THE ROLE OF USER EXPERIENCE RESEARCH IN PRODUCT STRATEGY IN SELECTED TECHNOLOGY COMPANIES IN KENYA

BY

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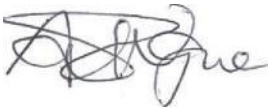
DECLARATION

Declaration by the Student

This research project is my original work and has not been presented for examination at any other university or any other institution of higher learning

Signature:  Date: 5th September, 2022

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ACRONYMS AND ABBREVIATIONS

UXR	User Experience Research
CAK	Communication Authority of Kenya
G.o.K	Government of Kenya
ICT	Information Communication Technology
KNBS	Kenya National Bureau of Statistics
SPSS	Statistical Package for Social Scientists

ABSTRACT

This study was carried out with the main purpose of examining the role played by user experience research (UXR) in determining product strategy for selected technology companies in Kenya. The research was guided by the product lifecycle theory and supported by the heart framework theory. The research design that was adopted by the current study was a descriptive cross-sectional research design, whose purpose was to produce information that defined the different features of data collected during the research. Data was collected using a structured questionnaire with a 5-point Likert scale rating. The Statistical Package for the Social Sciences (SPSS) was used to analyse quantitative data. In the analysis, descriptive and inferential statistical analyses were employed. Some of the examples of descriptive statistics that were used include standard deviation, means, percentages and frequency of responses given. In contrast, inferential statistics incorporated a correlation test, ANOVA testing, and regression analysis to determine the link between the study's variables. The study data was presented using frequency tables that included frequencies, means, and standard deviations. Since the research instrument used to collect data was quantitative, a quantitative analysis technique was adopted. Estimation techniques additionally confirmed for drawing inferences and conclusions central to the study. Linear regression analysis was used to test the hypotheses. The research findings confirmed that there are UXR methods that have been used by companies to inform their product strategy and include: UXR reporting and presentation which was leading at 97.7%, followed by planning for UXR at 95.5%, then types of user research methods at 93.3% with task analysis and usability testing following at 91.1% and 86.6% respectively. 92.84% average score suggested that the various outlined independent indicators tied to UXR influence the product strategy, which in turn gives the tech firms a competitive advantage. When testing the hypothesis, the results indicated that the types of user research methodologies have a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.534$, $t= 3.437$, p value < 0.05. In relation to the influence of planning for UXR on product strategy, when testing the hypothesis, the results did confirm that planning for UX research has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.509$, $t= 2.914$, p value < 0.05. On the other hand, in relation to the idea that task analysis influences product strategy, based on the regression coefficients during the testing of the hypothesis, usability testing also had a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.501$, $t= 3.091$, p value < 0.05. Further, when testing the hypothesis, task analysis also had a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.093$, $t= 3.789$, p value < 0.05. Finally, as per the idea that established the influence of UXR reporting/presentation on product strategy, when testing the hypothesis, the regression coefficients did confirm that UXR reporting/presentation has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.146$, $t= 4.098$, p value < 0.05. Based on the research objective that wanted to examine the role played by UXR in determining product strategy for selected tech companies, the study concluded that all the independent indicators (planning for UXR, types of user research methods, usability testing, task analysis, and UXR reporting/presentation) have a different but positive and significant influence on the product strategy. The researcher recommended for a thorough investment in the UXR concept and ensures that the various indicators of UXR (UXR reporting and presentation, planning for UXR, types of user research methods, task analysis and usability testing) are well understood and linked to the product strategy at all levels of the product strategy actualization.

CHAPTER ONE:

INTRODUCTION

1.1 Background of the Study

The term User experience was created by Don Norman in 1993 when he was working at Apple computer, however, the field had grown over the years and has been found to influence the choice of strategies by firms to advance their products in the market and gain competitive advantage (Nielsen, 2022; Kucheriavy, 2021). Based on Nielsen's (2022) and Kucheriavy's (2021) argument while studying giant tech companies across the globe like Facebook, Apple, Google, Amazon and Airbnb, user experience research has a crucial role to play in product strategy and general business performance. When coming up with a design for a strategy for any product, user research is critical and normally effective when used during the continuous life cycle of product development. Through this, organisations can get consumer feedback through various tests and reiterate samples and designs that will help the organisation make necessary changes when needed for the product. User research also aids organisations to recognise at an early stage those who are likely to be among their first users (Nielsen, 2022; Chaffey, 2021; Kucheriavy, 2021).

From the global perspective, China has been credited as one of the giant economies that have quickly recovered from the effects of Covid-19 thanks to UX research in tech companies. Zeng (2021) has used a case study of Alibaba by examining the future of business in China. It was confirmed that the company had hit the world market due to its ability to utilize and integrate UXR in its product strategy effectively. In this study, the product life cycle theory was employed and it was confirmed that the company had hit the world market due to its ability to utilize and integrate UXR in its product strategy effectively; making a crucial background for the current study.

Across Africa, Nigeria has been said to be among the top economies in Africa with giant tech companies that have effectively adopted and used the UXR in informing their product strategy, which has, later on, placed the country top in tech related businesses in the continent (AfDB, 2021). Apurvo (2021) while studying banks utilizing the UX strategy in gaining a competitive advantage

in Nigeria established that to be a successful organisation it is not just to meet customers' requirements but to ensure that those requirements are impeccable, and conducting a proper user experience research is aiding many organisations to accomplish that. Across East Africa, UXR in tech companies is said to have given them a competitive advantage in countries like Rwanda where technology for development has been centered on. For example, in Rwanda, Guo (2021) found out that Google and Microsoft are using UXR in ensuring their product strategy stands uniquely against their competitors thus gaining a competitive advantage. Intertwined in various user experience researcher teams whose main task is to closely work with interdisciplinary teams like the product team to drive customer feedback and research findings into product strategy. This has indeed positioned the companies strategically above their competitors in the East African markets with Rwanda being a case study.

Kenya is ranked the second giant consumer of technology in Africa after Nigeria. Several factors have been associated with distinctive tech products in Kenya among them the intensified use of UXR (Clutch, 2022). This has enabled them to develop competitive and sustainable product strategies which have helped in understanding the customer and market needs besides customizing their products to meet both the need and the wants of the users/customers (Digital4Africa Report, 2022).

Although the study by Wyche, Simiyu and Othieno (2019) is not academic in nature, they agree that UXR in Kenya can be explained by the use of two theories (the product life cycle theory, and technology diffusion theory). This has an important influence on how tech companies perform since it leads to a superior product strategy placing the companies above the competitors. KPMG (2022) confirms that in the telecommunication industry in Kenya, firms like Safaricom and Google, the early birds, that capitalized on UXR have differentiated products that have placed them above other players in the same market; making it a very crucial area of study. Due to the relevance of UXR on development strategy in tech companies in Kenya plus the associated competitive advantage, the current study was conducted and steered by two theories namely: the product life cycle theory and the heart framework.

1.1.1 User Experience Research (UXR)

Although not a common concept but a reality shaping the future business world, UXR is helping companies know how their products and services are working with actual customers in the world. CGAP (2019) states that companies who use UXR can understand better the lives of their customers and act accordingly to their requirements or needs with informed strategy resolutions to their products

According to Szatkowski (2020), UXR objective is to understand the needs of targeted customers to gather data and insights that will aid in the product development strategy. Different types of methodologies may be used for this and can be divided into two. The first one is the qualitative methodology, through ethnographies, and in-depth interviews, which will help the company, understand whom, why, and how their customers behave when using different products. The second one is the quantitative methodology through structured surveys to gather measurable information about the customers and quantify some of the findings from the qualitative research.

In a study that focused on UXR's influence on product strategy in India's leading online shopping platforms, Dheeraj (2022) argues that UXR can be divided into two approaches: Attitudinal which is all about listening to what customers say and Behavioural, which involves observing how customers behave in their natural environment.

Based on Veal (2021)'s report on conducting UXR, the study was guided by variables that link to objectives: (information gaps to be filled); hypotheses: (understanding who the customers/users are); methods (depending on the availability of time and resources, what methods should be selected from available UXR methods conduct (collect information through the appropriate methods); and synthesize: (knowledge gaps, prove or disprove hypotheses). The interaction components in the UXR circle that cut across the user needs, business goals and technical issues, synthesizing (observation, understanding, and analysis), communicating strategic insights, etc. made the variables in the current study.

