

EFFECT OF TECHNOLOGY CHANGE AND COMPETITIVE ADVANTAGE: A STUDY OF SELECTED SERVICE ORGANIZATIONS IN LAGOS STATE

By

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Abstract

In every part of the world business organizations rival one another for competitive positioning. Technology change is ever present in all spheres of human endeavor including in businesses. The speed at which the need for technology change arises in the business environment has made technology change management a key success factor for all firms. Technology change management has become a matter of life and death for businesses because those who fail to predict change and act appropriately usually lose market share and may face threats of extinction; hence, organizational efficiency, profitability, growth, and survival depend on change management. As identified in this paper, the major types of change that ravage the service sector in Lagos state is technology change. The purpose of this research is to assess whether technology change is a predictor of competitive advantage. Using a survey research design, and a self-developed questionnaire on a five-point Likert scale, responses were obtained from 187 respondents from the three service organizations selected for the purpose of this research. The data obtained was used to answer the research question formulated to assess the extent to which technology change impact on competitive advantage of business organizations. Using Statistical Package for Social Sciences (SPSS) to test the null hypotheses, the researcher found that technological change impact competitive advantage significantly. It concludes that for any organization to achieve success, paying attention to key drivers of technology change and being proactive about responding to the technology change drivers in a timely manner are prerequisites for organizational survival and competitive advantage.

Keywords: change management, technology change, competitive advantage.

1.0 Introduction

The interconnectedness of the global community in the twenty-first century implies that businesses and organizations are not separated by creed or distance. No business organization is immune to the impact of the ever-present change pressures posed by the global environment. Organizations must prepare and respond to forces of technology change in the environment. This is so because the business ecosystem is dynamic and discontinuous. The turbulence of the business environment becomes a source of competitive pressure. Whether in the public or private sector, large or small organization, technology change is inevitable. Such trends of organizational change are becoming more frequent, more complex, faster paced and more turbulent in current situation which is not expected to abate (Song, 2009). Improvements in information flow driven by the fast-paced developments in digital technology, growing global participation and awareness of citizens in the affairs of their countries, have made change unavoidable in organizations.

Consequently, it has become pertinent that management attention is drawn to the implication of the change factors in ensuring unrelenting progress in organizational performance. More

specifically, three factors - aptitudes, effectiveness of management, and output of the workforce have been identified as impacting on work performance in organizations (Akunne, Ibrahim, 2021; Eliyana, Ma'arif & Muzakki, 2019).

The internal and external environments of an organization are prone to changes frequently, and such changes usually have direct or indirect effects on organizational outcomes. Several factors such as rapid changes in customer tastes, employee attitudes, culture, leadership and change in information technology can make the introduction of organizational change inevitable. Organizations that can manage such change factors are most likely to achieve long-term survival, organizational growth, efficiency, and productivity, leading to competitive advantage. Organizations that can predict the future of their industry are best positioned to deal with the complexities of organizational change (Olajide, 2014). In this paper, technological change is considered as key factors for organizational change, while long-term survival, organizational efficiency and productivity, firm growth and profitability and industry leadership represent measures of competitive advantage. Therefore, in view of the above statement of the problem, this study is focused at examining technological change management as a predictor of competitive advantage, with reference to the selected financial and telecommunications service organizations in Lagos State.

Considering the background of the paper, the statement of the problem, and the objective of the study, the research question was formulated to address the objective of the study, to what extent has technological change impacted on competitive advantage of business organizations. This research work will create significant value for organizations because it will help management of businesses in the selected service sectors to understand the benefits of technology change management in the service industry. The results of this study will be significant in the sense that it will assist both management and employees to better understand the critical technology change factor, how the various leadership behaviors and organizational culture factors can be managed to inspire staff to increase and sustain performance so as to achieve the competitive advantage in the industry.

