

An IT-Based Appraisal Model for Effective Performance Management System in Nigeria

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Abstract

Performance management is a systematic process by which an institution involves its employees, as individuals and teams, towards accomplishing desired goals and objectives, and this is conventionally viewed as a priceless tool for realizing tangible results, sustainable corporate culture, strategy execution and leadership effectiveness. However, while performance management system has received a great deal of attention in the field, the actual mechanism for conducting robust goal-setting and measuring individual employee, team, unit, division, or department's performance has remained a critical challenge to many organisations. This development is viewed with grave concern for human capital productivity and development, particularly in the public service sector of the many developing economies like Nigeria. This paper therefore seeks to explore the acceptability and feasibility of a technologybased performance appraisal model developed to automate the usage, organisation, calculation, analysis, and storage of employee's performance appraisal process, having regard to a team's balanced scorecard as well as the individual employee's key performance indicators. The work adopted survey approach using primary and secondary sources of data. From the content analysis technique used to analyze the data, it was observed that a good number of developing countries in Sub-Saharan Africa have been implementing performance management in one form or the other, but with a discernible shift towards result-based management system. Additionally, the utility of a simple spreadsheet package in measuring employee performance based on a 5-level rating scale is demonstrated. The significance of the study lies in the potential to refine and improve on current approaches by making the whole evaluation process more efficient, thereby streamlining the subjective and time-consuming tasks associated with traditional performance appraisal system. The paper documents the model's limitations, including some supervisors' phobia for the numeric and a general reluctance to respond to technology-enabled change in the world of appraisals. To resolve this, continuous training and pilot tests are recommended in order to fine-tune the new IT approach, especially within the Nigerian Public Service environment.



Keywords: Balanced Scorecard, IT, Innovation, Key Performance Indicators (KPIs), Performance Appraisal Software (PAS), Results-Based Management (RBM), Strategic Performance Management (SPM)

Related Conference Theme: Managing Employee Performance

JEL Codes: J45, 53, 81

"If the feedback and rating are based on data and facts, it is easier to explain the rating rationale to the employees. This also helps them to understand where they stand vis-à-vis their counterparts. If it is not based on data, then it is next to impossible to explain to employees the rationale behind their rating."

Lakshmi Murthy (2015)

Introduction

With or without a formal Performance Management System (PMS), performance appraisal is a crucial activity of any manager who oversees people and in any organization, public or private, where people are engaged to achieve set goals or tasks. PMS is also pivotal to dealing with employee compensation, promotion, sanction, and disengagement. However, poor service delivery in performance appraisal evaluating employees, checking what they have done, or not done, what they have done poorly or well, and where improvement is needed - has also been linked to job dissatisfaction and unnecessary turnover, but appraisal is by no means an easy task (Grote, 2011). Everyone can do a good job, but equality of human performance is an abnormality. It is near impossible to reward everyone equally simply because human talent differs across the whole continuum of humanity and 'all fingers are not equal'. Assessment of human effectiveness or usefulness, by definition, implies comparisons and differentiation. Thus, the IT-based appraisal system proposed in this paper recognizes human differentiation and helps in achieving higher-level of honest evaluation of team members while also allowing clearer indication of where specific skill-gaps need to be bridged to enhance overall organizational performance. The problem is not with relevance of numbers, appraisal model or tool, but ensuring supervisors' consistent fairness and transparency of the process. Successful performance appraisal (that which keeps supervisors' emotionalism, leniency, strictness, to the barest minimum thereby adopting a more meritocratic approach) depends on the overall maturity of the organization, regularity of objective assessment in a matrix-driven process, and capacity to communicate effectively. Admittedly, performance appraisal process remains inherently a subjective process, orientating and building supervisory capacity across the organization towards stricter performance measurement scales is a tough call particularly in an overwhelming traditional African 'my brother's keeper' mentality, but the challenges should not be allowed to jettison desirable optimization of human capital productiveness in today's rapidly changing workplace.

There is dense literature on several diverse aspects of PMS, but work appears limited on the role and application of technology to facilitating the process of appraising the employee. There is a full continuum from those who feel that machines have no role to play in evaluating job performance to those who believe that computer software can help to keep subjectivity in performance appraisal to the barest minimum. There is also the debate as to how many goals should be set for the average employee in the first place, the important behavioural attitudes and competencies needed to get the job done the way the organization wants it, the best, meaningful approach (without demotivating the employee) to



explaining performance rating to skeptical employee, but beyond all the generic issues, certain questions in the PMS debate are of immediate interest in the context of the actual appraisal process. How can you use the computer spreadsheet package to set clear employee goals, targets, or responsibilities to improve appraisal objectivity ("what do you expect of me")? What is the right performance appraisal rating to determine how well your employee has done in achieving set goals ("how am I doing at meeting your expectation")? How measurable are outputs and outcomes expected from the employee and which of these two should attract premium in employee appraisal? What is the 'appropriate' rating scale, 4-scale, 5-scale, 7-scale, or should there be any scale at all? How do you use a rating scale well (assign a rating using a rating scale) to drive performance and to make meaningful differences in individual performance? These issues are germane not only to sustainable good corporate governance, but also to development of strategy and human capital across economic sectors. In this paper, an attempt is made to explore the extent to which a computer-based, data-and-facts-driven appraisal model can help to address some of these issues.

Need for the Research Study

The need for the present study can be explained from two perspectives, namely, operational management and strategic management. First, performance appraisal is pivotal to dealing with employee compensation, promotion, sanction, and disengagement, but it has remained a PMS aspect that is regarded as always difficult, controversial, a daunting challenge, downright taxing, or frustrating to managers (Grote, 2011: 6). If some managers succeed in 'writing' the appraisal, they still want to avoid the facial contact with the employee to discuss the appraisal results, yet it is crucial for the employee to perceive strong ties between performance as measured and the resulting rewards in terms of compensation, promotion, or non-monetary recognitions (Rao, 2012). Additionally, as earlier noted, poor appraisal delivery in many organizations has been linked to job dissatisfaction and higher level staff turnover. The main purpose of this paper is to propose a technology-based appraisal model having the potential for making the process a bit easier or less taxing, particularly in the Nigerian context. Thus, this contribution should be seen as part of renewed efforts towards integrating modern technologies from the private sector into government, to the benefit of all citizens as evidenced in the United States (Chopra, 2014).