1.1.2 Product Strategy

A product strategy in the telecommunication sector summarises the firm's strategic idea on how its product offering should succeed by showing where the product is headed, how it will likely get there and why it is likely to be successful (Travis 2021). Fabricio (2019) argues that the objective of having a strategy for your product is to ensure that the firm's visions and goals are being followed when developing the product. This ensures that everyone involved in developing the product is aligned and geared towards achieving the firm's goals. Botelho (2018) adds that having a product strategy in place is important to guide all the team players in product development to come up with a product that will add some significant value to customers that will have a good product/market fit.

In some studies that focused on 10 top tech companies that operate in Kenya, KPMG (2021) conducted a non-scientific academic-related study that identified the importance of product strategy when guided by UXR in any industry. It concluded that having a strategy for your product forms the foundation of how the product development will be executed and eventually launched**.** A good product strategy can be broken down into three parts (Duflos and Eric, 2021): the first one is vision – which directs the firm to understand who their customers are, their needs, and how to deliver a good offering to them. The second one is goals - which are measurable on what the firm is planning to accomplish in a specific period. The third one is initiative – which is all about what efforts the firm will put in place to achieve its goals.

1.1.3 Technology Companies in Kenya

High-tech companies in Kenya borrow greatly from the Safaricom ridden internet capability that almost determines all internet users. There are approximately 19 companies that provide mobile data subscriptions of which Safaricom has the highest market share, other well-known players include Airtel Networks and Telkom Kenya.

In terms of mobile money penetration, Kenya is leading with 58% of the population using it. Mobile money services were launched in 2007 in Kenya and as of March 2019, the number of

mobile money subscribers stood at 32 million. Safaricom leads in mobile money transactions with over 80% of the transaction happening through Safaricom Mpesa. Outside Safaricom, it is documented to have effectively used UXR to differentiate its products from others, research is missing on other key players in Kenya like Google, Mozilla, Masterclass, Microsoft, Twitter, Instagram, TikTok, Facebook, Telegram, Glovo, Jumia, Jiji, Alibaba, Kilimall, etc that borrow greatly from UXR in product strategy for competitive advantage in Kenya; hence a need arose to conduct the research.

1.2 Research Problem

User experience research is a new product in the market due to its competitive advantage more specifically in the digital world. To show the reason why UXR needs to be brought into the academic world, in the most developed countries where high tech companies like Apple, Alibaba, Microsoft, Facebook, TikTok, IBM, Oppo, Amazon, Tesla, etc utilize it to control the world economies, they have gained a significant competitive advantage and distinguished market products. According to Xavier (2021), digital products have significantly grown over time and the market is saturated with similar products combined with great competition among various firms. Firms that use UXR for their product strategies are the ones who are leading and successful in the market as they have happy and satisfied customers (a need for the current study).

From the global perspective, it can be argued that firms that use UXR as a key part of their product strategy have been successful in ensuring that their customers are loyal and devoted to their products and the customers are likely to recommend or promote them to other users. Practical examples indicate that it is no wonder the likes of Airbnb credited UXR with a nearly $ 10 billion loss in value. Amazon invested 100 times more in customer experience instead of doing the usual traditional advertising in their first year of launch. This makes UXR a very crucial component of organisational performance in the tech world since it positions the products of a firm strategically unlike its competitors in a similar market.

As much as UXR is an instrumental organ in tech companies' performance, some shortfalls have been realized calling for the current study. For example, Koning (2020) outlined that as much as

there is growing knowledge of the importance of UXR, there are still quite some firms that remain sceptical about the value of investing in UXR. A survey report by Mckinsey in 2020, *The Business Value of Design,* shows that over 40% of firms are not talking to their users during product development. To add to it the report shows that 50% of the firms did not conduct any UXR when coming up with their first concepts of the products; calling for studies like the current one being undertaken in Kenya's tech arena.

To be specific, users' experience in Africa's tech is still vague. Very few Africa's tech players like Jumia and Safaricom in Kenya understand it to some extent. This means that up to 89% of Africa's new market tech entrants are likely to fail, condemned on poor understanding of UXR in their products as exemplified by Olx and Yu-companies that once operated in Kenya; calling for the current study. It is also worth noting that outside two studies carried out in Africa; one in Nigeria and another in Ethiopia examining UXR and UX design's relevance in product strategy in the tech industry, no other known study is available (if any). In Kenya to be specific (if any), there is no academic study that has linked UXR to product strategy from the tech sector, and if any, the researcher seeks more guidance. Based on such a deficit, the researcher carried out this research that aimed at examining the role of UXR in product strategy for selected technology companies in Kenya.

1.3 Research Objectives

The general research in this context was to examine the role played by user experience research (UXR) in determining product strategy for selected technology companies in Kenya.

1.4 Value of the Study

The study is expected to benefit all telecommunication firms both from the global to local levels. The tech companies shall get information on the urgent need for UXR and the various elements of UXR that will strategically position their products that later on shall give them a competitive advantage in the market. Both established tech firms and starters will get first-hand information on the importance of various elements of UXR in their businesses thus strategically positioning the products that will, later on, allow them to gain more customers. The tech starters shall be the highest beneficiaries based on the fact up to 85% of them fail in penetrating the market due to poor understating, design and integration of UXR. Future researchers, academicians, experts and research agencies will get first-hand information about the role played by UXR in product strategy among tech companies. This data and information can be used to guide their work as reference materials.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two contains the literature review about UXR and product strategy starting from the global to local cases. The theory informing the study and those supporting theories were outlined and the chapter summary is given.

2.2 Theoretical Framework

The research was guided by the product lifecycle theory and supported by the heart framework theory.

2.2.1 The Product Life Cycle Theory

The theory was developed by Heckscher-Ohlin model (1919), but later on advanced by Raymond Vernon (1966) who saw some failures it had through observations of different patterns of trade globally. The theory proposes that during the initial stages of developing a product all the elements, which may include different parts and labour that are related or connected to the product come from the area where the product was originally conceived/created. After the product is accepted and used in the market, the production moves gradually away from its initial stage to the customers who are the end users; making the user experience relevant.

There are four stages for this theory including introduction, growth, maturity and decline; and how long each stage takes may differ depending on the type of product. Critics of the theory include Wright (2022) who argues that there is some shortfall in the theory as new certain products are still likely to fail or not be successful. He argues that some new products may not experience certain stages like growth or maturity if the product never left the introduction stage. Some new products also may not follow the stages in sequence or skip some of them hence breaking the circle sequence

and this may lead to spending too much money on a potentially weak or underperforming product that is expensive

Despite the criticism, this theory is a critical instrument for various department players in a firm as the four stages provide some guidance that helps firms come up with concrete product strategies that will enhance the overall success of the new product in the market. This theory was used to inform all the indicators of UXR and the dependent variable (product strategy).

2.2.2 The HEART Framework

The heart framework was originally developed at Google by a lead user experience researcher (Kerry Rodden, Hilary Hutchinson, and Xin Fu, 2010). The framework is a method used by firms to help them develop or discover better ways to implement the user experience of a product. The framework helps firms to assess any elements of their user experience according to five key metrics: Happiness, Engagement, Adoption, Retention, and Task success (HEART). Happiness is about checking how users feel about a product; engagement is about how often are users coming back to use a firm's product; adoption is about how many users are regularly using a firm's product; retention is about the number or percentage of users returning to use a firm's product; task success is about how effective or efficient users are finding a firm's product.

So far, the heart framework has not received any significant criticism. Accordingly, the product team uses the framework with most of them considering it a beneficial instrument for discussing how to design a product. This theory was used to study the independent indicators related to UXR and then extend to look at product strategy and the competitive advantage of tech companies.

2.3 User Experience Research and Product Strategy in the Tech Industry

In a study that looked at the factors favouring the dominance of high-end tech companies that do online businesses like Google, Alibaba, Amazon, etc., Merritt and Zhao (2021) have confirmed that customer experience research influences the uniqueness of these companies' products which in turn influences their performance by gaining competitive advantage. In Africa, tech giant companies like Microsoft, IBM, Deil, Oracle, EMC, Symantec, Google, etc. still dominate the

market; courtesy of UXR which has greatly distinguished their products (Chukwuemeka, 2021). According to AfDB (2022), emerging tech firms that have relied on UXR in Nigeria have gained 10 times better competitive advantage in the market due to their unique products as compared to their quiescent competitors. They have emerged to be the giant players in Nigeria's economy just like the international well-known UXR capitalists and include Andela; Flutterwave; MTN.

Rwanda is among the countries credited for high intake of technology in advertising and product development with one brand standing, ' Visit Rwanda,' displayed in any Arsenal football play. Accordingly, UXR is the key informant of product development and sustainability in the tech world in Rwanda (World Bank, 2019). In Uganda, Nigeria's Jumia, Google, Netflix, Apple, Oppo, MTN, DStv, etc. have utilized the UXR to differentiate their products from others to top the market.