2. Conceptual Review

It is now commonplace for firms to endure ongoing changes in the way they conduct their operations (Parish, Cadwallader & Busch, 2008). Internal or external forces push enterprises to make required changes for survival or require a venture to act in order to remain productive and competitive in its market (Chrusciel & Field, 2006). Every organization now needs to be able to successfully manage a substantial transition (Parish, et al., 2008). In this hypercompetitive climate, organizations that have several ways to arrange resources as needed and the competencies required for change processes are better positioned to gain an advantage. Organizations that are proactive in their approach to organizational transformation have a significant competitive advantage over their competitors. Wanaswa et al (2021) investigated the association between technological innovation and competitive advantage. The study was conducted on Kenya's telecommunication industry in which significant transformations has been evidenced and which has resulted in intense competition. The study which was conducted using a cross-sectional survey design was targeted at a population of 83 large telecommunication service providers in Kenya. Data analysis was conducted using both frequencies and inferential statistics. The findings revealed that more technologically innovative telecommunication companies are more likely to produce better products and services than less technologically innovative peers and therefore acquire more customers and earning competitive advantage.

Based on the investigation, technological innovation confers significant positive interest on competitive advantage. Therefore, organizations compete with one another on innovation capabilities (Wanaswa et al, 2021). Furthermore, effective use of information technology diffusion tools such as, robotics, computing technology and telecommunication, may affect the quality of production and distribution of products through improving production economics (Bruque et al, 2003). Machuki and Aosa (2011) considered the boundary effect in the connection between technology change and worker execution utilizing an econometric method that empowers advance valuation deduction techniques. Their discoveries showed that technological change and actual setting can altogether influence the degree of work execution. Due to the numerous schools of thought they belong to and the different perspectives they take on this issue, academics disagree on how to build a unified paradigm of change management. Change management is the ability to utilise existing funds proficiently and productively in order to shift from the undesirable results or actual fact in the quickest way possible and with the least amount of effort and cost to the ideal future reality with the least amount of negative effects on individuals and institutions (Jalagat, 2016).

Having reviewed the previous empirical studies, it was found that literature is scanty about change management as a predictor of competitive advantage in service organization in Lagos, Nigeria. From review of literature, there is no record of any systematically developed framework for implementing and managing change in banks, telecommunication companies and insurance in Lagos Nigeria. Therefore, this study adds to the body of knowledge on change management and competitive advantage. The study will systematically develop a framework for managing change thereby expanding and filling both theoretical and practical knowledge aspects. In this study, technological change, cultural change, attitudinal change, leadership change, and change in customer taste (the five change factors) are used as proxies for organizational change. Thus, judging by the above problems, this study therefore stands to examine change management as a predictor of competitive advantage with reference to the selected service organizations in Lagos State.

3. Methodology

This study adopted purely a survey research design that involves the use of questionnaire in eliciting information for this study. Furthermore, the design of the questionnaires is done in such a way that the questions asked would provide useful answers to the research questions as well as test the hypotheses of the study. This study used non-probability sampling techniques, specifically convenience sampling to select participants from a chosen service organization population. The sample size was carefully chosen from this population and data was collected using a questionnaire and analyzed using descriptive statistics. The data for this study was collected directly from participants through a questionnaire which is considered a field source of information since it involves obtaining information directly from the source. The questionnaire was electronically distributed among head office staff of the selected service organizations in Lagos state using a google form tool and responses were received electronically. The questionnaire used in this study consists of self-structured multiple-choice questions that were designed to gather crucial information from participants.

4. Data Analysis

To what extent has technological change impacted on competitive advantage of business organizations?

	ITEM	SA					SD	
		5	4	3	2	1	TOTAL	
1.	In contemporary business environment, your organization has made technology an essential tool in her operation.	119 (64%)	41 (22%)	20 (11%)	6 (2%)	1 (1%)	187 (100.0)	
2.	This organization possesses capability to embrace the most suitable technology.	91 (49%)	72 (39%)	18 (10%)	6 (2%)	0 (0%)	187 (100.0)	
3.	Through the adoption of appropriate technology, your organization has reached a tremendous stage in her communication.	76 (41%)	70 (37%)	29 (16%)	10 (5%)	2 (1%)	187 (100.0)	
4.	New technology employed by your organization has enhanced the authenticity of care process by improving and standardizing processes.	65 (35%)	78 (42%)	37 (20%)	5 (2%)	2 (1%)	187 (100.0)	
5.	Using new technology to achieve quality, your organization has improved tremendously in workflow.	75 (40%)	76 (41%)	26 (14%)	9 (4%)	1 (1%)	187 (100.0)	

