THE INFLUENCE OF TECHNOLOGY ON ORGANISATIONAL STRATEGY: A STUDY OF THE NIGERIAN BANKING INDUSTRY.

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Abstract

Technology which is a key element of the external environment, develops and changes rapidly creating uncertainties and challenges that affect organizational strategy and its processes; thus, reducing the effectiveness of strategies and making strategic responses more difficult. This study therefore aimed at determining the influence that technology wields on organizational strategy and its processes in the Nigerian banking industry. It investigated the specific ways that technology affects the strategic management processes of strategy formulation, strategy implementation and strategy evaluation and control. A descriptive survey research design was employed in this study. The population of study consists of all the commercial banks in Nigeria. The unit of analysis for the study are five banking organisations selected mainly from Tier-1 Nigerian banks. The study relied mainly on primary data obtained through structured questionnaire administered to a purposively selected 125 respondents across the major strata and departments of the selected banks. The data collected was analysed and presented using descriptive methods. The statistical techniques employed are the Analysis of Variance (ANOVA) and the regression analyses models. The hypotheses were tested using regression coefficients. The findings showed statistical evidence that technology is not only prevalent in the selected banks, but has become a vital requirement in the strategy formulation, implementation and control processes. Specifically, technology enhances the speed and quality of data gathering for strategy formulation as well as aids the implementation of specific market and product development strategies, and also enables the measurement and monitoring of organizational strategies. The study concludes that technology exerts significant influence on organizational strategy and has strong positive relationship with the organizational

URL: *http://journals.covenantuniversity.edu.ng/index.php/cjbss*

strategy processes. Thus, management of banking organisations should as a matter of policy invest in appropriate technology strategies and develop adequate technology capabilities and competences to cope with the imperatives of increased digitization and the effects of technology in order to remain competitive and successful in the industry.

Key words*: Technology, Strategy, Strategy Formulation, Strategy Implementation, Strategy evaluation and control, Banking industry.*

1. INTRODUCTION

Technology and its changes influence organisations and their business processes (Lakhwani, Dastane, Satar & Johari, 2020). Its effects are seen in new products, new machines, new tools and a greater variety of products (Pearce & Robinson, 2015). According to Deaconu and Manolescu (2007), new technologies create new products and services and entirely new markets apart from shortening the anticipated life of other products. In particular, information technology which is a major aspect of technology has become a key business function for virtually all organisations to achieve higher productivity, cost reduction, implementation of new business strategy and gaining of competitive advantage (Kihara, Bwisa & Kihoro, 2016). For Cox (2016), with increasing digitization and technology penetration, technology has become so fundamental, so strategic and so important that it is virtually at the core of the business of every organization.

Technology remains significant in the strategy process. Organizational strategies define the direction and scope of organisations over the long term (Johnson, Scholes & Whittington, 2008). Mintzberg and Quinn (2002) explain that strategy is a pattern or plan that integrates organization's major goals, policies and actions into a cohesive whole. It is the organisation's "game plan" which results in future oriented plans interacting with the competitive environment to achieve its objectives (Pearce & Robinson, 2015). Khan (2020) noted that organisations are increasingly relying on technology to take informed decisions and create competitive advantage.

Technology also plays phenomenal roles in the banking industry today. In Nigeria, banks are continually grappling with the impacts of new technologies (Osaze, 2003), even as the industry is currently being disrupted by changes brought about by modern digital technology (Lay, 2020). According to Gupta (2008), electronic banking is changing the banking and financial sector in terms of the nature of core products or services and the way these are packaged, suggested, delivered and consumed. It has brought a total swap pattern on bank's performance and on service delivery (Abubakar & Tasmin, 2012). It has provided an altogether new ways of interacting and providing services to bank customers rather than merely replicating activities of the bank employees (Godse, 2005). For instance, technology has enabled the advent of internet and online banking enhancing access to banking services at anytime, anywhere; and also, a greater number of choices in accessing banking services (Burani, 2012). It has also witnessed new banking distribution channels through the card technology, automated teller machines (ATMs), point of sales (PoS) terminals, mobile and internet banking (Chang, 2003). In Nigeria, technology and electronic banking transactions increase significantly annually rising to a volume of 5.1 billion transactions with a value of N783 trillion between January and August 2020 as against N441 trillion for the period of January to December 2019 (CBN, 2020).

Against this background, this study focuses specifically on the influence that technology wields on the strategic management process of strategy formulation, implementation and control in the banking industry. Generally, studies on technology and organisational strategy and performance have dominated management literature with several outcomes on the roles and influence of technology on organisational strategy and performance (Abubakar & Tasmin, 2012; Kihara et al., 2016; Gichana et al., 2016; and Sibanda & Ramrathan, 2017). It is hoped that evidence from this study and its findings would add to the empirical literature in this field of study.