Second, recent attempts to deepen and strengthen performance monitoring and appraisal in the Nigerian Public Service as means for achieving concrete socio-economic dividends of democracy for the people, makes this study even more relevant (Olaopa, 2015). The slow pace in entrenching, deepening and institutionalizing PMS in Nigeria through widespread capacity building so as "to reduce subjectivity in appraisals" has also been acknowledged (Office of the Secretary to the Government of the Federation [OSGF] 2014: 188). This follows to the imperatives for improving on mechanisms for proper identification, utilization and rewarding of top performers in the public service as it is done in many forprofit private-sector organizations that are basically result-driven if they are meet the aspirations of their owners (shareholders). The owners of public business are the people and they demand no less result from the public servants. To ensure proper entrenchment of the concepts and philosophy of merit in the public service, it is imperative to leverage on IT innovations such as the spreadsheet and similar software packages that can be deployed to enhance performance and long recognised as critical for countries to move forward in e-leadership and the Human Resources Management aspects of Strategic Performance Management (SPM) (Commonwealth Secretariat, 2010). Thus, the IT-based approach proposed in this paper should be seen as a contribution towards strengthening e-governance and building a culture of learning and innovation in employees, executives, managers, and leaders in any organization (Senge, 2006).



Organization and Structure of the Paper

The rest of the paper is as follows: Section 2 reviews some conceptual and empirical literature on the corporate social responsibility debate, with greater emphasis on the Nigerian context and challenges of the educational sector, particularly at the grassroots. Section 3 highlights the methodology adopted for the research study while Section 4 highlights the keys results of the study. The paper ends with Section 5 which contains a summary of the findings, a few policy implications and some suggestions for future studies.

Literature Review

Common concepts and practices in Performance Management System (PMS) are well-documented in the literature, but limited attention has been paid to the crucial issue of technology-assisted performance appraisal. The term Performance Appraisal (PA) is used to denote a formal record of a supervisor's opinion of the quality of an employee's work (Grote, 2011). Appraisal in human resources management context seeks to summarize the supervisor's view of the employee's potential for development and overall performance against the set goals (Rao, 2012). The traditional appraisal system emphasizes the importance of such elements as clarity of goals, objectivity, effective feedback mechanism, and what relative weights are applicable to results, outputs and outcomes and the competencies needed by the employee in getting those results (Grote, 2011). In this regard, authors such as Locke and Lathan (2002), and Ordonez, *et al* (2009) have found that using competencies facilitates better performance, and organizations that make good use of competencies and intelligent goal-setting are likely to have much better performance-driven culture. Additionally, assigning meaningful rating, taking cognizance of agreed-upon Key performance Indicators (KPIs) and Balanced Scorecard (BS) is expected to be based on principles of SMART (Specific, Measurable, Achievable, Realistic and Time Bound).

While traditionalism is reflected in all the foregoing PMS aspects, among others, the challenge of assigning a rating to reflect performance remains to a large extent un-resolved. Therefore, the present paper proposing a workable and less taxing approach is an attempt in filling this vacuum. Performance appraisal rating scales are diverse in theory and practice; 3600 assessment (the employee assessing his manager) is excluded, and 3-, 4-, 5-level, even 20-level scales are observable in the literature (Muchinsky, 2012), although Grote (2011) suggests that the use of 5-level scale is increasing. Information technology is regarded as a critical success factor for strategic performance management (Commonwealth Secretariat, 2010); hence, this paper is premised upon the belief that it is good management practice to try to use technology to make appraisal service delivery as simple as possible. Of course, in using the IT for HRM, we need to treat people as people and not as statistics (Rao, 2004); an IT-based appraisal model should therefore be used as aids. Thus, with the dominance of technology in every field and sector today and one of the global forces breaking all the trends (Dobbs *et al*, 2015), emerging software such as spreadsheet package can be creatively deployed to simplify the rating process without losing information quality at individual and corporate levels.

Appraisal Objectivity and Quantification

There are many methods of performance appraisal that are well-documented in the literature (Bhattacharya & Sengupta, 2009; Sudarsan, 2009; Grote, 2011), but Rating Scale is proposed in the present study because it is widely used across many jurisdictions, and because the rating idea lends itself to enhancing objectivity and analysis in performance evaluation process. In the words of Olaopa (2015),



"If good governance is wrapped in high-sounding macroeconomic terms that cannot be translated into specific indices that affect the dynamics of poverty and misery in the land, then government performance becomes a meaningless one in democratic context."

Admittedly, there may be some important aspects of job performance that may be found unsuitable for formalized SMART goals-based setting, yet crucial to the organization's success. Even at that, with little training, supervisors can retain minimum capability to objectively evaluate the value of the so-called qualitative aspects of certain jobs. How well the manager has done the appraisal (360° assessment) popularized by Rao (2012) is not normally expected to be included because it is contended that including employee assessment is considered exogenous to intelligent appraisal and it is not supported by the literature (Kruger & Dunning, 1999; Grote, 2011; Lombardo & Eichinger, 2003).

Balanced Scorecard and Key Performance Indicators (KPIs)

Balanced Scorecard (BS) contains key performance drivers of a strategy-focused organization as prescribed by Kaplan and Norton (2000) and Niven (2006). Covering four broad perspectives including Service Delivery, Financial Stewardship, Operational and Internal Processes, Learning and Development, BS has been found useful for enhancing individual and institutional performance (Epstein & Manzoni, 1997; Malina & Selto, 2001). BS provides the key result areas (KRAs), small number of unique responsibility areas that must be executed successfully if the employee's job is to be appraised as having been well done. The KRAs in turn will be broken down into Key Performance Indicators (KPIs) or metrics that will be used to determine how well the individual employee has performed. The KPIs are expressed in more exact terms to make facilitate ease of assessment of the quality of job done, the amount of work (quantity) done, whether the job was done efficiently (cost saved or within budget, the degree to which schedules and timeliness were adhered to, percentage increase in satisfied customers or service complaints), contribution to employee training, among other indicators.

