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Management Information System as a Catalyst to Organisational Performance in the 21st Century: A Study of Selected Banks in Nigeria

Obasan Kehinde A[1*] and Soyebo Yusuf. A[2]

[1]*Department of Business Administration, Olabisi Onabanjo University, Ago – Iwoye, Ogun State, Nigeria*
[2]*Department of Accounting and Finance, Lagos State University, Ojo, Nigeria*

Business managers view the implementation of Information Technology (IT) as a tactic to combat competition by improving productivity, profitability and the level of information, irrespective of forms of ownership. Information enables the conceptualization and creation of new products and services by guiding decision makers in reaching a valid conclusion and making an informed decision regarding every area of their responsibility. Using a structured questionnaire administered to sixty selected staffs of the three selected Banks in Nigeria and analyzing the obtained data with the descriptive and regression method of statistical analysis, this study examines the role of management information system (MIS) as a catalyst to organisational performance in the 21st century. The result obtained indicated that MIS is very important in an organisation because no organisation can survive, expand and attain meaningful development without information. Hence, the importance of MIS cannot be over emphasized especially in the Banking sector in the 21st Century. Thus it is recommended that such information system needs to be strategically managed so as to bring about sound and profitable organisation and thereby increase organisational chance of surviving amidst daunting challenges.

Keyword: management information system (MIS); organization; technology; performance

Introduction

Organisations view the effective adoption of Information Technology (IT) as a way to combat competition by improving productivity, profitability, and the level of information which is one common asset shared by all business regardless of their nature because it is a vital part of any business entity irrespective of their forms of ownership as it enables conceptualization and creation of new products and services.

Information guide decision makers in reaching a valid conclusion and making an informed decision regarding every area of their responsibility. Without adequate information, resources will not be located and converted into desirable finished goods aimed at a specific target market for profit. Since no business entity can survive or remain relevant without effective information, business data must be systematically captured, analyzed, quantified, compiled, shared and made accessible in order to enjoy the maximum value of information. Hence, an Information System is designed, developed, administered and maintained to accomplish those tasks.

*****Corresponding author. Email: basankehinde@yahoo.com

When properly collected, organized, and indexed in accordance with the requirements of the organisation, its stored data becomes accessible to those who need the information. A critical feature of any information system should be the ability to not only access and retrieve data, but also to keep the archived information as current as possible (Moga, 2007). The information system is the mechanism to ensure that information is available to the managers in the form they want it and when they need it. It is designed to support their work through providing relevant information for their decision making.

Innovations are adopted by organizations in order to improve the level of services delivered to various users and with the broad aim of increase their profitability and market share. Knowledge on the processes of innovation adoption and the characteristics of innovative organizations is evolving in various sectors of industries (Boyne et al. 2005; Rashman & Radnor 2005; Walker 2008).

Literature on whether adopted innovations such MIS are actually able to deliver positive outcomes is, by contrast, in its infancy. Findings from qualitative and quantitative studies in the emerging literature are not unanimous often suggest a positive relationship (Walker & Damanpour 2008). However, similar to the studies of business organizations where the focus has been on performance consequences of product

innovations, the emphasis in Banks has been on the influence of facility innovations on performance.
The evolution of computer-based Information System and the rapid advancement of IT have created a more sophisticated and competitive business environment. In fact, IT has changed the way companies compete, as it moves from strictly supporting role at the back of office to take a new vintage position. Developments in computer technology made possible for managers to select the information they require, in the form best suited for their needs and in time they want. This information must be current and in many cases is needed by man people at the same time. So it has to be accurate, concise, timely, complete, well presented and storable.

Most firms nowadays depend on IT. But personal computers (PCs) themselves will not improve organisational productivity this only comes about if they are used efficiently and effectively. Computer systems can clearly aid organisations in the processing data into accurate, well presented, up-to-date and cost effective information While the conciseness, relevancy, timeliness and completeness of supplied information will largely on the capabilities of the people involved in its processing and selection Harizonova, (2003).

In recent time, a surge in the number of studies that examine the MIS adoption is a proof to this challenge (Bharadwaj et al. 1999, Devaraj & Kohli 2000, Sohal Moss & Ng 2001). In doing so, the MIS adoption literature has examined the relationship between investments in MIS and their effect on organisational performance. However, due to the nature of the research designs employed, this stream of research has not definitively attributed the effects of usage and impact of individual technologies on organisational performance since most companies to have difficulty surviving for long. De Gevs (1997) observed that the international average life expectancy of a company of any size 12.5 years.

