
**ANALYSIS OF INFLUENCE OF INTELLECTUAL PROPERTY
STRATEGY ON SUSTAINABLE COMPETITIVE ADVANTAGE OF
PHARMACEUTICAL MANUFACTURING COMPANIES IN NAIROBI
CITY COUNTY, KENYA**

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Abstract

In Kenya, pharmaceutical manufacturing companies have achieved competitive advantage, but have not maintained it for a long time, due to some challenges that the pharmaceutical industry encounters such as counterfeit of drugs, competition from generics drugs, and marketing of new drugs. Intellectual property is thought to be one of the means of protection against counterfeit. The analysis of the influence of the intellectual property strategy on sustainable competitive advantage of pharmaceutical manufacturers in Nairobi was the purpose of this study. It focused on intellectual property assets that have a part to play in the pharmaceutical industry. Descriptive research design was adopted. The study's target population consisted of 139 managers of 22 leading pharmaceutical manufacturing companies located in Nairobi. Purposive sampling method was used to select three managers in each company, thus a sample size of 66 respondents, and to collect data from respondents a semi-structured questionnaire was used. The study concluded that pharmaceutical manufacturing companies had sustained their competitive advantage by adopting and integrating in their business plans intellectual property strategy which focuses on exploiting benefits from their intellectual property assets. The study recommends that pharmaceutical manufacturing companies should monitor the activities of their competitors in order to avoid or to stop the infringement of their registrable rights.

Keywords: Intellectual property, Competitive advantage, Strategy, Sustainability, Patents, Trademark, Industrial design.

I.INTRODUCTION

Background to the Study

The goal of every organization in the environment strongly competitive is to beat the competition and to win new customers. We live in a world where every company is after competitor's strategy, to get a competitive advantage. A competitive advantage gives you a higher level in your customer's appreciation than the competitors. Gordon (2015) defined it as a superior performance comparing to competitors. In other words, it is the influence that a company has over its competitors.

Sustainable competitive advantage as defined by Walker (2015) is a collection of assets, attributions, or abilities for a company that require a lot of time and means to imitate or overtake,

and which offer a superior or favorable long-term position with regard to its competitors. A sustainable competitive advantage depends on the substitutability as well as the immutability of company's assets (Sun & Tse, 2009). When a company can do something that competitors aren't able to do, or possesses an asset that competitors want to have that company has a competitive advantage (Lumpkin, 2013). Companies must adopt strategies that make their assets and capabilities very difficult to replicate or imitate to gain a sustainable competitive advantage.

WIPO (World Intellectual Property Organization) supports that intellectual property rights are generally taken as important economic resources of a firm. Intellectual property makes reference to conception of the original mind; while intellectual property rights are rights given to individuals to possess what they created. Globally, knowledge is becoming an integral part of major economic forces. Solid intellectual property systems can spur funds to growth of knowledge and thus promote innovation (WIPO, 2013).

Effective management of intellectual property is essential to support the economic development in business as confirmed by the Anti-Counterfeiting Trade Agreement (ACTA). WIPO and the United Nations University, in their research project measuring the impact of the systems of intellectual property on six Asian countries, have shown that there is an affirmative correlation between the reinforcement of the system of intellectual property and the economic development (Roach, 2007).

The pharmaceutical industry in Kenya has three sectors which are the manufacturers, distributors and retailers. Kenya has a strong and long-established pharmaceutical industry. A report of Business Monitor (2015) on the pharmaceutical manufacturing companies in Kenya indicated that the country accommodates the biggest pharmaceutical industry in East Africa. Kenya is the biggest producer in the region of the COMESA, supplying approximately 50 % of the region's market.