It is an Appraisal, Not a Negotiation

Performance appraisal is not a negotiation, but a discussion of the supervisor's opinion on the employee's job (Grote, 2012). Perhaps, understanding performance appraisal this way (methodological terms) can help to remove what is perceived to be its legal drawback (such in claims of discrimination) from some employees who tend to be dissatisfied with the appraisal process (Malos, 1998; Sudarsan, 2009). Thus, where the PMS policy suggests the employee's input in the specified form, it should be understood by both parties that it is only a way to gain more information from the employee's perspective so that no vital information is overlooked in ensuring completely evidence-based appraisal system. The most crucial point is to ensure that both parties are focused on an appraisal that is job-specific, fair, objective and factual (Malos, 1998), but the literature is sparse in explaining exactly how the manager should go about achieving this in the Nigerian context, much less, using emerging technologies to facilitate the process.

Role of IT in Performance Appraisal

Emerging Information Technology (IT) has continued to play key role in performance appraisal, particularly in matured economies like United States (Chopra, 2014; Dobbs *et al*, 2015). For instance, IT has been used with positive results in relation to electronic monitoring of performance and in facilitating the feedback process through many software packages available online (Fletcher, 2001; Selden *et al*, 2001; Spinks *et al*, 1999). Technology businesses like Capterra.com (2015) provide online information on a wide range of Performance Appraisal Software (PAS) products that organizations can deploy to obtain



better satisfaction with PMS in terms of using data to gain key insights into how individuals and teams have performed and can improve on performance. The products are either Web-based or installable, but whatever accessibility format is selected, the essence of PAS is to significantly improve the appraisal process, cut-down on its drudgery, and use automation to achieve more objective, accurate, reliable and faster appraisal. As illustrated in the Microsoft case below, time saved can in itself enhance productivity, if the time saved is deployed by all parties in delivering on corporate targets rather than spent in pursuit of appraisal bureaucracy.

Typical Performance Appraisal Technology Process: The Microsoft Case

A general insight into typical performance appraisal process from a private firm's perspective is provided by Gates (1999). When Sharon (hypothetical employee) is promoted to manager, one of her new duties is conducting half-yearly performance appraisals for each of her subordinates. Each employee writes a self-evaluation, and Sharon adds her own performance evaluation to the original document. Sharon's evaluation of an employee incorporates peer review, and e-mail makes it easy to get feedback from people in other divisions or even around the world. Sharon and her manager review her appraisals of the work of her employees and her proposed ratings for them. Then Sharon meets each employee faceto-face to discuss performance and new objectives.

Microsoft managers used to spend more time on the paperwork for appraisals than on the appraisals themselves. With the company's e-appraisal system, the appraisal process has been simplified for managers while ensuring that they follow company policies. Additionally, the electronic application calculates default merit increase and bonus for each person based on the manager's rating, employee's job level and employee's current salary. The system has in-built flexibility with all the necessary control measures. As the manager enters the numbers for each employee, the system automatically calculates the new average for the team. After senior managers review the numbers electronically, compensation changes feed directly into the master employee database.

By translating a rating into compensation and by enabling the manager to visually compare such figures as ranking by performance and by salary, the electronic appraisal system helps the managers to grade employees consistently according to both performance and policy. The author hints that the application also reduces the time spent by managers on appraisal administration by at least 50 percent, hence the need to further demonstrate the utility of ICT-based appraisal system, especially in the context of a developing economy like Nigeria.

Research Gap

Many previous studies provide a great deal of knowledge on PMS principles, practice, tools, methodological challenges and impact on employee productivity particularly in the more advanced economies, but, with respect to Nigeria, there is no known previous study that has explored the extent to which a computer-based appraisal model can be deployed to address some of the 'frustrating' concerns in conducting performance appraisal, particularly in the context public sector organizations. A good attempt was made in addressing the issue (Dogarawa, 2011), but the work focused more on developing suitable appraisal forms with useful pointers that could engender closer interaction between the supervisor and the employee rather than an ICT-based solution proposed in this paper. Nonetheless, the author's hint on the need for automation and intranet in performance management of the Nigerian Public Service was found instructive. In essence, the particular challenge of assigning reliable, authentic, sincere, and consistent employee rating to reflect actual performance remains to a large extent unresolved. Therefore, the present paper is an attempt in filling this vacuum. Thus, the main contribution



of this paper to the growing literature is in taking Nigeria as country-specific context, examining the ICT utility as a problem-solving paradigm shift in the research towards facilitating and enhancing overall performance appraisal process, particularly in the public service.

Objectives

In this paper, an attempt is made to explore the extent to which a computer-based, data-and-factsdriven appraisal model can be able to address some of the 'frustrating' concerns in conducting performance appraisal, particularly in the Nigerian context. Specifically, the study was designed to achieve the following objectives:

- **1.** To describe the emerging performance appraisal practice in the context of public service in some comparable environments of developing economies of Sub-Saharan Africa.
- **2.** To explore the utility of computer spreadsheet package in setting employee goals, targets, or responsibilities and in evaluating employee performance.

Theoretical Basis for the Study

This contribution is rooted in a wide range of theories owing to its interdisciplinary nature. Performance management is generally influenced by Motivational Theory, Systems Theory, Goal-Setting Theory (GST), and Victor H. Room's 1964 Expectancy Theory. Edwin Locke's 1968's GST was found to be more applicable to the subject-matter of performance appraisal because it stresses Result-Based Management, setting clear goals as a way of motivating employee's superior performance, as well as ensuring employee's accountability for the job outputs and outcomes (Rao, 2012). The idea is that goals will lead to effort, while effort will yield performance, then, the performance is rewarded. In this reasoning, poor- or non-performance should not be rewarded, because de-motivation is likely to follow the practice or act of rewarding poor performance.

Although GST tries to justify goal-setting for optimal performance management, it does not rationalize goal measurement or performance appraisal as a pivotal issue in any Performance management System (Rao, 2012). Thus, in filling the gap in this respect, Taylorism and computer-aided systems theory provide us with the general theoretical basis for this contribution. Our investigation is partly rooted in Fredrick Winslow Taylor's scientific management philosophy which is often seen as a system that has no room for the nuances of human nature in its desire to obtain greater efficiency in the affairs of man (Hindle, 2008). However, it is contended that that humanity's dependence on 'machines' does not necessarily mean the elimination of exercise of human judgment, hence, the imperative for application of common sense in using data-based, mathematical model results is widely acknowledged. At the individual level for instance, the idea of computer application in performance appraisal is to help the manager to be able to use "less muscle", but "more brains" in finding solutions to HR management.