Statement of the Problem

Organizational managers are confronted with challenges arising from the external environment in which they operate, including the technology environment. The developments in the technology environment, especially its rapid advances, cause increasing uncertainties and complexities which not only reduce the effectiveness of existing strategies but also make the formulation, implementation and control of new strategic responses more difficult. As technology changes rapidly, organisations face the challenge of changing their strategic plans in order to adjust to new and changing technologies (Khusniyah & Sumiati, 2017). Moreso, as technology cycles continue to shorten (Satell, 2013), organizational managers grapple with the dilemma of embracing frequently-emerging technologies or sticking to existing technologies that may be serving their current needs but may make the organization less competitive in the near future. This is compounded by the difficulty in predicting such changes and likely direction of new technologies and incorporating same into organisational strategy formulation, implementation and control.

Objective of the Study
The objective of this study is to examine the influence of technology on organizational strategy and its processes in the Nigerian banking industry.

Research Questions
1. How does technology influence strategy formulation in the Nigerian banking industry.?
2. How does technology influence strategy implementation in the Nigerian banking industry?
3. How does technology influence strategy evaluation and control in the Nigerian banking industry?

Research Hypotheses
At 95% confidence level, the following hypotheses stated in null form are formulated:
Ho: Technology has no significant influence on strategy formulation in Nigerian banking industry
Ho: Technology has no significant influence on strategy implementation in Nigeria banking industry
Ho: Technology has no significant influence on strategy evaluation and control in the Nigerian banking industry

2. LITERATURE REVIEW

2.1 Theoretical Framework

The theoretical basis of this study is the resource dependency theory. Built on the works of earlier scholars, Pfeffer and Salancik (2003), espoused the theory of resource dependency. The resource dependency theory deals with the relationship between the organisation and the resources it needs to operate (Resource Dependency Theory: How External Resources Affect Organisational Behaviour, 2017). The basic assumption of the resource dependency theory is that an organisation depends on resources which are sourced from its environment. It postulates that the environment provides critical resources needed by the organisation (Pfeffer & Salancik, 2003). The theory views an organisation as an open system which engages its external environment to acquire resources needed for its survival. Thus, resource dependency theorists recognise the influence of external resources on the organisation (Hillman et al., 2009).

Further to the theory's central proposition is that the behaviour of an organisation must be understood within the context of its dependence on its external resources and ecology. According to Nienhuser (2008) the behaviour of organisations is influenced by external and internal agents controlling critical resources in its environment. Those who control critical resources have power and influence over organisations thereby creating some measure of uncertainty as organistions are subject to external control; and more so if such resources are scarce and concentrated.

The resource dependency theory is relevant to this study as it provides the theoretical context for understanding and analysing the influence of technology on organizational strategy. The theory is concerned with the dependence of the organisation on its task environment to obtain resources for its survival (Hessels & Terjessen, 2010). It therefore provides an understanding of the dependence of banking organisations on their environment for its resources of which technology is a major one. Thus, as organisations depend on resources which are sourced from the external environment so do banks depend on technology among other resources in their industry environment.

Relatively, in the same way the behaviour of banking organisations must be understood within the context of its dependence on the technology environment. The changes in technology and in the technological environment which have become so pervasive and highly impactful require banks to respond through their strategies. Thus, the behaviour, strategies and structures of banking organisations are driven largely by their technology capabilities and competences. It is in this regard that Lakwani et al. (2020) noted that the effects of technology advancements in the environment have completely influenced organisations by making their business processes more effective. Thus, banks now strive to acquire technological capabilities and competences to enhance their bargaining power and mitigate the uncertainty arising from the technology environment.

2.2 Conceptual Model
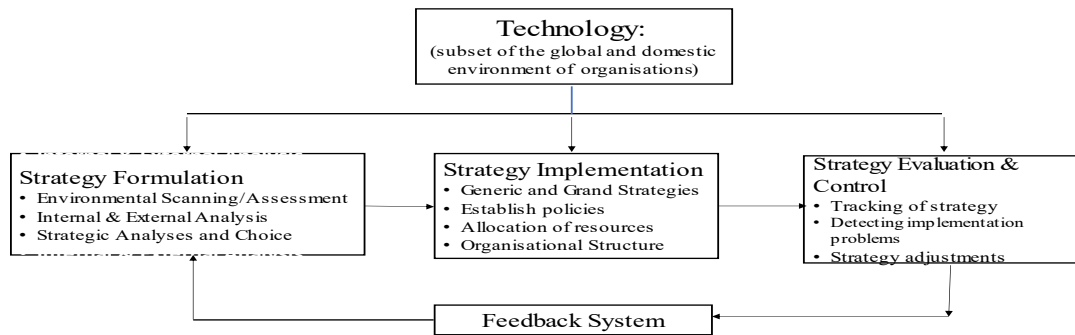
- Figure 2.1: Conceptual Model of the   Influence of Technology on Organisational Strategy (adapted partly from the Strategic Management Process by Pearce and Robinson, 2015)
- Source: Graphic   representation   by researcher.

