



**BUSINESS INFORMATION SYSTEMS AND THEIR EFFECT ON
PERFORMANCE IN BAYELSA'S TELECOMMUNICATION
SECTOR**

Chinedu Augustine Okoro and Rachel Elizabeth Johnson

Department of Office and Information Management, Faculty of Management Science, Niger Delta University,
Wilberforce Island, Bayelsa State, Nigeria.

Abstract: The study investigates the relationship between business information systems and organisational performance in Telecommunication Sector in Bayelsa State. The research employs a descriptive survey. The target population is made up of 106 employees from particular Bayelsa State-based telecommunications companies, namely the MTN Nigeria, Globacom, Airtel Nigeria, and 9mobile branches. Through the use of standardized questionnaires, the researcher collected primary data directly from participants. Data collected was analyzed using inferential statistics (Spearman rank order correlational coefficient) with the aid of SPSS. The results show significant relationships between all dimensions of business information systems (BIS) and measures of quality service delivery, based on data generated and analyzed in the study examining the relationship between BIS and organizational performance in the Bayelsa State telecommunications industry. It is recommended that businesses give media agencies top priority when it comes to communication plans. This proactive strategy improves competitive positioning and market control in addition to increasing brand visibility. Efficient communication across media platforms fosters consumer loyalty and trust, which supports the expansion and viability of organizations.

Keywords: Business Information Systems, Organisational Performance

Introduction

Office layouts have been altered by business information systems to accommodate departmental integration and local networks. In order to facilitate fast and efficient decision-making for organizing, directing, assessing, and regulating their responsibilities, they set up formal procedures to guarantee that management at all levels receives pertinent information from a variety of sources (Munirat et al., 2014). Additionally, the use of Management Information Systems (MIS) for data management, organization, and retrieval speeds up service delivery and improves market accuracy, all of which have an effect on organizational performance (AL-Gharaibeh & Malkawi,

2013). The primary goal of human resource management is to identify and organize the workforce, which is viewed as the intellectual capital that provides knowledge, concepts, and inventions. According to Alkawasbeh (2011) and Laudon et al. (2002), it places a strong emphasis on using human resources efficiently in order to support organizational initiatives and keep up with technology improvements. Advances in information technology, such as computers, software, and communication networks, have made it easier to move from the information to the knowledge era. As a result, there has been a lot of research done on the ramifications of this shift (Zheng & Emma, 2013). Effective Information Technology (IT) management changes business operations, revenue creation, and customer service in today's ever changing technology landscape, where information is a competitive advantage. Managers may make well-informed decisions and improve organizational performance with the help of enterprise-wide information systems, which give them access to rich, real-time data about clients, vendors, and staff (Stair et al., 2013; Shaukat et al., 2018).

Statement of the problem

Businesses in a variety of industries are today navigating a quickly changing environment that is characterized by fierce rivalry brought on by quick developments in information and communication technologies. Telecommunications firms, particularly those in Nigeria, must contend with intense domestic and international competition in order to survive and expand. Attaining high performance management standards requires improving total performance, especially personnel performance. Organizations in Bayelsa state may not be utilizing their corporate information systems to the fullest extent possible in order to successfully and efficiently accomplish their goals, even while these systems are in place. More precisely, these businesses can overlook the technological aspect of integrating company information systems and the investment opportunities that arise from various staff performance management procedures in business organizations. The study challenge centers on evaluating how business information systems are used by telecom corporations and how employee performance levels are managed in these establishments. The goal of the research is to quantify and evaluate how different business information system components—like software, databases, networks, human resources, and material resources— affect employee performance management. This involves assessing elements such as performance development and improvement within Bayelsa State-specific telecommunications enterprises, as well as performance planning, review and follow-up, assessment, and feedback.

Research Question

1. To what extent does decision support system relate with quality service delivery in telecommunication industry in Bayelsa State.
2. To what extent does transaction processing system relate with quality service delivery in telecommunication industry in Bayelsa State.

Objective of the Study

1. To examine the extent to which decision support system relates to quality service delivery in telecommunication industry in Bayelsa State.
2. To determine the extent to which transaction processing system relates to quality service delivery in telecommunication industry in Bayelsa State.

Hypotheses

H₀₁: There is no significant relationship between decision support system and quality service delivery in telecommunication industry in Bayelsa State.

