

INFLUENCE OF INFORMATION TECHNOLOGY INFRASTRUCTURE ON MARKETING EFFECTIVENESS OF BANKS OPERATION IN GHANA

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ABSTRACT

Information technology infrastructure (ITI) as key element in economic development has changed the face of banking in terms of operations, quality delivery of service and productivity of service. The banking sector has benefited substantially from ITI in strengthening their competitiveness. This paper empirically attempt to examine if information technology infrastructure ITI influences marketing effectiveness in Ghana commercial banks. But the study specifically evaluated the influence of ITI on customer satisfaction and competitive advantage of effectiveness marketing (ME). The researchers' adopted simple random sampling and judgment sampling in selecting 10 banks which represents the 21 banks in Ghana. The researchers' systematically selected 100 staff from the 10 banks as the sample size of the study. The five point Likert scale was used in framing the questionnaire instrument for ITI and ME, thereafter a total of 100 instruments were distributed and 80 copies of the instrument were retrieved. The researchers' used Spearman's rank order correlation coefficient to analyze the data related to ITI and ME with the ease of Statistical Package for Social Sciences (SPSS). The study revealed that the two constructs of ITI: which are connectivity and flexibility impact on the two construct of ME: which are customer satisfaction as well as competitive advantage. This study recommended that the banks should overhaul their ITI facilities regularly in order to mitigate the challenges that customers face in accessing banking services in Ghana, for example, ATM, funds transfer, POS as well as other related problems.

Keywords: Information Technology Infrastructure ITI, Marketing Effectiveness, Banking.

INTRODUCTION

The business world of today requires new and innovative applications in the areas of marketing, accounting, finance, hospitality and other worthy human endeavours. In Ghana firms are making significant investment in information technology infrastructure to build business strategies, improve profitability so as to achieve effective marketing system to meet customer satisfaction. The Ghanaian banking sector in retrospect has in the last decade gone through a traumatic period of expectations and frustrations, expansion and contraction for survival. From the mid-1990s the recorded phenomenal growth in the number of licensed banks rose (Ezeuduji, 2000).

With the emergence of democracy, Ghana emerged from economic sanctions and global isolation which brought about a new phase of sanction, including organizational and ethical reforms as well as recapitalization. In the pursuit for survival the Ghanaian banking industry seemed to have realized the inevitability of investing in information technology.

This became evidence from the development around the world on the tremendous role of information technology infrastructure in the management of information resource and business prosperity (Ehikhamenor, 2003). However, according to Akpan (2003) information technology infrastructure in the banking sector can be divided into three areas, these are; electronic commerce and electronic banking and E-learning. In this paper, the researcher empirically examined the influence of information technology infrastructure on marketing effectiveness of banks operations. Marketing effectiveness defines the extents to which an organization acquires market share over competitors, advertising and sales growth, (Nwokah & Ahiazu, 2009). Also Byrd and Turner (2000) defined Information Technology Infrastructure (ITI) as the shared information technology resources consisting of a technical, physical base of hardware, software, communication technologies, data, core application, human component skills and expertise combined to create quality services that are typically unique to an organization.

They further operationalized ITI into four dimensions they are: connectivity, compatibility, modularity and flexibility. But for the purpose of this paper the study abrogated the dimensions of ITI by Byrd & Turner (2000) and adopted connectivity, flexibility. Also Webster's (1995) two dimensions of marketing effectiveness were adopted by the researchers'. But more specifically, the study will examine the influence of ITI on customer satisfaction and competitive advantage.

The Concept of Information Technology Infrastructure

According to Byrd & Turner (2000) information technology infrastructure ITI is defined as the shared information technology resources consisting of a technical, physical base of hardware, software, communication technologies, data, core application, human component skills and expertise combined to create quality services that are typically unique to an organization. Information technology infrastructure in the banking sector can be divided into two areas, such as; electronic commerce and electronic banking (Akpan, 2003). Electronic commerce is a system which includes transaction that centres on buying and selling of goods and services only to directly generate revenue (Uppall, 2011). According to Nwokah, et al (2006) e-commerce provides consumers the ability to bank, invest, purchase, distribute, communicate, explore and research from virtually anywhere an internet connection can be obtained. While e-banking can be described as an act of carrying out the business transaction of a bank using electronic devices, Examples of electronic devices that are used includes computer systems, Global system for mobile communication (GSM), Automated Teller Machines (ATM), internet facilities, smart cards, funds transfers, electronic mail and point-of sales POS (Oluwatobani, Abah & Achimugu, 2011).

Connectivity Duncan (1995) observed that connectivity is the ability of any technology components to communicate with any of the other components inside and outside of the organizational environment. According to Chaung et al (2003) information technology connectivity enables seamless and transparent organizations that are independent of time and space.