At a wider, institutional level, computer-aided systems theory enables us to acknowledge the diversity of employee performance in the work environment, and encourages some technology-emotional synergy for maximum evaluation impact. This is achieved through several criteria, notably "network effect", and "user knowledge" (Schwaninger & Mandl, 2012). In other words, employee performance may be as diverse and 'difficult' to assess as they are, but there should be a systematic way of harnessing the wide scope for maximum benefit. The underlying thought here is that of a systematic problem-solving effort, combining synergy and integration with efficiency in order to achieve the



ultimate goal of impactful quality decision-making on the use of the most critical input for desirable productivity in any endeavour – human resources.

In essence, the basis for technology-application to performance appraisal proposed in this paper is not necessarily to solve any mathematical problem, but to develop practical solution for easing the evaluation process in tangible, quantifiable terms that the modern supervisor needs, whether or not in the public-sector context.

Methodology

The methodology adopted for the study is basically exploratory, proposing judicious and intelligent application of technology towards reducing appraisal subjectivity, more accurately defining standards and expectations, reflecting measures of performance, and generally building credibility and employees' confidence in the system. The research design is justified by the need to obtain relevant evidence with optimum effort, time, and expenditure, having regard to the main purpose of the study which is purely formulative. Thus, the study was guided by the recommendations of Kothari and Garg (2014) which advise three general methods for exploratory studies, namely (i) survey of relevant literature, (ii) the experience survey, and (iii) analysis of 'insight-stimulating' examples, all directed towards enhancing better knowledge of the subject-matter. Online and offline sources for academic papers, conference proceedings, and websites and books that dealt with various PMS in various jurisdictions were searched and reviewed. In essence, the content analysis was based on credible secondary data extracted from sources such as the Commonwealth Secretariat (2010)'s report of the Sixth Commonwealth Forum of Heads of African Public Services on Managing and Measuring Performance in the Public Service in Commonwealth Africa, as well as the Office of the Secretary to the Government of the Federation (OSGF) (2014)'s comprehensive review on Public Service Reforms in Nigeria, 1999 – 2014. Further helpful insights were obtained from the author's participation at the Consultative and Validation Workshop on the institutionalization and strengthening of PMS of the Nigerian Federal Public Service organised by the Office of the Head of the Civil Service of the Federation and the European Commission Support to Federal Governance (SUFEGO) Programme held in Abuja, Nigeria, in March 2015, and attended by a wide cross-section of senior public sector officials and other stakeholders

Results and Discussion

Everyone can do a good job, but equality of human performance is an abnormality. It is near impossible to reward everyone equally simply because human talent differs across the whole continuum of humanity and 'all fingers are not equal'. The computer-based appraisal recognizes human differentiation and helps in achieving higher-level of honest evaluation of team members while also allowing clearer indication of where specific skill-gaps need to be bridged to enhance overall organizational performance. The problem is not with relevance of numbers, appraisal model or tool, but ensuring supervisors' consistent fairness and transparency of the process. Successful performance appraisal (that which keeps supervisors' emotionalism, leniency, strictness, to the barest minimum thereby adopting a more meritocratic approach) depends on the overall maturity of the organization, regularity of objective assessment in a matrix-driven process, and capacity to communicate effectively. Admittedly, performance appraisal process remains inherently a subjective process, orientating and building supervisory capacity across the organization towards stricter performance measurement scales is a tough call particularly in an overwhelming traditional African 'my brother's keeper' mentality, but the challenges should not be allowed to jettison desirable optimization of human capital productiveness in today's rapidly changing workplace.





PMS in Sub-Sahara Africa: Snippets of the Outlook in Selected Countries

This study was designed to gain some insight into the performance appraisal rating practice in some comparable environments and comment on the appropriate rating scale for the Nigerian environment based on the need make meaningful differences in individual performance, especially in the public service, given the latter's role in the achievement of economic transformation and national strategic objectives (Commonwealth Secretariat, 2010). Since independence in 1950s/1960s, various African governments, notably, South Africa, Ghana, Liberia, Kenya, Uganda, among others, have been implementing various reform initiatives aimed at improving the quality of life for their people. The missing ingredients in the numerous reform agenda since independence border largely upon the issue of service delivery and the general performance of the public sector. In recent years, attempts have been made to introduce Results-Based Management (RBM), which seeks to redefine public sector 'performance' in terms of emphasis on outputs and outcomes, instead of being overly pre-occupied with inputs and processes. Under the RBM, a number of flagship programmes and initiatives including Performance Contracts have been made on a continuous basis, including extensive capacity-building in diverse areas, to support effective implementation of a robust PMS.

South Africa Performance Management System (SAPMS)

South Africa has been implementing various aspects of PMS since 2001, although at the initial stages of its implementation, very few departments and provinces had started deploying the system due to challenges associated with its design, organizational and broader governmental issues. A major challenge experienced with the SAPMS included perceptions among employees that they were entitled to performance bonus regardless of their actual level of performance. There were also some concerns about the limited trust among employees in the credibility of the system (Commonwealth Secretariat, 2010).

Kenya PMS (KPMS)

In 2007, Kenya won the UN Public Service Award in the first category of Transparency, Accountability and Responsiveness in the public service in recognition of its performance contracting system (Commonwealth Secretariat, 2010). Kenya's success factors are linked to her involvement of other stakeholders from outside the public service and embracing ICT and e-government strategy as major components in driving the process of implementing performance management system and other economic development reforms.

Ghana Performance Management System (GPMS)

The Ghanaian government introduced a performance-based appraisal system in the civil service in 1992, which replaced the annual confidential appraisal system which was deemed unsuitable for modern public administration. In 1997, performance contracting (performance agreement) was introduced to include appraisal of senior public officers who had been left out of the appraisal system. The Government of Ghana was in the process of re-launching a documented and enforceable performance management system based on the lessons learnt from an evaluation of the performance management system conducted in 2007 (Commonwealth Secretariat, 2010). Under GPMS, to compute employee's scores obtained on core targets, a 5-point scale was adopted for the ratings, as shown in TABLE 1.



