

Impact of Product Innovation on Business Sustainability: Evidence from Telecom Industry

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Abstract

Product innovation can be a positioning strategy that several firms use to inform apart their products from those of competitors. it is a process whereby firms use different marketing mix activities like product features and advertising to help the patron perceive the merchandise as being different and better than competing products. The perceived differences may involve physical features or non-physical ones like image and price. The broad objective of the study is to figure out the impact of product innovation on business sustainability. the knowledge was collected from 75 respondents out of the population of 100 using convenient sampling technique with the assistance of five-point Likert scale close-ended questionnaire distributed to staff of 20 Airtel outlets at the time of this study. Data collected were analyzed through the adoption of easy percentage and regression (Statistical Package for Social Sciences) at 5% level of significance. The result revealed that out of the three (3) independent variables tested within the course of this research work, perceived usefulness OF 4G proxy was found to possess most significant on business sustainability among staff of Airtel because it's the simplest beta value followed by LOW DATA ON 4G while easy USE OF 4G has an inverse relationship respectively. The study concludes that if the executives should add hands with the worker by identifying product innovative ideas and attributes which is able to interest prospective customers in other to bolster business sustainability.

Keywords: 4G, 3G, 2G, LTE, Product Innovation, Sustainability.

Introduction

Competition within telecommunication industry is getting harder day by day because of globalization, deregulation, increasing global and domestic competition, new technologies, and e-commerce. The firms are competing to each other for purchasers, market share and long-term survival. Customers are becoming more sophisticated, segmented and demanding, and expect more in terms of customization, newness, quality and price (Stark, 2011). Ventures survive in current conditions of market, firms within the industry must enhance their innovation

capabilities so on satisfy market demands and customer preferences to require care of a long-term competitive advantage (Panayides, 2006). Innovation assists firms to adapt to the worldwide market and to provide customized solutions to consumers. a glance at recent trends of pioneer organization show that innovation is also a necessity for long-term success, growth, sustainable performance, and to survive because the firm's industry (Cottam, 2011). Product differentiation could also be a marketing concept which was first proposed by Chamberlin in 1933, within the speculation of Monopolistic

Competition. Product differentiation is that the method by which a product is distinguished from others (competitors' products, or the firms' own products), by making it more attractive to a particular target market. (Anderson, De Palma, & Thisse, 2002). The differentiation is because of buyers perceiving a difference; therefore, the differentiation can just be made by a definite packaging, crusade, commercial or distribution chain. The difference is also made by the merchandise itself; the foremost sources of differentiation for products are: Differences within the product's functional aspects like differences in quality and Differences in price (Hoyle, 2005). In differentiation strategy, the business owners must target the segment of the market and deliver the message that the merchandise is positively different from all other similar products available. Product differentiation are often adopted to make value to customers by specializing within the value of the merchandise versus other similar products within the market. it creates a perceived value among customers and potential customers. The broad objective of the study is to appear at product innovation within the telecommunication industry by examining 4G because the innovative development within the industry. the looks of 4G is that the beginning of great point for the telecommunication industry likewise because the end-users, it'll bring benefits that will leave a legacy for years to return, it'll signal the evolution of mobile telephony to a 100% packet switched focus network, elevating data usage to levels never experienced before and also it'll provide the world wide web to achieve to corners of the world that haven't been reached before, bridging the digital divide. it absolutely was guided by the next specific objectives; to go looking out whether easy USE OF 4G promotes business sustainability; to seem at USEFULLNESS OF 4G promotes business sustainability and to evaluate how LOW DATA USAGE ON 4G promotes business sustainability within the Nigerian telecommunication industry.

Literature Review

Literature conceptualizes innovation in a very sort of ways within the literature, as a process, and outcome of both However, most of the definitions of innovation share the concept that innovation implies the adoption of a replacement idea or behavior. Literature also distinguishes differing types of innovation. The classification most extended and accepted is that the one Damanpour (2011) proposes. He distinguishes between technical and administrative innovations. Whereas technical innovations include a replacement process and new products or services, administrative innovations seek advice from new procedures, policies and organizational forms. Innovation transfer is of continuous interest within the study of multinational corporations. it's generally assumed that innovation development and also the next intra-corporate transfer will positively affect the business activities of recipient units located elsewhere .However, whilst this assumption has rendered extensive research on the efficiency and effectiveness of the transfer process few research have considered the impact on the recipient unit's business performance. Innovation can occur in three broad domains; products, processes, and organizations, and is "an idea, product or process, system or device that's gave the impression to be new a personal, a gaggle of people or firms, an industrial sector, or a society as a whole". According to Damanpour (2011), organizational innovation combines the event and implementation of latest ideas, systems, products, or technologies.