Different strategies in the pharmaceutical industry in Kenya have been adopted, but according to Adhiambo (2013) some initiatives still need to be taken to achieve and sustain a competitive advantage. Challenges that the industry is facing, counterfeit especially are the obstacles to Pharmaceutical manufacturing companies in Nairobi to sustain the competitive advantage for a long period. The occurrence of fake drugs became a serious threat confronting global health care delivery and affecting the competitive advantage of pharmaceutical companies. According to Gautam, Utreja & Singal (2009), majority of counterfeit drug is a modern threat which took an international alarmingly, in particular in the third world countries. They supported that the market of counterfeit drugs is a white crime well-structured. It is one the origin of lack of public trust in drugs and also one of the sources of morbidity and mortality. Counterfeit medical products are deliberately made to look like an existing medical product (Anabila and Awunyo-Vitor, 2014).

In 2015 the Kenya Association of Manufacturers did a study and concluded that more than 30% of drugs sold in Kenya are counterfeit. A report released by the World Health Organization (WHO) also confirmed the existence of counterfeit drugs, 80% of all malaria drugs in the Kenyan market are counterfeits (Walters, 2017).

According to Atkinson and Jones (2009), intellectual property protection is particularly linked to the pharmaceutical industry. The pharmaceutical companies use intellectual property protection to support their investments in the medical research. Intellectual property strategy is thought being among strategies that can protect against imitation and lead to a sustainable competitive advantage.

Statement of the problem

It is a risky, long and costly investment; to develop a new drug and to launch successfully into market. It is a capital intensive, what justify the need for a pharmaceutical company to protect its product (drug) against counterfeits. According to Muthoni (2014) counterfeits affect to a large extent innovation and counterfeiting cause decrease of the brand's clientele to a large extent. The propagation of fake drugs is one of critical problems which the pharmaceutical industry in Kenya is confronted. Due to fake drugs, companies lose income and earnings, and consumers are obliged to pay higher price for authentic drugs because of financial losses (Muthiani and Wanjau, 2012).

Firms in pharmaceutical industry adopt many strategies to achieve a competitive advantage but to sustain it, remain difficult because of challenges that pharmacies encounter. In Kenya, pharmaceutical companies have gained a short-term competitive advantage due to the rapid imitation of their competitors, especially companies manufacturing generic products (Munene, 2016). Counterfeiting in Kenya is about \$ 835 million and the government loses about \$ 84 million in tax revenue due to counterfeiting and piracy, which could be financed to expand in the areas of public health, infrastructure and education (UNECA 2013).

A sustainable competitive advantage to be achieved, a company must defend its competitive advantage. According to Gordon (2015) they are two ways to defend a competitive advantage. The first one is to retain customers. To do it, the simplest way is to make defection expensive. The more the customer has to support costs of switching to pass in a new product, the more he may stay with the current product. The second way consists in making sure that the competition is weak. It can be achieved by preventing counterfeit.

Counterfeit is one of the causes that make difficult for pharmaceutical companies to sustain the competitive advantage. Considering these ways of defending a competitive advantage according to Walker in particular the second way, we can consider intellectual property as one of ways to sustain competitive advantage in pharmaceutical industry by protecting against counterfeit new drugs. Against the background this study analysed the influence of the intellectual property strategy on sustainable competitive advantage of pharmaceutical manufacturing companies in Nairobi.

Purpose of the Study

The main purpose of this study was to analyse the influence of the intellectual property strategy on the sustainability of competitive advantage of pharmaceutical manufacturers in Nairobi, Kenya.

Objectives of the Study

1. To establish the influence of patents system on the sustainability of competitive advantage of pharmaceutical manufacturing companies.
2. To evaluate the influence of trademarks on the sustainability of competitive advantage of pharmaceutical manufacturing companies.
3. To assess the influence of industrial designs on the sustainable competitive advantage of pharmaceutical manufacturing companies.

II. LITERATURE REVIEW

Intellectual Property and Competitive Advantage

Intellectual property makes reference to the human creativity protection which includes the novelty of the new products, the secrecy of the know-how and the distinctive character of names. It is a type of property which comprises the intangible productions of the human intellect and comprises mainly copyright, patents, trademarks, industrial design and geographical indications. Intellectual property rights are rights granted to one person or to a company by a State for products of intellectual effort and ingenuity (WTO, 2016).

