EFFECT OF INNOVATION ON CUSTOMER SATISFACTION AND CUSTOMER RETENTION IN THE TELECOMMUNICATION INDUSTRY IN GHANA: CUSTOMERS' PERSPECTIVES

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ABSTRACT

The study examines on the effect of innovation on customer satisfaction in the telecommunication service industry which is highly competitive in Ghana. Product and service 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 relationship between variables (dependent and independent). A significant 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 major determinant in customer satisfaction and retention. The study recommends that telecommunication companies should invest in providing innovative services by researching current trends in order to forecast products and services.

Keywords: Innovation; Customer Satisfaction; Customer retention; Ghana Telecommunication Service Industry.

INTRODUCTION

Considered one of the most important and vital sector of Ghana's economy, the telecommunication industry has received an intense amount of attention over the few years. Telecommunication is the main economic sector of Ghana due to Ghana Liberal Policy around information and communication technology. Among the main sector of investment, 65% is for ICT,8% for communications and 27% is divided for public administration (Ghana, Internet usage and telecommunications,2013)

Due to e-commerce, globalization, and new technologies, competition within the Ghana telecommunication industry is getting tougher day by day.

Ghana Telecom founded in 1974 and headquartered in Accra was the only provider of telephone services until the market liberation period (1997-2007) where Westel limited was introduced into fixed line market, Spacefon, Celltell and Mobitel all introduced into the cellular telephony market. Recently, from the beginning of 2011 up to date, policy is directed to consumer protection and projects such as Mobile Number Portability and SIM Card Identification has been rolled out (Osei-Owusu,2015). In 1996, the National Communication Authority was established under the Communications Act of 1996, Act 524, to regulate communications by wire, cable, radio, television, satellite and similar means of technology for the orderly development and operation of efficient communications services in Ghana. The mobile telecommunications market in Ghana dominated by MTN Ghana. MTN Ghana continues to lead Ghana's Telecommunications mobile voice market as at December, 2015, Telecoms Regulator, NCA (National Communications Authority) has revealed. MTN Ghana

maintained a commanding lead, followed by Vodafone, with Tigo in third place. At the end of December 2015, the total number of mobile voice subscribers had increased from 34,400,153 in November 2015 to 35,008,387. The total penetration rate for the month under review was 127.63% (National Communications Authority, 2015).

RESEARCH OBJECTIVES

A lot of researches have been conducted to the assertion that innovation in terms of service or product increase profit, increase customer base and retain customers. This study will look much into the relationship of innovation and customer satisfaction and retention. Customers are becoming more sophisticated, segmented and demanding, and expect more in terms of customization, newness, quality and price (Stark, 2011). In order to survive in current conditions of market, firms within the industry must enhance their innovation capabilities in order to satisfy market demands and customer preferences to maintain a long-term competitive advantage (Panayides, 2006). Fair competition forces the three competitive mobile service providers to promote, innovate and differentiate their products and services in order to win first-time mobile users, to draw customers away from their rivals, and to retain their current customers. As a consequence, customer satisfaction has emerged as a major retention factor (Cronin, Brady, & Hult, 2000).

In order to maintain a competitive advantage, telecom manufacturers have to innovate through the use of their R&D departments (Ojanen & Vuola,2006), and such innovations have to be taken into account the market, technology and management (Popadiuka & Choob,2006).

Two main objectives of the study are
1. To determine the impact of innovation on customer satisfaction
2. 2. To find the impact of innovation on customer retention

LITERATURE REVIEW
Innovation
Schumpeter (1995) defined innovation as encompassing the entire process, starting from a kernel of an idea continuing through all the steps to reach a marketable product that changes the economy. Technological innovation in telecommunication industry will involve management of innovations strategy, research and development, design and new product, service development, operations and value service delivery. These are both internal and external drivers of innovations.

An innovation is also defined by the Oslo manual (OECD, 2005) as a product, process, marketing method or organizational method that is new(or significantly improved) to the firm, including products, processes and methods that firms are the first to develop and those that have been adopted from other firms or organizations.

Innovation can be defined as a new and original idea that successfully resolves a problem or improves existing product. Innovation deals with processes, products, services and technology. Cummings (1998) stated that innovation management processes can either be linear or continuous .In the business environment innovation is understood to be a catalyst to growth as it provides unique products and services to consumers. (Dodgson et al., 2008) suggest that innovations are essential for a firm to remain in business.