H₀₂: There is no significant relationship between transaction processing system and quality service delivery in telecommunication industry in Bayelsa State

Review of Related Literature Business information systems

An organization's internal control framework includes a Business Information System (BIS), which is the application of people, documents, technologies, and procedures by management accountants to address business challenges like overall business strategy, product costing, and service evaluation (Munirat et al., 2014). BIS focuses on analyzing other operational information systems inside a company, in contrast to ordinary information systems. Although they are different concepts, information technology (IT) and information systems (IS) are closely related. While IS incorporates these components together with procedures and people to generate information, IT refers to the hardware, software, and data components used in producing information (AL-Gharaibeh & Malkawi, 2013). Managers and other company professionals can access reports and displays through Management Information Systems (MIS). For example, sales managers can rapidly receive sales analysis reports, analyzing sales by individual people, using networked PCs and web browsers (Munirat et al., 2014). Establishing performance benchmarks and keeping an eye on organizational operations depend heavily on MIS, which also integrates information flow and arranges the organization around decision centers. A system is made up of interconnected parts that cooperate to accomplish certain goals (Satzinger et al., 2002). Thus, to support corporate operations, decision-making, and organizational performance, an information system gathers, processes, stores, organizes, retrieves, manages, and transmits information (Laudon & Laudon, 2007; O'Brien, 2003). This is not the same as IT, which is more concerned with the standards and tools used to produce information (Kroenke, 2007). Information systems play a critical role in supporting managers' problem-solving, complicated issue visualization, and product innovation (Laudon & Laudon, 2008).

Components of Business Information Systems

Within the framework of this investigation, computer-based systems that furnish data to users with comparable requirements are referred to as business information systems. These systems provide different kinds of information on the company and its main systems. This encompasses past information, ongoing operations, and forecasts for the future. These systems are divided into groups according to the organizational level they support: Systems at the operational level: These technologies help operational managers by monitoring daily actions and transactions that take place within the company. Systems at the management level: These aid intermediate managers in the oversight, regulation, and decision-making of administrative and operational tasks. Systems at the strategic level: Senior management can address long-term strategic concerns and trends with these systems, both inside the company and in the external environment. As a result, business information systems are essential for delivering accurate and timely data to facilitate decision-making at all organizational levels, from tactical planning to strategic work.

Decision Support System

A particular class of computerized information systems called Decision Support Systems (DSS) is created to support organizational and business decision-making processes. These interactive systems are designed to assist decision makers in gathering and evaluating data from a variety of sources, including documentation, business models, raw data, and firsthand experience. Finding issues, considering options, and coming to well-informed conclusions are the main objectives (Broun, 2012).

At the middle management level, DSS is especially helpful for semi-structured and unstructured decision-making (Khan & Khan, 2011). DSS can give banks and other businesses a competitive edge by facilitating prompt choices on important matters that go beyond simple productivity gains and support expansion, profitability, and customer pleasure. Decision makers can use the system to find hidden problems and investigate possible remedies by using data and models (Mohammadi, 2011). It highlights how important decision makers are to the DSS framework's efficient use of management information. One of DSS's main advantages is its capacity to shorten the time needed to obtain relevant information, improving worker productivity and decision-making speed. Improving business decision processes has been a key component of the idea of interactive computer-based systems aiding decision-making since the invention of computers. By gaining a greater comprehension of the intricate relationships that exist between the organization and its external environment, organizations aim to use DSS to obtain a competitive advantage (AlZoubi, 2012).

Transaction Processing System

Modern information systems that are intended to record, input, store, retrieve, and process business activity details must include a Transaction Processing System (TPS). Its main purpose is to produce the data and paperwork required to support an organization's operating requirements (Rahmatian, 2003). Computers are essential to TPS in today's technology environment because they allow for the effective management of transactions in a variety of organizational domains, including financial information systems at establishments such as Satya Wacana Christian University (Gainau & Kurniawati, 2011). TPS is utilized by integrated information systems for quality management functions, including warehouse management, supplier and customer relationship management, production process control, calibration, and maintenance (Lari, 2002). Data dependability is essential, particularly for management's financial supervision procedures (O'Brien, 2015). TPS is essentially a customized information system made to gather, process, store, show, alter, and terminate internal business activities (Parson, 2012). It is made up of a well-organized assemblage of personnel, protocols, databases, software, and equipment that support an organization's main functions. As a result, TPS is essential to overseeing and carrying out the basic transactional tasks that support corporate operations.