Source: Field survey, 2022

Table 4 shows that 64% strongly agree that in contemporary business environment organization has made technology an essential tool in her operation; 49% also strongly agree that organization possesses capability to embrace the most suitable technology, 41% strongly agree that through the adoption of appropriate technology, organization has reached a tremendous stage in her communication, 35% also strongly agree that new technology employed by organization has enhanced the authenticity of care process by improving and standardizing processes and 40% also agree that using new technology to achieve quality organization has improved workflow tremendously.

4.1 Testing of Hypothesis

The study propositions was tested via regression by using SPSS.

H₀: Technological change does not contribute significantly to competitive advantage of business organizations

4.1: Regression analysis for Technological change and competitive advantage

MODEL SUMMARY^B

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.746 ^a	.556	.544	.53799	1.803

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.546	5	13.109	45.292	.000 ^b
	Residual	52.388	181	.289		
	Total	117.934	186			

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients Beta	T	Sig.
		B	Std. Error			
1	(Constant)	-.069	.274		-.250	.803
	TC	.251	.074	.223	3.385	.001

Source: Field Survey (2022)

Dependent Variable: Competitive advantage ($P < 0.05$)

In the table 4.1, the regression analysis indicated R coefficient of 0.746, and this has established an association between Technological change and competitive advantage. The R-Square value of 0.556 established that only maximum of 55.6% of the variants in the competitive advantage could be explained by Technological change while other factors that were not stated in this study could account for 44.4%. The F-statistic value of 45.292, $p < .05$ also signified the goodness of fit of the model to describe the variants and to consider the null hypothesis not suitable. Therefore, this admitted the alternative hypothesis which states that technological change can significantly impact competitive advantage in selected service organizations in Lagos state. The Beta (β) values of .223 also confirmed the significant association between the variables. The value of $t = 3.385$, $p < .05$ showed that when technological change occurs there would be improvement in competitive advantage of business organizations.

5. Conclusions and Recommendations

This study ascertained the role of technology change management as a predictor of competitive advantage for companies in the service sector. For this paper, objective was positioned with subsequent hypothesis to provide direction. The sample consisted of 187 respondents from the three service organizations namely Zenith Bank Plc, MTN Nigeria, and AIICO Insurance within Lagos State in proximity to the researcher. A five-point Likert scale structured questionnaire was analyzed using regression analysis. Statistical Package for Social Sciences (SPSS) was used to analyze the data. Findings of the results of data analysis are technological change has significant impact on competitive advantage of business organizations. The result depicts the value of $t = 3.385$, $p < .05$ implying that when Technology change occurs there would be improvement in competitive advantage of business organizations.

For any organization to attain a level of success change is key. Organizations need to develop and sustain actions and activities which necessitate necessary changes in order to cope with environmental pressures which can be both internal and/or external. The competitiveness of business environment has resulted to complexity and sophistication of business decision-making which requires strategic management. However, there are several factors which make the introduction of organizational change inevitable. These have necessitated the need for Organizations to manage such changes which are likely to confer competitive advantage and aid long-term survival. These are the recommendations

- i. Organizations need to adopt strategic management practices to be at alert to environmental changes.
- ii. Leaders of change management must identify the need for change in the organizations and at the same time establish employee readiness.
- iii. There is need for managers to adopt proactive change management techniques in order to prepare for impending organizational competitive challenges.
- iv. It is essential for organizations to be proactive in responding to changes in competitive markets in order to ensure smooth implementation of necessary changes and enhance organizational survival.
- v. There is need for effective management of transformation in establishing long-term competitive advantage at the organizational level.

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