

## **The Impact of Information Technology (IT) on Human Resource Management (HRM): Empirical evidence from Nigeria Banking Sector. Case Study of Selected Banks from Lagos State and Oyo State in South-West Nigeria**

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### **Abstract**

Information technology (IT) has become an indispensable part of contemporary world while human resource management globally has equally being affected in a number of ways through its adoption and application. Despite the considerable growth in the use of information technology in human resource management (HRM), the level of impact is still under-researched. Using the descriptive statistics, this study seeks to harness the overall and generalized impact of IT on HRM in the Nigeria Banking Sector by exploring some aspects of HRM that have been affected by IT and the effect of such adoption on HRM activities through primary data collected with a structured questionnaire administered to selected Banks in South-West Nigeria. It was revealed that IT has significantly increase the efficiency of HR management activities and processes through an effective and efficient employee communication and engagement while the roles and skills of HR managers has expand considerable overtime due to their adoption and continuous upgrade of knowledge in the use of IT in the discharge of their primary functions. Hence, it is duty bound for Banks policy formulators to determine the right size of IT required to derived the best result in an organisation.

**Keywords:** Technology, Information Technology (IT), Human Resource (HR), Human Resource Management (HRM), Nigeria Banking Sector

### **INTRODUCTION**

Information Technology (IT) has proved to be a catalyst to fundamental changes in the world's economies and societies by creates more avenues to earn income, allows access to useful information, enhances the world of work and makes the world a global village. The IT industry spans broadcast, electronics and print media, computers, human resources management, telecommunications and e-commerce activities. David (2006) opined that the recognition of the pivotal role of Information Technology (IT) for development became eminent in Nigeria with the formulation and approval of the National Information Technology (IT) Policy in March, 2001. The formulation of the IT policy was a consultative process that brought together major IT stakeholders such as Computer Association of Nigeria (COAN) now known as Computer society of Nigeria, National Information Technology Professional Associations (NITDA), and Association of Licensed Telecommunication Companies in Nigeria (ALTCON) as well as all Nigerians in the Diaspora. While Broderick and Boudreau (2001) provides that IT policy has very clear-cut policy goals on the development of the national information backbone to engender seamless interconnectivity in ICT infrastructure development and human resource management in Nigeria.

In modern time, IT has been adopted in most sectors of the Nigerian economy with the aim of achieving the vision 2020 and the Millennium Development Goals (MDGs). It is also imperative to note that, as other sectors of the Nigeria economy embrace the IT revolution, the Nigeria banking sector is not left out as most banking operations are now being automated through the use and incorporation of automated teller machines (ATM) for withdrawals, use of sophisticated database software to maintain customers transactions with intra and inter-bank fund transfer opportunities, smart cards and ATM cards with security labels for customer identification, electronic doors with metallic detectors at entrances to enhance security during banking hours, surveillance cameras placed at strategic positions targeted at capturing employees, customers and intruder's unholy activities during and after the office hour, money counting machine instead of the ad-hoc manual way of counting notes, electronic and mobile banking services (e-banking) to enable customers to monitor their monetary transactions anywhere and anytime from either the internet or their mobile phones.

Ball (2005) observed that IT has brought a great revolutionary change to the Nigeria banking system, but efficient and effective management of [human capital](#) management in this sector of the economy has progressed to an increasingly imperative and complex process. The function of Human Resources Management department is generally administrative and common to almost all organizations but to reduce the manual workload of these administrative activities, banks began to electronically automate many of these processes by developing and introducing IT-oriented software applications which later led to the development of specialized Human Resource Management Systems (HRMS). As a result of this development, the use of information technology in HRM has grown considerably in recent years and there are now extensive applications across a wide range of HRM activities in the banking sector.

According to Ruel et al, (2008) the term e-HRM was first used in the late 1990's when e-commerce was sweeping the business world. e-HRM is internal application of e-business techniques to add value to the management through more effective and efficient information flow and is a way of doing HRM. As information technology improves, organizations especially banks, could manage an increasing number of HRM processes in an effective manner, thereby contributing to the availability of information and knowledge. This in turn has help HRM professionals to play a strategic role in attaining improved competitive advantage. This interaction and intersection between IT and HRM leads to the emergence of HRMS a term used to describe the systems and processes at the intersection between [human resource management](#) (HRM) and [information technology](#) (IT). It merges all HRM activities and processes with the information technology field while the programming of data processing systems evolved into standardized routines and packages of [enterprise resource planning](#) software.

