

**EFFECT OF TECHNOLOGY ORIENTED COMPETITIVE INTELLIGENCE PRACTICE
ON THE PERFORMANCE OF FIRMS LISTED ON THE NAIROBI SECURITIES
EXCHANGE, KENYA.**

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Abstract

The rapidly changing business environment brought about by advances in technology, economic and social changes as well as the fast-shortening product life cycles has led to hyper competition requiring business firms to devote a larger proportion of their resources to knowledge and innovation. To compete effectively in the turbulent business environment firms have been forced to embrace advanced competences that support strategic decision making by providing accurate and timely information on opportunities and threats, competitor assessment that support strategic planning and implementation which is the main objective of competitive intelligence. Technology intelligence is the capture and delivery of technological information as part of the process through which an organization develops an awareness of technological threats and opportunities. The target population for the study were all the sixty firms listed on the Nairobi Securities Exchange (NSE). Primary data was collected by the use of a semi-structured questionnaire and secondary data was obtained from published financial reports. The data collected was analyzed using descriptive and inferential statistical tools. The findings indicate that strategy oriented competitive intelligence practice had a positive and statistically significant relationship with the performance with firms listed on the Nairobi securities exchange.

Key Terms: Competitive intelligence, Technology oriented competitive intelligence, Firm performance, competitive strategy

Background Information

Firms today are experiencing an increasingly competitive environment created by globalization, advances in technology, social and economic changes as well as fast shortening product life cycle that has led to hyper-competition (Muthama & Ngugi, 2012). Increased competition in an industry leads to lower levels of activity in organizations hence negatively impacting on performance (Assefa, Hermes & Meesters, 2010). While Al-Rfou (2012) established a positive relationship between competition and firm performance, a negative relationship cannot be ruled out in highly competitive industries (Odhiambo, Kibera & Musyoka, 2015).

The challenge for the management of many organizations today is the quest to improve performance and deal with the changing competitive landscape. Organizational management like to see tangible results of and positive return on their investment in given activities and may complain if they perceive lack of understanding of how a given activity actually contributes to performance (Kaplan & Norton, 1992). There is a need to evaluate performance with the primary objective of providing valid and reliable data on performance. Measuring performance is essential for enabling researchers and managers to evaluate the specific actions of firms, and how firms perform over time (Sabina, 2009).

Intelligence is a problem solving process that involves information gathering and analysis, interpretation, and speculative consideration of future developments, patterns, risks and opportunities through the exercise of human judgment (McDowell, 2009). Competitive analysis forms new communication links both inside and outside the firm. Intelligence is information that has been analyzed for decision making. Competitive intelligence can be viewed both as a process and a product. As a process, it is the set of legal and ethical methods for collecting, developing,

analyzing and disseminating actionable information pertaining to competitors, suppliers, customers, the organization itself and business environment that can affect a company's plans, decisions and operations (Yap, Rashid & Sapuan, 2011). As a product competitive intelligence is information about the present and future behavior of competitors, suppliers, customers, technologies, government, market and the general business environment (Wright, Eid & Fleisher, 2009).

Technology-oriented competitive intelligence permits a firm to respond to threats from, as well as to identify and exploit opportunities resulting from technological and scientific changes. It is usually focused on technological trends and scientific breakthroughs and can develop information on opportunities as well as threats for the firm (McGonagle & Vella, 2002). This type of competitive intelligence, support innovation strategies as well as research and development, and has become a growth area within competitive intelligence (Santo & Correia, 2010).

Role of Securities Exchange

A stock exchange is a marketplace in which securities, commodities, derivatives and other financial instruments are traded. The core function of an exchange is to ensure fair and orderly trading, as well as efficient dissemination of price information for any securities trading on that exchange (Capasso, 2006). Singh (1997) stated that stock markets are established to be a means of accelerating economic growth through increased domestic savings and improvement of the quantity and quality of investment. Security exchanges give companies, governments and other groups a platform to sell securities to the investing public.

Nairobi Securities Exchange

There are 60 companies listed on the Nairobi securities exchange (NSE, 2014). These are grouped into eleven sectors: agricultural; automobiles and accessories; banking, commercial and services;

construction and allied; energy and petroleum; insurance, investment; manufacturing and allied; telecommunication and technology; and growth and enterprise market segment. The securities' exchange also lists treasury bonds issued by the Government of Kenya (GoK) and occasionally, there are privately issued corporate bonds as well. The level of performance is influenced by various factors such as corporate governance, weak regulatory framework and the slow level of economic growth. Performance keeps alternating between bull runs when the prices for most stocks keep rising and bearish season when prices either stagnate or generally decline.

Research Objective

To determine the effect of technology oriented competitive intelligence practice on the performance of firms listed on the Nairobi securities exchange.

Research Hypothesis

H₀₁: Technology oriented competitive intelligence practice has no effect on the performance of firms listed on the Nairobi securities exchange.