Figure 2.1 above illustrates the conceptual framework guiding this study. The conceptual model is an adaptation in part, of the strategic management process as proposed by Pearce and Robinson (2015). It brings out an integrated perspective on how technology which is part of the external environment influences the organizational strategy process. The model presents the technology environment and its interrelationship with, and influences on the organization, its strategies and the entire strategic management process. From the model, technology first influences the strategy formulation involving developing an organizational purpose and mission, deriving specific objectives, scanning the environment, conducting an internal and external analysis and then culminating in the analysis and choosing of strategy. The second major process shows how technology influences strategy implementation and the translation of strategy into carefully implementable organizational actions through the establishment of long-term objectives and generic strategies, and devolving into policies, functional tasks, allocation of resources and configuring the organizational strategy to match people, structure, task and technology. Finally, it also depicts the influence of technology on strategy evaluation and control. Technology is used in the tracking of strategy as it is being implemented, detecting problems or changes and making necessary adjustments. It is also used in internal and external reviews, performance management and corrective actions (David, 2012).

2.3 Influence of Technology on the Strategy Process
Antoniou and Ansoff (2007) affirm the influence that technology and strategy wield on each other. However, the impact of technology on organizational strategy is pervasive and extends to all the stages of the strategy process. Dasgupta et. al. (2011) opined that technology is a critical element to consider when formulating and determining organizational strategy. According to them technology is a useful tool in scanning, assessing and analysing the environment which is the foremost step in strategy formulation. Technology is helpful in assessing and analyzing trends through the information systems that an organization puts in place to facilitate its procedures and processes. Fundamentally, technology remains significant to organisational strategy formulation process at two levels. Firstly, technology and technological changes form part of the conditions

and forces in the external environment that affect an organisation's strategic options (Pearce & Robinson, 2015); and which organizational managers must take into account. Secondly, technology is also part of the strategic internal capabilities that an organization must develop to achieve success. Phaal et al. (2004) stated that effective strategic planning process takes into account the technology infrastructure needed to support the business.

Technology also affects the implementation phase of the strategy process. Technology's impact on strategy implementation is basically in the area of organizational design which requires the identification and types of technology, structure, task, people and culture that ensure the effective utilisation of managerial capabilities (Volberda, 1997). To remain competitive, organisations need to change their strategies, processes, structure and culture (Keong & Dastane, 2019). Technology also plays direct roles in the strategy implementation profile of organisations. Indeed, the implementation of organisational strategies is largely driven by technology. Technology infrastructure, devices and platforms are used to increase types and channels of distribution to reach wider markets, advertise and promote products in new devices and technology channels as well as in building synergies in linking similar and compatible products. Technology is therefore an integral part of organizational design and the strategy implementation process of organisations. This position is also supported by Dasgupta et al (2011) that deployment of appropriate technology ensures efficiency of operations, greater productivity and increased customer satisfaction.

In terms of strategy evaluation and control which is the last stage in the strategy process, the impact of technology is also noteworthy. With the aid of technology, organizational strategy is more effectively tracked and monitored to enable the application of corrective measures. Besides, technology provides a better and unbiased measurement and monitoring of organizational strategy performance as well as other organizational key performance indicators. It indeed eliminates the elements of human bias and subjectivity in monitoring and evaluating the performance and implementation of organizational tasks and strategies.

3. RESEARCH DESIGN AND METHODOLOGY
Research Design

The research design employed in this study is the descriptive survey design which involves the observation of what is happening to sample subjects or variables without attempting to control or manipulate them (Asika, 2008). Primary data was sourced from questionnaires addressed to a statistically-significant audience to gather information on the various ways technology influences organisational strategies in the Nigerian banking industry. The choice of the banking industry is informed by the high prevalence of technology in banking operations and processes.