Intellectual property is divided into two types, copyright and industrial property (WIPO, 2008). WIPO (2016) in its publication on industrial property advanced that industrial property takes diverse forms, among which patents, industrial designs, trademarks, the geographical indications, the configuration schema of integrated circuits, and the trade names. The purpose of the industrial property consists of passing information through symbols, specifically to the clients, vis-à-vis services and goods in the marketplace. The protection is focused against the illegal use of such symbols which can misguide the customers, in other words the protection is against the misleading practices in general. The copyright concerns the literary and artistic creations, for example music, books, sculptures, and paintings, movies and technological works such as computer programs and electronic databases (WIPO, 2016). The category of intellectual property that was covered by this study is industrial property (patents, trademarks, and industrial designs).

According to Gordon (2009) a sustainable competitive advantage is an assemblage of assets, attribution, or abilities of a company that require many efforts to imitate or overtake, and give a superior or favorable long term position over rivals. For him to achieve a competitive advantage, a company must do two things. In the first place, it has to elaborate a strategy by setting and by realizing an objective to reach a leading position in the market. But the domination of the market is not enough. Secondly the company has to develop a solid defence strategy to protect the return of the company from the effects of the competitors. Without an offense and defence strategies, no company can have a superior performance and be able to keep it for a long time. Companies are always interested to steal the strategies of others. Because the imitators invade generally the market and lower prices, the pioneers who succeeded have to raise barriers around their customers and around their key assets.

Patents, trademarks, industrial design are some examples of strategic assets that provide sustainable competitive advantage. They accomplish the task of defence by protecting intangible assets.

Patents and Competitive Advantage

A patent is a form of industrial property which can be assigned, transferred, granted under license or used by the owner. It is the right given to an inventor to prevent thirds from creating, from using or from selling its new device, or its new process. It is a right granted exclusively for an invention. These last years, the role of patents radically changed. Patents concerned formerly only a group of practitioners of the law and nobody else was really interested. But over time and the increasing competition in the business world, the patents became a key factor for any company (WIPO, 2016).

Studies on the role of patent protection in research and development in the pharmaceutical industry indicated that the protection granted by patents is essential for innovation in pharmaceutical industry (WIPO, 2014). Most of the pharmaceutical companies use the innovation as engine of growth and a source of high returns on investment. The development and the launch of a new drug in the market imply enormous costs and the success or the failure depends on the innovation, which is essential for the industry. Patents play an essential role in the pharmaceutical industry by protecting the inventions of the company and so contribute to the production of drugs that meet the needs of patients in developing and developed countries (Poonia and Bhardwaj, 2015).

Trademark and Competitive Advantage

A trademark as defined by the Trademark law article 61, is anything that takes a unique shape, whether in letters, representations, figures, seals, drawings, signatures, symbols, titles, engravings, words or any other mark or a combination of these, when they are used or are intended to be used to distinguish products. A trademark differentiates the source of products or services of a firm from its rivals.

Schautschick and Greenhalgh in their study done in 2013 entitled “Empirical Studies of Trademarks: The Existing Economic Literature” concluded after analysing studies at a more disaggregated level that firms use trademarks to protect their brands and their identity, both of which are instruments to communicate with consumers and stakeholders; and that the private value to firms from trade-marking is positive.

According to the international Association of trademarks (2007) in its publication entitled The Importance of Pharmaceutical Trademarks in Protecting Public Health; trademarks establish the best way to prescribe pharmaceutical products and to execute prescriptions. Even if no system is infallible, the use of the pharmaceutical trademarks, associated with the current efforts to incite the persons receiving benefits of health care to keep in mind the names of similar medicine, may much more minimize the errors of medication than any other solution. The pharmaceutical trademarks allow the healthcare professionals to minimize the errors of prescription, allow the consumers to identify easily specific medicine which they take, allow the manufacturers of drugs to control their products, to take measures to fight against the counterfeit and incite the

manufacturers to develop new drugs. The pharmaceutical trademarks are thus beneficial for the health and the safety of the patient and therefore, for the whole health system.