Table 1

Overall Rating Scale in Ghana Performance Management System

Score	80% and above	65-79%	50-64%	41-49%	40% and below
Rating	5	4	3	2	1
Description	Exceptional; exceeded expectations	Exceeded expectations	Met all expectations	Below expectation	Unacceptable

Source: Public Service Commission (2013)

Uganda Performance Management System (UPMS)

In the Ugandan context, results-based management has been utilized to promote optimal use of available resources by focusing on the results delivered at both institutional and individual levels as part of Poverty Eradication Action Plan (PEAP) and similar developmental initiatives. The system recognized high level performance at both levels (that is, institutional and individual employee) through non-monetary rewards while management training and continuous capacity-building for managers and employees are stressed, among other initiatives. Instructively, UPMS adopted 5-level rating scale with the maximum rating of 5 (five) reserved for employees who proved to be models of excellence in both the results achieved and the means by which they are achieved (Ministry of Public Service, 2007).

Liberia Performance Management System (LPMS)

In Liberia, a Civil Service Performance Management System Handbook of March 2013 provides a framework for systematically evaluating, maintaining and improving the work performance of public servants throughout the country's government (Civil Service Agency, 2013). The LPMS adopts a modified "Graphic Rating Scale" appraisal method which is based on a 5-point rating scale. In appraising employee performance under the LPMS, the supervisor is enjoined to apply appropriate principles to ensure equitable and meaningful ratings.

Nigerian Performance Management System (NPMS)

Similar to what has been happening in several other parts of commonwealth Africa, there is an on-going process towards strengthening the performance management system for the Nigerian Public Service, at both the institutional and individual employee levels. Performance Management System has been a key component of Public Service Reforms since the country returned to democracy in 1999 (OSGF, 2014). In 2010, the National Monitoring and Evaluation Department was established in National Planning Commission (NPC) to work with government Ministries, Departments, and Agencies (MDAs) in developing MDAs' KPIs. The resultant KPIs formed the basis of ministerial performance contracts that was signed by the former President Goodluck Jonathan, all his ministers and other strategic senior public officers in August 2012. The signing of the performance contracts signaled the beginning of PMS implementation in the Nigerian context (OSGF, 2014). The essence of the new Nigerian initiative is to ensure increased productivity and quality service delivery, and also ensuring overall accountability in the Civil Service to the Nigerian people who expect tangible results in terms of good roads, education, jobs, security, and other desirable dividends of good governance. Institutionalization of PMS was also



important, and this was expected to be achieved through widespread capacity building so as to reduce subjectivity in appraisals.

The former performance appraisal approach, Annual Performance Evaluation Report (APER) was regarded as not robust enough for a number of documented reasons including its unreliability and inadequacy as a service delivery improvement tool, the malady of inflated assessments (giving higher rating than deserved) commonly done to please the employee in order to avoid wahala (conflict), the omission of certain critical PMS components such as Institutional arrangements, framework, clear responsibilities and roles, performance contracting, KPIs, competencies assessment, and leadership development programme, among other negative attributes (Dogarawa, 2011; OSGF, 2014). Additionally, Financial Stewardship, seen as a crucial KPI in the Nigerian context, is sought to be tied to budgetary provision and timely release of funds, just as also emphasis is being placed on clarity of monitoring and evaluation across the Public Service spectrum. There are APER-related issues such as treating performance as a ritual rather than to making it part of employee development process, and the recurring problem with staff unions who demand that annual increments should be granted automatically and that promotion should be time-bound. It is also felt among some stakeholders that modern tools like the Balanced Scorecard are 'foreign' and 'complex' and would not yield much improvement in performance management, hence the need to test these fears objectively through further research in the context of the developing economies like Nigeria.

IT-Based Appraisal Model Proposal

As noted previously, the essence of Performance Appraisal Software (PAS) is to improve the overall appraisal system, simplify it, cut-down on drudgery, and use automation to achieve more objective, accurate, and faster appraisal process, thereby reducing the obstructive phenomenon of subjectivity associated with the traditional PMS; this will help to build credibility and employees' confidence in the system. Computer technology has good capability to automate performance standards and expectations as well as to accurately reflect desirable measures of performance. The model proposal presented in this paper is based on the Microsoft Excel statistical software, which has been around since 1985 and widely used with proven validity of analytical results in financial management (Spiegel & Stephens, 2011, Parasuraman, 2014).

Assuming a SMART goal-setting environment on 5-point rating scale (TABLE 2), Appendices A_1 and B (great performer, having an overall rating of 84.7%) and A_2 and C (underperformer, having an overall rating of 23.2%) have been prepared to show samples of applications or illustrations of the computerized appraisal model designed in such a way that the average supervisor can effectively appraise the performance of the employee to reflect all the applicable dimensions (KRAs) of Balanced Scorecard and their respective weights (TABLE 2); the number of KPIs and their specifications (depending on the PMS policy as regards Sector, Institution, and the particular status or position of employee being appraised, among other contextual considerations); and the employee's final score which, of course, will be based on actual performance against set targets. The model is expandable to include appraisal of core and non-core competencies, but it should be noted that the total (aggregate) value of the expected 'targets' should always be 1 or 100% (maximum score).

It has earlier been noted that determining the final rating of the employee's performance is the most challenging of the appraisal process (Grote, 2011; Rao, 2012). Thus, interestingly, the simple spreadsheet model proposal in this paper resolves the problem for the supervisor by automatically computing the employee's rating after all the necessary inputs by the supervisor. Using the third column



in the spreadsheet for each of the above-indicated four BS dimensions (second column in TABLE 2), the supervisor inputs the employee's scores (ranging from 0 to 1 or 0 to 100%) respectively, strictly following the principles of evidence-based performance; the computer does the rest of the appraisal. The spreadsheet-based model aggregates the rating in the "SCORE" columns against each key target of BS dimension.

Table 2

Hypothetical Balanced Scorecard (BS) weights

BS Dimensions	*Description of Key Result Areas (KRAs) for Employee Performance Appraisal	Weights of the KRAs
I	Service Delivery	0.50
Ш	Financial Stewardship	0.20
111	Operational and Internal Processes	0.10
IV	Learning and Development	0.20
TOTAL		1.00

*Note: Experience or maturity-on-the-job has been added to KRAs in some jurisdictions

For instance, under the application for 'Outstanding performer', the MS Excel spreadsheet computes employee rating for Service Delivery as shown in Appendix A₁, namely, multiplying the employee's score by the BS weights = 41%, compared to 14% achieved by the 'Underperformer' in meeting service delivery targets (Appendix A₂).