Flexibility Byrd and Turner (2000) defined flexibility as the ability to easily and readily diffuse or support a wide variety of hardware, software, communications technologies, data, core applications, skills and competencies, commitment and values. However, flexibility of IT infrastructure has been viewed as necessary to accommodate a rapidly changing business environment (Byrd & Turner, 2001). Flexibility of IT personnel emphasizes the ability of IT

personnel to respond to customer complaints and changes as to deliver reliable and accessible service to their teaming customers.

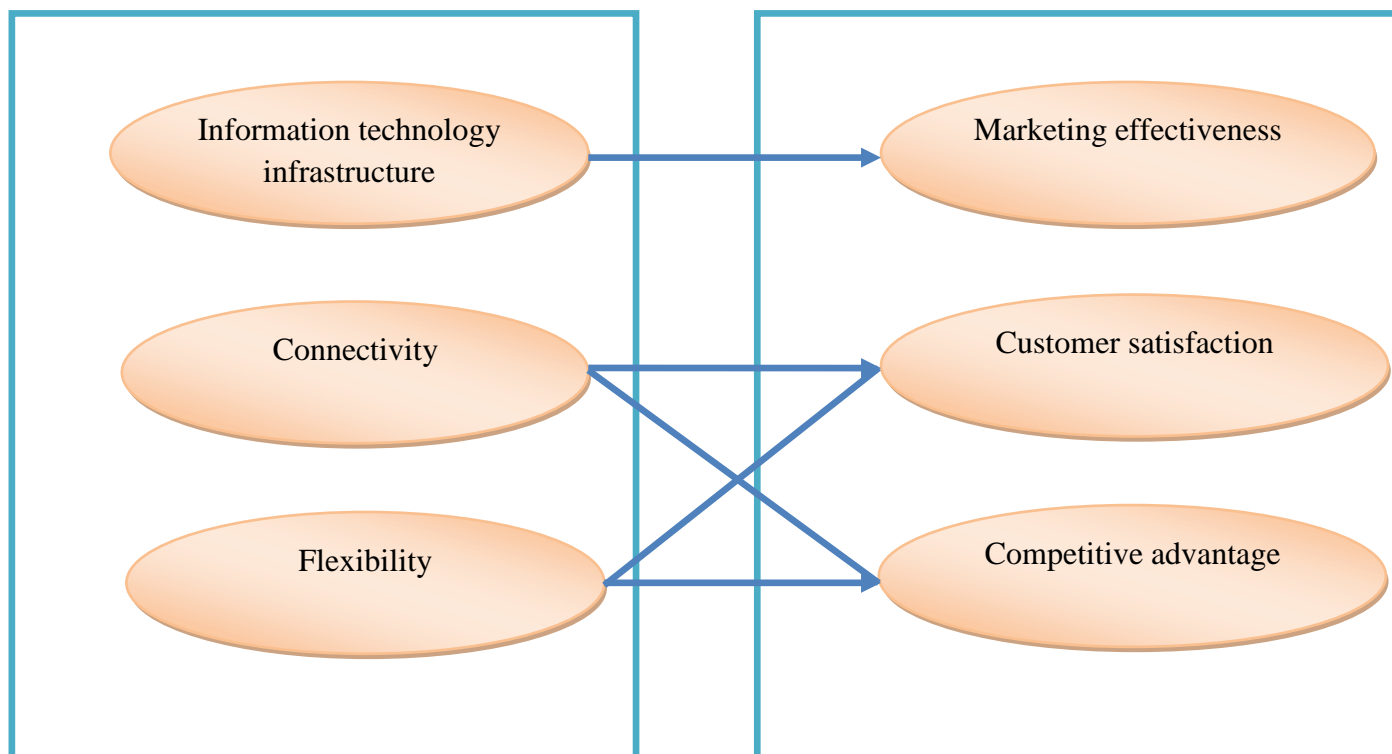
The Concept of Marketing Effectiveness the Wikipedia free encyclopedia (2006) defines marketing effectiveness as the function of improving how marketers go to market with the goal of optimizing their marketing spends to achieve even better results for both the short-and long-term objectives. Webster (1995) operationalized marketing effectiveness as customer satisfaction and competitive advantage.

Customer Satisfaction. This means delivering value to target market so as to retain their patronage and increase their sales growth as well as profitability, in other words meeting customers' expectations (Wali & Nwokah, 2012).

Competitive Advantage Competitive advantage centered is on technical superiority, product or service quality, and comprehensive customer services which will yield the highest potential for a long-lasting competitive edge. More specifically, competitive advantage can be defined as the implementation of an action creating value that is not being simultaneously created by any current or potential competitors (Wali & Nwokah, 2012).