Although there is no intensified UXR in Kenya in the tech industry from the academic line, it is evident that some sampled tech experts have found a correlation between UXR and product strategy that in turn influences the competitive advantage of tech firms (Ndege, 2020. Kenya's giant internet user companies like Safaricom, Sunculture, Jumia, M-shwari, Jikomeko, etc. control the market due to partial or full integration of UXR in the product strategy (M-Kopa, 2019).

Being a new and very practical concept in Kenya's tech industry, UXR was discussed under the following subheading in the current research as an empirical literature review:

2.3.1 Planning for UXR and Products Strategy

In Singapore, a study by Li (2020) has confirmed that the majority of the tech starters fail in their UXR strategy due to the simple issue of poor planning. According to Li (2020) who sampled 115 local tech companies that have spread their wings across the larger China, their product strategy failed by 50% due to poor UXR planning. Therefore, planning for UXR is crucial in product strategy development in tech (UX Booth, 2019). According to Balázs (2021), for you to conduct a successful UXR, a good research plan is one of the key requirements as it will guide and provide all the team players involved with a proper outline of the specifications of a project, i.e. who, when, what, why and how of the project.

A cross-sectional study conducted by Tom (2021) where some telecommunication firms operating in Kenya, Nigeria, Rwanda, Ethiopia, Egypt and South Africa features, has outlined guidelines that can be used to define a UXR study plan. They include: what area entails your research question(s) and goals; why entailing business goals; how comprising of methodology; who entailing the participants; where and when the schedule and logistics of the research will entail; finally stating some anticipated results and final deliverables

Miranda (2021) has written on the prerequisite steps one should always incorporate in developing a UXR plan for better product strategy in the tech industry. According to the comparative study cutting across the developed and less developed countries between 2018 and 2021, the following should be put in place. It includes the identification of research goals, development of research questions, gathering available data and existing insights, choosing the right research methods, designing the study, putting a recruiting strategy in place, being ready to share the research findings, etc. The outlined elements, although not supported by any specific theory shall add up to the elements used in developing the current study's research instrument.

2.3.2 Types of User Research Methods and Product Strategy

In the UK and USA, it has been confirmed by Houghton (2021) that tech firms have gained a competitive advantage due to unique products in the market due to the utilization of user research market methods. The study concluded that different research methods could be used in UXR by either doing a quantitative or a qualitative research methodology; an attitudinal or behavioural approach, etc. This study however was a comparative desktop study depending on secondary data from a few selected tech companies in USA and UK with no specific theory underpinning it. The current study considered the extent to which various research methods affect product strategy in UXR setting from the global to the local case in Kenya and was informed by various theories relevant to UXR and product strategy.

In Kenya, although not much documented academic research linking UXR to tech companies' product strategy and general competitive advantage, senior research firms like Ipsos Kenya (2022) have confirmed that the various types of research methods influence product strategy. Among the

2021 reports, giant companies like Google, Twiga foods, Safaricom, Mozilla, etc. have been said to capitalize on various research methods to advance their product. Despite the fact that the report by Ipsos Kenya is not academic in nature, other research firms like Nielsen Kenya in their 2021 report gave similar findings; making a foundation for the current study.

Farrell (2020) relied on Nielsen Norman Group to create a UXR cheat sheet. In this sheet, various research methods have been recommended at various UXR stages. Accordingly, at the discovery stage, different methodologies like ethnographies with users, collection of data through diaries with users, and in-depth interviews with different stakeholders can all be applied. At the exploration stage, methodologies like building a persona, analysing different tasks given, competitor analysis, storytelling, and feedback from prototypes tested are used.

2.3.2 Usability Testing and Product Strategy

According to Mears & Lindarte (2019), usability forms a core component of UXR that influences product strategy in major telecommunication companies across the globe. Houghton (2021) argues that while the psychology of the user is predominantly subconscious, usability is more consciously driven because the senses that one uses to determine when something is confusing will teach one how to avoid that situation in the future. In a study conducted in India, China and USA, Balboni (2022) confirmed that usability testing is embedded deeply in some of the thing's customers do and it is a process that helps a firm see how usable their product is.

In terms of methodology when conducting usability testing one can use both qualitative and quantitative approaches (Carter, 2022). In product development strategy, usability testing plays a crucial role and falls under the primary areas of UXR that strategically affect the product (Carter, 2022). Miklos (2021) avers that usability testing is a core method used in UXR to give maximum experience to the user of a product thus influencing the general product strategy in the tech world.

Carrie (2022) has outlined some usability tests that have been used by giant tech companies. One such important usability test criteria is qualitative usability testing (QUT). QUT is the process of testing how "usable" a product is. Another one is tree testing which involves testing the architecture of your website. This is useful when reorganizing your site, or when building a new one. Equally,

first click testing is useful and it measures where users first click on your site. On the other hand, A/B testing follows an accessibility-testing conclusion. A/B testing involves testing one option against another. Hassenzahl & Tractinsky (2019) avers that usability testing services include moderated usability testing; unmoderated usability testing; task analysis; tree tests; and A/B Tests.

2.3.4 Task Analysis and Product Strategy

From the global perspective in the USA, Forlizzi (2022) confirmed that the main area of weakness for most user experience designers and researchers is analysis. Objectivity and attention to detail are very important elements of UXR that make it different from other types of research design. In many ways, the analysis makes you different from others, and you will be better off if you excel at it. According to KPMG Report (2019), the process of interpreting data into valued information while concluding the information is what is known as analysis. When the analysis is done properly, the researcher is likely to generate insightful findings.

A study conducted in Nepal, NY, Thailand and Singapore by Kuniavsky (2020) indicated that user experience researchers often are faced with complex and too much data, which at times negatively affects the outcomes. Therefore, the data collected needs to be organized into distinct parts of scrutiny and then given priority to the most critical areas of importance or consideration. Methods of data analysis are very crucial in UXR. According to Buley (2020), there are categories of UXR data analysis methods depending on the nature of the data. For example, when analysing quantitative data, if the data received is large then using software's like Python or SPSS may be used, while for small data received entering them manually in an excel spreadsheet would work. Either way, user experience studies for quantitative methodologies investigate important metrics like the number of shared variables: rates of success, time to complete tasks and error rates as just but a few examples.

In quantitative UXR, the use of attitudinal measurements assessed by the questionnaire ratings when it comes to user experience satisfaction with the experience is also commonly used. Finally, use of the demographics (gender, age, etc.) of the participants is also analysed to help determine the different outcomes of certain groups of customers. Concerning analysing qualitative data,

Buley (2020) states that two ways can be used to organise the data collected which include: thematic and content analysis. Norman, Miller and Henderson (2019) aver that user analytics should be analysed carefully for an analysis to take place effectively. Therefore, the researcher should start with the use goals in any given preparation for analysis, then understand why reviewing analytics matters, further determine the essential analytics you want to measure (survey analytics, product analytics, web analytics, etc), and set up a system for measuring analytics.

2.3.5. UXR Reporting/Presentation and Product Strategy

According to Roto, et al. (2021) research deliverables can be observed from the presentation and reporting angle. Therefore, the user researcher when reporting or presenting the findings he/she needs to communicate all the data findings they have uncovered during the research. The findings can be presented in different forms of charts, graphs, maps, reports and presentations. The final deliverables of any UXR are in the form of a report or presentation that is shared with the relevant stakeholders.

In the report, it is important to give the full scope of the study information related to the project. In most firms, UX researchers would normally generate a standard report daily to help them have a comprehensive interpretation of the data records collected irrespective of what other findings they produce. Using storytelling to engage the stakeholders has been outlined as another deliverable mechanism that influences the success of UXR in product strategy development. According to Barton (2021), storytelling includes a narrative structure that significantly influences product strategy and gives a firm a general competitive advantage in the market.

2.4 Empirical Review

From the global perspective, Masahito (2022) examined the influence of UX research on the performance of Huawei's Corporate Strategies and the Impact of US–China High-Tech War. In the study that relied on online interviews among the various Huawei's outlet centres found a strong relationship between UX research and performance of Huawei's corporate strategy. In the corporate strategy, the study did confirm the Huawei's bigger picture of integrating the product

strategy to be giving it a competitive advantage. Ambashi (2019) adds that UX research has a significant influence on Huawei's product and expansion strategy with its entry to USA and the rest of Africa gaining momentum. Kimura (2020) found a strong relationship between UX research and the performance of product strategy of Samsung and Huawei tech firms in 10 countries in Africa where Kenya and Rwanda featured in East Africa with Nigeria being the leader.