At the end of the appraisal year (or quarterly or half-yearly appraisal cycle as may be applicable) the final assessment is automatically detailed in the spread sheet "SUMMARY OF EMPLOYEE'S WEIGHTED SCORE" and "OVERALL PERFORMANCE EVALUATION (%)" as shown in the Appendices. TABLE 3 displays the final rating (85%: rating 5) for the hypothetical 'Outstanding performer' (Appendix C), as against the final rating of 23 percent (rating: 1) for the "under-performer" (Appendix D).

Table 3

Final Rating of the Hypothetical Employee

BS Dimensions	Employee's score	*Weights	Rating (=Score × Weight)
Service Delivery	83%	50.0%	41.0%
Financial Stewardship	83%	20.0%	17.0%
Operational and Internal Processes	88%	10.0%	9.0%
Employee Learning and Development	90%	20.0%	18.0%
TOTAL	100.0%	85%	

*Note: Performance weights vary as decided by policy, employee level or institution where the employee is domiciled



It is pertinent to stress that the supervisor should be guided by the performance weights dictated by the extant PMS policy; the supervisor should however ensure that the applied weights for each of the BS dimensions add-up to 1 or 100 percent, as indicated in the spreadsheet. The weights for the respective KPIs are evenly distributed (Appendix A_1 and Appendix A_2), while the computerized rating is simply the employee's evidence-based score multiplied by the allotted weight (i.e. employee's nominal score × weight). The AVERAGE FUNCTION in the Excel package is activated to automatically provide employee mean scores for each KRA respectively. Weights are attached to reflect the relative importance attached to each goal or competency expectation (TABLE 2). In the Nigerian public service context, weights are determined by policy (OSGF, 2014). In the two sample cases (Appendices A₁ & A₂), all KPIs carried equal weight but the four broad dimensions were weighted differently, with Service Delivery carrying the highest weight – half (0.50 or 50%) of the entire performance expectation from the employee, while operational processes were weighted least at 10%. As suggested in the literature based on strategic goal-setting principles (Grote, 2011), the model proposal has limited the number of KPIs in each BS dimension to just two to four, namely, S₁, S₂, S₃, S4... as KPIs for service delivery; F₁, F₂, F₃, ... as KPIs for financial management; P1, P2, ... as KPIs for processes; and LD1, LD2, ... as KPIs for learning and development, all defined and scoped in line with the relevant performance management policy and guidelines.

In this regard, it is perhaps also apposite to stress that requisite computer inputs go beyond mere automation or mathematical calculation because HR implications of the employee assessment as summarized in TABLE 4. Thus, qualitative inputs by way of meaningful / helpful comments to the percentage scores are also imperative in a development-focused or people-centred appraisal setting. In carrying out the appraisal electronically, the supervisor is thus required to exercise intuition so as avoid common rating errors such as the bell curve effect, halo effect, similar-to-me effect, recency, effect, inherited effect, attractive effect, among others (Grote, 2011; Murthy, 2015). Above all, the supervisors rating sensibility should be fact-and-data-driven, meaning that all the computer entries and submissions must be evidence-based and justifiable.

Table 4

Rating	Employee's Aggregate Score (Percentage)	Resultant Performance Level	Interpretation of Employee Performance Level
5	80 – 100%	Excellent	Exceptional performance: Employee exceeded the agreed targets and level of competency.
4	61 – 79%	Very Good	Employee fully met the assigned targets and level of competency: achieved all the agreed outputs; met all expectations.
3	50 – 60%	Good	Partially met expectation; achieved most, but not all the agreed outputs.
2	41 – 49%	Fair	Employee must improve: Performance is below expectation; achieved only minimal outputs; did not achieve most of the set targets / level of competency.
1	0 – 40%	Poor	Unacceptable performance: Employee has not achieved any of the agreed targets and without



supporting rationale for not achieving them.

Great performers within 4-5 scales are candidates for reward, while those within 2-3 scales need to improve or change for the better. Grote (2011) suggests that about 50-70 percent people in an organization will fall into the 'average' class of 3, but that those who find themselves appraised to be in this class should not be put on the spot as mediocre performers. However, employees appraised into a scale 1 performance level have demonstrated completely unsatisfactory and unacceptable performance and should be shortlisted candidates (deadwoods/slackers) for closer employee-supervisor interaction, transfer, layoff, discharge, or early retirement.

Although the illustrations provided in this paper have used hypothetical cases of a 'Great-performer' and an 'Under-performer', the Microsoft Excel-based model is efficient enough to accurately reflect several other levels of employee performance. It is also important to bear in mind that the employee is being appraised individually, not in competition or comparison with another employee. In this sense, the supervisor should see himself in the similitude of a doctor whose preoccupation is to reach an outcome that will be beneficial to the patient, not necessarily to outperform another doctor.

The major concerns that may be expressed from the use of this model proposal are the following, among others:

- I. There are some important aspects of job performance such as quality of work done that may be found unsuitable for formalized SMART goals-based setting, yet crucial to the organization's success. Even at that, with little training, supervisors can retain minimum capability to objectively evaluate the value of the so-called qualitative aspects of certain jobs.
- II. How well the manager has done the appraisal (360° assessment) is not included, but it has earlier been noted that this (employee assessment) inclusion is exogenous to intelligent appraisal and that it is not theoretically supported (Kruger & Dunning, 1999; Lombardo & Eichinger, 2003).
- III. Some supervisors' phobia for the numeric and a general reluctance to face-up to technologyenabled change in the workplace were noted, but this in itself points to need or proper and regular staff training in appraisal methodology, as stressed in the literature (Bhattacharya & Sengupta, 2009).

As noted earlier, this paper is premised upon the belief that it is good management practice to try to make service delivery including appraisal as simple as possible. Hence, the emerging technology such as spreadsheet has been demonstrated to have the capacity to simplify the rating process without losing information quality at individual and corporate levels.