However, most decisions about IT are critically important to the prosperity and survival of a firm. A successful organisation must be able to adapt and learn fast as creative activity increase their survival against all odds, especially in rapidly changing environment of the 21st century. Also, an associated stream of research examines the issue of technology usage in the context of technology acceptance (Lucas & Spitler 1999). The comparability of self-reported usage and objective or actual usage remains a controversial point in information systems research (Venkatesh & Davis 2000). Self-reported usage might induce biases due to having the same respondents answer similar questions on their perceptions of the IT and its effectiveness. Further, there is evidence suggesting that actual usage and perceived usage may not be congruent. Because most studies to date have been in laboratory settings with student subjects, there is merit to examining an independently monitored and objective measure of technology usage. This study extends this line of research by examining the technology usage issue in the field setting of a bank network. Thus, this study investigates how Management Information System (MIS) serves as a catalyst to organisational survival in the 21st century.

Literature Review

The global business environment is becoming more complex at an increasing rate while greed and globalization were the two major concepts used to describe the situation, other major forces for changes include technological developments, new employment patterns and organisations structures, the growing importance of environmental issues and the death of deference among employees, customers and communities. There is also an increasing need for companies to gain and maintain the confidence of the general public in their business conduct. All this saddle manager with the task of surfacing a tool for the extraction of timely and required information from the target audience in order to effect an accurate and productive decision; Hence, the birth of MIS.

Oladejo (2007) described MIS as a system using formalized procedures based on data from both internal and external sources, to enable decision makers make timely and effective decisions, for planning, directing and carrying out the activities for which they have appointed. This connotes that MIS is a system responsible for the collection, processing and communication of defined data in order to enhance prompt decision making. Viewing MIS as data processing or a computer based system would amount to a production oriented view of MIS which places more emphasis on production but generation of information from data processing and the management involvement makes the system distinctly different from data processing.

Presently, computer and information systems play several vital roles in the smooth running and implementation of various organisational activities such as the formulation of a business plan, formulation and selection of business operating protocols and securities, design of data bank etc. This new development saddle Computer and Information System Managers with the task of planning, coordinating and directing research and facilitate the computer-related activities of firms. They help determine both technical and business goals in consultation with top management and make

detailed plans for the accomplishment of these goals. All this requires a strong understanding of both technology and business practices (McLeod, 1995). Scholars all over the world have resorted to internet as personal library where all necessary information can be obtained and displayed while computers have significantly altered business management (Bee, 1999). The MIS is presently the organisation nervous systems which respond to opportunities and avoid threats. It is widely acknowledged that firms with the best and most effective Information Systems are those that have clear and well thought of information strategy (Harizanova, 2003). Only few empirical studies has focused on the innovation-performance hypothesis (Damanpour, Walker, & Avellaneda 2009; Salge & Vera 2009).

Whereas extant work does not examine performance consequences of MIs in particular, it provides evidence to support the notion that innovation may unfold and influence organizational performance in different ways—findings that corroborate Walker's (2004) quantitative review of studies across public and private sectors that innovation influences performance positively. The balance of evidence suggests that although innovation is risky and its success is not guaranteed, its adoption enhances performance. It confirms views espoused by contingency and resource dependence theories that organizations are adaptive systems that introduce change in order to function effectively (Pfeffer & Salancik 2003). MIS can play a central role in the process of changing organizations, facilitating organizational adaptation to the external environment and increasing the efficiency and effectiveness of internal processes. Argument from institutional theory has alternatively suggested that MIS may have indirect performance impacts because factors driving adoption are initially focused upon securing internal and external legitimacy (Staw & Epstein 2000).

Although large sample empirical studies of the relationship between MIS and organizational performance are scarce, evidence from case studies repeatedly points toward the positive effects of the adoption of MIS (Birkinshaw & Mol 2006; Hamel 2006). For instance, Hamel (2006) cites cases from the private sector in the early 1900s such as Mary Parker Follett's experiences of building and running community- based organizations in Boston to more modern-day MIS in non profit ventures such as Bangladesh's Grameen Bank.

The contemporary trend in the Nigeria Banking System requires Banks of different sizes to deliver their services using different technologies. Large banks may have comparative advantages in lending technologies such as credit scoring that are based on "hard" quantitative data. Small banks, in contrast, may have comparative advantages in lending technologies such as relationship lending that are based on "soft" information that is difficult to quantify and transmit through the communication channels of large banking organisations Stein (2002) and may create agency problems that require a closely-held organisational structure Berger and Udell (2002).

Luftman, et al (1993) emphasized that for companies to succeed in an increasingly competitive, information-intense, dynamic environment, then the alignment of business strategy and IT strategy was a necessity.