Changhao, Zikang and Xinyi (2020) did a study in China, USA and South Africa focussing on marketing strategy application by Tesla during the covid-19 pandemic. The researchers used a relatively flexible and exploratory qualitative approach, conducting semi-structured interviews with seven current Tesla employees and using secondary sources to aid in proving the veracity and viability of the information. The researchers found out that the adoption, integration and continuous improvement of the UX research did improve the product strategy which in turn gave out unique products that have taken the world by surprise thus improved performance and competitive advantage. PWC (2020) confirmed that user experience research is a key determinant of product strategy in todays' globalized world. The study looked at major companies using the high tech in the construction of the Konza City in Kenya. Some of the components of UX research that were found to have a significant influence on the product strategy include: types of UX research methods used, UXR reporting and presentation, testing the usability etc.

Gurumurthy (2022) sought to establish the importance of UXR for product managers with Meta Product Lead. The study relied on secondary data from the Meta company that runs facebook, instagram etc. The results confirmed a strong relationship between the various components of UXR like planning for UXR, types of URMs, usability testing, UXR reporting and the product strategy performance. Racine (2022) did a study relating to incorporating UX research to inform business strategy in Tech companies. The study found a significant and positive relationship between UXR indicators and the business strategy of tech firms. The business strategy incorporates the product strategy which has been said to give firms a product lead in the market and a branding status. Some of the elements of UXR found to influence both business and product strategy are: Planning for UXR; Types of User Research Methods; Usability Testing; Task Analysis; UXR Reporting/Presentation etc.

Oracle published a report which confirmed that UXR is the new trend that sees companies boost their products in the market by up to 35% as compared to general performance. The UXR in this report has been found to heavily being informed by the process of planning for the UXR itself, the methods of UXR adopted, and the task testing, reporting and presenting the UXR finings. This study further realized that each indicator has an individual effect on the product strategy (Oracle, 2022). Pfister (2022) asserts that USX researcher as defined by planning for UXR, identifying and utilizing the appropriate UXR methods, task analysis and testing, presentation and documentation influence the product process of an organization.

2.5 Research Gaps

Table 2.1 Research Gap

Author	**Independent indicator(s)**	**Results**	**Gaps**	**How gaps are addressed**
Masahito (2022)	UXR	The study found a strong relationship between UX research and performance of Huawei's corporate strategy. In the corporate strategy, the study did confirm the Huawei's bigger picture of integrating the product strategy to be giving it a competitive advantage.	This failed to outline the various UXR indicators that can be used to examine the extent of UXR integration and then establish how this integration extent affects the corporate and product strategy. Further, it was carried out in China whose IT development is advanced.	The current study used the standard known components of UXR (planning for UXR, types of UXR methods adopted, usability testing, task analysis, UXR reporting and presentation. Further, a regression analysis was carried out to show the extent of influence of

				each indicator of UXR on the product strategy.
Miranda (2021)	Planning for UXR	This study established that there are various UXR plans that when well established and integrated influence the product strategy of tech firms across the globe.	However, as much as this study gave such credible findings, the various indicators of UXR planning haven't been outlined. Further, the study relied on secondary data that at times might be biased besides failing to rely on a given standard theory.	All the possible indicators of UXR planning were used in the current study. Further, the study used specific theories of UXR, product strategy, and tech firms' performance. Linear regression analysis was used to test the extent of influence between the various independent and dependent variable.
Farrell (2020)	Types of User Research Methods	There are various UXR research methods as guided by the UXR cheat sheet	The study relied on Nielsen Norman Group which is more of a recommended method of creating a cheatsheet. The study never relied on any theory or well-known standard research methodologies	The current study adopted a descriptive research design, outlined the various indicators of the various types of UXR methods. The study further tested the hypotheses besides using well known theories of UXR.
Hassenzahl & Tracti	Usability Testing	Various usability testing components like moderated usability testing; unmoderated	The study only mentioned the various usability testing components and failed	The current study used a regression analysis to establish the relationship between each indicator

nsky (2019)		usability testing; task analysis; tree tests; and A/B Tests have been outlined.	to outline the extent of influence of each indicator on product strategy. Research methodology used was exploratory and used qualitative data	and it used quantitative data that was collected using a primary data collection method (questionnaire)
Kunia vsky (2020)	Task Analysis	User experience researchers often are faced with complex and too much data, which at times negatively affects the outcomes if not well analysed.	The study failed to show how this component of task analysis can be analysed and the extent of influence of each indicator. The study used secondary data and was carried out in Nepal.	The current study was carried out in Kenya's tech market and outlined all the indicators of task analysis with a questionnaire being used at the instrument of collecting primary data.
Roto, et al. (2021	UXR Reporting/ Presentati on	The study outlined that there are various ways through which data presentation and reporting can be done.	The study just failed to single in on a given tech company	The current study used various Giant tech companies in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section is an outline of the research methodology that was employed to enhance the success of the study.

3.2 Research Design

The research design that was adopted by the current study was a descriptive cross-sectional research design, whose purpose was to produce information that defined the different features of data collected during the research. With this type of research design, a quantitative approach to collecting data was used where the data collected was properly structured and organized. The design methodology made it possible for the study to categorise the relationships between the five components of UXR and the product strategy of telecommunication companies in Kenya.

3.3 Target Population

There are 60 telecom firms as of 2021 (Communications Authority of Kenya, 2022). The study targeted a manager from each of these firms adding 60 respondents as the target population.

3.4 Sample Size and Sampling Procedure

The sample size identified ensured that the researcher focused on a particular target group of customers who were relevant to give the right information to the study. The sample size for the study was 60 telecom companies that are registered by the CAK. Yamane formula was used for calculating the sample size for this project as given below:

$$n = \frac{N}{1 + N(e)^2}$$

Where n= sample size, N=target population, e= level of precision (error term=0.05)

n= 60/1+60(0.05)^2 =52. Therefore, a simple random sampling was applied to select 52 respondents as the sample size for the entire study.

3.5 Research Instrument

Data was collected using a structured questionnaire with a 5-point Likert scale rating. The first section contained background information, the second section contained statements on the independent variable (UXR) made of five indicators and the third section had statements on the dependent variable (product strategy).

3.5 Data Collection Procedures

The researcher presented the proposal at the graduate school of the University of Nairobi and later sought permission from the National Commission for Science, Technology, and Innovation (NACOSTI) to undertake the project. In the distribution of questionnaires and the data collecting process, the researcher used a drop-and-pick approach. During this time of uncertainty because of Covid-19 limits or rules being implemented throughout the country, the use of google forms was used where it was not feasible to collect the data properly. This assisted to improve data collecting efficiency and allowed respondents to complete their questionnaires whenever it was convenient for them.

3.6 Data Analysis and Presentation

The Statistical Package for the Social Sciences (SPSS) was used to analyse quantitative data. In the analysis, descriptive and inferential statistical analyses were employed. Some of the examples of descriptive statistics that were used include standard deviation, means, percentages and

frequency of responses given. In difference, inferential statistics incorporated a correlation test, ANOVA testing, and regression analysis, which determined the link between the study's variables. Presentation of the data results was in the format of frequency tables that included frequencies, standard deviations and means. Since the research instrument used to collect data was quantitative, a quantitative analysis technique was adopted. Estimation techniques additionally confirmed for drawing inferences and conclusions central to the study. The following regression model was used; $Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \varepsilon$ Where; Y = dependent variable (product strategy) α = the model intercept $\beta 1\text{-}5$ = coefficients of the independent variable (URX).

3.7 Ethical Consideration

Throughout the study process and reporting, the researcher followed certain ethical issues like getting permission from the participant; assuring them of anonymity and all responses given treated with confidentiality. Before beginning the research, the study verified that all respondents signed the permission form. Before beginning the research, the study guaranteed that the University of Nairobi gave an ethical approval certificate. Furthermore, before the commencement of data collection from the field, a NACOSTI study authorization was obtained. The study also guarantees that the respondents' anonymity was preserved during the duration of the research by not attempting to identify them through the questionnaire used. The acquired information was safeguarded utilising cloud platforms and accessible exclusively for academic reasons.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

The chapter discusses how the data was analysed, how the results came to be and their discussion. This research used inferential and descriptive statistics to conduct data analysis. Findings were summarized and shown in the form of frequency tables with means and standard deviation employed.

4.2 Return Rate

Table 4.1 confirms that out of the 52 questionnaires distributed, only 45 were fully filled, returned and became useful in the study.