Sample Size and Sampling Technique
The sample for this study was drawn from 5 banks out of the 22 commercial banks operating in Nigeria at the time of this study. This represents a sample of 23% of the population of Nigerian commercial banks. The banks are: Access Bank; Fidelity Bank; First Bank; Guaranty Trust Bank;

and Zenith Bank. The selected banks were chosen mainly for being Nigeria's Tier-1 banks pioneering technological developments and innovation in the industry. A sample of 25 respondents were chosen from each of the 5 banks to bring the sample size to 125. The distribution of the questionnaires was done by the researcher who visited the 5 banks using established contacts to transmit 25 questionnaires to the selected departments. A non-probability purposive sampling technique comprising quota and judgmental sampling were employed to gather information from respondents from four major relevant departments of each of the selected banks. The departments are the Technology/IT; Operations; Commercial/Retail and Corporate/Wholesale banking. These departments were selected on account of their high level of adoption and application of technology in their operations. Out of the 125 questionnaires distributed, 104 were returned representing about 84% return. 12 out of the 104 questionnaires were not properly filled and thus were rejected leaving 92 respondent questionnaires representing 74% usable for this study.

Analysis of Data

Data was generated through the questionnaire. A 5-point Likert scale capturing the extent of agreement or disagreement of a given situation was applied. Descriptive methods of analyses were utilized to examine and evaluate data from questionnaire instruments using weighted mean scores and percentages to present them. The data consist of single independent variable and multiple dependent variables. The Analysis of Variance (ANOVA) and the regression analyses were deployed to generate results. Regression coefficients were used to test the various hypotheses and determine the impact of the independent variable on the dependent variables as well as the nature of the relationship between them.

Validity and Reliability Analysis

The validity of the questionnaire instruments was severally measured. The questionnaires were variously and extensively reviewed with IT and operations officers of Fidelity bank as well as 5 identified major customers who are heavy users of electronic banking services. The internal and external validity were respectively established through a pre-testing of the questionnaire to 20 respondents and through a representativeness that cut across key areas of banking organisations. The content validity of the questionnaire was assured by the incorporation of the key dimensions of technology prevalence and the key processes of strategic management model in the questionnaire. Besides, the questions asked in the questionnaire substantially addressed the key intents of the questionnaire and the research questions.

Variables	No of Items	Cronbach's Alpha
Independent Variables		
- Level of Technology prevalence	5	0.96
Dependent Variables:		
- Impact on strategy formulation	3	0.93
- Impact on strategy implementation	6	0.96
- Impact on strategy evaluation and control	2	0.97

The reliability of the questionnaire which is the major research instrument was tested and established through the Cronbach's Alpha Coefficient which tested the degree of correlation between questionnaire items. The Cronbach's Alpha obtained for each segment of the questionnaire are 0.96; 0.93; 0.96; and 0.97; all of which are above the 0.7 acceptance benchmark, indicating that the variables of the questionnaire were internally consistent and highly reliable.

4. DATA PRESENTATION AND ANALYSES

4.1 Technology Prevalence in the Nigerian Banking Industry

Table 4.1 The Extent of Technology Prevalence in Nigerian Banking Organisations

S/	Description	Very Low (1)	Low (2)	Average (3)	High (4)	Very High (5)	Weighted Mean Scores
1	Technology application in your department's operations	0 (0%)	2 (2.2%)	18 (19.6%)	34 (36.9%)	38 (41.3%)	**4.17** (83.4%)
2	Technology innovations and growth in Digital product/services	0 (0%)	4 (4.3%)	18 (19.6%)	42 (45.6%)	28 (30.4%)	**4.02** (80.4%)
3	Customer Enrolment/Usage of Electronic/Tech banking platforms	0 (0%)	3 (3.3%)	13 (14.1%)	29 (31.5%)	47 (51%)	**4.30** (86%)
4	Investments in Technology and Digitisation in your bank	0 (0%)	4 (4.3%)	32 (34.8%)	27 (29.3%)	29 (31.5%)	**3.88** (77.6%)
5	Income from Electronic banking products and services	0 (0%)	0 (0%)	30 (32.6%)	35 (38%)	27 (29.3%)	**3.97** (79.4%)
	Total Mean Scores	0 (0%)	2.6 (2.8%)	22.2 (24.1%)	33.4 (36.3%)	33.8 (36.7%)	**4.07** (81.4%)

Source: Field Survey, 2021

Table 4.1 shows the result of the responses on the level and degree of technology prevalence in the Nigerian banking industry. On a Likert scale of 5 points, an overall mean score of 4.07 or 81.4% of the respondents indicate a significant prevalence of technology in the Nigerian banking industry. This finding supports the views of Adesina and Ayo (2010) that almost all the banks in Nigeria have given maximum importance to technological development and deployment.

