized softwares, online mobile applications and internet use explain 65% of the variations in the dependent variable which is competitive advantage of selected media houses in Kenya. This results further means that the model applied to link the relationship of the variables was satisfactory.

Table 9: Model Fitness

Indicator	Coefficient
------------------	--------------------

R	0.806
R Square	0.650

Analysis of Variance

In statistics significance testing the p-value indicates the level of relation of the independent variable to the dependent variable. If the significance number found is less than the critical value also known as the probability value (p) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else the model would be regarded as non-significant.

Table 10 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variables are good predictors of competitive advantage. This was supported by an F statistic of 10.853 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 10: Analysis of Variance

Indicator	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.749	3	4.25	10.853	0.000
Residual	30.543	78	0.392		
Total	43.292	81			

Regression of Coefficients

Results in Table 11 shows that computerized softwares and competitive advantage are positively and significantly related ($\beta=0.466$, $p=0.001$). This implies that an increase in the use of computerized softwares by one unit would result to an increase in competitive advantage by 0.466 units. The table further indicates that online mobile applications and competitive advantage are positively and significantly related ($\beta=0.675$, $p=0.010$). This implies that an increase in the use of online mobile applications by one unit would result to an increase in competitive advantage by 0.675 units. It was further established that internet use and competitive advantage were positively and significantly related ($\beta =0.741$, $p=0.000$). This implies that an increase in the use of internet by one unit would result to an increase in competitive advantage by 0.741 units. Further, results in Table 11 show that staff training a positive and significant moderating effect on the relationship between computer technology and competitive advantage of selected media houses in Kenya. This was supported by a p value of 0.000 which is lesser than the critical p value of 0.05.

Table 11: Regression of Coefficients

Variable	B	Std. Error	t	Sig.
(Constant)	1.193	0.497	2.402	0.019
Computerized Softwares	0.466	0.219	2.13	0.001

Online Mobile Applications	0.675	0.254	2.659	0.010
Internet	0.741	0.317	2.338	0.000
Moderating Effect of Staff Training	0.131	0.032	4.088	0.000

Thus, the optimal model for the study is;

Competitive advantage = $1.193 + 0.466$ Computerized Softwares + 0.675 Online Mobile Applications + 0.741 Internet

CONCLUSIONS

The study concluded that computer technology influenced the competitive advantage of selected media houses in Kenya. The conclusion was informed by the realization that computerized software adoption, online mobile application and use of internet influenced the competitive advantage of selected media houses in Kenya. The study also concluded that staff training had a moderating effect on the relationship between technology and competitive advantage of selected media houses in Kenya.

Specifically, the study concluded that media houses should invest financially towards the development of computerized softwares and online mobile applications. The study also concluded that media houses should hire skilled personnel to develop computerized softwares and online mobile applications. Further, the study concluded that media houses should ensure that computerized software's and online mobile applications in their media house are easy to use. The study also concluded that media houses should ensure that they use stable and reliable internet. The study also concluded that you found that training contributed more to the competitive advantage which implies that media houses ought to have well trained staff on the latest technologies. Thus the study concluded that training is a driver on what organizations can adopt in terms of technology and its application.

RECOMMENDATIONS

The study recommended that management of media houses should encourage the adoption of computer technology in a bid to enhance their competitive advantage. This can be achieved by investing financially towards the development of computerized softwares and online mobile applications. In addition, media houses should hire skilled personnel to develop computerized softwares and online mobile applications. The study also recommends that media houses should ensure that media houses should ensure that they use stable and reliable internet. The study also recommends that the media houses should embark on continuous training of employees to tap into the new technologies as well as equip employees with necessary skills for current and future appointments.

