Building Blocks for the Development of Electronics Employees Performance Management System

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Abstract

Successive administrations in Nigeria have deployed various control mechanisms towards improving the quality of service delivery in the Nigerian Public Service (NPS). However, indications are rife that these mechanisms are not effectively tackling the problem. This paper identifies some of this mechanisms, and identify that they are cosmetic in approach, since they are addressing the symptoms and not the real cause(s) of the problem. Consequently, they are momentary, and therefore, fail very quickly. Our approach is to determine the extent of effectiveness of the operational Performance Management System (PMS) in the NPS, which the literature identifies as the instrument for improving performances. We therefore, conduct empirical study into its psychometric properties. The results are highly revealing, and exposes the correlation between the operational PMS and the widespread existence of counterproductive behaviours in the workplace, which further translates to the poor quality of service delivery. In view of this discovery, this paper introduces a software development framework whose implementation will bring about substantive reforms in improving employees' performances in the NPS. Consequently, we provide the structures constituting the building blocks for the development of the e-EPMS. The e-EPMS is an emerging concept for electronically managing employees' performances in the public service. The implementation of such systems will make information readily available, facilitate sound decisions, and make workers accountable for their actions and inactions in the workplace.

Keywords: e-EPMS, e-Government, Architecture, Public Service, Performance Management

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1.0   Introduction

Members of the Nigerian public, and indeed, governments at different levels have variously complained about the poor quality of services delivered by the Nigerian Public Service (NPS). As a result, successive Nigerian governments have adopted various frameworks or mechanisms to drive the Public Service towards improving quality of service delivery. Very often, however, these reform strategies are designed to address the symptoms and not the causes of the problem. Consequently, such symptomatic and momentary solutions fail very quickly, because they obscure the real causes of the

basic condition, while the problem persists.

For instance, wage increases have been used on many occasions as a strategy to motivate the workforce towards improving the quality of service delivery. There is also the Public Complaints Commission (PCC), established by Decree No. 31 of 1975 (as further amended by Decree No. 21 of 1979) with the mandate to provide impartial investigation of complaints received from aggrieved persons against the services offered by government agencies.

Furthermore, there is also the Code of Conduct Bureau, enshrined in the 1999 constitution, as well as SERVICOM (Service Compact with all Nigerians) established in 2004, which provides the basis for customer expectations of quality service delivery, rights to demand for good service, and recourse when service delivery fails.

However, indications are rife that these reform strategies and the performance control mechanisms are yet to make the public service employees improve on the quality of services. The climax of these is a declaration by a serving President of the Federal Republic of Nit34iq, to the effect that the NPS is underperforming in the quality of services delivered to the public [8]. The President proceeded further to inaugurate a committee to, "look at those things that need to be done in order to facilitate improved performances in the Nigerian Public Service". The committee's report has since been submitted, and has introduced another momentary framework of mechanism, where serving Ministers with the Federal Government are made to sign "Performance Agreements", leaving the actual people who do the work to continue as usual.

This paper aligns with the presidential mandate above. However, we look beyond the cosmetics solutions presented earlier, to providing empirical evidence of the need to reform the employees' Performance Management System (PMS) in the NPS,

with a view to improving its psychometric perceptions. The PMS is a globally recognised tool for managing workers behaviours and outcomes in the workplace [10]. The paper then proposes a framework for the development of the e-EPMS as a panacea for the observed weaknesses in the existing system. The e-EPMS is an acronym representing "electronic Employee Performance Management System".

Therefore, we conduct an empirical study to determine the perception of workers concerning the effectiveness of the PMS in the NPS. This is in line with the position of [2], who states that the process of improving performances, begin with an understanding of what the level of current performance is, in terms of both results and competence requirements. This will form the basis for identifying improvement and development needs if there is a shortfall.

2.0 Empirical Examination of the Existing PMS in the NPS

Section 5, sub-Section 1, Rule 1 through Section 4, Rule 2 of the Nigerian Public Service Rules, prescribe that immediate supervising officers prepare biannual and annual progress and performance reports in respect of each subordinate officer on probation and confirmed ones respectively [4].

Consequently, [3] asserts that: "The only structured methodology at present, for evaluating the performances of public servants in the NPS is the "Annual Performance Evaluation Report (APER)". He further states that "there is no record of the conduct of Public Servants that carries more weight than the APER". Suffice it to say that the APER is substantially used to organise the Business Process Intelligence (BPI) in the NPS. In the APER, objectives are set at the beginning and tested at the end of the process, so as to find out if the objectives have been met. And the evaluation is done once in a year.

The survey was conducted among all levels of staff. And in order to give effect to the course of this study, a questionnaire was

designed as the measuring instrument to gather primary data from respondents. The questionnaire has six (6) parts: (i) Personal Data (ii) Monitoring Process (iii) Target or Goal Setting (iv) Job Description (v) Actual Performance Standard, and (vi) Possibility of Review.

In order to obtain a representative sample size for the study, we refer to the Research Population Representation in [6], which is a chart indicating study population (N) and a representative sample size (S) to be chosen. In consideration of the large size of the NPS, with an estimation of population greater than 100,000 we distributed Five (500) Hundred Questionnaires to Federal Ministries, Federal Parastatals, State Ministries, State Parastatals, and Local Government Services.

We adopted the quota sampling method, whereby the total population is divided into quotas in order to be able to see all the characteristics of the total population in the same relationships they would have been if the total population was indeed used for the study. With this method, we were able to reach across the sample groups. Out of the Five Hundred (500) questionnaires distributed, Four Hundred and Eighty Three (483) were returned by the respondents, making a response rate of about 97% on the distributed questionnaires.

2.1   Results and Interpretations

The data was extracted from the questionnaires for the purpose of analysis. The data was then fed into SPSS statistical package for the analysis.