Industrial Design and Competitive Advantage

Industrial designs are arrangements of lines or colors or any three-dimensional forms which give a special aspect to a product. They protect the decorative or esthetic aspect of a useful article, which generally appeals on the sense of the view or to the touch and can be reproduced in important quantities. A registered industrial design provides to the holder the right to restrain others from benefiting an article with a duplicate or a substantial duplicate of the protected design or model, when such acts are carried out under commercial purposes (WIPO, 2017).

Ünsal (2018) in his study on the role of industrial design within new product development process support that the design method is centred on improving the importance, profit, image, and manufacturability of a product, and it is the greatest means to satisfy desires and needs, and to produce competitive products with unique structures. For him, good design helps achieve a more successful product result, and stimulates firms' achievements. Industrial design increases firms' sales and profits; firms contribute to competitive power and product differentiation with respect to rival brands. Among the variety of products available, new products differentiated by designers orientate consumer product preferences and purchasing decisions, and successfully increase consumer brand recognition and awareness.

According to Anne Maclsaac (2014), industrial designs can be a means for the presentation of pharmaceutical products. A tablet or capsule form may be protected by an industrial design. The design of the top surface of a tablet can also form a part of an industrial design. Pharmaceutical industry design demands specialized knowledge, a good understanding of how the industry is run and how best to ensure the production of efficacious and quality products for the consumer.

Relevance of Intellectual Property to Competitive Advantage

A competitive advantage leads a company to create a higher value for its customers and higher profits for itself. Intellectual property creates also a value and provides a profit. Thus according to Martensen (2015) in her study on consumer segmentation when a distinctive and desirable product, brand or design is protected by the laws governing intellectual property, such a protection allows a company to supply a product or a service different from his competitors. More specifically, it allows the owners of intellectual property to refuse other people to practice or to use their properties. The creative innovation of a company as well as its protection, are often directly connected to their success.

A 2013 study by Willoughby on the impact of intellectual property on the business performance of technology firms showed that there is a statistically significant positive relationship between business investment in intellectual property and its performance. The performance measure was based upon revenue-growth data collected from each company, and the categories of intellectual property analysed included patents, trade secrets, trademarks, and copyright. The study argued that intellectual property should be strategically addressed and managed as an essential function of modern business, along with orthodox functions such as finance, accounting, operations, human resources, marketing, sales, R & D, legal affairs or public relations.

Intellectual Property Strategy

WIPO (2014) in its study on the role of patents system in promoting innovative medicines defined IP strategy as a set of actions which use IP to allow a company to sustainably realize higher price, to increase its market share, or to maintain costs lower than those of the competitors. The IP strategy is a means which allows to link and to manage the actions of a company so that the IP portfolio, managed properly, can generate some value. According to the rhythm of the industry, IP strategy should be updated, where necessary, generally one or two times a year (Olsson, 2017). And Holgersson (2016) stated that intellectual property strategy can be exemplified by proprietary strategy, which focuses on isolating and protecting a company's competitive advantages from counterfeit; defensive strategy, which covers how companies protect themselves; and leverage strategy, treating how companies make use of intellectual property assets to reach a positive return in different context.

A solid intellectual property strategy must be consistent with, and fully adapted to, the company's business strategy to achieve a sustainable competitive advantage. Specifically, its objectives should be: to help generate profits and develop income opportunities; minimize legal risks and dependencies on third parties; position the company as a sole provider of goods or services through a set of enforceable rights; and strengthen the valuation of the company in terms of its financing strategy and / or exit. In accounting terms, the objectives are to maximize assets and minimize liabilities (Tangible IP LLC, 2015).