Statement of the Problem

In Kenya studies on competitive intelligence are generally limited. These studies are, however, descriptive case-based in nature, were done on specific firms or industries and used profitability as the measure of performance leaving out non-financial measures. These studies focused on product, market and technology intelligence (Mugo, Wanjau & Ayodo (2012); Muthama, & Ngugi (2012); and Ngugi, Gakure & Mugo (2012) whereas, the current study focused on technology oriented competitive intelligence practice. In the contextual gap among NSE listed companies and the limited empirical review, the study aimed to establish the effects of technology oriented competitive intelligence practice on firms listed at the Nairobi securities exchange and relate it to the firms' performance measured in both financial and non-financial terms.

Practical Implications of the Study

The management of the listed firms should consider raising the current levels of competitive intelligence activities which was found to be of moderate level to enable firms reap more benefits. Management of the listed firms should increase the amount of resources devoted for competitive intelligence activities as they were found to be low. The firms without a functional unit dedicated to competitive intelligence activities should create one to enable them cope with the changing business environment. Since employee play a critical role in the process of collecting information for competitive intelligence purposes, they should be trained to improve their effectiveness in this task. Firms should make greater utilization of technology oriented competitive intelligence activities to enable them create innovations ahead of their rivals.

Literature Review

The diffusion of innovations theory explains the importance of technology intelligence in the process of identifying and exploiting scientific and technological opportunities, exerting a significant influence on the ability to innovate and is viewed as a major source of competitive advantage. The theory is normally applied to the dispersion of technical innovation over a period of time by members of a social system. Karshenas and Stoneman (1995) indicate that the three main elements of the diffusion model are: identification of stages of diffusion, characteristics of innovation that impact upon the rate of diffusion and adopter's strategy. The innovation decision process is characterized as a process that occurs while individuals participate in a series of actions related to decisions.

In the current competitive environment, innovation is generally considered a firm's core value creation capacity and one of the most important competitive weapon (Sandvik & Sandvik, 2003).

Product innovation represents the provision of solutions to market threats and opportunities, creating the basis for survival and success of the firm well into the future (Hult, Hurley & Knight 2004). The positive effect of innovation on the firm's performance has been explained by the fact that through innovation the company faces up the changes in the environment (Agarwal, 2003). Furthermore, innovation has a positive effect on sales growth and the occupation of the firm's manufacturing capacity (Sandvik & Sandvik, 2003).

Canongia, Antunes, Nazare, and Pereira (2004), argued that competitive intelligence, if implemented and used correctly can lead to technological foresight, which is likely to be a key consideration to any industry which is driven by innovation and technological advancement in pursuit of competitive advantage. The theory considers a number of attributes associated with technological innovations and which are believed to influence the rate of adoption of the innovations. This theory is applicable to the study because innovations generated through research and development would need to be integrated with other business process to create a competitive advantage for the business in the market.

Empirical Literature

In a study to determine the influence of competitive intelligence practices in Essar Telcom (YU) K. Limited (Mutua, 2010) noted that to cope with the level of competition, firms adopted strategic actions which enabled market penetration; specifically differentiation and innovation for products were adopted. The study found that the players in the market had introduced cheaper but quality handsets that met the needs of the lower end of the segmented market. The firm was found to have used various competitive intelligence practices to gain understanding of competitor's future moves, analysis of competitor's strategies, and analysis of industry players' capability.

Nemutanzhela and Iyamu (2011) in a study to determine the impact of competitive intelligence on products and services innovation in organizations found that when cultural values were compromised, customers lost confidence on the organization's ability to deliver. Though knowledge sharing could improve and sustain competitive intelligence on products and services, it was found that some factors existed that inhibited this. Among the factors found to be of impact included employees fear of losing their jobs if they shared knowledge and skills they possessed. Muthama and Ngugi (2012) established that competitive intelligence practices played a vital role in overall profitability of mobile telecommunication companies in Kenya. The study found that technology intelligence was the one most utilized by these firms.

Samtani and Capatina (2012) found that almost all the Romanian companies surveyed were very optimistic about the prospects for software services industry in the future and that all seemed focused on innovation and creation of differentiated experiences for the clients. Increasing the client's efficiency and reduction of costs for doing business was found to be top priority. Most Indian firms mentioned that the uncertainty in the environment was affecting business growth, innovation also featured as a way of improving efficiency and reducing costs. Most of these companies were found to have adopted aggressive strategies to make the best use of opportunities being presented by the changing environment. The big players were found to have focused on moving up the value chain while the others preferred to focus on their niche area of expertise.

Santos and Correia (2010) in an exploratory study of Portuguese biotechnology industry examined competitive intelligence as a source of competitive advantage. It was found that competitive intelligence activities were carried out in an informal way, mostly by the decision makers themselves. Differences were also found in the level of informality in the competitive intelligence

activities between the two organizations. The larger and older organization tended to be more formal in approach to competitive activities while the smaller younger organization was found to rely more on informal approach.