4.2 Influence of Technology on Strategy Formulation in the Nigerian Banking Industry

Table 4.2.1 The impact of technology on strategy formulation in Nigerian banks

S/N	Description	Strongly Disagree (1)	Dis-Agree (2)	Un Decided (3)	Agree (4)	Strongly Agree (5)	Weighted Mean Scores
1	Technology issues are considered in our strategy formulation process	4 (4.3%)	10 (10.8%)	8 (8.7%)	45 (48.9%)	25 (27.2%)	**3.84** (76.8%)
2	Changes in Technology influence our strategy formulation options	3 (3.3%)	9 (9.8%)	7 (7.6%)	49 (53.2%)	24 (26.1%)	**3.89** (77.8%)

3	Technology enhances speed and quality of data gathering and data analyses for strategy formulation.	1 (1.1%)	7 (7.6%)	5 (5.4%)	35 (38.1%)	44 (47.8%)	**4.24** **(84.8%)**
	Total Mean Scores	2.7 (2.9%)	8.7 (9.4%)	6.7 (7.2%)	43 (46.7%)	31 (33.7%)	**3.99** **(79.8%)**

Source: Field Survey, 2021

Table 4.2.1 shows the respondents responses on the impact of technology on strategy formulation process in Nigerian banks weighted on a Likert scale of 1 to 5 points. A total mean score of 3.99 (79.8%) indicate that the respondents generally agreed that technology impacts on the strategy formulation process in Nigerian banks. This result agrees with the views of Tassey (2012) that management must understand the prevailing technology and formulate strategies that incorporate these technologies to ensure organizational success as a whole.

Table 4.2.2 Regression Analysis of Technology and Strategy Formulation

Regression Statistics				
Multiple R	R Square	Adjusted R Square	Standard Error	Observation
0.92394139	0.85366769	0.80489026	1.19086156	5

a. Predictors: (Constant), Technology

Table 4.2.2 shows the regression statistics explaining the relationship between technology and strategy formulation in Nigerian banks. The Multiple R confirms the correlation coefficient at 0.92 (92%) indicating a strong positive linear relationship between technology (predictor variable) and strategy formulation (outcome variable). The R-Square denoting the coefficient of determination is shown as 0.85 (85%) represents the percentage of proportion of variation in the strategy formulation process (outcome variable) that is explained by the prevalence of technology (predictor variable). The Adjusted R-Squared at 0.80 indicates about 80% in real and adjusted variation attributed to the impact of technology on strategy formulation.

Table 4.2.3 ANOVA of Technology and Strategy Formulation

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	24.81946623	24.8194662	17.50128	0.024891
Residual	3	4.254453771	1.41815126		
Total	4	29.07392			

Table 4.2.3 shows the Analysis of Variance (ANOVA) between technology and strategy formulation. The SS of 24.8 denotes the sum of squares explained by the regression as against the SS of 4.25 being the residual sum of squares due to random forces outside the model. The ANOVA value at (F = 17.501, p < 0.05) at 1 degree of freedom indicates that technology (predictor variable) is significant in explaining strategy formulation (outcome variable). The Significance F (SF=0.02<0.05) represents the probability value that the statistical significance of the F-Ratio is high; thus, indicating the high impact of technology on strategy formulation.

Table 4.2.4 Regression Coefficients and Test of Hypothesis 1

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.07422	0.794811442	-0.0933803	0.931488	-2.60366	2.455225	-2.60366	2.455225
Technology	0.60674	0.145033368	4.18345346	0.024891	0.145179	1.068301	0.145179	1.068301

From the analysis of the regression coefficients in table 4.2.4, the coefficient of 0.60674 indicates the direction of the relationship between technology and strategy formulation. It indicates that a unit of positive change in technology (predictor variable) would result in 60.7% of positive impact on strategy formulation. The t-Statistic further indicates the degree by which the coefficient of the dependent variable (strategy formulation) differs from the null. Thus, the t-Statistics of 4.18 which is above 2, rejects the null hypothesis that technology has no significantly impact on strategy formulation in Nigerian banking organisations. Resultantly, the alternate hypothesis that technology has significant impacts on strategy formulation in Nigerian banks is accepted. This is further confirmed by the small P-value at 0.025 which represents the probability of the occurrence of the null and gives 97.5% confidence to accept the alternate hypothesis that technology makes a significant impact on strategy formulation in the Nigerian banking industry.

4.3 Influence of Technology on Strategy Implementation in the Banking Industry

Table 4.3.1 Responses on the impact of technology on strategy implementation in Nigerian banking industry.