Table 4.1 Response Rate

Questionnaire	Frequency	Response Rate
Returned	45	86.5%
Unreturned	07	13.5%
Total	**52**	**100%**

From the returned questionnaires, 86.5% represented the response rate, which was considered excellent for analysing the study findings (Sekaran, 2003). According to Kothari (2014), a response rate of 80% or higher is considered significant for statistical analysis.

4.3 Demographic Information and Respondents Profiles

The section outlines the information in relation to the respondents starting with their gender, level of education, age, job description and work experience.

Table 4.2 posted results indicating that the majority of the tech companies had the male gender as most managers as indicated by a frequency of 35 managers translating to 77.78% of the respondents. The remaining 10 translating to 22.22% were female managers

Table 4.2 Respondents Gender

Gender	Frequency	Percentage
Male	35	77.78%
Female	10	22.22%
Total	**45**	**100%**

Table 4.3 shows that most of the managers who participated had postgraduate degrees as represented by 27 respondents (27.0%). Those with a university level of education were 9 (20.0%), followed by those with other forms of education at 8 (17.8%) followed by tertiary education with 1 manager making 2.2% of the respondents.

Table 4.3 Academic Qualifications

Category	Description	Frequency	Percentage
Highest education	Tertiary	01	22.2%
	Bachelor degree	09	20.0%
	Postgraduate degree	27	27.0%
	Others	08	17.8%
Total		**45**	**100%**

Table 4.4 indicates that the majority of the managers involved in these tech companies in Kenya had above 15 years of work experience as indicated by 33 respondents translating to 73.3%. This was followed by those with 10-15 years of respondents with 8 respondents (17.8%), and finally those with 5-10 years of work experience concluded at 8.9% made of 4 respondents.

Table 4.4 Work Experience

Description (years)	Frequency	Percentage
5-10 years	4	8.9%
10-15 years	8	17.8%
Above 15 years	33	73.3%
Total	**45**	**100%**

4.4 User Experience Research (UXR) and Product Strategy Knowledge

When asked to indicate their knowledge towards UXR and its general influence on the product strategy in the organizations, majority of the respondent managers had knowledge about UXR and did confirm that it affects the product strategy of the firms, which is also reflected in the performance of these tech agencies. For example, 95.5% of these managers did agree that they have come across planning for UXR and it influences product strategy. Equally, 93.3% of the managers reinforced the idea that types of user research methods applied in organizations affect product strategy. 86.6% of the respondents did agree that usability testing affects the product strategy while 91.1% and 97.7% supported the idea that task analysis and UXR reporting/presentation affect the product strategy which is also directly proportional to organization performance.

Table 4.5 User Experience Research (UXR) and Product Strategy Knowledge

UXR indicators	Yes	No
Planning for UX research	95.5%	4.5%
Types of User Research Methods	93.3%	6.7%
Usability Testing	86.6 %	13.4%
Task Analysis	91.1%	8.9%
UXR Reporting/Presentation	97.7%	2.3%

4.5 Analysis of Likert- Type Data and Accounting for the Error Term

In this study, the following Likert Scale was used: 1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=strongly agree. It was also assumed that Likert-type data has equidistant so that parametric methods of data analysis can be used (Lantz, 2013). Carifio and Racco (2007) indicate that when using a five-point Likert scale the following is the scoring; strongly agree (SA) 4.2<SA<5.0; agree (A) 3.4<A<4.2; neutral (N) 2.6<N<3.4; disagree (DA) 1.8<DA<2.6 and strongly disagree (SDA) 1.0<SDA<1.8. The scale gives an equidistant of 0.8. This weighting criterion was followed in the data analysis of the Likert-type of data in this study. The same scale was used successfully by Nganga (2014), Musyoka, Gakuu and Ndunge (2017), Kisimbii (2019), Ndungu (2017), Otundo (2020) among others.

Table 4.6 Planning for UXR and Product Strategy

Statement	N	Min	Max	Mean	Std. Dev	Var
Planning for UXR is undertaken at any given lifecycle process of UXR in this firm	45	1	5	2.67	1.187	1.409
There is planning in the identification of research goals	45	1	5	3.69	1.062	1.128
Planning is carried out in the identification of research goals	45	1	5	3.38	.960	.922
There are planning activities for gathering available data and existing insights	45	1	5	3.67	1.066	1.136
Planning is done in the choosing the right research methods stage	45	1	5	3.53	1.079	1.164
Planning is effective at designing the study, putting a recruiting strategy in place	45	1	5	3.00	.905	.818
Planning is done at presenting and reporting research findings	45	1	5	3.73	1.053	1.109

The idea that planning is done at presenting and reporting research findings had the highest support as a mean score of 3.73, sd of 1.053, and var of 1.109 meant that majority of the respondents agreed with the idea. Also, the majority of the respondents agreed that: there is planning in the identification of research goals (m=3.69, sd=1.062, var=1.128); there are planning activities for gathering available data and existing insights (m=3.67, sd=1.066, var=1.136); and, planning is done in the choosing the right research methods (m=3.53, sd=1.079, var=1.164).

Table 4.7 Types of User Research Methodologies and Product Strategy

Statement	**N**	**Min**	**Max**	**Mean**	**Std. Dev**	**Var**
Qualitative research method is used for this firm's UXR	45	1	5	3.33	1.087	1.182
Quantitative research method has been adopted for this firm's UXR	45	1	5	3.56	1.056	1.116
Generative research methods are common	45	1	5	3.82	.834	.695
Evaluative research methods are common	45	1	5	3.60	1.009	1.018
Attitudinal methods are used for UXR	45	2	5	3.64	.830	.689
Behavioural methods inform UXR	45	1	4	2.91	.996	.992
Remote research methods are used	45	1	5	3.38	1.154	1.331
In-person user research is common in firm's UXR	45	1	5	3.56	1.159	1.343
Moderated methods are used	45	1	5	3.56	1.139	1.298
Unmoderated methods are used	45	1	5	2.11	.775	.601

Table 4.7 indicates that majority of the managers representing the tech companies agreed with the ideas that: Generative research methods are commonly used in their tech firms (m=3.82, sd=.834, var=.695; attitudinal methods are used for UXR (m=3.64, sd=.830, var=.689); evaluative research methods are common (m=3.60, sd=1.009, var=1.018); quantitative research method has been adopted for the firm's UXR (m=3.56, sd=1.056, var=1.116); in-person user research is common in firm's UXR (m=3.56, sd=1.159, var=1.343); and moderated methods are used (m=3.56, sd=1.139, var=1.298).

Table 4.8 Usability Testing and Product Strategy

Statement	N	Min	Max	Mean	Std. Dev
Moderated usability testing is commonly used in UXR	45	3	5	4.18	.747
Unmoderated usability testing is commonly used in UXR	45	1	4	2.38	.886
Guerrilla usability testing is commonly used in UXR	45	1	5	3.93	1.053
Task Analysis usability testing is commonly used in UXR	45	1	5	3.62	1.114
Tree Tests usability testing is commonly used in UXR	45	1	5	3.84	1.167
A/B Tests usability testing is commonly used in UXR	45	1	5	3.87	.991

Majority of the respondents agree with the idea that moderated usability testing is commonly used in UXR (m=4.18, sd= .747). Further, a higher percentage of the respondents agreed that: guerrilla usability testing is commonly used in UXR (m=3.93, sd= 1.053); task analysis usability testing is commonly used in UXR (m=3.62, sd=1.114); tree tests usability testing is commonly used in UXR (m=3.84, sd=1.167); and A/B tests usability testing is commonly used in UXR (m=3.87, sd=.991).

Table 4.9 Task Analysis and Product Strategy

Statement	N	Min	Max	Mean	Std. Dev	Var
There is periodic and continuous data analysis in UXR in this firm	45	1	5	3.11	.885	.783
Prioritizing areas of analysis is effective	45	1	5	3.33	1.087	1.182
Organizing the data into discrete areas of analysis is common	45	1	5	3.47	1.014	1.027
Data analysis methods are differentiated effectively	45	1	5	2.40	1.009	1.018
Quantitative data is analysed differently using defined tools	45	3	5	4.09	.668	.446
Qualitative data is analysed differently using differentiated models	45	1	5	4.04	1.278	1.634

A mean score of 4.09, sd of .668, and var of .446 confirmed that majority of the respondents agreed with the idea that quantitative data is analysed differently using defined tools. Equally, most of the respondents agreed that qualitative data is analysed differently using differentiated models (m=4.04, sd=1.278, var=1.634). Finally, a higher percentage of the respondents were in agreement that organizing the data into discrete areas of analysis is common (m=3.47, sd=1.014, var=1.027).