This has been developed since their increased visibility in the late 1990s and were largely used for administrative and data recording purposes and have presently metamorphose into HRM supporting applications for recruitment and selection, flexible benefits, development, e-learning and so on.

Human Resource Management System is any system that helps an organization to acquire, store, manipulate, analyze, retrieve and distribute information about an organization's human resources. While the term 'e-HRM' is used to express the use of information technology within the HRM function. Martin et al (2005) provides the main areas in which HRM practitioners have traditionally introduced IT capabilities.



Table 1: HRM Capability Model

Source: the National Grid HR Capability Framework, adapted from Martin et al (2005)

Additionally, the HRM function may also be involved in organizational development and change management. CIPD (2005) observed that human resource is one of the most sensitive departments in the bank and that the success or failure of a bank lies in its HRM capability.

Aspect of HRM	Potential use of technology
People development and performance management	E-learning Online appraisal systems such as 360-degree feedback Training needs analysis Career management
Resourcing	Online recruitment and selection Induction packages HR planning and forecasting
Employee relations and communications	Intranet Staff surveys Shared services centres OD approaches Team development
HR information and accounting	Intranet Employee and manager self-service Metrics and human capital measurement
Retention and reward	Payroll Total rewards statements Employee self-service in creation of flexible rewards packages Reward modelling/pay reviews Pensions and benefits administration

Table 2: Areas in HRM of Potential Use of IT

Source: CIPD People Management and Technology Survey, 2005

There is no doubt that the introduction and implementation of information technology within the human resource department of banks is a complex matter and that the requirements for the implementation and the impact of the technology differ according to the nature of the bank's human resource management strategies and of the technology. Martin et al (2009) opined that the use of ICT can establish more virtual customer relationships within the organization thus enabling it to provide strategic value. Through social networking, it can also improve employee voice. While Wachira (2010) conclude that HRM in Africa should be concerned with application of internet and web based systems and increasing mobile technologies to change the nature of interactions among HR staff, line managers and employees.

However, the introduction of information technology to human resource management activities is usually driven by potential improvements such as in the speed and efficiency of processes, cost savings, enhanced customer satisfaction, increased accuracy of data, improved transparency and consistency of processes, increased availability of information and the facilitation of a change in the role of human resource managers.

The design of a human resource management system normally involves some trade-off between using the solution and customizing it to fit with the human resource management and organizational needs. Consultation with human resource managers on the design and development of the system is essential in order to map out processes and to ensure that the system will be usable. This must be considered carefully, as should the branding of the solution, which should fit with the human resource and organizational brand. Finally, extensive testing of the system with human resource managers is essential in order to produce a product that is usable and effective.

This will have a major positive impact on human resource management processes by making them faster, more efficient, cheaper, more accurate, more reliable, more transparent and consistent.

Information technology has enhanced the ability of human resource managers to produce reliable data via a human resource management system; this in turn allows human resource professionals to make data-driven decisions and to provide other managers with consultancy based upon this data.

Finally, with regard to the human resource management role, it is apparent that human resource managers may be able to adopt a more advisory or strategic role due to the increased availability of reliable human resource management data.

Many banks have gone beyond the traditional functions and developed human resource management systems that support recruitment, selection, hiring, job placement, performance appraisals, employee benefit analysis, health, safety and security. The recent areas of implementation of human resource management system include:

- Payroll
- Work Time
- Benefits Administration
- HR Information management
- Recruiting
- Training/[Learning Management System](#)
- Performance Record

The payroll module automates the pay process by gathering data on employee time and attendance, calculating various deductions and taxes, and generating periodic pay cheques and employee tax reports. Data is generally fed from the human resources and time keeping modules to calculate automatic deposit and manual cheque writing capabilities. This module can encompass all employee-related transactions as well as integrate with existing financial management systems.