Furthermore, Chan et al. (1997) provided empirical support for a positive relationship between business performance and the alignment of business strategy and IT strategy. The above studies were conducted in the context of large organisations. This study hypothesized a similar relationship between IT alignment and performance for small firms. Thus the study's major hypothesis was: Effective adoption of MIS does not have any significant impact of on organisational success and survival.

Methodology

This study focused on MIS, as a catalyst to organisational survival in the 21st century using three selected banks in Lagos. The Banks include Intercontinental Bank Plc., UBA Plc., and First Bank Plc. The aggregate of the three selected Banks staff is Two hundred from different department in the organisation while samples of Sixty (60) staff were selected for this study using the simple random sample technique applied among the various levels of management and departments. Data were sourced from both the primary and secondary source of data collection with the administered of questionnaire and review of existing literature on MIS and organisational performance. The questionnaires were divided into two Section A and B with the former seeking personal data of respondents such as Sex, Marital Status, Religion, etc., while the latter part seek opinions of the respondent on the focus using a five point Likert scale.

The data obtained were analyzed with the use of both the descriptive statistical analysis and regression method and t-test were employed to test the nature of relationship between MIS and organisational performance. The model of this is specified as:

$Y=b_0 + b_1x_1 + \mu$

Where; Y=Dependent variable (Organisational Performance) X=Independent variable (Management Information System) b_0=Autonomous level of

Organisational Performance b_1=Rate of change in Organisational Performance due to change in MIS
µ=standard error/random variable.

Results and Discussion

Result of analysis of the relationship between MIS and organisation performance. $Y = 1.259 + 0.703X_1 + 0.368$

Table 1. MIS and organisational performance

Variables	N	d.f.	Sig. Level	r	r^2	T_{cal}	T_{tab}	F_{cal}	F_{tab}
MIS and organisational performance	60	58	0.05	0.703	0.496	4.195	1.74	17.60	4.42

Interpretation: From Table 2, OND/NCE/A'LEVEL is 3 (5%) HND/B.Sc./B.Ed. holders are 21 (35%), M.Sc./M.Ed. holders are 24 (40%) while the remaining 12 (20%) have professional qualification.

Table 2. Educational qualification distribution

Educational qualification	Frequency	%	Cumulative %	Mean	Standard Deviation
OND/NCE/A'LEVEL	3	5	5		
HND/B.Sc./B.Ed.	21	35	40		
M.Sc./M.Ed.	24	40	80	2.75	0.851
Professional qualification	12	20	100		
Total	60	100			

Interpretation: From table 3, 15 (25%) of the respondents have had below 2 years of experience with the bank, 21 (35%) had 3 – 5 years of experience, 15 (25%) had 6 – 10 years of experience, while the 9 (15%) had 11 – 15 years of experience with the organisation.

Table 3. Year with organisation distribution

Year with organisation	Frequency	%	Cumulative %	Mean	Standard Deviation
Below 2 years	15	25	25		
3 – 5 years	21	35	60		
6 – 10 years	15	25	85	2.30	1.031
11 – 15 years	9	15	100		
Total	60	100			

Table 4. Summary of respondents reactions to various research statement

S/N	Statement	Responses				
		S.A	A	UD	D	S.D
1	MIS is a major issue that affects my organisational survival.	39(65%)	15(25%)	6(10)	-	-
2	MIS is imposing Security and control threat on my organisation.	-	42(70%)	6(10%)	9(15%)	3(5%)
3	Computer virus and many other fraudulent manipulations are threat of exposure of confidential information confronting my organisation.	3(5%)	18(30%)	33(55%)	3(5%)	3(5%)
4	MIS has made service continuity a more appropriate term than business continuity.	6(10%)	15(25%)	30(50%)	9(15%)	-
5	MIS has made decisions leading to the achievement of my organisation objectives attainable.	39(65%)	15(25%)	6(10%)	-	-
6	With MIS accurate and well-presented information is available to improve our productivity.	3(5%)	51(85%)	6(10%)	-	-
7	MIS enables planning, coordinating, organizing and controlling functions of management.	15(25%)	39(65%)	6(10%)	-	-
8	MIS is the Life Blood of my organisation	12(20%)	42(70%)	6(10%)	-	-
9	From My Own Perspective, MIS is that least important	6(10%)	12(20%)	18(30%)	21(35%)	3(5%)
10	MIS has a profound contribution on our Operation	12(20%)	39(65%)	3(5%)	6(10%)	-
11	Strategic ability to deal with Crisis and Interruptions effectively is a gain of MIS	3(5%)	13(39%)	15(25%)	3(5%)	-
12	MIS has made decisions leading to the achievement of my organisation objectives attainable.	39(65%)	15(25%)	6(10%)	-	-
13	With MIS accurate, timely well-presented information is available to improve our productivity.	3(5%)	52(85%)	6(10%)	-	-
14	MIS has assisted my Organisation understand the rule of its Environment.	18(30%)	21(35%)	21(35%)	-	-