Webster (1995) states that a firm has a competitive advantage whenever it has an edge over rivals in attracting customers and can defend against the competitive forces of rivalry among sellers, substitute products or services, potential new entrants to the field and pressures from suppliers and buyers.

Fig 1. Illustrates the operational conceptual framework. This is proposed based on the review of the relevant literature on the two construct
Figure 1



Operational Conceptual Framework of ITI and Marketing Effectiveness ME Base on the above operational conceptual framework, we hypothesized thus:

Ho1: There is no significant impact of connectivity of ITI on customer satisfaction of ME.

Ho2: There is no significant impact of connectivity of ITI on competitive advantage of ME.

Ho3: There is no significant impact of flexibility of ITI on customer satisfaction of ME

Ho4: There is no significant impact of flexibility of ITI on competitive advantage of ME.

RESEARCH METHODOLOGY

The sample frame of this study is the 21 commercial banks in Nigeria, but the researchers' limited the sample frame to the 21 banks in Port Harcourt Nigeria. Thereafter the researchers' randomly selected 10 banks from the 21 commercial banks in Port Harcourt and further selected 5 staff from the operations department and five staff from the marketing department which is 10 staff each from the 10 banks which is 100 staff as the sample size of this study.

The research instrument used was questionnaire. Two sets of instruments were designed to test the two constructs and A 7item five-points Likert scale anchored by "1" strongly disagree to "5" strongly agree was developed to measure informational technology infrastructure ITI, three items were constructed to measure connectivity and four items were constructed to measure flexibility.

To measure marketing effectiveness, 8 – items were used, four items for customer satisfaction and four items for competitive advantage. In collecting data for this study three students were used to administer a total of 100 copies of the questionnaire. A total of 80 copies of useable questionnaire were returned and used in the study. To analyze the data generated for this study, the Spearman's rank order correlation coefficient was used and simplified with statistical package for social science SPSS.

Research Findings

Computing Spearman's Rank Order Correlation Coefficient between Connectivity of ITI and Customer Satisfaction of ME

The stated hypotheses are as follows:

Ho1: $\rho_s = 0$: There is no significant relationship between connectivity of ITI and customer satisfaction of ME in Ghanaian commercial banks

HA1: $\rho_s \neq 0$: There is a significant relationship between connectivity of ITI and customer satisfaction of ME in Ghanaian commercial banks

Table 1. Spearman's Rank Order Correlation Coefficient between Connectivity of ITI and Customer Satisfaction of ME**Table 1**

| | CONNECTIVITY | CUSTOMER |
|--|----------------------|----------------------|
| Spearman's rho CONNECTIVITY correlation coefficient sig (2-tailed) N | 1.06 79 | .952** .000 79 |
| CUSTOMER SATISFACTION Correlation coefficient sig (2 tailed) N | .952** .000 79 | - 79 |

** Correlation is significant at the 0.01level (2-tailed)

Ho1: The SPSS table for spearman rank order correlation revealed that, there is a significant impact between connectivity and customer satisfaction.

The rule is that if the probability is less than the confidence level of 0.05 reject the null hypothesis and accept the alternate hypothesis.

Computing Spearman's Rank Order Correlation Coefficient between Connectivity of ITI and Competitive Advantage of ME

Ho2: $\rho_s = 0$: There is no significant relationship between connectivity of ITI and competitive advantage of ME in Ghanaian commercial banks

HA2: $\rho_s \neq 0$: There is a significant relationship between connectivity of ITI and competitive advantage of ME in Ghanaian commercial banks

Table 2. Spearman's Rank Order Correlation Coefficient between Connectivity of ITI and Competitive Advantage of ME**Table 2**

| | CONNECTIVITY | COMPETITIVE |
|---|---------------------|----------------------|
| Spearman's rho CONNECTIVITY correlation coefficient sig. (2-tailed) N | 1.00 - 79 | .995** .000 80 |
| COMPETITIVE ADVANTAGE Correlation coefficient Sig. (2 tailed) N | .995** .00 79 | 1.00 - 79 |

** Correlation is significant at the 0.01level (2-tailed)

Ho2: The SPSS table for spearman rank order correlation revealed that, there is a significant impact between connectivity and competitive advantage.

The rule is that if the probability is less than the confidence level of 0.05 reject the null hypothesis and accept the alternate hypothesis.