The work time gathers standardized time and work related efforts. The most advanced modules provide broad flexibility in data collection methods, labor distribution capabilities and data analysis features. Cost analysis and efficiency metrics are the primary functions. The benefits administration module provides a system for banks to administer and track employee participation in benefits programs. These typically encompass insurance, compensation, profit sharing and retirement.

The HR management module is a component covering many other HR aspects from application to retirement. The system records basic demographic and address data, selection, training and development, capabilities and skills management, compensation planning records and other related activities. Leading edge systems provide the ability to read applications and enter relevant data to applicable database fields, notify employers and provide position management and position control. Human resource management function involves the recruitment, placement, evaluation, compensation and development of the employees of an organization. Initially, businesses used computer based information system to:

- produce pay checks and payroll reports;
- maintain personnel records;

- pursue [talent management](#).

Online recruiting has become one of the primary methods employed by HR departments to gather potential candidates for available positions within an organization. [Talent Management](#) systems typically encompass:

- analyzing personnel usage within an organization;
- identifying potential applicants;
- recruiting through company-facing listings;
- recruiting through online recruiting sites or publications that market to both recruiters and applicants.

The significant cost incurred in maintaining an organized recruitment effort, cross-posting within and across general or industry-specific job boards and maintaining a competitive exposure of availabilities has given rise to the development of a dedicated [Applicant Tracking System](#), or 'ATS', module.

The training module provides a system for banks to administer and track employee training and development efforts. The system, normally called a [Learning Management System](#) (LMS) if a stand-alone product, allows HR to track education, qualifications and skills of the employees, as well as outlining what training courses, books, CDs, web based learning or materials are available to develop which skills. Courses can then be offered in date specific sessions, with delegates and training resources being mapped and managed within the same system. Sophisticated [LMS](#) allow managers to approve training, budgets and calendars alongside performance management and appraisal metrics.

For this reason, a random survey of the general but substantial impact of IT on HRM in Nigeria banking sector will be carried out as well as the level of impact in measured in degrees.

### **Methodology**

For the purpose of this study, data were sourced from both primary and secondary. The secondary data sources include extensive desk research through library, different published and unpublished materials and the world-wide web while primary data was collected through structured questionnaires and interviews with the major players including HR managers and employees in the banking industry in order to solicit their views on the evolution, adoption and benefits derived from the application of information technology in Nigeria banking sector and its impact on HRM activities.

The questionnaires were designed based on three independent variables of HRM activities that had been identified during oral interview with HR managers, these include: Efficiency of HR management activities and processes, Employee communication and engagement and the changing roles and skills of HR managers.

Respondents were serving HR managers with a minimum of 20 years' experience in HRM in the same bank and other bank employees with a minimum of 20 years work experience as well. This was to enable the respondents to attend practically to questions about HRM activities before the adoption of IT in HRM in their respective banks. The respondents graded the dependent variables determining the impact of IT on each HRM activity in percentage (%).

The Banks were selected at random using criteria such as ownership structure, years in business, turnover, human capital size and relevance to IT adoption. The selected Banks include First bank of Nigeria (FBN), United Bank for Africa (UBA), Skye Bank Plc. and Union Bank in Lagos and Oyo states of South-West Nigeria. It can be observed that most of these banks had been in operation before the evolution and adoption of IT in HRM activities of banking industry and were selected based on their high concentration in the region with a view to achieving maximum representation within Nigeria banking sector vis-à-vis the objective of this study.

It is paramount to state that the dependent variables, for each of the three identified independent variables to measure the impact of IT on HRM, were identified through oral interview with HRM professionals and are stated below:

❖ Changing roles and skills of HR managers

**Dependent Variables:** Reduction of administrative and transactional work; Facilitation of change in HR structure; Facilitation of a strategic data-driven HR role; increased management of vital information; Time and labour management

❖ Efficiency of HR activities and processes

**Dependent Variables:** Speed and efficiency of HR activities; Accuracy of information; Transparency and consistency; Cost Savings; Timeliness of information processing; e-learning