Product Innovation

As innovation is also a central concern for organizations hence managers are faced with the challenge of mobilizing the innovative potential of all varieties of employees. As these employees have a capital of tacit knowledge (Polanyi, 2006) about the assembly process, the work organization and so the merchandise design, mobilizing this data may end in workplace innovations with high returns on investments (Getz & Robinson, 2003). Human resource managers therefore face the

challenge of creating a chunk environment during which employees can develop and exploit their innovative potential. An innovation may be a thought, practice or object that's perceived as new by a non-public or other unit of adoption. For instance, in an exceedingly research distributed by Rogers (2003) the thought perceived as new in iPhone mobile, a smartphone with a sophisticated programme (mainly thanks to its touch-screen qualities). For something to be an innovation, it doesn't matter whether the thought is objectively new, but how the innovation is perceived. An iPhone may not have any truly new ideas intrinsically, but if the potential adopters perceive it as new, as an example thanks to successful marketing, then it'll be counted as a differentiation process through innovation.

Airtel Brand Strategy

Airtel came to Nigeria as Celtel. It changed hands to Zain (a wonderful world) and later to Airtel. The change in brand had strategic significance. It absolutely was a growth strategy to grow the brand globally to comprehend competitive advantage and to enjoy economies of scale. Airtel Nigeria has greatly benefited from this (Chinula, 2012). Airtel is now a world brand ranked 5th within the globe in terms of subscriber base. Its main focus in Nigeria is on the low-income population with emphasis on the youth. This age of telecommunication is categorized by ability of individuals to be able to have free and instant access to information; this is often often mentioned as being the digital or epoch (Wikipedia). This is often often the age of the online and social network, where people are constantly connected to applications that allow them to instantly communicate to a minimum of each other, through the use of information services, during this age, people want to be able to make video calls, send multimedia messages, watch videos or TV over the online, send emails, do online research etc. and most importantly people want to be connected anytime, anywhere and 4G is anticipated to provide that to the tip users 4G is that the 4th generation mobile

communication standard developed by the 3GPP (3rd Generation Partnership Project), proceeded by 3G or UMTS. It viewed because the subsequent big step within the mobile evolution towards some way forward for universal broadband. The 4G standard is laid move into the International Mobile Telecommunications Advanced (IMT-advanced) it's expected to provide a peak speed of 100 Mb second in places like cars and trains and 1 GB per second for stationary users.

Business Sustainability

Sustainability is vital for organizations to run their business, and diverse studies revealed factors that have a possible effect on sustainable operations. As sustainable innovation becomes an important topic within the sphere of innovation, the results of sustainable innovation on firm performance has been one of the foremost research dimensions. Because sustainability may well be a broad concept and encompasses not only environmental issues but also social issues, sustainable innovation has been measured in various ways. Most of the researches have focused on preventing the negative impact on environment as sustainable innovation, while several researches have extended its scope to material and energy reduction, or even to social responsibility. Though most of the studies revealed the positive effect of such sustainable innovation, Baker and Sinkula (2005) showed that environmental marketing doesn't directly related to the market share. Moreover, Ghisetti and Rennings (2014) puzzled out that innovations that are related to externality reduction, like reducing air, water, pollution, and harmful materials, encompasses a negative effect on firms' competitiveness. To sum up, though the effect of sustainable innovation on firm performance has been investigated, the effect of sustainability as motivation of innovation remains unanswered. More importantly, while literature on innovation keep emphasize on the importance of measuring the efficiency of it considering input and output together, studies on sustainable

innovation is yet to contemplate the efficiency, but rather the performance itself.

Theoretical Literature:

The Theory of Consumer Behavior

The change in consumers' products and services preferences and their other ways of buying produces the study of consumer behavior. The thought of consumer behavior aims at having knowledge on how consumers will behave within the long run, especially as a result of experience and knowledge influencing their buying decisions (Lamb, Hair & McDaniel 2008). There are three components within the model of consumer behavior namely, individual factors, social factors and also the acquisition situation. These components influence the consumers' decision to buy for or to not buy a product or service. Theory of Reasoned Action (TRA) TRA was developed by Fishbein and Ajzen in 1975. The thought was derived from scientific discipline, particularly from previous research that started off because of the speculation of attitude, which led to the study of attitude and behavior. It is considered to be one of the foremost fundamental and influential theories used broadly to predict and explain human behavior in various domains (Venkatesh, Morris, Davis, & Davis, 2003). Research has shown that TRA can successfully predict and/or explain a person's behavioral intentions during a variety of consumer-based contexts (Fishbein & Ajzen, 1975), including innovation adoption behaviors. The model Theory of Planned Behavior (TPB) Theory of planned behavior was propounded by Ajzen Theory of Planned Behavior (TPB) is an extension of Ajzen and Fishbein's TRA Model (1975). TPB includes the construct of perceived behavioral control, defined as 'the perceived ease or difficulty of performing the behavior (Ajzen, 1975) to beat the primary model's limitation in addressing behaviors over which individuals have incomplete volitional control (Ajzen, 1975). Ajzen (1975) revises TRA and proposes the inclusion of a third determinant of behavioral intention; perceived behavioral control. Keep with Theory of Planned