III. RESEARCH METHODOLOGY

A descriptive research design was adopted in this study. A descriptive research design was appropriate for this study; it allowed knowing the influence of intellectual property strategy on the sustainability of competitive advantage in pharmaceutical manufacturers in Nairobi. The target population was 139 managers of 22 leading pharmaceutical manufacturing companies located in Nairobi. Purposive sampling method was used to select three managers in each company, thus a sample size of 66 respondents. A semi-structured questionnaire was used to collect data. The information that participants gave, was coded, tabulated and processed by use of the statistical package for social sciences (SPSS) version 21 to analyse quantitative data. Qualitative data were classified and content analysis applied.

IV. FINDINGS

A regression analysis was used to determine the extent to which independent variables (patents, trademarks, and industry models) influence the target variable (sustainable competitive advantage).

The following model was used: $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$.

Whereby Y=sustainable competitive advantage,

X_1 = patents,

X_2 = trademark

X_3 = industrial designs,

$\beta_1, \beta_2, \beta_3$ = coefficients of determination of independent variables

ϵ = the error term.

Patents

Table 1: Patents

Opinion variables	Mean	Standard deviation
Patents are used to protect drugs against counterfeit	4.11	1.14
Patents incite innovations	4.15	0.64
Patents provide the opportunity of material reward	4.03	0.59
Patents increase the negotiating power	3.80	1.02

In the first statement the study sought to know if patents are used to protect drugs against counterfeit. Results presented 4.11 and 1.14 as mean and standard deviation respectively. Mean of 4.11 implies that the participants agreed with the statement and a standard deviation of 1.14 revealed that participants had differing opinions on this statement. The second statement with a mean of 4.15 findings revealed that participants agreed that patents incite innovations. The findings had a low standard deviation of 0.64 which implies that most of findings were very close to the mean. In the third statement, findings presented 4.03 as mean and 0.59 as standard deviation. This implies that participants agreed that patents provide the opportunity of material reward and that the respondents were of similar opinion. In the fourth statement, the findings had a mean of 3.80 and standard deviation of 1.02. This implies that most of participants agreed with the statement but that the findings were spread out.

Trademarks

Table 2: Trademarks

Opinion variables	Mean	Standard deviation
Trademarks allow quick identification of the product	4.62	0.48
Trademarks endear brand loyalty	4.39	0.53
Trademarks are means for companies to build a good reputation in the marketplace	4.52	0.57
Trademarks improve the products image	4.50	0.70

According to the findings in the first statement of table 2, respondents agreed that trademarks allow quick identification of the product as justified by 4.62 as mean. Standard deviation of 0.48 implies that participants had similar opinions. In the second statement which stipulated that

trademarks endear brand loyalty; participants confirmed the statement as shown by 4.39 as mean and standard deviation of 0.53 revealed that findings were close to mean. The third statement, findings had 4.52 as mean and standard deviation of 0.57. This implies that respondents agreed that trademarks are mean for companies to build a good reputation in the marketplace, and that respondents were of similar opinion. The fourth statement with mean of 4.50 results identified that respondents agreed that trademarks improve the products image. Value of 0.70 as standard deviation revealed that findings were close to the mean.

Industrial Design

Table 3: Industrial Design

Opinion variables	Mean	Standard deviation
Industrial designs are key factors in the consumer's purchase decision	3.76	0.73
Industrial designs play a key role in differentiation	3.90	0.53
Industrial designs increase consumer brand recognition and awareness	3.92	0.65

Results in the first statement of table 7 identified that respondents agreed that industrial designs are a key factors in the consumer's purchase. The findings revealed also that opinions of participants were not spread out as indicated by standard deviation of 0.73. The second statement, findings presented 3.90 and 0.53 as mean and standard deviation respectively. This implies that participants agreed with statement and that they were of similar opinion. The participants agreed with the third statement which supported that industrial designs increase consumer brand recognition and awareness as shown by a mean of 3.92. The findings were close to the mean since they had a standard deviation of 0.65.

Regression Analysis

Table 4: Model Summary

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.734^a	.539	.496	.32527

a. Predictors : (constants), Patents, trademarks, industrial design

Results identified that the study produced coefficient of determination of 53.9 % which implied that at any given circumstance, the independent variables (patents, trademarks, industrial design) combined have 53.9% effect on dependant variable (sustainable competitive advantage).