From the data analysis 3(5%) of the total respondents possess OND/NCE/A'LEVEL qualification is while 21 (35%); 24 (40%) and 12 (20%) possess HND/B.Sc./B.Ed; M.Sc./M.Ed; and professional qualification respectively. The table 4 above showed the summarized responses to the various questions advanced to the respondents. The statistical meanings of the statistical tool used in analyzing the model of this research work were given in this sub-section. The correlation coefficient (r) value of 0.703 indicates the existence of strong positive relationship between MIS and Organisational Performance. The co-efficient of Determination (r^2) value of 0.496 explains the proportion of the total variations in organisational performance that are attributed to variations in management information system. The r^2 often overstate the true value of explanations due to the un-adjusted degrees of freedom and to eliminate such, the adjusted r^2 value of 0.446 shows the actual variation in Organisational performance attributable to Management Information System.

The t-test statistic indicates the individual significance of the parameters used in the model. Each value is compared with the table value (t_{tab} at 5% = 1.743) and they all exert a significant in the functioning of the model. The F-ratio value of compared with table value of 3.01shows the overall significance of the model as well as the goodness of fit through its explanatory power. This shows that the model is significant because the calculated F-ratio of 17.60 is greater than the table values of 4.42 at 5% level of significance. To this end, the alternative hypothesis was accepted and it was revealed that MIS has significant effect on Organisational performance in Nigerian Banking industry.

Conclusion and Implication of Study

This study examined the effects of MIS on organizational performance using descriptive and inferential statistical analytic techniques. The analysis above showed that Management Information System is very important in an organisation because no organisation can survive without information. Hence, the importance of Management Information System cannot be over emphasized especially in the Banking sector in the 21st Century the world over.

Thus such information system needs to be strategically managed so as to bring about sound and profitable organisation and thereby increase organisational chance of surviving. In the same vein, there is a need for organisations to procure quality gadgets and tools that will enhance effectiveness, efficiency and customers' retention. This ensures quality service delivery and productivity which is essential for any future- oriented organisation while the primary goals for the effective adoption of MIS are not truncated.

This study reveals that MIS have a direct positive relationship with organizational performance. Although the poise of evidence on the direct effect of innovation on performance is weighted toward positive findings, previous research has not examined the possible mediating effects of other variables. Therefore, this study's revealed that there is a need for more extensive inquiry on the innovation-performance relationship designed for facilitating organizational attributes and processes.

Certainly, there are some evidence in previous research that raises the possibility of ''pro-innovation bias'' such as Rogers (1995) such patterns of adoption, pasts and consequences of different types of organisational change are not necessarily the same. Similarly, majority of knowledge management adoption comes from the private sector. Other studies (Moore and Hartley 2008; Walker 2008) are making progress in interpreting evidence on innovation types in various organizations. Hence, this study showed that the adoption of MIS in an effective and purpose driven scale will increase the chance of attaining set organisational goals.

References

Andrews, Rhys, George A. Boyne, Jennifer Law, & Richard M. Walker. (2005). External constraints and public sector performance: The case of comprehensive performance assessment in English local government. *Public Administration* 83:639–56.

Barua, A., C. Kriebel & T. Mukhopadhyay (1995). Information technologies and business value: An analytic and empirical investigation. *Inform. Systems Res.* 6(1) 3–24.

Bee, R. Beef (1999). Management information system and statistic. Trowbridge: Crown Well Press.

Berger, Allen N. and Gregory F. Udell. (2002). Small Business credit availability and relationship lending: The Importance Of Bank Organisational Structure. *Economic Journal* 112: F32-F53.

Bharadwaj, A. S., S. G. Bharadwaj, & B. R. Konsynski. (1999) information technology effects on firm performance as measured by Tobin's *q*. *Management Sci.* 45(7) 1008–1024.

Birkinshaw, Julian, & Michael J. Mol. (2006). How management innovation happens. *MIT Sloan Management Review* 47:81–8.

Brynjolfsson, E. (1996). The contribution of information technology to consumer welfare. *Inform. Systems Res.* 7(3) 281–300.