S/N	Description	Strongly Disagree (1)	Dis-Agree (2)	Un Decided (3)	Agree (4)	Strongly Agree (5)	**Weighted Mean Scores**
1	Technology affects organizational design for implementing strategies	2 (2.2%)	7 (7.6%)	10 (10.8%)	39 (42.3%)	34 (36.9)	**4.04** (80.8%)
2	Technology enhances our market penetration strategies by creating new uses for existing products	1 (1.1%)	3 (3.3%)	7 (7.6%)	35 (38.1%)	46 (50.5%)	**4.33** (86.6%)
3	Technology extends our banking products /services to new markets	0 (0%)	0 (0%)	2 (2.2%)	39 (42.3%)	51 (55.4%)	**4.53** (90.6%)
4	Technological tools improve and create new products for customers	0 (0%)	0 (0%)	4 (4.3%)	38 (41.3%)	50 (54.3%)	**4.50** (90%)
5	Technology helps us to diversify to develop new products/markets	3 (3.3%)	3 (3.3%)	6 (6.5%)	34 (36.9%)	46 (50.5%)	**4.27** (85.4%)
6	Rapid changes in technology affect our strategy implementation	4 (4.3%)	4 (4.3%)	10 (10.8%)	34 (36.9%)	40 (43.5%)	**4.11** (82.2%)
	Total Mean Scores	1.67 (1.8%)	2.83 (3.1%)	6.50 (7.1%)	36.50 (39.6%)	44.50 (48.4%)	**4.30** (86%)

Source: Field Survey, 2021

Table 4.3.1 shows the respondents responses on the impact of technology on strategy implementation process in Nigerian banking organisations weighted on a Likert scale of 1 to 5 points. The overall mean score of 4.30 or 86% demonstrate the respondents' general agreement on

the strong impact of technology on strategy implementation. This is implied in the views of Sibanda and Ramrathan (2017) that technology has become the fundamental conduit through which organisations execute their strategies and business models.

Table 4.3.2 Regression Analysis of Technology and Strategy Implementation

Regression Statistics				
Multiple R	R Square	Adjusted R Square	Standard Error	Observation
0.95408144	0.91027139	0.88036185	2.25498159	5

a. Predictors: (Constant), Technology

Table 4.3.2 shows the regression statistics explaining the relationship between technology and strategy implementation in Nigerian banking organisations. The Multiple R confirms the correlation coefficient at 0.95 (95%) indicating a strong positive linear relationship between technology (predictor variable) and strategy implementation (outcome variable). The R-Square denoting the coefficient of determination is shown as 0.91 (91%) represents the percentage of the proportion of variation in the strategy implementation process (outcome variable) that is explained by technology (predictor variable). The Adjusted R-Square of 0.88 indicate about 88% in real and adjusted variation attributed to the impact of technology on strategy implementation.

Table 4.3.3 ANOVA of Technology and Strategy Implementation

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	154.755894	154.755894	30.43415	0.01173
Residual	3	15.25482597	5.08494199		
Total	4	170.01072			

Table 4.3.3 shows the Analysis of Variance (ANOVA) between technology and strategy implementation. The SS of 154.7 denotes the sum of squares explained by the regression as against the SS of 15.25 being the residual sum of squares due to random forces outside the model. The ANOVA value at ($F = 30.434$, $p < 0.05$) at 1 degree of freedom indicates that technology (predictor variable) is significant in explaining strategy formulation (outcome variable). The Significance F (SF=0.01173<0.05) represents the probability value that indicates that the statistical significance of the F-Ratio is high, thus representing high impact of technology on strategy implementation.

Table 4.3.4 Regression Coefficients and Test of Hypothesis 2

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.00727009	1.505032349	-0.6692681	0.551225	-5.79695	3.782415	-5.79695	3.782415
Technology	1.51506148	0.274631063	5.51671563	0.01173	0.641063	2.38906	0.641063	2.38906

From the analysis in table 4.3.4 the regression coefficient of 1.515 indicates the direction of the relationship between technology and strategy formulation. It means that a unit of positive change in technology (predictor variable) would result in 1.515 units (151.5%) of positive impact on strategy implementation. The t-Statistic further indicates the degree by which the coefficient of the dependent variable (strategy implementation) differs from the null. The t-Statistics of 5.51 is

above 2 and thus rejects the null hypothesis that technology does not significantly impact on strategy implementation in the Nigerian banking industry. Resultantly, the alternate hypothesis that technology has significant impacts on strategy implementation in Nigerian banking industry is accepted. This is further confirmed by the small P-value at 0.01 which represents the probability of the occurrence of the null and thus gives 99% confidence to accept the alternate hypothesis that technology makes a significant impact on strategy implementation.