Table 4.10 UXR Reporting/Presentation and Product Strategy

Statement	N	Min	Max	Mean	Std. Dev	Var
There are clearly defined deliverables in UXR presentation/reporting	45	1	5	3.29	1.121	1.256
Presentations are used in special occasions	45	2	5	3.76	.908	.825
Reports are used when details are needed	45	1	5	3.62	1.007	1.013
Storytelling including narrative structure is used in relevant occasions	45	1	5	3.00	1.261	1.591
Usability reports, analytics reports, and competitive analysis reports are used in reporting	45	1	5	3.89	1.092	1.192

Majority of the respondents agreed that usability reports, analytics reports, and competitive analysis reports are used in reporting (m=3.89, sd=1.092, var=1.192). While others agree that presentations are used in special occasions (m=3.76, sd=.908, var=.825); and reports are used when details are needed (m=3.62, sd=1.007, var=1.013).

4.6 Correlation Analysis

Product moment correlation coefficient was applied to examine the relationship between the independent and dependent variables. Outcomes in table 4.11, revealed that there was a strong, a confident and substantial relationship between types of user research methodologies and product strategy in selected technology organisations in Kenya where rho=0.551, p value <0.05. Secondly, there was a weak, confident and substantial relationship between types of usability testing and product strategy in selected technology organisations in Kenya where rho=0.077, p value <0.05. Task analysis had a weak, confident and substantial relationship with product strategy in selected technology organisations in Kenya where rho=0.258, p value <0.05. Further, there was a fairly strong, confident and substantial relationship between user experience

reporting/presentation and product strategy in selected technology organisations in Kenya where rho=0.325, p value <0.05. Finally, there was a fairly strong, confident and substantial relationship between planning for UX research and product strategy in selected technology organisations in Kenya where rho=0.325, p value <0.05. There was no collinearity as none of the independent indicators was vastly connected to each other and none of their respective association coefficients surpassed 0.7.

Table 4.11: Correlation Analysis

		Product Strategy	Types of User Research Methodologies	Usability Testing	Task Analysis	UXR Reporting/ Presentation	Planning for UX Research
Product Strategy	Pearson Correlation	1	.551**	.077	.258*	.325*	.325*
	Sig. (1-tailed)		.000	.000	.000	.000	.000
	N		45	45	45	45	45
Types of User Research Methodologies	Pearson Correlation		1	.256*	.342*	.252*	.252*
	Sig. (1-tailed)			.048	.048	.048	.048
	N			45	45	45	45
Usability Testing	Pearson Correlation			1	.030	.492**	.492**
	Sig. (1-tailed)				.000	.000	.000
	N				45	45	45
Task Analysis	Pearson Correlation				1	.357**	.357**
	Sig. (1-tailed)					.008	.008
	N					45	45
UXR Reporting/ Presentation	Pearson Correlation					1	.230
	Sig. (1-tailed)						.004
	N						45
Planning for UX Research	Pearson Correlation						1

4.7 Testing the Hypothesis

Regression analysis was used to test the hypothesis of the study. The confidence level used was 0.05.

4.7.1 Regression Analysis on the Types of User Research Methodologies' Influence on Product Strategy

The first hypothesis stated that types of user research methodologies have no significant influence on product strategy in selected technology organisations in Kenya. The outcomes in table 4.12 has an R squared of 0.556 which implies that 55.6% of changes in the product strategy of selected tech organisations in Kenya can be described by types of user research methodologies while the residual proportion can be accounted for by other aspects omitted from the model.

On the other hand, Anova's results have an F statistic of 14.666, p value < 0.05, which implies that a significant association between types of user research methodologies and product strategy in selected technology companies in Kenya. Therefore, user research methodologies have a positive significant influence on product strategy in selected technology companies in Kenya.

Based on the regression coefficients, types of user research methodologies have a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.534$, $t = 3.437$, p value < 0.05. This implies that a unit increase in types of user research methodologies increases product strategy in selected tech organisations in Kenya by 0.534 units.

Table 4.12 Regression Analysis on the Influence of Types of User Research Methodologies on Product Strategy

Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.559[a]	.556	.481	.650

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.273	5	5.901	14.666	.000[b]
	Residual	26.172	39	.722		
	Total	52.444	44			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.031	1.593		1.276	.002
	Types of User Research Methodologies	.534	.146	.065	3.437	.001

4.7.2 Regression Analysis on the Influence of Planning for UX Research on Product Strategy

The second hypothesis stated that planning for UX research has no significant influence on product strategy in selected technology organisations in Kenya. The outcomes in table 4.13 have an R squared of 0.303 which implies that 30.3% of changes in the product strategy of selected tech companies in Kenya can be explained by planning for UX while the residual proportion can be accounted for by other aspects omitted from the model.

On the other hand, Anova's results have an F statistic of 8.918, p value < 0.05, which implies that planning for UX research has a significant influence on product strategy in selected technology companies in Kenya.

Based on the regression coefficients, planning for UX research has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.509$, $t = 2.914$, p

value < 0.05. This implies that a unit increase in planning for UX research increases product strategy in selected tech organisations in Kenya by 0.509 units.

Table 4.13 Regression Analysis on the Influence of Planning for UX Research on Product Strategy

Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.309[a]	.303	.305	.989

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	38.009	5	7.987	8.918	.001[b]
	Residual	14.435	39	.981		
	Total	52.444	44			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.912	1.430		1.981	.001
	Planning for UX Research	.509	.077	.071	2.914	.001

4.7.3 Regression Analysis on the Influence of Usability Testing on Product Strategy

The third hypothesis stated that usability testing has no significant influence on product strategy in selected technology organisations in Kenya. The outcomes in table 4.14 has an R squared of 0.317 which implies that 31.7% of changes in the product strategy of selected tech organisations

in Kenya can be explained by usability testing while the residual proportion can be accounted for by other aspects omitted from the model.

On the other hand, Anova's results have an F statistic of 11.091, p value < 0.05, which implies that a significant association between usability testing and product strategy in selected technology organisations in Kenya.

Based on the regression coefficients, usability testing has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.501$, $t = 3.091$, p value < 0.05. This implies that a unit increase in usability testing increases product strategy in selected tech organisations in Kenya by 0.501 units.

Table 4.14 Regression Analysis on the Influence of Usability Testing on Product Strategy

Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.321[a]	.317	.320	.788

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.671	5	6.897	11.091	.003[b]
	Residual	24.773	39	1.001		
	Total	52.444	44			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.009	0.966		2.331	.000

	Usability Testing	.501	.331	.300	3.091	.000

4.7.4 Regression Analysis on the Influence of Task Analysis on Product Strategy

The fourth hypothesis stated that task analysis has no significant influence on product strategy in selected technology organisations in Kenya. The outcomes in table 4.15 has an R squared of 0.297 which implies that 29.7% of changes in the product strategy of selected tech organisations in Kenya can be explained by task analysis while the residual proportion can be accounted for by other aspects omitted from the model.

On the other hand, Anova's results have an F statistic of 9.048, p value < 0.05, which implies that a significant association between task analysis and product strategy in selected technology organisations in Kenya.

Based on the regression coefficients, task analysis has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.093$, $t = 3.789$, p value < 0.05. This implies that a unit increase in task analysis increases product strategy in selected tech organisations in Kenya by 0.093 units.

Table 4.15 Regression Analysis on the Influence of Task Analysis on Product Strategy

Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.304[a]	.297	.289	0.997

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.823	5	5.098	9.048	.006[b]
	Residual	22.621	39	1.819		

	Total	52.444	44			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.909	1.221		2.651	.006
	Task analysis	.093	.091	.088	3.789	.006

4.7.5 Regression Analysis on the Influence of UXR Reporting/Presentation on Product Strategy

The fifth and final hypothesis stated that UXR reporting/presentation has no significant influence on product strategy in selected technology organisations in Kenya. The outcomes in table 4.16 has an R squared of 0.331 which implies that 33.1% of changes in product strategy of selected tech organisations in Kenya can be explained by UXR reporting/presentation while the residual proportion can be accounted for by other aspects omitted from the model.

On the other hand, Anova results has an F statistic of 4.891, p value < 0.05, that implies a significant association between UXR reporting/presentation and product strategy in selected technology companies in Kenya.

Based on the regression coefficients, UXR reporting/presentation has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.146$, $t = 4.098$, p value < 0.05. This implies that a unit increase in UXR reporting/presentation increases product strategy in selected tech organisations in Kenya by 0.146 units.