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quart.* 13(3) 319–340.

De Gevs (1997). The living company, Harvard Business Review, 75(2): 51-59.

Chan, Y.E., Huff, S.L., Barclay, D.W. & Copeland, D.G. (1997). Business strategic orientation, information systems strategic orientation and strategic alignment. *Information Systems Research*, 8:2, 125-150.

Dewan, S & C. Min. (1997). The substitution of information technology for other factors of production: A firm level analysis. *Management Sci.* 43(12) 1660–1675.

Devaraj, S., R. Kohli. (2000) Information technology payoff in the healthcare industry: A longitudinal study. *Journal of Management Information Systems* 16(4) 41–67

Diewert, E. W., A. M. Smith. (1994). *Productivity measurement for a distribution firm*. National Bureau of Economic Research working paper no. 4812, Washington, D.C.

Francalanci, C., H. Galal. (1998) Information technology and worker composition: Determinants of productivity in the life insurance industry. *MIS Quart.* 22(2) 227–241.

Harizonova, A. (2003). Management information system in tailoring industry. *Academic Open Internet Journal*, 9.

Hamel, Gary. (2006). The why, what and how of management innovation. *Harvard Business Review*, 84:72–84.

Hitt, L., E. Brynjolfsson. (1995). Productivity, business profitability, and consumer surplus: Three different measures of information technology value. *MIS Quart.* 20(2) 121–142.

Igbaria, M., N. Zinatelli, P. Cragg, A. Cavaye (1997). Personal computing acceptance factors in small firms: A structural equation model. *MIS Quart.* 21(3) 279–305.

Lucas, H. C., Jr., V. K. Spitler. (1999) Technology use and performance: A field study of broker workstations. *Decision Sci.* 30(2) 291–311.

Luftman, J.N., Lewis, P.R. and Oldach, S.H. (1993) Transforming the enterprise: The alignment of business and information technology strategies. *IBM Systems Journal*, 32(1), 198-221.

McLeod, R. (1995). Management Information system: A study of Computer-based Information System (6th edition) New Delhi Centre Centre for Agricultural and Rural.

Menon, N. M., B. Lee, L. Eldenburg. (2000). Productivity of information systems in the healthcare industry. *Information Systems Resource*. 11(1) 83–92.

Moga, J.A. (2007). Management information system: Encyclopedia of management: Advanmeg Inc.

Moore, Mark, and Jean Hartley. (2008) Innovations in governance. *Public Management Review* 10:3–20.

Mukhopadhyay, T., S. Kekre, S. Kalathur. (1995) Business value of information technology: A study of electronic data interchange. *MIS Quart.* 19(2) 137–156.

.

Oladejo, M. O. (2007): Essentials of management information system and communication technology, 1st Publications.

Pfeffer, Jeffery, and Gerald R. Salancik. (2003). *The external control of organizations: A resource dependency perspective*, 2nd ed. New York: Harper & Row.

Rashman, Lyndsay, and Zoe Radnor. (2005). Learning to improve: Approaches to improving local government services. *Public Money and Management* 25:19–26.

Rogers Everett (1995). *Diffusion of innovations.* Reviewed from http://www.stanford.edu/class/symbsys205/Diffusion%20of%20innovations.htm

Sohal, A. S., S. Moss, L. Ng. (2000). Using information technology productively: Practices and factors that enhance the success of IT. *Internet J. Tech. Management* 20(3–4) 340–353.

Strassman, P. A. (1990). *The Business Value of Computers*. Information Economics Press, New Cannan, CT.

Staw, Barry M & Lisa D. Esptein. (2000). What bandwagons bring: Effects of popular management techniques on corporate performance, reputation and CEO pay. *Administrative Science Quarterly*, 45:523–56.

Straub, D., M. Limayem, E. Karahanna-Evaristo. (1995) Measuring system usage: Implications for IS theory testing. *Management Sci.* 41(8) 1328–1342

Stein, Jeremy C. (2002). Information production and capital allocation: Decentralized vs. Hierarchical Firms, *Journal of Finance* 57, 1891-1921.

Szajna, B. (1996) Empirical evaluation of the revised technology acceptance model. *Management Sci*. 42(1) 85–92.

Taylor, S., P. Todd. (1995). Understanding information technology usage: A test of competing models. *Inform. Systems Res.* 6(2) 144–176.

Venkatesh, V & F. D. Davis. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Sci.* 46(2) 186–204.

Walker (2008). An empirical evaluation of innovation types and organizational characteristics: Towards a configuration framework. *Journal of Public Administration Research and Theory* 18:591–615.