REFERENCES

- Aswathappa, K. (2005). *Human Resource and Personnel Management: Text and Cases*. Tata McGraw-Hill.
- Belsley, D. A., Kuh, E. & Wdrh, R. E. (1980). *Regrcssion diaptics: Identifytng influcntutl datr and souras of collinearity*. Wiky. New York. NYL.
- Chukwunonso, F., Omoju, J., Ikani, D. & Ribadu, D. (2011). Management of Information Technology for Competitive Advantage: A Savvy Case Study, *Journal of Scientific Research*, 1(2)
- Contador, H. (2013). *Traditional media in Africa remains strong despite the emergence of digital media*. Retrieved from <http://traditional-media-in-africa-remains-strong-despite-the-emergence-of-digital-media/>
- Field, C.A. (2009). *Small Sample Asymptotics*. IMS Lecture Notes, Monograph Series, 13.
- Frawley, T. & Fahy, J. (2006). Revisiting the First-Mover Advantage Theory: A Resource-Based Perspective. *Irish Journal of Management*, 2006 27 (1) pp. 273- 295
- Gujarati, D. N. (2002). *Basic Econometrics (Fourth ed.)*. McGraw Hill. pp. 147–148. ISBN 0-07-123017-3.
- Jennifer, W. A. (2011). Innovation management and U.S. weekly newspaper web sites: An examination of newspaper managers and emerging technology. *International Journal on Media Management*, 10:2, 64-73.
- Kihuga, M. (2010). *The Internet's unique architecture can enable freedom of expression in unprecedented ways*. Retrieved from <http://www.gp-digital.org/wp-content/uploads/2013/10/Kenya.pdf>
- Millward Brown (2015). *Kenya Print Industry Dynamics: Today looking into the future*. A study commissioned by the Nation Media Group
- Nyabuga, G. (2011). *New media and its effects*. Nairobi. University of Nairobi.

- Ogina, G. M. (2013). *To investigate the effects of Information Systems on sustainable competitive advantage within the aviation industry. A case: Kenya Airways Limited* (Unpublished MBA Project) Nairobi: Kenyatta University.
- Ohmae, K. (2005). *The Mindset of a Strategist*. Boston: McGraw Hill.
- Ordoñez de Pablos, P. (2004b). Strategic human resource management and organizational competitiveness: the importance of fit and flexibility. *International Journal Human Resources Development and Management*, 5 (1):1-15.
- Ordóñez, P. & Lytra, D. M. (2011). Competencies and human resource management: implications for organizational competitive advantage. *Journal of Knowledge Management*, 12(6): 48-55
- Porter M., (2003). Corporate Social Responsibility (CSR): A religion with too many priests?- dialogue with Mette Morsing, *European Business Forum*, 15: 41-2.
- Porter, M. E. (1992). Capital disadvantage: America's failing capital investment system. *Harvard Business Review*, 70, 65-82.
- Porter, M.E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. The Free Press, New York, NY.
- Prahalad C.K. & Hamel G., (2009). *Core Competence Concept*, Harvard Business Review, pp.64.
- Saurombe, M. (2006). *The impact of Media Commercialization on Public Service Broadcasting: The Case of Radio Zimbabwe after the Adoption of The Commercialization Act (No 26) of 2001*, (Unpublished Degree Thesis), Nelson Mandela Metropolitan University.
- Schumpeter, J. A. (1928). The instability of capitalism. *The Economic Journal*, September 1928.
- Schumpeter, J. A. (1939). *Business Cycles*. McGraw-Hill: New York.

Schumpeter, J.A. (1934). *The Theory of Economic Development*. Cambridge, Mass.: Harvard University Press (originally published in German in 1911; reprinted by Transaction Publishers, New Brunswick, New Jersey in 1997).

Solow, R. M. (1957). Technical change and the aggregate production function. *Review of Economics and Statistics* 39, 312-20.

Thompson, A. & Strickland A. J., (2003). *Strategic Management: Concepts and Cases*, 13th ed., McGraw – Hill College.

Waema, T. & Katua, C. (2013). *The Impacts of Broadband Internet and Related Technologies on the Value Chain of the Tourism Sector in Kenya*, (Unpublished MBA Thesis), University of Nairobi.

William P.T., Burke, B. J., Beckman, B. R., Morgan, C., Daly, E. A., & Litz, M. (2013). Multivariate models of adult Pacific salmon returns, USA.

Wirtz, B.W. (2011). Reconfiguration of value chains in converging media and communications markets. *Long Range Planning*, 34, 489-506.

Wright, P.M. & McMahan, G.C. (1992). Theoretical perspectives for strategic human resource management. *Journal of Management*, 18 (2):295-320.

Yap, B. (2010). *Time running out for newspapers*. The Malaysian Insider. Retrieved October 31, 2010 from www.themalaysianinsider.com/index.php/opinion/brianyap/28538-time-running-out-for-newspapers.