Behavior (TPB), behavior is about by the intention to perform the behavior. The behavior itself is about by three factors: attitude toward the behavior, subjective norm, and perceived behavioral control (Mathieson, 1991).

Diffusion of Innovation Model

Diffusion of Innovation theory was propounded by Rogers (2003). Diffusion of Innovation theory is also a theory of communication and adoption of recent ideas and technologies (Rogers, 2003). Rogers (2003) defined innovation as "an idea, practice, or object that's perceived as new by a non-public or other unit of adoption". Rogers (2003) defined diffusion as "the process by which an innovation is communicated through certain channels over time and among the members of a structure." In other words, the diffusion of innovation evaluates how, why, and at what rate new ideas and technology are communicated and adopted. Rogers (2003) identified five factors that strongly influence whether or not someone will adopt an innovation. These factors are: relative advantage, complexity, compatibility, trial ability and observability.

Empirical Literature

Hashim (2014) administered a descriptive research to identify the determinants of customer loyalty among subscribers of world system for mobile (GSM) communication in north-western Nigeria. This study adopts survey research approach, and using logistic regression model, there's evidence to suggest that perceived price fairness doesn't affect customer loyalty in northwestern Nigeria. Additionally, this study discovered that the foremost important factors influencing whether a GSM subscriber will report brand loyalty are; perceived service quality, perceived brand image, and perceived customer satisfaction. Faniran and Odumeru (2015) conducted a study on Acceptance of information technology in Nigeria. The results of this study have some implications to m-banking policy formulation and implementation. It also throws more light into what should be done to reinforce

m- banking adoption rate in Nigeria. Diaw&Asare (2018) examined the effect of innovation on customer satisfaction within the telecommunication industry which is extremely competitive in Ghana. Product and repair innovation is believed to be the key in satisfying and retaining customers. Data were collected using questionnaire to 150 customers of MTN, Vodafone, Tigo-Airtel, Glo, and Expresso. Data analysis tools were employed to assess the link between variables (dependent and independent). an enormous positive relationship was found between innovation and customer satisfaction and retention. The study also found that marketing innovations introduced in recent years has been a significant determinant in customer satisfaction and retention. Kyei and Bayoh (2017) examined the effect of innovation on customer retention within the telecommunication industry in Ghana. The result shows that there is positive and significant relationship between innovation and customer retention. The study also discloses that service innovation, process innovation, and marketing innovation were the key determinants of customer retention. The study found service innovation to be an enormous chief driver of customer retention and business sustainability.

Methodology

Quantitative research method was employed to determine the connection innovation and business sustainability within the Nigerian telecommunication sector. A cross sectional data was collected from 20 Airtel outlets at the time of this study. Convenience sampling technique was employed for the study. Self-administered questionnaires for Airtel staff were accustomed collect data from respondents. By employing a self-administered questionnaire, respondents could easily respond with the researcher’s limited aid. the use of this kind of questionnaire also facilitated data collection. The distribution and collection process lasted for two weeks. In all, 100 staffs were approached and 100 participated but 75 valid questionnaires. Data was collected employing a structured questionnaire supported

Likert-style five-point rating scale ranging from 5 (strongly disagree) to 1 (strongly agree), which sought to elicit information on product innovation variables business sustainability. All the items intended to measure product innovation (independent variable) were adapted from previous literature (Lin, Chan, and Chiu, 2010). The quantity (business sustainability) was adapted from Ndubisi, (2007).