❖ Employee communication and engagement

**Dependent Variables:** Availability of information; Work flexibility; Resourcing and recruitment; Employee communication from Top to Bottom; Employee Selection; Employee training and development

Interviews were conducted and questionnaires reports were generated in 10 branches of each of the respective banks selected in each of the two states. The average result of all the values supplied for each dependent variable was administered as a generalized response from each of the banks in the two states to determining the impact of IT on HRM activities. Afterwards, overall average value of each IT impact variable obtained from the generalized response from each bank represented was taken for the two states. Thereafter, the percentage impact of IT on each HRM activity (independent variable) was determined based on the results obtained. A comparison of the degree of effectiveness and efficiency of HRM activities before and after the adoption of IT in HRM in the selected banks was presented based on the results obtained from the data analysis carried out in the study and stands to represent the impact of information technology on HRM in the Nigeria banking sector.

#### DATA ANALYSIS AND RESULTS DISCUSSION

The statistical analyses used were simple and descriptive in nature based on the percentage impact metrics variables. The dependent and the independent variables used had been initially stated and explained in the methodology section. However, the response from the selected banks representing the Nigeria banking sector based on the impact of IT on HRM activities for the three independent variables are shown in Table 3- 8 in the appendix.

It can be observed that the overall mean response on the impact of IT on employee communication and engagement is 79 % as against 49 % before its adoption in HRM.

Overall mean response on the impact of IT on HRM roles and skills is 78 % as against 43 % before its adoption in HRM. Overall mean response on the impact of IT on HRM activities and processes is 85 % as against 49 % before its adoption in HRM.

Empirical evidences of the impact of IT on HRM

Areas of impact of IT on HRM	Before adoption of IT	After adoption of IT
Efficiency of HR management activities and processes	49	85
Employee communication and engagement	49	79
Role and skills of HR managers	43	78
<b>Overall average value in %</b>	<b>47</b>	<b>81</b>

Source: Field survey (2011)

From the result of the data analyzed and presented in the table above, it can be observed that the overall mean efficiency and effectiveness of HRM activities was 47% before the adoption of IT and later improved after adoption of IT by 81%.

- Efficiency of HR management activities and processes, through improved speed and efficiency of HR activities, accuracy of information, transparency and consistency, cost savings, timeliness of information processing and e-learning, was 49% before the adoption of IT infrastructures in the whole managerial process and 85% after the adoption.
- Employee communication and engagement, through improved availability of information, work flexibility, resourcing and recruitment, employee communication from top to bottom, employee selection and employee training and development, was 49% before the adoption of IT infrastructures in the whole managerial process and 79% after the adoption.
- Role and skills of HR managers, through reduction of administrative and transactional work, facilitation of change in HR structure, facilitation of a strategic data-driven HR role, time and labour management and increased management of vital information, was 43% before the adoption of IT infrastructures in the whole managerial process and 78% after the adoption.

### CONCLUSION

The study has particularly provided empirical evidence that indeed the adoption of IT in the Nigerian banking sector and especially in its HRM department, going by what the analyzed data collected from the banks selected have revealed, has largely impacted HRM activities in the Nigeria Banking Sector. Three independent variables of HRM activities have been identified, these include: Efficiency of HR management activities and processes, Employee communication and engagement and Role and skills of HR managers.

Efficiency of HR management activities and processes was 49% before the adoption of IT in the managerial process and 85% after the adoption (table 5), employee communication and engagement was 49% before the adoption of IT infrastructures in the HR managerial process and 79% after the adoption (Table 8) while role and skills of HR managers was 43% before the adoption of IT infrastructures in the whole HR managerial process and 78% after the adoption (Table 6).

In a related manner, the study revealed that in the Nigeria banking sector as represented by the selected banks in the study, the overall mean efficiency and effectiveness of HRM activities was 47% before the adoption of IT and later improved by 81% after the adoption of IT (Table 9).

The overall conclusion, however, is that flexibility in the use of IT in HRM in Nigeria banking sector can be enhanced if the latest IT infrastructures are incorporated assuming IT impact level beyond 81% obtained in this study is desired.