Computing Spearman's Rank Order Correlation Coefficient between Flexibility of ITI and Customer Satisfaction of ME

HA3: $\rho_s \neq 0$: There is a significant relationship between flexibility of ITI and customer satisfaction of ME in Ghanaian commercial banks

Ho3: $\rho_s = 0$: There is no significant relationship between flexibility of ITI and customer satisfaction of ME in Ghanaian commercial banks

Table 3. Computing Spearman's Rank Order Correlation Coefficient between Flexibility of ITI and Customer Satisfaction of ME

Table 3

| | FLEXIBILITY | CUSTOMER |
|--|--------------------|--------------------|
| Spearman's rho FLEXIBILITY correlation coefficient sig (2-tailed) | 1.00 | .980 ^{**} |
| N | 79 | 79 |
| CUSTOMER Correlation coefficient sig (2 tailed) | .980 ^{**} | 1.00 |
| N | 79 | 79 |

^{**} Correlation is significant at the 0.01 level (2-tailed)

Ho3: The SPSS table for spearman rank order correlation revealed that, there is a significant impact between flexibility and customer satisfaction.

The rule is that if the probability is less than the confidence level of 0.05 reject the null hypothesis and accept the alternate hypothesis.

Computing Spearman's Rank Order Correlation Coefficient between Flexibility of ITI and Competitive Advantage of ME

Ho4: $\rho_s = 0$: There is no significant relationship between flexibility of ITI and competitive advantage of ME in Ghanaian commercial banks

HA4: $\rho_s \neq 0$: There is a significant relationship between flexibility of ITI and competitive advantage of ME in Ghanaian commercial banks

Table 4. Spearman's Rank Order Correlation Coefficient between Flexibility of ITI and Competitive Advantage of ME**Table 4**

| | FLEXIBILITY | COMPETITIVE |
|---|--------------------|--------------------|
| Spearman's rho | 1.00 | .980** |
| FLEXIBILITY correlation coefficient sig (2-tailed) | - | .000 |
| N | 79 | 79 |
| COMPETITIVE ADVANTAGE Correlation coefficient sig (2 tailed) | .980** | 1.00 |
| N | 79 | 79 |

** Correlation is significant at the 0.01 level (2-tailed)

Ho4: The SPSS table for spearman rank order correlation revealed that, there is a significant impact between flexibility and competitive advantage.

The rule is that if the probability is less than the confidence level of 0.05 reject the null hypothesis and accept the alternate hypothesis.

DISCUSSION OF FINDINGS

Ho1: Hypothesis one predicted that there is no significant impact of Connectivity of ITI on customer satisfaction. However, $r_s = .962$ and $p\text{-value} = 0.000$ is less than the level of significance of 0.01. We therefore rejected the null hypothesis and accepted the alternate hypothesis and concluded that there is a strong and positive impact of Connectivity of ITI on customer satisfaction. From this finding it is reveal that connectivity of information technology infrastructure ITI enhance customer satisfaction and by extension enhance customer retention in the commercial banks in Ghana.

Ho2: Hypothesis two predicted that there is no significant impact of Connectivity of ITI on competitive advantage. But $r_s = .996$ and $p\text{-value} = 0.000$ is less than the level of significance of 0.01. We therefore rejected the null hypothesis and accepted the alternate hypothesis and concluded that there is a strong and positive impact of Connectivity of ITI on competitive advantage. These finding have been able to prove that banks with formidable ITI connectivity can enjoy competitive advantage over rivalry.

Ho3: Hypothesis three predicted that there is no significant relationship between flexibility of ITI and customer satisfaction. But the finding reveal that $r_s = .981$ and $p\text{-value} = 0.000$ which is less than the level of significance of 0.01. We therefore rejected the null hypothesis and accepted the alternate hypothesis and concluded that there is a strong correlation between flexibility of ITI and customer satisfaction. This finding no doubt has revealed that flexibility of ITI create customer satisfaction.

Ho4: Hypothesis four predicted that there is no significant relationship between flexibility of ITI and competitive advantage. But the analysis revealed that $r_s = .981$ and $p\text{-value} = 0.000$ which is less than the level of significance of 0.01. We therefore rejected the null hypothesis

and accepted the alternate hypothesis and concluded that there is a strong correlation between flexibility of ITI and competitive advantage.

CONCLUSION AND RECOMMENDATIONS

From the foregoing, This piece of work was aimed at evaluating the impact of information technology infrastructure ITI on marketing effectiveness has revealed that ITI impact on marketing effectiveness in the Ghanaian banking sector. More specifically, the findings revealed that connectivity and flexibility of ITI impact on customer satisfaction and as well as competitive advantage of marketing effectiveness ME in the Nigerian banking sector.

The study hereby recommends as follows: Commercial Banks should overhaul their ITI facilities regularly, by retraining and equipping their IT department to be responsive to customers' complaints. In other word, to mitigate the regular transaction challenges customers' are exposed to, such as ATM, funds transfer and POS related problems to mention but a few, the implementation of this recommendation will create customers' satisfaction, competitive advantage and will place the Ghanaian banks on the map of world leading economy in her dream of attaining vision 2020 to be among the 20 leading economies in the world.

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