Model Specification and Estimation Technique

The model was adopted from the work of (Ibe, 2013) was used to achieve the stated objectives. The function for this study is given as:
 $Y = f(b_0 + b_1 + b_2 + b_3 + e)$

To be estimated as:

$$BSV = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e \dots \dots \dots (i)$$

Where: (BS) representing the dependent variable;

BSV= Business Sustainability Value

b_0, b_1, b_2, b_3 ; are regression coefficients or parameters;

X_1, X_2 and X_3 ; are independent variables;

X_1 = ease of use

X_2 = usefulness

X_3 = low data usage

Data Analysis and Interpretation:

Interpretation of Regression Results

According to the research model summary in Table1, the coefficient of determination or correlation (R) gives a positive value of 0.605; this implies that there is a correlation between the dependent variables (business sustainability value) and also the Independent variables (ease of use, usefulness and low data usage). This implies that the business sustainability is measured by the

coefficient are often explained by any changes within the of those independent variables as specified above. The coefficient of multiple determinations (R2) is also a little of the complete variation within the variable that's explained by the variation within the independent variables. From the results obtained, R2 is adequate 0.642;

this implies that there is a mild linear relationship between the business sustainability and also the Independent variables (ease of use, usefulness and low data usage), while the remaining 39.45% is accounted for by some factors not per the research model i.e. the presence of dissonance, error term or variable quantity.

Table 1: Model Summary
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.605 ^a	.642	.684	3.28240	.1.70

Source: Author’s Computation (2019)

- a. Predictors: (Constant), EAS_USE, US_FUL, LOW_DAT
- B. Dependent Variable: SUSTAINABILITY_VALUE

Analysis of Variance (ANOVA)

Table2: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	63.777	4	15.944	1.480	.212 ^b
	Residual	1454.509	135	10.774		
	Total	1518.286	139			

Source: Author’s Computation, (2019)

- a. Dependent Variable: SUSTAINABILITY_VALUE
- b. Predictors: (Constant), EAS_USE, US_FUL, LOW_DAT

ANOVA is used to test whether there is a significant linear relationship between the dependent variable and explanatory variables. The F test is used to test the overall significance of a model by comparing the F-calculated with the F-

tabulated. The test is conducted on a tailed test. The hypothesis for the test is formulated as:
H₀: There is no overall significance in the research model

H₁: There is overall significance in the research model

H₀ and reject H₁, at 10% significance level (obtained from statistical table).

Decision Rule: If F-calculated > F-tabulated, accept H₁ and reject H₀ and if F-cal < F-tab, accept

Table 3: Summary of F-test

F-calculated	F-tabulated	H ₀	H ₁	Remark
20.571	2.45	Reject	Accept	Significant

Source: Field Survey, (2019)

From the table above, the F-calculated gives a value greater than the F-tabulated. Hence, we reject H₀ (null hypothesis) and Accept H₁

(alternative hypothesis). Thus, it signifies that the overall research model for this study is statistically significant.

Interpretation of Coefficients

Regression Coefficients

Table 4: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	11.680	3.326		3.512	.001
EASE OF USE	-.131	.125	-.092	-1.046	.029
USEFULNESS	.123	.105	.099	1.169	.024
LOW DATA USAGE	.163	.112	.130	1.446	.015

Source: Field Survey, 2019

- a. Dependent Variable: Employee Performance
- b. Predictors: (Constant), EAS_USE, US_FUL, LOW_DAT

From the Table 4, all the parameters have their coefficients shows a figure but unitary i.e. 1 except easy use which shows a Negative figure. The constant parameter also shows a stronger positively value related to the variable. The constant coefficient gives a positive value of 11.680 implying that if all explanatory variables

are at zero level, that is, when held constant within the short run, the variable (sustainability value) will increase by 11.680. The beta coefficient of easy use shows a Negative value of 0.131, which suggests that a unit increase in easy use will decrease the sustainability value. Usefulness provides a positive value of 0.123, implying

increase in activities which will develop businesses also will increase the sustainability of business. The coefficient of low data usage also shows a positive value of 0.163, implying that stable low data cost of 4g networks will contribute and cause business sustainability.

Test for the Significance of Parameters (T-test)

The T test could also be a two tailed test accustomed test the statistical significance of parameters. The condition for statistical

significance is that T-calculated must be greater than T-tabulated. The T-tabulated as obtained from the array is 2.000, or when their respective probability value attached with the T-cal may be a smaller amount than 0.05 at significant level. Table 4 revealed that every proxy the explanatory variables are statistically significant because their respective Probability value but 5% at significant level, it may be concluded that every proxy the questions constructed are significant enough to underpin the research hypothesis.