Types of innovation

The *Oslo Manual* for measuring innovation defines four types of innovation: product innovation, process innovation, marketing innovation and organizational innovation.

- Product innovation: A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics.

- Process innovation: A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

- Marketing innovation: A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

- Organizational innovation: A new organizational method in business practices, workplace organization or external relations. (Oslo Manual, 2005)

Figure 1 Types of Innovation
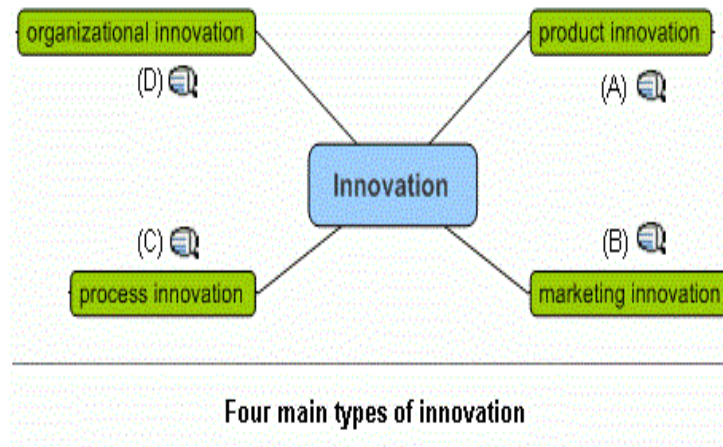
Source (Oslo Manual, 2005)

Customer satisfaction and retention

Customer satisfaction and retention are incredibly important for growing a sustainable business in an extensively competitive environment. Marketers are becoming more aware that it is more cost effective to make sure customers never get on the exit path to competitors in the first place and are implementing retention strategies (preemptive and proactive).

Tsai and Hsu (2014) mentioned that customer satisfaction was caused by the comparison between customers' pre-expectation of products or services through past purchase experiences and the current purchase experience.

Anderson et al. (2004) also mention that customer's eagerness to pay more and positive word of mouth for a particular brand establishes levels of satisfaction. They also argue that if a business cannot satisfy customers efficiently and proficiently against its competitor(s), it can lose its market share. The term of customer satisfaction is used for evaluation either a good or service provided by any business may make customer happy/pleased or not (Nemati, Khan & Iftikhar, 2010). Kotler and Keller (2009) define satisfaction as "a person's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his/her expectations". This definition is supported by many other studies, for

example, Tse and Wilton (1988) and Oliver (1997). Others define customer satisfaction as the feeling or attitude of customers toward a product/service after it has been used (Solomon, 1996; Wells & Prensky, 1996; Hansemark & Albinsson, 2004).

Ghana Telecommunication service industry
Allotey and Felix (2000), trace the history of telecommunication in Ghana to the pre-colonial period when the first telegraph line in Ghana, (then the Gold Coast), was a ten mile link installed in 1881 between the castle of the colony's then governor in Cape Coast and Elmina. In 1882, the first public telegraph line, stretching over a distance of 2.5 miles, was erected between Christianborg and Accra.Consequently, the telecommunication sector was reformed in addition to other state managed corporations (Frempong, 2002). Currently, there are five major competitors in Ghana's mobile telecommunications industry, namely MTN, Vodafone, Tigo-Airtel, Expresso and Glo. As stated by Koi-Akrofi (2013), some of the entrants by virtue of rebranding, acquisitions and mergers have changed in shareholding structure and name.

Innovations in Mobile telecommunication Services
4G Emergence
In June, 2013, three wholly Ghanaian-owned companies - Surfline Communications Limited, Blu Telecom Limited and Goldkey Telecoms Limited - were given Broadband Wireless Access (BWA) licenses on the 2500- 2690 MHz spectrum band, which is suitable for 4G LTE (Long Term Evolution) at a cost of US$6million each (Dowuona, 2014)

Mobile Money Transfer
Mobile Money is a fast, simple, convenient, secure and affordable way of transferring money, making payments and doing other transactions using a mobile phone. The service is offered by MTN, Tigo-Airtel, Vodafone and Expresso in partnership with partner banks. You can use Mobile Money services to send and receive money, top-up airtime, pay bills (DStv, ECG Postpaid, Postpaid, School fees and more), buy & pay for insurance, pay employee salaries, pay for airline tickets and other goods and services. No need to travel far or wait impatiently to receive or send money. Register with a valid photo ID today and enjoy the ease and convenience Mobile Money offers

Mobile Number Portability
Due to incessant complaints by subscribers who were appalled by the poor quality of service, the National Communications Authority, introduced the Mobile Number Portability (MNP) facility into the country's telecom sector on 1st July, 2011 with the view to offering subscribers the choice in their mobile life (Boah-Mensah, 2012b) making it a permanent part of the telecoms landscape in Ghana (NCA 2012).