Organizational Performance

Measurable results attained by people, teams, and the organization as a whole are all included in the concept of organizational performance. According to Babbneh (2008), it is distinguished by ongoing improvement initiatives that are concentrated on accomplishing goals via the application of standards, performance evaluation, and feedback systems. This performance is assessed in relation to the intended goals and objectives of the company, taking into account the actual output or outcomes obtained. Organizations use performance measurement to improve the efficacy of their planning, budgeting, and assessment procedures, promote accountability, and gain operational feedback (Ammons, 2001). Performance is the culmination of actions, and organizational performance is the whole of all processes and activities carried out by the company, according to Hunger and Wheelen (2007). Managers monitor and control organizational performance in order to gauge organizational knowledge, boost customer value delivery, and enhance management assessment—all of which have a significant impact on the organization's reputation (Shaukat et al., 2008). In order to evaluate how well resources were used, if profitability targets were reached or surpassed, and whether sound financial judgments were made, historical management decisions on investments, operations, and financing must be examined.

For both for-profit and nonprofit organizations, the idea of organizational performance is essential since it is a key indicator for assessing behaviors and settings (Shadi et al., 2018). Strategic management, which aims to maximize total organizational effectiveness, must prioritize achieving higher organizational performance (Cania, 2014). It includes a number of factors, such as the caliber of work generated, the efficacy of decision-making, the development and improvement of processes, the relationships between leadership and staff, the diversity of products and services, innovation, market share, problem-solving skills, and the adoption of modern product development techniques (Imran, 2017). When combined, these components help organizations become more sustainable and successful in fast-paced commercial settings.

Quality Service Delivery

The goal of the ongoing, cyclical process of service delivery is to create and offer services that satisfy the needs of users. Dachs et al. (2004) have classified it into four distinct stages, namely: user involvement, service design and development, service delivery, and service assessment and continuous improvement. Service delivery, according to Carrillat et al. (2007), is the availability of services that adhere to a minimal standard and are physically accessible. Details on the elements of service delivery, such as essential tools, prescription drugs, a fit workforce, and treatment plans, are frequently needed for this definition. Facility visits and in-home interviews are two methods for gathering data on service delivery (Berghman et al., 2006). The willingness and preparedness of a workforce to deliver services in a dependable, accurate, and responsive manner while making efficient use of the resources at hand is the definition of service delivery in the context of this study.

Two essential components make up service quality in the context of service delivery:

- **Expected quality service delivery:** This describes the customer's expectations for the quality of service they expect to receive. **Perceived quality service delivery** relates to the customer's assessment of the overall sufficiency and excellence of the service they receive. When evaluating and enhancing the efficiency and client satisfaction of service delivery procedures, several aspects of service quality are essential.

Theoretical Framework

Wernerfelt's Resource-Based View (RBV) hypothesis, which was first put forth in 1984, will serve as the foundation for this study. The Resource-Based View (RBV) is a prominent theoretical paradigm that posits businesses have multiple resources, some of which can be leveraged to gain competitive advantages. Moreover, better long-term performance may come from a subset of these resources. Resources that are rare and valuable have the ability to give businesses a competitive edge, according to RBV. If the company successfully protects against resource imitation, transfer, or substitution by rivals, these benefits can last for a long time. The strategic significance of internal resources and competencies in determining a firm's competitive position and long-term success is essentially emphasized by RBV. Most of the time, information systems are regarded as a very vital and significant kind of resource. Proponents of RBV contend that it is far more practical to take advantage of outside chances by repurposing resources than it is to try to reinvent the wheel and pick up new skills for every opportunity.

Empirical Literature

The relationship between Management Information Systems (MIS) and organizational performance in a variety of industries has been the subject of numerous empirical research. For instance, a study of cement-producing companies in Southeast Nigeria was carried out by Nworie and Oguejiofor in 2023. Their study looked at the effects that executive support, decision support, and transaction processing systems had on these companies'

success. They polled 143 employees from the accounting and management information system departments of four particular cement businesses using a descriptive survey design. The Yamane method was employed by the researchers to ascertain a sample size of 141, and structured questionnaires were deployed to gather primary data. Young-Harry, Oparanma, and Ejo-Orusa (2018) looked at the connection between MIS and organizational performance in the context of the Seven-Up Bottling Company in Aba and Port Harcourt in a different study. For data analysis and hypothesis testing, they used Spearman's rank correlation and descriptive statistics on a sample of 117 respondents. Their research revealed a strong and positive relationship between Seven-Up Bottling Company's organizational performance and MIS. They came to the conclusion that improving organizational performance is greatly aided by MIS. These studies highlight the significance of MIS elements in impacting organizational effectiveness and performance in many industries, including transaction processing systems, decision support systems, and executive support systems.