Table 4.16 Regression Analysis on the Influence of UXR Reporting/Presentation on Product Strategy

Summary Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347[a]	.331	.321	0.872

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.643	5	4.889	4.891	.000[b]
	Residual	23.801	39	1.918		
	Total	52.444	44			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.011	0.671		3.091	.000
	UXR reporting/presentation	.146	.125	.147	4.098	.000

4.8 Research Findings Discussion

The study was carried out with the main objective of examining the role played by UXR in determining product strategy for selected tech companies. The questions to answer were; Are there any user experience research indicators and components that tech companies have relied on to inform their product strategy? What is the extent of influence of these user experience research

indicators on the product strategy in these organisations? What is the net effect on the general performance of these tech firms? The research findings confirmed that there are UXR methods that have been used by companies to inform their product strategy and include: UXR reporting and presentation which was leading at 97.7%, followed by planning for UXR at 95.5%, then types of user research methods at 93.3% with task analysis and usability testing following at 91.1% and 86.6% respectively. 92.84% average score suggested that the various outlined independent indicators tied to UXR influence the product strategy, which in turn gives the tech firms a competitive advantage.

As per the issue touching on types of user research methods affecting product strategy, the majority of the managers (93.3%) representing the tech companies agreed that types of user research methods do affect the product strategy performance significantly. For example, majority of these respondents agreed with the ideas that: generative research methods are commonly used in their tech firms (m=3.82, sd=.834, var=.695; attitudinal methods are used for UXR (m=3.64, sd=.830, var=.689); evaluative research methods are common (m=3.60, sd=1.009, var=1.018); etc. When testing the hypothesis, the results indicated that the types of user research methodologies have a positive and significant influence on product strategy in selected tech organisations in Kenya where $\beta = 0.534$, $t= 3.437$, p value < 0.05. From the literature review, in the UK and USA, it has been confirmed by Houghton (2021) that tech firms have gained a competitive advantage due to unique products in the market due to the utilization of user experience market research methods. The study concluded that different research methods could be used in UXR by either doing a quantitative or qualitative research methodology; an attitudinal or behavioural approach; etc.

In relation to the influence of planning for UXR on product strategy, a significant relationship was reached. For example, the idea that planning is done at presenting and reporting research findings had the highest support with a mean score of 3.73, sd of 1.053, and var of 1.109, meaning that the majority of the respondents agreed with the idea. Also, the majority of the respondents agreed that there is planning in the identification of research goals (m=3.69, sd=1.062, var=1.128), etc. When testing the hypothesis, the results did confirm that planning for UX research has a positive and significant influence on product strategy in selected tech organisations in Kenya where $\beta = 0.509$,

t= 2.914, p value < 0.05. This is in agreement with Balázs (2021) who avers that for you to conduct a successful UXR, a good research plan is one of the key requirements as it will guide and provide all the team players involved with a proper outline of the specifications of a project, i.e. who, when, what, why and how of the project.

On the other hand, in relation to the idea that usability testing influences product strategy, the majority of the respondents (91.1%) indicated that there is a significant relationship. To be specific, most of the respondents agreed with the idea that moderated usability testing is commonly used in UXR (m=4.18, sd= .747). Further, a higher percentage of the respondents agreed that guerrilla usability testing is commonly used in UXR (m=3.93, sd= 1.053); task analysis usability testing is commonly used in UXR (m=3.62, sd=1.114); tree tests usability testing is commonly used in UXR (m=3.84, sd=1.167); and A/B tests usability testing is commonly used in UXR (m=3.87, sd=.991). Based on the regression coefficients during the testing of the hypothesis, usability testing was found to have a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.501$, t= 3.091, p value < 0.05. This is in agreement with Mears & Lindarte (2019) who aver that usability forms a core component of UXR that influences product strategy in major telecommunication companies across the globe. Further, Houghton (2021) argues that while the psychology of the user is predominantly subconscious, usability is more consciously driven because the senses that one uses to determine when something is confusing will teach one how to avoid that situation in the future. Finally, in a study conducted in India, China and USA, Balboni (2022) confirmed that usability testing is embedded deeply in some of the thing's customers do and it is a process that helps a firm see how usable their product is.

The finding confirmed also that most of the respondents supported the argument that task analysis influences product strategy. A mean score of 4.09, sd of .668, and var of .446 confirmed that the majority of the respondents agreed with the idea that quantitative data is analysed differently using defined tools. Equally, most of the respondents agreed that qualitative data is analysed differently using differentiated models (m=4.04, sd=1.278, var=1.634). Finally, a higher percentage of the respondents agreed that organizing the data into discrete areas of analysis is common (m=3.47, sd=1.014, var=1.027). When testing the hypothesis, task analysis was found to have a confident

and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.093$, $t= 3.789$, p value < 0.05. In agreement with these findings are Norman, Miller and Henderson (2019) who aver that user analytics should be analysed carefully for an analysis to take place effectively. Therefore, the researcher should start with the use goal in any given preparation for analysis, then understand why reviewing analytics matters, further determine the essential analytics you want to measure (survey analytics, product analytics, web analytics, etc), and set up a system for measuring analytics.

Finally, as per the idea that established the influence of UXR reporting/presentation on product strategy, a significant relationship was established. For example, most of the managers agreed that presentations are used on special occasions (m=3.76, sd=.908, var=.825); reports are used when details are needed (m=3.62, sd=1.007, var=1.013; and usability reports, analytics reports, and competitive analysis reports are used in reporting (m=3.89, sd=1.092, var=1.192). When testing the hypothesis, the regression coefficients did confirm that UXR reporting/presentation has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.146$, $t= 4.098$, p value < 0.05. From the literature review, according to Roto, et al. (2021), research deliverables can be observed from the presentation and reporting angle. Therefore, the user researcher when reporting or presenting the findings he/she needs to communicate all the data findings they have uncovered during the research. The findings can be presented in different forms of charts, graphs, maps, reports and presentations. The final deliverables of any UXR are in the form of a report or presentation that is shared with the relevant stakeholders.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter captures a summary the findings, presents the conclusion and recommendation, states limitations experienced and suggestions for further research.

5.2 Findings Summary

The main objective of the study was to examine the role played by UXR in determining product strategy for selected tech companies. The questions to answer were; Are there any user experience research indicators and components that tech companies have relied on to inform their product strategy? What is the extent of influence of these user experience research indicators on the product strategy in these organisations? What is the net effect on the general performance of these tech firms? A combined average score **of 92.84**% suggested that the various outlined independent indicators (UXR reporting and presentation, planning for UXR, types of user research methods, task analysis and usability testing) tied to UXR influence the product strategy, which in turn gives the technology firms a competitive advantage.

As per the issue touching on types of user research methods affecting product strategy, the majority of the managers (93.3%) representing the tech companies agreed that types of user research methods do affect the product strategy performance significantly. When testing the hypothesis, the results indicated that the types of user research methodologies have a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.534$, $t= 3.437$, p value < 0.05. In relation to the influence of planning for UXR on product strategy, a significant relationship was reached. When testing the hypothesis, the results did confirm that planning for UX research has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.509$, $t= 2.914$, p value < 0.05.

On the other hand, in relation to the idea that task analysis influences product strategy, the majority of the respondents (91.1%) indicated that there is a significant relationship. Based on the regression coefficients during the testing of the hypothesis, usability testing was found to have a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.501$, $t= 3.091$, p value < 0.05. Further, the finding confirmed that most of the respondents supported the argument that task analysis influences product strategy. When testing the hypothesis, task analysis was found to have a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.093$, $t= 3.789$, p value < 0.05. Finally, as per the idea that established the influence of UXR reporting/presentation on product strategy, a significant relationship was established. When testing the hypothesis, the regression coefficients did confirm that UXR reporting/presentation has a confident and substantial effect on product strategy in selected tech organisations in Kenya where $\beta = 0.146$, $t= 4.098$, p value < 0.05.

5.3 Conclusions

Based on the research objective that wanted to examine the role played by UXR in determining product strategy for selected tech companies, the study concludes that all the independent indicators (planning for UXR, types of user research methods, usability testing, task analysis, and UXR reporting/presentation) have a different but positive and significant influence on the product strategy.

Further, it can be concluded that types of user research methods have a significant, positive and strong influence on product strategy in various technology companies. In fact, when types of user research methods are increased by a unit, product strategy performance is increased by 0.534 units. In relation to the influence of planning for UXR on product strategy, the researcher concludes that it is a very crucial component of product strategy performance that has a significant and positive effect on its performance since a unit increase in planning for UX research is responsible for 0.509 units of increase in product strategy in the selected tech companies in Kenya. It is the conclusion of the researcher that usability testing is very crucial in determining the position the product

strategy takes in the tech firms since a unit increase in usability testing is responsible for a 0.501 unit increase in product strategy which later on gives tech firms a competitive advantage.