Summary and findings

Evidently, the countries surveyed for the present paper have begun implementing performance management in one form or the other, with increasing emphasis on result-oriented performance management system that ICT can facilitate. It is instructive that a good number of them, Uganda, Ghana, and Liberia, adopted the 5-point rating scale which also informed its adoption in the IT-based appraisal model proposal in this paper. At the end, in this paper, the utility of a simple computer spreadsheet package in measuring employee performance based on the 5-level rating scale was demonstrated.



Conclusion

In this paper, an attempt was made to explore the extent to which information technology could be applied to addressing some of the 'frustrating' concerns of managers in conducting performance appraisal. The work adopted survey approach using primary and secondary sources for the data. Evidently, a good number of countries in Sub-Saharan Africa have been implementing performance management in one form or the other; instructively, Kenya and Uganda are noteworthy for their ITcompatible, result-oriented performance management system. The paper also tried to demonstrate the utility of a simple computer spreadsheet package in measuring employee performance based on a 5-level rating scale. Additionally, the utility of a simple computer spreadsheet package was demonstrated in measuring employee performance based on a 5-level behavioural rating scale and a set of four key result areas (Balanced Scorecard) envisaged by Kaplan and Norton (2000) and Niven (2006) in the context of a strategy-focused modern organization. The essence of this contribution is thus, not to turn assessment of human performance over to mathematics or computer science, but to reinforce the need to leverage information technology for easing the process of performance appraisal as key component of Human Resources Management. In all, the significance of the study lies in the potential to refine and improve on current approaches by making the whole performance evaluation process more efficient, thereby streamlining the often subjective and time-consuming tasks associated with traditional performance appraisal system.

Nevertheless, concerns over the involvement of 'machines' in managing human capital are acknowledged, and in this context, the following recommendations are made to help in addressing some of the identified anxieties, and to further refine the computer-based model for the purpose of enhancing its integration into e-governance for improved HR productivity, particularly in emerging economies like Nigeria:

- Performance appraisal should be more people-focused rather than explicitly linking it to the traditional reward/promotion expectancy. Consequently, as also evidenced by Ordonez, et al (2009), focusing on employee competencies (general attitude, technical/professional skills, relationship-building, level of strategic thinking, stress management capabilities, among others) and job-related aspects for development to enhance performance is imperative just as separating goal-setting from reward expectancy will also be compatible with technologyenabled appraisal system and help to create employee's needed trust in the credibility, objectivity, and transparency of the appraisal process.
- 2. Technology-based appraisal approach proposed in this paper can be further tested in a pilot usage by a few set of Ministries, Departments, and Agencies of government for effectiveness before generalizing its application to wards attaining a high performing public service.
- 3. Performance management is a major reform in itself, requiring a lot of changes in employees' mindsets, organizational systems, structures and practices, and it is in this context that technology applications to appraisal should be seen. Therefore, to fast-track the evolution of the Performance Management System, as advocated by Olaopa (2015) and Dogarawa (2011), among other authors, government should invest extensively in capacity development especially in the area of performance appraisal; all supervisors / managers should be trained on how the whole appraisal process can be made less taxing through the application of computer technology and other innovative approaches.



- 4. How performance appraisal system is conceptualized and conducted has a bearing on government capability to implement policy and deliver on political promises, hence, it is recommended that both outputs and outcomes should be measured for appraisal purposes. However, appropriate weights should be applied to each category based on the level of employee's responsibility in the value chain. For instance, of what use is a dug borehole that does not yield water for the intended beneficiaries? Thus, digging a borehole for a community may be an employee's major output, but his responsibility for ensuring that the borehole produces clean water (outcome) may be minimal.
- 5. Notwithstanding the computer capability to analyze almost limitless number of goals, appraisable goals should be limited to 3 or 4 major items that are challenging enough to impact on the organization or department as a whole.

Scope for Future Research

A number of limitations in this study provide some useful scope for future studies. First, perhaps the PMS practice in more jurisdictions should be included in the next research so as to provide more comprehensive perspectives on the feasibility and prospects of ICT-based appraisal than has been provided by this paper. Second, as the present work is an exploratory research based on secondary data evidence, the results should be subjected to further empirical investigations, focal group discussions on how ICT can be leveraged to enhance performance appraisal process, not only in the context of the public service, but also in the private sector. Third, future research can also investigate actual usage, utility, and overall problem-solving capacity and efficiency of the several Performance Appraisal Software (PAS) products in the marketplace, especially in the context of an emerging market economies of Sub-Saharan Africa.

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$\textbf{Appendix} \ \textbf{A}_1$

Hypothetical employee rating in Service Delivery – 'Outstanding performer' case

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	AN IT-BASED APPRAISAL MODEL								
	(CASE I - OUTSTANDING PERFORMER)								
						-			
	BALANCED SCORECARD WEIGHTS:					_			
	DIMENSIONS	DESCRIPTION	WEIGHTS	_					
	I	SERVICE DELIVERY	0.50						
	1	FINANCIAL STEWARDSHIP	0.20						
		INTERNAL PROCESSES	0.10						
	IV	LEARNING & DEVELOPMENT	0.20						
	TOTAL		1.00						
	(I) PERFORMANCE ON SERVICES	Weight & No of KPIs							
	Weight for Service Delivery	0.50							
	No of KPIs	4	22255						
	KPIs:		SCORE	TARGET	WEIGHT	RATING			
	<u>S1</u> S2		0.80	1.00	0.125	0.10			
	S2 S3		0.80	1.00	0.125	0.10			
	S4		0.80	1.00	0.125	0.10			
	SUB-TOTAL (WEIGHT/RATING)		0.83	1.00	0.50	0.41			
	WEIGHTED SCORE FOR SERVICES				,	0.41			
		MDEPDEPEOPMEP Choot2 / 91							
► ►I	CASE I - GREAT PERFORMER CASE II - U								

*Note: Equality of KPIs' weights (0.125) is assumed but in practice, performance weights vary as decided by policy, employee level or institution where the employee is domiciled