Bulk Messaging
The Bulk SMS service is a reliable and cheap message delivery platform that allows businesses and Bulk SMS re-sellers connect to the SMS gateway and send SMS in bulk to their clientele via telecom service providers through secure and reliable connection. With Bulk SMS service, customers can send SMS over a fast and secure connection from their own systems and servers. This service will cater to customers' needs for SMS broadcast in areas such as awareness/campaigns, result notifications, product advertisement and so on.

Gps Vehicle Tracking

With MTN Vehicle Tracking Service, all your locating and monitoring problems have become a thing of the past. The quality of the service and the durability of the products are outstanding. Our unbeatable product and our service costs makes the service number one choice for all your vehicle and personal tracking needs. You can be one of our most cherished client by subscribing to be part of this excellent family as we press forward in making Ghana the gateway to tracking in West Africa (MTN, 2017).

Conference call

It is available in Vodafone post-paid connection and prepaid connection. If a customer has a Call Conference facility, then he can connect with five other people. Thus a conference can take place with six people including the originator.

METHOD

This study employed quantitative research method to determine the relationship between service innovation and customer satisfaction and retention in the Telecommunication service industry in Ghana. Questionnaires were administered to 200 mobile service users in Greater Accra Region of Ghana. These respondents were randomly selected using convenience sampling method since it is impossible to reach out to all mobile telecommunication service users. Distribution and collection of responses covered a period of one week. 250 questionnaires were distributed but 150 out of the 250 were valid. The questionnaire used likert-style five-point rating scale ranging from 5 (strongly agree) to 1 (strongly disagree). The questionnaire helped to elicit information on service innovation and customer satisfaction. Descriptive statistics such as mean and frequencies, correlation and multiple regressions were used to analyze the data collected. The correlation and multiple regressions were used to analyze the relationship between innovation and customer retention.

DATA ANALYSIS AND DISCUSSION

This chapter presents the results of the study and discusses the findings. It used frequency tables and percentages to analysis the results.

Table 4.1 shows the background information of the respondents. It was revealed that 56.7% were males and 43.3% were females. 50.7% of the respondents were between the ages of 25-35years and this represent majority of mobile users in Ghana. It was followed by people below 25years, 27.3%, 36-45years 16.7%, 46-55years were 3.3% and 56 years and above were 2.0%

Concerning educational background of respondents, 38 respondents representing 25.3% were WASSCE holders, 8% were technical or vocational certificate holders, 25.3% were diploma holders, 30.0% representing the highest among the respondents were bachelor degree holders, 9.3% were post graduate and 23 respondents representing 15.3% were have non-formal education.

The data also revealed the type of network or telecommunication that respondents subscribed, it was found that 70 of the respondents representing 46.7% were MTN, 28.7% were Vodafone, 16.0% were AIRTEL/TIGO, 4.7% were also GLO and 4.0% were EXPRESSO. This confirmed the literature that MTN is the leading telecom in Ghana followed by Vodafone.

A further attempt was made to know the number of years subscribers' have used the type of Network Company. Subscribers who have been with their respective company below 5 years were 24 representing 16.0%, 5-10 years were 28.7%, 11-15years were 50%, 16-20 years were 2.7% and above 21 years were 2.7%. This shows majority have use their mobile number for between 11 to 15 years in the telecommunication industry.

Table 1.1 Background Information

Background of Respondents	Frequency	Percentage (%)
Gender of Respondents		
Male	85	56.7
Female	65	43.3
Total	150	100
Age of Respondents		
Below 25 years	41	27.3
25-35 years	76	50.7
36-45 years	25	16.7
46-55 years	5	3.3
56 and above	3	2.0
Total	150	100.0
Qualification of Respondents		
WASSCE/SSCE	12	8.0
Technical / Vocational	18	12.0
Diploma	38	25.3
Bachelor Degree	45	30.0
Post Graduate	14	9.3
Non-Formal Education	23	15.3
Total	150	100.0
Type of Mobile Network		
MTN	70	46.7
VODAFONE	43	28.7
AIRTEL/TIGO	24	16.0
GLO	7	4.7
EXPRESSO	6	4.0
Total	150	100.0
Years of using the network service		
below 5 years	24	16.0
5-10 years	43	28.7
11-15 years	75	50.0
16- 20 years	4	2.7
above 21 years	4	2.7
Total	150	100.0