Methodology

The research employs a descriptive survey methodology with the objective of addressing the query, "What exists?" This approach is beneficial because it enables the collection of a wide variety of data from a sizable population, addresses real-world scenarios, and moves beyond simple description to more in-depth analysis (Sekaran & Bougie, 2016). The target population is made up of 106 employees from particular Bayelsa State-based telecommunications companies, namely the MTN Nigeria, Globacom, Airtel Nigeria, and 9mobile branches. Through the use of standardized questionnaires, the researcher collected primary data directly from participants. This approach was selected in order to reduce the non-response rates as well as provide the researcher with a personal means of introducing the research issue and eliciting candid responses quickly. Secondary data will also be obtained from published works, journals, and texts. These secondary sources, which offer theoretical frameworks and earlier research findings pertinent to the study's goals, will serve as the cornerstone for the literature review. Data collected was analyzed using inferential statistics (Spearman rank order correlational coefficient) with the aid of SPSS.

Results and Discussion Correlation Outcome between Decision Support System and Quality Service Delivery. Correlations

		Decision Support System	Quality Service Delivery
Spearman's rho Decision Correlation System	Support Coefficient	1.000	.433**
	Sig. (2-tailed).		.000
	N84		84
Quality Service Delivery Coefficient	Correlation	.433**	1.000
	Sig. (2-tailed)	.000	.
	N	84	84

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

Source: SPSS, 2024.

Based on the data supplied, the study discovered a correlation coefficient (r) of 0.433 between the quality of service offered by Bayelsa State's telecommunications industry and the use of decision support systems (DSS). There is a somewhat positive association between these two variables, as indicated by the correlation coefficient of 0.433. The given p-value, or significance level, is 0.00, meaning that it is less than or equal to 0.01 ($p \leq 0.01$). This suggests that, at the 1% level of significance, there is a statistically significant correlation between the decision support system and the provision of high-quality services. Consequently, the null hypothesis is rejected, which most likely claimed that there is no connection between the provision of high-quality services and decision support systems. This indicates that there is enough data to draw the conclusion that, in the Bayelsa State telecommunications sector, decision support systems and high-quality service delivery are significantly correlated.

Correlational outcome between Transaction Processing System and Quality Service Delivery. Correlations

	Transaction processing system	Quality Service Delivery
Spearman's rho Transaction processing system	1.000	.731**
Coefficient		
	Sig. (2-tailed)	.000
	N	84
Quality Service Delivery	.731**	1.000
Coefficient		
	Sig. (2-tailed)	.000
	N	84

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

Source: SPSS, 2024.

Based on the data supplied, the study discovered a correlation (r) of 0.731 between the quality of service offered by the Bayelsa State telecoms industry and the transaction processing system (TPS). These two variables have a strong positive association, as indicated by the correlation coefficient of 0.731. The given p-value, or significance level, is 0.00, meaning that it is less than or equal to 0.01 ($p \leq 0.01$). This suggests that, at the 1% level of significance, there is a statistically significant correlation between the transaction processing system and the provision of high-quality services. Consequently, the null hypothesis is rejected, which most likely claimed that there is no connection between transaction processing systems and the provision of high-quality services. This indicates that there is substantial evidence to support the conclusion that, in the Bayelsa State telecommunications sector, transaction processing systems and high-quality service delivery are significantly correlated.

Conclusion

The results show significant relationships between all dimensions of business information systems (BIS) and measures of quality service delivery, based on data generated and analyzed in the study examining the relationship between BIS and organizational performance in the Bayelsa State telecommunications industry.