4.4 Impact of Technology on Strategy Evaluation and Control in Nigerian Banking Industry.
Table 4.4.1 Responses on the impact of technology on strategy evaluation and control in Nigerian banking industry.

S/N	Description	Strongly Disagree (1)	Dis-Agree (2)	Un Decided (3)	Agree (4)	Strongly Agree (5)	**Weighted Mean Scores**
1	Technology enables measurement and monitoring of our strategies	3 (3.3%)	4 (4.3%)	4 (4.3%)	45 (48.9%)	36 (39.1%)	**4.16** (83.2%)
2	Technology enables corrective and control actions on our strategies	2 (2.2%)	5 (5.4%)	6 (6.6%)	48 (52.2%)	31 (33.7%)	**4.10** (82%)
	Total Mean Scores	2.50 (2.7%)	4.50 (4.9%)	5.00 (5.4%)	46.50 (51%)	33.50 (36%)	**4.13** (82.6%)

Source: Field Survey, 2021

Table 4.4.1 shows the respondents responses on the impact of technology on strategy evaluation and control in the Nigerian banking industry and weighted on a Likert scale of 1 to 5 points. The total weighted mean scores of 4.13 or 82.6% by the respondents indicate the general agreement on the high impact of technology on strategy evaluation and control among Nigerian banks.

Table 4.3.2 Regression Analysis of Technology and Strategy Implementation

Regression Statistics				
Multiple R	R Square	Adjusted R Square	Standard Error	Observation
0.95408144	0.8523083	0.80307774	0.88965372	5

a. Predictors: (Constant), Technology

Table 4.4.2 shows the regression statistics of the impact of technology on strategy evaluation and control. It was used to explain the relationship between technology and strategy evaluation and control in the Nigerian banking industry. The Multiple R confirms the correlation coefficient at 0.92 indicating a strong positive linear relationship between technology (predictor variable) and strategy evaluation and control (outcome variable). The R-Square denoting the coefficient of determination is shown as 0.85 (85%) represents the percentage of the proportion of variation in the strategy evaluation and control process (outcome variable) that is explained by technology (predictor variable). The Adjusted R-Squared is 0.8 which indicates about 80% in real and adjusted variation attributed to the impact of technology on strategy evaluation and control.

Table 4.4.3 ANOVA of Technology and Strategy Evaluation and Control

	df	*SS*	*MS*	*F*	*Significance F*

Regression	1	13.70262876	13.7026288	17.31258	0.02525
Residual	3	2.374451242	0.79148375		
Total	4	16.07708			

Table 4.4.3 shows the Analysis of Variance (ANOVA) between technology and strategy evaluation and control. The SS of 13.7 denotes the sum of squares explained by the regression as against the SS of 2.3 being the residual sum of squares due to random forces outside the model. The ANOVA value at (F = 17.3, p < 0.05) at 1 degree of freedom indicates that technology (predictor variable) is significant in explaining strategy evaluation and control (outcome variable). The Significance F (SF=0.02525<0.05) represents the probability value that indicates that the statistical significance of the F-Ratio is high, thus representing the high impact of technology on strategy evaluation and control in the Nigerian banking industry.

Table 4.4.4 Regression Coefficients and Test of Hypothesis 3

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.18195868	0.593777633	-0.3064425	0.77930	-2.07162	1.707707	-2.07162	1.707707
Technology	0.45082563	0.108349686	4.16083932	0.02525	0.106009	0.795643	0.106009	0.795643

From table 4.4.4 the regression coefficient of 0.45 indicates the direction of the relationship between technology and strategy evaluation and control. It means that a unit of positive change in technology (predictor variable) would result in 45% of positive impact on strategy evaluation and control. The t-Statistic further indicates the degree by which the coefficient of the dependent variable (strategy evaluation and control) differs from the null. The t-Statistics of 4.16 is above 2 and thus rejects the null hypothesis that technology has no significant impact on strategy evaluation and control in Nigerian banks. Resultantly, the alternate hypothesis that technology has significant impacts on strategy evaluation and control in the Nigerian banking industry is accepted. The small P-value at 0.025 represents the probability of the occurrence of the null and gives 97.5% confidence to accept the alternate hypothesis that technology exerts significant impact on strategy evaluation and control in Nigerian banking industry.