Table 1.2 illustrates the types of innovation in the telecommunication industry in Ghana. The innovation was grouped categorically. It was found that 137 out of 150 respondents said yes in favour of product innovation, this represents 91.3%, service innovation 92.7%, technology 92.7%, marketing innovation 98.0% and administrative innovation was 88.7%. This indicates the tremendous improvement in the telecommunication industry in Ghana.

Table 1.2 Types of innovation

Innovation	Frequency	Percent
Administrative innovation		
Yes	133	88.7
No	17	11.3
Total	150	100.0
marketing innovation		
Yes	147	98.0
No	3	2.0
Total	150	100.0
technological innovation		
Yes	139	92.7
No	11	7.3
Total	150	100.0
service innovation		
Yes	139	92.7
No	11	7.3
Total	150	100.0
product innovation		
Yes	137	91.3
No	13	8.7
Total	150	100.0

Relationship between innovation and customer satisfaction

The purpose of the study is to determine the effect of innovation on customer satisfaction in the telecommunication industry. The result shows that there is positive and significant relationship between innovation and customer retention. In other words, the study found innovation to be a key determinant or antecedent for customer retention. The regression table indicated a strong relationship between innovation and customer satisfaction. From table 4.3, it could be observed that R Square of .068 (68%) of were obtained meaning that customers mostly derive satisfactions from innovation of the firms. The results showed the overall consistency of findings with the model and previous studies conducted on related topics (Therrien et al., 2011; Gunday et al., 2011; and Artz et al., 2010).

Table 1.3. Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.261[a]	.068	-.028	.76514

In table 1.4, F-statistic value of 0.707 was obtained implying that there is a significant relationship between innovation and customer satisfaction. In other words, innovation of the telecommunication companies influenced customer retention.

Table 1.4 Regression ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.798	14	.414	.707	.764[b]
	Residual	79.035	135	.585		
	Total	84.833	149			

Table 1.5 Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.875	1.072		3.613	.000
	happy with service process	.086	.076	.106	1.124	.263
	trust network provider	.022	.098	.021	.220	.826
	uninterrupted services	.044	.088	.047	.500	.618
	access to employees	.136	.082	.151	1.659	.099
	easy to make enquires	.007	.080	.008	.087	.931
	employee relationship	-.048	.092	-.049	-.519	.604
	network charges	.052	.081	.057	.644	.520
	enjoy free credit at times	.028	.084	.031	.334	.739
	enjoy free internet bundle	.168	.091	.180	1.845	.067
	call and data packages	-.027	.088	-.027	-.304	.762
	i get service everywhere	-.058	.089	-.058	-.654	.514
	access to office branch	.008	.079	.011	.106	.916
	proximity to office branch	.026	.075	.032	.355	.723
	mobile money process	.021	.083	.023	.251	.802

a. Dependent Variable: Innovation (at Significant of .000)

From the table 1.5, it could be observed that *happy with the network process* was the leading factor customers are satisfied with in the telecommunication industry a significant rate of 0.86. This was followed by the network charges, 0.52.

Effects of innovation in Ghana telecommunication industry on customers' retention.
The study found out the relationship between telecommunication innovation and customers retention. Satisfaction somehow differ from retention, not all satisfied customers intend to stay or subscribed to a network. The study further to find out the relationship between innovation in the telecommunication industry and rate which customers will remained in the industry. A Pearson Correlation was used to analysis this relationship. Pearson Correlation test was conducted and the results are shown in Table 1.6. It is explicit from the table that, testing at 1% level of significance, a strong positive Pearson correlation coefficient of 0.51 (51%) was obtained between innovation and customer retention. This means that innovation help to retain customers in the industry.