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**Table 3:** Mean response on the impact of IT on HRM activities and processes variables in %

HR activities & processes IT variables	Speed and efficiency of HR activities		Accuracy of Information		Transparency and consistency		Cost Savings		E-Learning		Timeliness of Information Processing	
	Before adoption of IT	After adoption of IT	before adoption of IT	after adoption of IT	before adoption of IT	after adoption of IT	before adoption of IT	after adoption of IT	Before adoption of IT	After adoption of IT	Before adoption of IT	After adoption of IT
<b>Select ed Banks</b>												
<b>FBN</b>	61	89	78	97	60	93	58	86	-	88	70	92
<b>UBA</b>	63	87	80	96	56	90	52	89	-	85	65	90
<b>UNION</b>	43	65	65	80	52	80	34	66	-	50	40	68
<b>SKYE</b>	47	85	71	94	55	87	44	85	-	91	59	88
<b>Average (%)</b>	<b>54</b>	<b>82</b>	<b>74</b>	<b>92</b>	<b>56</b>	<b>88</b>	<b>47</b>	<b>82</b>	<b>-</b>	<b>79</b>	<b>59</b>	<b>85</b>

Source: Field Survey (2011)

**Table 4:** Overall Mean response on the impact of IT on HRM activities and processes variables in %

HR activities & processes IT	Before adoption of IT	After adoption of IT
<b>Overall average value in %</b>	49	85

Source: Field Survey (2011)

**Table 5:** Mean response on the impact of IT on HRM roles and skills variables in %

HR Roles and Skills Variables	Reduction of administrative & transactional work		Facilitation of change in HR structure		Facilitation of a strategic data-driven HR role		Increased management of information		Facilitation of time and labour management	
	Before adoption of IT	After adoption of IT	Before adoption of IT	After adoption of IT	Before adoption of IT	After adoption of IT	Before adoption of IT	After adoption of IT	Before adoption of IT	After adoption of IT
<b>Banks Selected</b>										
<b>FBN</b>	50	85	56	83	45	88	51	86	45	92
<b>UBA</b>	47	70	59	85	41	90	46	84	42	89
<b>UNION</b>	30	51	44	58	29	67	34	55	15	69
<b>SKYE</b>	42	80	53	82	33	81	40	75	38	84
<b>Average (%)</b>	<b>43</b>	<b>72</b>	<b>53</b>	<b>77</b>	<b>37</b>	<b>82</b>	<b>43</b>	<b>75</b>	<b>35</b>	<b>84</b>

Source: Field Survey (2011)

**Table 6:** Overall Mean response on the impact of IT on HRM roles and skills variables in %

HR Roles and Skills	Before adoption of IT	After adoption of IT
<b>Overall average value in %</b>	43	78

Source: Field Survey (2011)

**Table 7:** Mean response on the impact of IT on employee communication and engagement variables in %

HR employee communication variables	Availability of information		Work flexibility		Resourcing and recruitment		Employee communication from Top to Bottom		Employee Selection		Employee training and development	
	Befo re adop tion of IT	After adop tion of IT	Befo re adop tion of IT	After adop tion of IT	Befo re adop tion of IT	After adop tion of IT	Befo re adop tion of IT	After adop tion of IT	Befo re adop tion of IT	After adop tion of IT	Befo re adop tion of IT	After adop tion of IT
<b>Banks Selected</b>												
<b>FBN</b>	65	87	31	72	50	80	55	93	66	86	60	89
<b>UBA</b>	68	89	39	75	51	89	53	92	67	82	62	85
<b>UNION</b>	56	72	15	30	38	55	24	81	43	52	53	70
<b>SKYE</b>	59	85	28	70	40	85	38	92	55	85	57	87
<b>Average</b>	<b>62</b>	<b>84</b>	<b>29</b>	<b>62</b>	<b>45</b>	<b>78</b>	<b>43</b>	<b>90</b>	<b>58</b>	<b>77</b>	<b>58</b>	<b>83</b>

Source: Field Survey (2011)

**Table 8:** Overall Mean response on the impact of IT on employee communication and engagement variables in %

HR employee communication	Before adoption of IT	After adoption of IT
Overall average value in %	49	79

Source: Field Survey (2011)

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