Table 5: Summary of T-test

Variables	T calculated	Probability Value	Remark
Constant	3.512	.001	Significant
Ease of use	-1.046	.029	Insignificant
Use_Ful	1.169	.024	Significant
Low data usage	1.446	.015	Significant

Summary of Findings

The study assessed the impact of product innovation on business sustainability within the telecom industry. The correlation (R) with a price of 0.602 showed a correlation between quantity and also the Independent variables. The coefficient of multiple determination (R²) with a price of roughly 0.642 showed that everyone the independent variables explained up to 64% of total variation within the advance within the business sustainability measured by the influence of product differentiation (ease of use, usefulness and low data usage), while the remaining 39.5% was accounted for by factors not per the research model. The test for autocorrelation showed that there is no conclusion on whether there's the presence or absence of autocorrelation or serial correlation within the research model. The F-test showed that the final model was statistically significant in capturing the link between sustainability value as variable and also the independent variables within the study are easy use, usefulness and low data usage. The results of the statistical method showed that everyone the

regression parameters were positively related to the variable except easy use, which is that the surrogate for the variable within the study. The T-test indicated that the independent variables are statistically significant in explaining the quantity of business sustainability.

Conclusion

The crux of this treatise is to assess the impact of product innovation on business sustainability within the telecom industry. Judging from the result obtained, it's going to be concluded that every one product innovation variables tested within the study were significant to business sustainability except simple use that was insignificant. In light of the findings of this study, it's of cognizance to recommend policy measures to further enhance the impact of product innovation on business sustainability within the telecom industry. The following recommendations among others were made: The executives should add hands with the worker by identifying product innovative ideas and attributes which will interest prospective customers in other to bolster business sustainability. Programs and seminars should be

organized frequently to remain business active so on define attributes that customers value which boost their performance value.

References

- Anderson, De Palma, & Thisse, (2002). Social Capital: Prospects for A new Concept. *Academy of Management Review*, 27 (1), 17-40.
- Baker, F., & Sinkula, H. (2005). Business ethics as competitive advantage for companies in the globalization era.
- Cottam, J. (2011). The dynamics of product innovation and firm competences. *Strategic Management Journal*, 23(12), 1095-1121.
- Chinula, R.N. (2012). An Exploratory Study of Business Students' Discretionary Social Responsibility Orientation. *Small Business Institute® Journal*, 1(1). 23-34.
- Damanpour, G. (2011). Evolutionary and Competence Based Theories of the Firm. *Journal of Economic Studies*, 25,
- Diaw, O., & Asare, B. (2018). Is the Resource Based View a Useful Perspective for Strategic Management Research? Yes. *The Academy Management Review*, 26(1), 41-56.
- Faniran, G., & Odumeru, S. (2015). Creating a Competitive Advantage by Building Resource Capability: The case of Outback Steak House, Korea. *Cornell Hospitality Quarterly*, 49, 73-78.
- Fishbein M, Ajzen I (1975). Belief, Attitude, Intention and Behavior Reading: An Introduction to Theory and Research, Mass: Addison Wesley.
- Getz, D. & Robinson, J. M. (2012). Institutional Context, University Industry Collaboration, Human Resource Development Infrastructure and Performance of Universities in Kenya. *Unpublished Doctoral Thesis*. Nairobi: University of Nairobi.
- Ghisetti, M., & Rennings, D.F. (2014). Uncertain Irritability: An Analysis of Inter Firm Differences in Efficiency under Competition. *Bell Journal of Economics*, 13, 418-438. <http://dx.doi.org/10.2307/3003464>
- Hashim, G. (2014). Adopting a specific innovation type versus composition of different innovation types Case study of a Ghanaian bank. *International Journal of Bank Marketing*, 30(3), 218-240.
- Hoyle, J. (2005). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.
- Ibe, J. (2007). The Effect of Core Competence Building on Company Performance. *The Journal of High Technology Management Research*, 11(1), 75-91.
- Kyei, K., & Bayoh, B. (2017). Organizational Antecedents of Second Order Competences. *Strategic Management Journal*, 29(5), 519-543.
- Lamb, D., Hair, G., & McDaniel, K., 2008 (2006). *Business Ethics as Competitive Advantage for Companies in the Globalization Era*. Retrieved March 25, 2018, from Available at SSRN: <https://ssrn.com/abstract=1010073> or <http://dx.doi.org/10.2139/ssrn.1010073>
- Ndubisi, A. (2007). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 4(2), 147-160.
- Polanyi, R. (2006). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135.
- Rogers, G., Elston, J. & Garside, R. (2003). The harmful health effects of recreational ecstasy: A systematic review of observational evidence. *Health Technol Assess* 13: 1-315.
- Stark, D. (2011). Corporate Environmental Strategies and Actions. *Management Decision*, 39(1), 36-44.
- Venkatesh, V. Morris, M.G. Davis, F.D & Davis, G.B. (2003). User Acceptance of Information Technology: Towards a Unified View. *MIS Quarterly (online)*, 27(1): 425-478