Table 1.6 Correlations between innovation and retention

		Innovation	Retention
Innovation	Pearson Correlation	1	.051
	Sig. (2-tailed)		.535
	N	150	150
Retention	Pearson Correlation	.051	1
	Sig. (2-tailed)	.535	
	N	150	150

DISCUSSION OF RESULTS

The aimed to determine the kind of innovation that exist in the Ghanaian telecommunication industry and its impact on customers' satisfaction and retention. The background data revealed that 46.7% were MTN, 28.7% were Vodafone, 16.0% were AIRTEL/TIGO, 4.7% were also GLO and 4.0% were EXPRESSO. This confirmed the literature that MTN is the leading telecom in Ghana followed by Vodafone. Also, 50% of the Ghanaian subscribers have used their mobile numbers between 11-15years.

In terms of innovation advancement in the telecommunication industry, marketing innovation was keen among the rest. This was due to the fact that the network companies are many therefore attractive selling strategies are used to attract and retain customers. It is argued here that innovation is still important for firms to remain competitive. The lack of innovation at the firm level will result in firms losing market opportunities, market share, and earnings potential. Again, inadequate innovation will likely experience a declining competitive position in the market and, ultimately, weakening performance (Auken & Madrid-Guijarro, 2008). Auken and Madrid-Guijarro, (2008) also asserted that firms that develop innovative practices will be better positioned against their competitors in the market and have the opportunity to achieve strong customer retention.

Marketing innovation also proved to be a strong determinant of customer retention. The existence of a link between marketing innovation and customer retention is supported by several authors who believe that marketing innovation is easily perceived by customers, therefore, making firms more willing to invest in it (Gordon, 2006).

Also, service innovation 92.7% and technology 92.7% and administrative innovation was 88.7%. This indicates the tremendous improvement in the telecommunication industry in Ghana. Telecommunication should highly concentrate on service innovation since service innovation has been found in this study to be a chief driver of customer retention. This means customers can feel the value of quality service and service innovation from their providers. Service innovation has a direct effect on customer retention when the innovation was applied to enhance the quality of service.

This confirms the findings of prior studies conducted by Dotzel, Shankar and Berry, (2013) about service innovativeness and customer retention. The findings of the study add to findings of who established that service innovation was oriented toward improving the features and functionality of existing services or creating wholly new services and in this way firm can reinforce their competitiveness and increase their profitability

When customers are mostly satisfied, they are likely to be retained. The F-statistic value of 0.707 Regression Anova proofed the significant level. At a constant significant of .000, *happy with the network process* was the leading factor customers are satisfied with in the telecommunication industry with a significant rate of 0.86. This was followed by the network charges, 0.52. This implies that telecommunication industry should pay attention to charges or price of their products and process innovation. From the regression coefficient tables almost all the items were highly important. This suggests to the telecommunication firms to pay attention to such items.

A relationship between customer satisfaction was known in Table 4.7 using Pearson Correlation It is explicit from the table that, testing at 1% level of significance, a strong positive Pearson correlation coefficient of 0.51 (51%) was obtained between innovation and customer retention. This indicates the extent at which innovation affects customers' retention rate. Customers continue to stay in the Ghana telecommunication industry depending on the satisfaction due to innovation they derive. This findings show similar studies on customer satisfaction previously conducted. (Simon & Yaya, 2012; Rosli & Sidek, 2013; Atalay, Anafarta & Sarvan, 2013; Therrien et al., 2011; Gunday et al., 2011; and Artz et al., 2010).

CONCLUSION

Increasing emphases on innovation in recent times and customers satisfaction have directly created business opportunities for Telecommunication Industry in terms of customer retention. In order to attract and retain more customers to surpass competitors, the innovation capability must present uniqueness and be able to match customer needs. The study has indicated that the dimensions of innovation can predict customer retention, at least in the telecommunication industry of Ghana. There is a proof from this study that customers are satisfied and can be retained when attention is paid to marketing innovation, service and technological innovation. From the results of the study, the objectives of the research have been achieved. There is a an undeniably positive relationship between innovation and customer satisfaction and retention. The greater the extent of variables, the greater the extent of customer satisfaction and retention.There is an empirical evidence for the effect of innovation on customer satisfaction. While most studies concentrated on the manufacturing sector, this study has added to the literature on innovation in service industry and has deepened the acceptability and applicability of the concept of innovation of any form.

RECOMMENDATIONS

The study recommends that the regulators in the telecommunication industry should create an enabling environment that will enhance innovations or all forms so that firms which operate in the sector will realize the full benefits of innovation. The study also recommends that all firms in the telecommunication sector in order to attract, satisfy and retain customers should embrace innovation in marketing, service and technology.

Further studies should be done to examine the effect of service innovation on customer satisfaction and retention.

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