On the other hand, in relation to the idea that task analysis influences product strategy, the researcher concludes that task analysis is a major determinant of product strategy performance; although a majority of managers tend to ignore it. Task analysis is one of the indicators that have a significant influence on product strategy based on the fact that a unit increase in task analysis is responsible for a 0.093 unit increase in product strategy. Finally, as per the idea that established the influence of UXR reporting/presentation on product strategy, the researcher concluded that although not well outlined in the majority of the companies since it has a relatively small score, its net effect is significant in determining the performance of product strategy. The research is for the conclusion that a unit increase in UXR reporting/presentation is responsible for a 0.146 unit increase in product strategy.

5.4 Recommendations

The study was carried out with the main objective of examining the role played by UXR in determining product strategy for selected tech companies. The questions to answer were; Are there any user experience research indicators and components that tech companies have relied on to inform their product strategy? What is the extent of influence of these user experience research indicators on the product strategy in these organisations? What is the net effect on the general performance of these tech firms? The research findings confirmed that there are UXR methods that have been used by companies to inform their product strategy and include: UXR reporting and presentation which was leading at 97.7%, followed by planning for UXR at 95.5%, then types of user research methods at 93.3% with task analysis and usability testing following at 91.1% and 86.6% respectively. 92.84% average score suggested that the various outlined independent indicators tied to UXR influence the product strategy, which in turn gives the tech firms a competitive advantage.

Based on the results of the research findings, the literature reviewed, and research conclusions, the researcher recommends a thorough investment in the UXR concept and ensures that the various

indicators of UXR (UXR reporting and presentation, planning for UXR, types of user research methods, task analysis and usability testing are well understood and linked to the product strategy at all levels of the product strategy actualization.

Further, the research recommends that the tech firms should improve in a number of planning for UXR for them to optimize the role of UXR on their product strategy, which shall in term give them a competitive advantage. The firms should work on the perspective that UXR planning is undertaken at any given lifecycle of UXR in the firms. Further, UXR should be carried out at the identification of research goals for effective strategy performance and general organizational performance. The researcher also has a recommendation indicating that planning for UXR should be effective at the design stage and well-trained expertise be recruited for better product strategy delivery.

It is also recommended that the various tech firms should come up with strategies that should strengthen various types of research methodologies including qualitative research methods for UXR, behavioural methods, and unmoderated methods for better product strategy performance. Equally, these tech firms have to work on the utilization of unmoderated usability testing in their UXR for maximum success of the product strategy.

Finally, the researcher recommended that the firms should also ensure that during task analysis, data analysis methods are differentiated effectively to make sure that the UXR adds value to the product strategy. Further, there should be periodic and continuous data analysis in UXR in this firm, and prioritization of areas of analysis be effective to ensure maximum performance of product strategy and general firms' performance. In order to achieve better product strategy performance, tech firms should ensure that UXR reporting or presentation ratifies on areas touching on clearly defined deliverables in UXR presentation/reporting, and storytelling including narrative structure is used on relevant occasions.

5.5 Limitation of the Study

The study faced time constraints in data collection and interruptions from the general elections that were being carried out in Kenya. However, the research utilized online methods of data collection like the use of Google forms, emails, etc.

5.6 Suggestions for future studies

This study could be among the newest researches taken in Kenya; meaning that more studies in the areas need to be carried out in other firms.

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APPENDICES

Appendix I: Letter of Introduction

AMON NGURE MWADIME

UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS ADMINISTRATION

TEL: +254(0)21907455

Dear Respondent:

RE: REQUEST FOR YOUR PARTICIPATION

I am a postgraduate student at the University of Nairobi, researching the ROLE OF USER EXPERIENCE RESEARCH IN PRODUCT STRATEGY FOR SELECTED TECHNOLOGY COMPANIES IN KENYA. The findings will help tech companies to come up with unique products that shall differentiate their markets and gain a competitive advantage. This study shall also help all the policy developers and makers who want to see tech companies penetrate the rich Kenyan market besides other African markets. The information gathered will be treated with the utmost confidentiality and only used for academic purposes.

The respondents are encouraged to give their honest responses to the questions or statements in the questionnaires in an objective manner. Your involvement in helping answer the questions, which is voluntary, is highly appreciated.

Yours faithfully,

Sign: …….

Amon Ngure Mwadime

Appendix II: Research Questionnaire

Kindly tick or fill in the blank spaces provided by answering all questions in each section

SECTION A: Background Information

1) What is your gender?

Male ( ) Female ( )

2) Age category.

Below 20 years ( ), 21-30 years ( ), 31-40 years ( ) above 41 years ( )

3) What is your highest level of education?

Secondary ( ) Tertiary college ( ) University graduate ( ) University postgraduate ( ) other (please specify) ( )

4) What is your work specification? ----------

5) What is your work experience?

Below 5 years ( ), 5-10 years ( ), 10-15 years ( ) above 15 years ( )

6) How much knowledgeable are you about User Experience Research (UXR) and product strategy?

Not Knowledgeable at all ( ), not knowledgeable ( ), not sure ( ), knowledgeable ( ), very knowledgeable ( )

Section B: Questions as per the Objectives

Nominal Scale Rated Questions

7 (a) Have you ever come across the following practices of UXR in your product strategy?

Practice	**Yes**	**No**
Planning for UX research		
Types of User Research Methods		
Usability Testing		
Task Analysis		
UXR Reporting/Presentation		

7 (b) If your answer to question 7(a) is yes, kindly tick whether you support the idea that the following component of UXR has a significant influence on product strategy in your firm

Practice	**Yes**	**No**
Planning for UX research		
Types of User Research Methods		
Usability Testing		
Task Analysis		
UXR Reporting/Presentation		

Likert Rated Questions

8) Below are statements that you can either agree or disagree with, kindly mark X only once in each statement. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Indicators of Planning for UX Research	**1**	**2**	**3**	**4**	**5**
i. Planning for UXR is undertaken at any given lifecycle process of UXR in this firm					
ii. There is planning in the identification of research goals					
iii. Planning is carried out in the identification of research goals					
iv. There are planning activities for gathering available data and existing insights					
v. Planning is done in the choosing the right research methods stage					
vi. Planning is effective at designing the study, putting a recruiting strategy in place					
vii. Planning is done at presenting and reporting research findings					

9) Below are statements that you can either agree or disagree with, kindly mark X only once in each statement. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements of Types of User Research Methodologies	**1**	**2**	**3**	**4**	**5**
i. Qualitative research method is used for this firm's UXR					
ii. Quantitative research method has been adopted for this firm's UXR					
iii. Generative research methods are common					
iv. Evaluative research methods are common					

v.	Attitudinal methods are used for UXR					
vi.	behavioural methods inform UXR					
vii.	Remote research methods are used					
viii.	in-person user research is common in firm's UXR					
ix.	Moderated methods are used					
x.	unmoderated methods are used					

10) Below are statements that you can either agree or disagree with, kindly mark X only once in each statement. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements of Usability Testing		**1**	**2**	**3**	**4**	**5**
i.	moderated usability testing is commonly used in UXR					
ii.	unmoderated usability testing is commonly used in UXR					
iii.	guerrilla usability testing is commonly used in UXR					
iv.	Task Analysis usability testing is commonly used in UXR					
v.	Tree Tests usability testing is commonly used in UXR					
vi.	A/B Tests usability testing is commonly used in UXR					

11) Below are statements that you can either agree or disagree with, kindly mark X only once in each statement. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements of Task Analysis		1	2	3	4	5
i.	There is periodic and continuous data analysis in UXR in this firm					
ii.	prioritizing areas of analysis is effective					
iii.	organizing the data into discrete areas of analysis is common					
iv.	data analysis methods are differentiated effectively					
v.	quantitative data is analysed differently using defined tools					
vi.	qualitative data is analysed differently using differentiated models					

12) Below are statements that you can either agree or disagree with, kindly mark X only once in each statement. The agreement scale ranges from 1-5 where 5= Strongly Agree (SA), 4= Agree (A), 3=Neither Agree nor Disagree (N), 2=disagree (D), and 1=Strongly Disagree (SD)

Elements UXR Reporting/Presentation		1	2	3	4	5
i.	There are clearly defined deliverables in UXR presentation/reporting					
ii.	Presentations are used in special occasions					
iii.	Reports are used when details are needed					
iv.	storytelling including narrative structure is used in relevant occasions					
v.	usability reports, analytics reports, and competitive analysis reports are used in reporting					