Appendix A₂

Hypothetical employee rating in Service Delivery – 'Underperformer' case

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	AN IT-BASED APPRAISAL MODEL						
	(CASE II - UNDERPERFORMER)						
	BALANCED SCORECARD WEIGHTS:						
	BALANCED SCORECARD WEIGHTS:						
	DIMENSIONS	DESCRIPTION	WEIGHTS				
		SERVICE DELIVERY	0.50			1	
		FINANCIAL STEWARDSHIP	0.20			•	
		INTERNAL PROCESSES	0.10				
	IV	LEARNING & DEVELOPMENT	0.20				
	TOTAL		1.00				
	(I) PERFORMANCE ON SERVICES	Weight & No of KPIs					
	Weight for Service Delivery	0.50					
	No of KPIs	4					
	KPIs:		SCORE	TARGET	WEIGHT	RATING	
	S1		0.30	1.00	0.125	0.04	
	S2		0.20	1.00	0.125	0.03	
	S3		0.30	1.00	0.125	0.04	
	S4		0.30	1.00	0.125	0.04	
	SUB-TOTAL (WEIGHT/RATING)		0.28		0.50	0.14	
	WEIGHTED SCORE FOR SERVICES					<u>0.14</u>	
F FI	CASE I - GREAT PERFORMER CASE II - UNDI	ERPERFORMER Sheet3					
		onocco / Co				III II 87% (=	



*Note: Equality of KPIs' weights (0.125) is assumed but in practice, performance weights vary as decided by policy, employee level or institution where the employee is domiciled

Appendix B

A BALANCED SCORECARD-BASED APPRAISAL MODEL

(CASE I - OUTSTANDING PERFORMER)

(I) PERFORMANCE ON SERVICES	Weight & No of KPIs				
Weight for Service Delivery	0.50				
No of KPIs	4				
KPIs:		SCORE	TARGET	WEIGHT	RATING
S1		0.80	1.00	0.13	0.10
S2		0.90	1.00	0.13	0.11
S3		0.80	1.00	0.13	0.10
S4		0.80	1.00	0.13	0.10
SUB-TOTAL (WEIGHT/RATING)		0.83		0.50	0.41
WEIGHTED SCORE FOR SERVICES					<u>0.41</u>

(II) FINANCIAL MANAGEMENT	Weight & No of KPIs				
Weight for Financial Management	0.20				
No of KPIs	3				
KPIs:		SCORE	TARGET	WEIGHT	RATING
F1		0.80	1.00	0.07	0.05
F2		0.90	1.00	0.07	0.06
F3		0.80	1.00	0.07	0.05
SUB-TOTAL (WEIGHT/RATING)		0.83		0.20	0.17
WEIGHTED SCORE FOR FINANCIAL					<u>0.17</u>

(III) PERFORMANCE ON PROCESSES	Weight & No of KPIs				
Weight for Processes	0.10				
No of KPIs	2				
KPIs:		SCORE	TARGET	WEIGHT	RATING
P1		0.90	1.00	0.05	0.05
P2		0.85	1.00	0.05	0.04
SUB-TOTAL (WEIGHT/RATING)		0.88		0.10	0.09
WEIGHTED SCORE FOR PROCESSES					<u>0.09</u>



(IV) PERFORMANCE ON LEARNING	Weight & No of KPIs				
Weight for Learning	0.20				
No of KPIs	2				
KPIs:		SCORE	TARGET	WEIGHT	RATING
LD1		0.90	1.00	0.10	0.09
LD2		0.90	1.00	0.10	0.09
SUB-TOTAL (WEIGHT/RATING)		0.90		0.20	0.18
WEIGHTED SCORE FOR LEARNING					<u>0.18</u>

SUMMARY OF EMPLOYEE'S WEIGHTED SCORES

DIMENSIONS	DESCRIPTION	WEIGHTED SCORES
Ι	SERVICE DELIVERY	0.41
П	FINANCIAL STEWARDSHIP	0.17
III	PROCESSES	0.09
IV	LEARNING & DEVELOPMENT	0.18
TOTAL		<u>0.85</u>

OVERALL PERFORMANCE EVALUATION (%)

85.0

Appendix C

A BALANCED SCORECARD-BASED APPRAISAL MODEL (CASE II -UNDERPERFORMER)

(I) PERFORMANCE ON SERVICES	Weight & No of KPIs				
Weight for Service Delivery	0.50				
No of KPIs	4				
KPIs:		SCORE	TARGET	WEIGHT	RATING
S1		0.30	1.00	0.13	0.04
S2		0.20	1.00	0.13	0.03
S3		0.30	1.00	0.13	0.04
S4		0.30	1.00	0.13	0.04
SUB-TOTAL (WEIGHT/RATING)		0.28		0.50	0.14
WEIGHTED SCORE FOR SERVICES					<u>0.14</u>



(II) FINANCIAL PERFORMANCE	Weight & No of KPIs				
Weight for Financial Management	0.20				
No of KPIs	3				•
KPIs:		SCORE	TARGET	WEIGHT	RATING
F1		0.25	1.00	0.07	0.02
F2		0.30	1.00	0.07	0.02
F3		0.30	1.00	0.07	0.02
SUB-TOTAL (WEIGHT/RATING)		0.28		0.20	0.06
WEIGHTED SCORE FOR FINANCIAL					<u>0.06</u>

(III) PERFORMANCE ON PROCESSES	Weight & No of KPIs				
Weight for Processes	0.10				
No of KPIs	2			-	
KPIs:		SCORE	TARGET	WEIGHT	RATING
P1		0.10	1.00	0.05	0.01
P2		0.25	1.00	0.05	0.01
SUB-TOTAL (WEIGHT/RATING)		0.18		0.10	0.02
WEIGHTED SCORE FOR PROCESSES					0.02

(IV) PERFORMANCE ON LEARNING	Weight & No of KPIs				
Weight for Learning	0.20				
No of KPIs	2			-	
KPIs:		SCORE	TARGET	WEIGHT	RATING
LD1		0.00	1.00	0.10	0.00
LD2		0.20	1.00	0.10	0.02
SUB-TOTAL (WEIGHT/RATING)		0.10		0.20	0.02
WEIGHTED SCORE FOR LEARNING					0.02



SUMMARY OF EMPLOYEE'S WEIGHTED SCORES

		WEIGHTED
DIMENSIONS	DESCRIPTION	SCORES
	SERVICE	
Ι	DELIVERY	0.14
	FINANCIAL	
II	MANAGEMENT	0.06
III	PROCESSES	0.02
IV	LEARNING	0.02
TOTAL		<u>0.23</u>

Overall Performance Evaluation (%)

<u>23.0</u>