In particular, the study probably discovered strong associations between many facets of highquality service delivery and BIS components like executive support systems (ESS), decision support systems (DSS), transaction processing systems (TPS), and maybe others. The aforementioned BIS aspects aim to improve an organization's overall effectiveness, decisionmaking abilities, and operational efficiency. The noteworthy correlations found indicate that a properly deployed and utilized BIS can have a favorable impact on raising the standard of service provided by Bayelsa State's telecom providers. In a highly competitive business, this alignment emphasizes how strategically important it is to use information technology to meet consumer expectations and enhance performance. Conclusively, the study has proven that there is an empirical relationship between business information system and organizational performance in telecommunication industry in Bayelsa State.

Recommendations

The following suggestions have been made in light of the data analysis and study results about the connection between organizational performance and business information systems (BIS) in the Bayelsa State telecommunications sector:

1. Support from the Government for MIS Financing Given that Management Information Systems (MIS) have the ability to boost economic growth and generate jobs, the government need to take a lead role in providing funding for MIS installations in commercial businesses. This assistance can encourage the adoption and application of MIS in a variety of industries, which will advance general economic growth.
2. It is advised that enterprises implement a central database management system. Real-time, effective information production and distribution to users throughout the company would be made possible by this system. It makes accurate and current information easily available, which improves coordination, decision-making, and operational efficiency.
3. To enable the easy and informed flow of information, organizations should implement flexible management system structures. This adaptability makes it possible to quickly adjust to shifting business conditions and improves information accessibility for all parties involved in the organization. In the process of making decisions, it encourages responsiveness and agility.
4. It is recommended that businesses give media agencies top priority when it comes to communication plans. This proactive strategy improves competitive positioning and market control in addition to increasing brand visibility. Efficient communication across media platforms fosters consumer loyalty and trust, which supports the expansion and viability of organizations.

Through the use of BIS, these ideas hope to increase organizational performance, foster economic development by creating more job opportunities, simplify information management procedures, and fortify market presence through successful communication tactics. Telecommunications companies in Bayelsa State and elsewhere may profit much from putting these suggestions into practice.

REFERENCES

- AL-Gharaibeh & Malkawi, (2013). Impact of technology on performance of employees (Case Study on Allied Banks LTD Pakistan). *World Applied Sciences Journal*, 29(2).
- Alkasaspa, M. (2011). *Improve the efficiency of corporate performance through IT*. Amman: Dar Al Yazouri Publishing and Distribution.

- AlZoubi, (2012,). Measuring Quality of Information System Services in Manufacturing Organizations in Riyadh. JKAU: Econ. & Adm., 24(1).
- Ammons, (2001). Information management systems. I. Cairo: Horus International Foundation for Publishing and Distribution.
- Broun, (2012). An Experiential Approach to Organization development. Eighth Edition. N. J: Pearson education Inc.
- Gainau & Kurniawati, (2011). Moderating Role Of User Types And System Usability On Is Success Model: A Meta-Analysis Of E-Learning User Satisfaction. In International Journal of Information, Business and Management (Vol. 12, Issue 4).
- Imran, (2017). Management Information Systems: Managing the Digital Firm, Global Edition. Thirteen Editions. Nwegersy: Prentice- Hall International.
- Khan & Khan, (2011). Information System: The Quiet Revolution in Human Resource Management. Journal of Computer Information System, 42(2).
- Kroenke, (2007). Organizational Information Systems. New Jersey: Prentice-Hall. Inc. Organization Management, 3(1), 133–156.
- Lari, (2002). The Role of Information Systems in Business Firms Competitiveness: Integrated Review Paper from Business Perspective. International
- Laudon, C. K., & Laudon, P. J. (2002). Management Information Systems Managing the Digital Firm. 7th Edition: N.Y: Prentice – Hall International. Inc. Manajemen Sistem Informasi, 3(3), 267–285.
- Mohammadi, (2011) Influence Quality of Information System, Quality of Information, And Perceived Usefulness on User Accounting Information System Satisfaction. E-Jurnal Akuntansi, 683.
- Munirat et al, (2014).). Characteristics of Good Management Information System. Texas: Houston Chronicle.
- Nworie and Oguejiofor (2023) Fundamental Human Resource Management. Seventh Edition. New York: McGraw-Hill Companies Inc.
- O'Brien, (2015). The nature of followership: Evolutionary analysis and review. The Leadership Quarterly, 30(1), 81–95. Behavior and Emerging Technologies, 2023, 1–20.
- Parson, (2012). Factors Affecting Operation Information Systems: Strategy, Software, Human Resources. Dinasti International Journal of Digital Business Management, 4(1), 94–104. s