Table 1: ANOVA

Model	Sum of squares	Df	Mean square	F	Sig.	
1	Regression	1.355	3	.452	4.264	.035 ^b
	Residual	3.174	30	.106		
	Total	4.529	33			

a. Dependant Variable : Sustainable competitive advantage

b. Predictors : (constant), Patents, Trademarks, Industrial designs

In this study, the results produced a p-value of 0.035, less than 0.05, which implied that the regression model was statistically significant in predicting the relationship between a sustainable competitive advantage and the predictor variables (patents, trademark and industrial designs).

Table 2: Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.		
	B	Std. Error	Beta			
	(Constant)	1.287	.916		1.405	.756
1	Patents	.360	.272	.361	1.324	.019
	Trademarks	.543	.431	.320	1.259	.021
	Industrial design	.387	.435	.173	.889	.038

a. Dependant Variable : Sustainable competitive advantage

From the results in Table 6, the linear equation of this study is: $Y = 1.287 + 0.360X_1 + 0.543X_2 + 0.387X_3$. From this equation, any unit change in patents would improve a sustainable competitive advantage by a factor of 0.360; a unit change in trademark would enhance a sustainable competitive advantage by a factor of 0.543; and a unit change in industrial designs would strengthen a sustainable competitive advantage by a factor of 0.387.

V. CONCLUSION AND RECOMMENDATIONS

Conclusion

The first objective of the study was to establish the influence of patents on the sustainability of competitive advantage; it concluded that patents influence the sustainability of competitive advantage. The study concluded that protecting inventions was one of the ways to prevent counterfeiting; encourage the innovations that drive the growth of the company. The study also concluded that the right given to the investor to prevent others from using or copying without its consent gives to the owner of patents the negotiating power.

The second objective was meant to evaluate the influence of trademarks on sustainable competitive advantage of pharmaceutical manufacturing companies. The study concluded that pharmaceutical manufacturing companies had used trademarks in order to allow their products to be quickly identified in the marketplace; to endear brand loyalty; to improve products image and thereby build a good reputation.

To assess the influence of industrial designs on sustainable competitive advantage of pharmaceutical manufacturers was the third objective. The study concludes that industrial designs influence the sustainability of the competitive advantage. The study concludes that industrial designs differentiate the product from the competitor's products; that they are key factors taken into consideration by the consumer while purchasing and that they increase the consumer brand recognition and awareness.

In other words, the study concludes that intellectual strategy which is a set of actions that use intellectual property rights (patents, trademarks and industrial designs) has an influence on sustainable competitive advantage of pharmaceutical manufacturers in Nairobi.

Recommendations

From the research findings, same recommendations were made with regards to three objectives of the study. The study found out that patents are positively related to sustainable competitive advantage. This study recommends that managers of pharmaceutical manufacturing companies should monitor the activities of competitors to ensure that patent infringement cases are identified and stopped in a way that helps to sustain their competitive advantage over the long term.

The study findings revealed that trademarks are influential on sustainability of competitive advantage of pharmaceutical manufacturers in Nairobi. It recommends that pharmaceutical manufacturing companies should register all their brands and logos as they add new brands to ensure that their identity and reputation are protected.

The study found out that industrial designs influence the sustainability of competitive advantage hence the study advocates that pharmaceutical manufacturing companies should adopt convenient designs of their products that differentiate them with competitor's products, attract the attention and engender consumer satisfaction.

The study found out that some pharmaceutical manufacturing companies in Nairobi did not have intellectual property strategy due to inadequate awareness of potentials of intellectual property in enhancing competitiveness. The business strategy aspects of intellectual property require that the ability to understand intellectual property system be broadened beyond the legal profession. The study advises the government to raise awareness of intellectual property and to strength the intellectual property law to ensure full security for intellectual property rights holders, especially in the case of infringement.

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