5. DISCUSSION OF FINDINGS

The findings of this study confirm the strong influence of technology on organisational strategy and its processes. An overall mean of 3.95 on a Likert scale of 5 or 75% score by the respondents confirm technology's influence on strategy formulation. Statistical evidence showed the correlation coefficient at 0.92 implying a strong positive linear relationship between technology and strategy formulation. The regression coefficient indicates about 60.7% of positive impact on strategy formulation by a unit of increase in technology. This relationship between technology and strategy formulation is captured in the views of Bill (2014) that technology serves the purpose of information gathering and analyses for management decision making and strategy formulation. These findings are also supported by the views of Dasgupta et. al., (2011) that technology is a critical element to consider when formulating and determining organizational strategy. In

furtherance to this, Khan (2020) stated that organisations rely on technology to take informed decisions and create competitive advantage. Similarly, Obasan (2011) advised that banks should incorporate information and communication technology into their strategic plans for effective performance. This advice has been heeded by many Nigerian banks as Amangbo (2019) confirmed that Nigerian banks have developed the culture of benchmarking trends in technology to shape their future. This finding has a lot of policy implications for strategy formulation in the banking industry. The greater application of technology in information gathering and processing will more likely ensure greater accuracy and adequacy of relevant planning data for decision making and strategy formulation in banks. It will also facilitate a quicker decision making and strategy formulation process. As technology becomes gradually indispensable in banks, strategy planning executives will need to acquire requisite technological capabilities and competences.

In terms of strategy implementation, technology has an even higher influence with an overall mean of 4.3 on a Likert scale of 5 representing 86% response scores by the respondents. Statistical analyses show the correlation coefficient at 0.95 indicating a stronger positive linear relationship between technology and strategy implementation; whilst the regression coefficient indicates a high 151% of positive effect on strategy implementation by a unit of increase in technology. In this regard, El-Chaarani and El-Abiad (2018) acknowledged that the use of technology in banks result in the delivery of high-quality services with less effort and enhances performance. Tallon (2007) also confirmed that technology influences an organization, its processes and the strategies put in place to ensure success. This denotes that strategy implementation is greatly enhanced by technology, and also suggests that through technology and the digitization and automation of their operations and processes, banking organisations achieve better tasks accomplishment. The policy implication is that banks will continue to face the challenges of coping with the rapid changes in technologies with the emergence and deployment of newer and faster technologies in implementing their strategies. Besides, the increasing digitization and deployment of more technology in the strategy implementation process will most likely result in the displacement of human labour and consequent disengagement of some of the workforce in the banking industry.

Finally, an overall mean of 4.13 on a Likert scale of 5 representing 82.6% response scores validate the influence of technology on strategy evaluation and control. The correlation coefficient at 0.92 indicate a strong positive linear relationship between technology and strategy formulation, and the regression coefficient indicates about 45% of positive impact on strategy formulation by a unit of increase in technology. This means that banking organisations deploy various technologies in the measurement, evaluation and control of their strategies and operations. The works of Reimink (2019) support this finding by illustrating how technology affects strategy evaluation and control with the use of automated workflow processing which enables banks to monitor work queues, oversee and control the activities being performed, identify bottlenecks or problems, and reallocate work to respond to changing conditions. This is supported by the views of Cascio and Montealegre (2016) that the use of technology and electronic monitoring and surveillance systems can better control the flow of operations and avoid disruptions. A major implication of this finding is that

technologically-aided evaluation and control will eliminate elements of human bias in the evaluation and measurement of strategic activities.

6. SUMMARY, CONCLUSION AND RECOMMENDATION

Technology exerts great influence on organizational strategy. It affects strategy formulation through its use in gathering relevant data for consideration and incorporation in strategy formulation. Technology also influences strategy implementation through the use of technology in the realignment and reconfiguration of organisational internal design and in the implementation of market penetration, market development and product development strategies. Finally, technology affects strategy evaluation and control through its use in monitoring, evaluating and controlling strategy activities and outcomes of various strategies.

The outcome of the findings of this study has determined that technology exerts strong influence on, and affects organizational strategy process in Nigerian banking industry. It also showed evidence that there is a strong positive relationship between technology and the process of strategy formulation, implementation and control. This study has therefore provided additional empirical evidences to support existing knowledge base on the importance and influence of technology on organizational strategy. It has also made evident the imperative of technology for the survival of banks and achievement of strategic success in the banking industry. More research is needed to determine the role of technology in specific strategies both within and outside the banking industry.

On the basis of the findings and conclusions, this study recommends that:
 i. Banks should develop adequate technology capabilities and competences to cope with the trend of increased digitization and technology deployment in the industry.
 ii. Banks should embark on stronger technology infrastructure to eliminate frequent incidences of network downtime that impede digital banking services in Nigeria.
iii. Banking organisations should employ technology to pursue the strategy of full digitization of their operations, processes and services to achieve greater product differentiation, customization of service offerings, increase in market share and development of new products.

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