Wright, Fleisher and Madden (2008) examined the characteristics of competitive intelligence practice in R&D driven firms in the United Kingdom pharmaceutical industry. The study found that the state of competitive intelligence practice in the industry was both fragmented and embryonic. The background of those practicing competitive intelligence were found to have come largely from marketing, information and technology, technology and R&D. The sources and analytical tools most used by practitioners were customers, suppliers and distributors. The study found that the views of both senior management and other department heads on the contribution of competitive intelligence made to the overall performance were mixed or inconclusive.

Methodology

The study adopted a mixed design of descriptive and explanatory survey research. According to Sekaran and Bougie (2009) a researcher should use more than one design to enhance the study; hence these two designs were used to achieve the optimal results as recommended by (Saunders, Lewis & Thornhill, 2009). Mixed methods can elicit insights that may be overlooked by a mono-method and can produce more complete knowledge contributions to theory and practice (Niglas, 2008).

Target Population

The target population for this study were all the companies listed on the Nairobi securities exchange. There are 60 companies listed on the Nairobi securities exchange (NSE, 2014). A census

study of all 60 firms listed at the Nairobi securities exchange was done. The study targeted the manager or director in-charge of planning /strategy in each firm as the unit for observation.

Empirical Model

The study was guided by multiple linear regression model that involved moderation.

$$P = \beta_0 + \beta_1 \text{TEC} + \varepsilon_i$$

Where:

β_0 is the intercept

β_1 are the Beta coefficients

TEC represents technology oriented competitive intelligence practice

ε_i is a random variable, error term that accounts for the variability in P that cannot be explained by the linear effect of the predictor variables.

Data Collection

Both Primary and secondary data were collected for this study. Primary data was collected from the director/manager in-charge of planning or strategy in each firm listed on the Nairobi securities exchange. Secondary data was obtained from firm's published annual reports for the years 2011 to 2013 which are available at the Nairobi securities exchange. These are the years when the number of firms issuing profit warnings rose drastically. The information collected included profit before tax, Return on Assets (ROA), Return on Equity (ROE). The collection of secondary data was facilitated by document review guides.

Descriptive statistics such as mean scores, standard deviations, percentages, and frequency distribution were computed to describe the characteristics of the variables of interest in the study.

Qualitative responses was categorized, coded and grouped into themes that emerged and then triangulated with quantitative data of the study. Inferential statistics such as correlation and regression analysis as suggested by Muthen and Muthen (2007) was used to establish the nature and magnitude of the relationships between the variables and to test the hypothesized relationships. The findings were presented using tables. Data was analyzed using SPSS version 17. A regression model was developed and correlation analysis was conducted at 95% confidence level. Pearson's product moment correlation (r) was derived to show the nature and strength of the relationship. Coefficient of determination (R^2) was used to measure the amount of variation in the dependent variable explained by the independent variables.

Findings

Questionnaire's response rate was found to be 49 out of 60=81.6% which was very good according to (Mugenda & Mugenda, 2003). About half the respondents 52.4% rated information received for competitive intelligence purposes as good and excellent. Employees were found to be the most frequently used means of gathering information for intelligence purposes. Internet was ranked as the most important source of information for competitive intelligence purposes. E-mail was found to be the most preferred means of dissemination competitive intelligence in the listed firms. SWOT analysis was ranked as the most preferred technique for analyzing information

The Pearson correlation coefficient of technology oriented competitive intelligence practice versus performance of firms listed at the Nairobi securities exchange was computed as 0.721 (p value=0.000) which is a positive relationship between the variables. The R-Square value of 0.519, indicating that the independent variable (technology oriented competitive intelligence practice) explained 51.9% of the variation in performance of firms listed on the Nairobi securities exchange.

The remaining 48.1% is explained by other management practices and strategies put in place by managers.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721	.519	.509	1.39244

a. Predictors: (Constant), technology oriented competitive intelligence

The results on the beta coefficient of the resulting model shows that the constant $\alpha=21.829$ is significantly different from zero. The coefficient $\beta=.389$ is also significantly different from 0 with a p-value=0.000 which is less than 0.05. The findings indicate that when technology oriented competitive intelligence practice is increased by 1 unit, performance of firms listed on the Nairobi securities exchange is expected to increase by 0.389 units.

Conclusion

Technology oriented competitive intelligence practice that permits a firm to respond to threats from, as well as identify and exploit opportunities resulting from technical and scientific changes was found to be positive and statistically significant effect on the performance of firms listed on the Nairobi securities exchange.

Policy Recommendations

The study recommends that firms listed on the Nairobi securities exchange should make use of technology oriented competitive intelligence practice to increase their competitiveness in terms of product innovation and automation to improve service delivery. Nationally, government should support research and development initiatives in universities and other research institutions to enhance innovation. This could be done by increasing the funding for research purposes.

Suggestions for Further Research

Future research should build on the findings of this study to enrich existing knowledge on the practice of competitive intelligence. Such studies, for example should consider carrying out research on the effect of technology oriented competitive intelligence practices on the non-listed corporate sector firms to validate this study and add more knowledge to this area.

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