The results of the analysis are presented as follows.

The sample consisted of 28(5.8%) from Federal Ministries, 182(37.7%) from Federal Parastatals, 91(18.8%) from State Ministries, 175(36.2%) from State Parastatals and 7(1.4%) from Local Government Service.

In terms of gender, 259(53.6%) were males, while 224(46.4%) were females. In terms of age, 35(7.2%) were from the age range 18-25, 98(20.3%) from the age range 26-33, 154(31.9%) from the age 34-41, 147(30.4%) from the age range 50-57, and 7(1.4%) from the age range 58 and above.

For the category of staff grouping, the distribution shows that 126(26.1%) were junior staff, 70(14.5%) middle level, 231(47.8%) senior and 56(11.6%) management level staff. The distribution also shows that 7(1.4%) were holders of First School Leaving Certificate, 63(13.0%) were holders of West African School Certificate or its equivalent, 70(14.5%) were holders of National Diploma or its equivalent, while 245(50.7%) were holders of first degree or its equivalent, 28 representing 5.8% held PhD or its equivalent professional qualifications.

Thus, in line with the recommendations in [5], the sample is considered heterogeneous enough for an inferential study.

Four areas on the current appraisal form were identified – monitoring process, goal setting, job description and the actual performance standard. The adequacy of the coverage of these four areas were assessed and tested for significance using the population t-test. The results are summarized in Table 1.

Table 1; T-TEST RESULTS						
		Mean				
Variable	N	Observed	Expected	Std. Dev.	t	P-Value
Monitoring process	483	19.75	18.00	2.94	13.27	0.000
Goal setting	483	15.10	12.50	3.58	15.95	0.000
Job Description	483	18.36	15.00	3.32	22.26	0.000
Actual Performance	483	20.14	17.50	3.55	16.33	0.000

From Table 1, the P-values associated with the computed t-values for all the four criteria or areas of evaluation are less than the chosen level of significance (0.05). Consequently the null hypothesis that the monitoring process, goal setting, job description, and actual performance standard are not significantly effective beyond the expected level, were rejected. This implies that the current evaluation scheme is effective to an extent.

However, a careful study of the results reveals that though the difference is significant, it is not substantial. In the case of monitoring process the difference between the observed and expected mean is just 1.75 representing about 10% on the expected 18. This means that, as far as the monitoring process is concerned, the system is only about 60% effective. The implication is that 40% of the activities of employees are not monitored. One would not therefore expect 100% goal attainment in an organisation with such monitoring capability.

In terms of goal setting, the mean difference is 2.60 representing 21% on the expected 12.5. This means that the goal setting process is about 71% effective. Here, there are 29% of goal setting activities that are not accounted for. In terms of job description and specification, the mean difference is 3.36, which is 22% on the expected 15.0. This means that the job description and specification is about 72% effective. Here again, 28% of the activities are unaccounted for.

In terms of actual performance standard, the mean difference is 2.64 over the expected 17.5. This represents 15% on the expected 17.50. This means that the actual evaluation, on which decisions to reward, punish, promote, demote, commend, and even terminate appointment, among others derive from, is only about 65% effective. Here, as much as 35% is unaccounted for.

The essence of setting goals is with the expectation to achieve 100% success of it. In consideration of the above discourse, none of the expected activities of the employees contribution to goal attainment is 100% captured. From these results, the entire evaluation process is on the average 67% effective, the poorest being the monitoring process.

Another area that was captured by the study is the need for review or the possibility of review. The results are given in Table 2.

Table 2: Population t-test for possibility of review

Mean		Std. Dev.	Mean difference	t-	P-value
Observed	Expected				
22.54	20	6.098	2.54	9.20*	0.000

* - Significant at 0.05 level.

From Table 2, the P-Value associated with the computed t-value (9.20) is less than the chosen level of significance (0.05). The null hypothesis was rejected. This means that the entire evaluation, an integral part of performance management, significantly needs review. In fact the mean difference of 2.54 represented 13% on the expected. This means the system is about 63% in need of review.

To find out if there were other factors that differentially affect the opinion of respondents, further analysis was done. A one way analysis of variance (ANOVA) was

done with category of staff as the factor. The results indicate that the respondents seem unanimous in their appraisal of the monitoring process ($19.0 \leq x \leq 21.50$). The picture is the same for goal setting and job description ($14.1 \leq x \leq 15.72$; $17.55 \leq x \leq 19.21$), respectively. There is a wide disparity in actual performance standard with the middle level and management staff scoring the system very low: 18.71 and 18.68 respectively. The senior staff scores the system highest, 21. 14. On the other hand, only the junior staff would want the evaluation system to remain as it is, with lowest mean score = 19.93. The middle level staff are the highest on the need to review the system, with the highest mean score of 25.66.

2.2   Discussion

It is clear from the results above that about 63% of the workers in the NPS desire a review in the existing PMS used to evaluate their productive performances. Furthermore, while the monitoring instrumentation of the PMS is only about 60% effective, the actual appraisal is 65% effective. These are obvious inadequacies in the operational effectiveness of the PMS that require reforms in order to control the behaviours of workers in the delivery of service.

In the next section, we present the building blocks for the development of the computer based PMS process that will lead to improvements in employees' perceptions.

3.0   The e-EPMS Framework

Article 10 of the Charter for Public Service in Africa, adopted in Windhoek, Namibia, by the Heads of Public Services across Africa, provides in part, thus: "The Public Service shall make necessary adjustments that lead to better service delivery and informed by the best practices in the application of Information and Communication Technologies" [7]. Information and Communication Technologies (ICT) drive the concept of e-Government. And e-Government provides an automated platform through which the policies, programmes, and services of government could be communicated to the members of the public.

Hitherto, concepts such as e-Citizens, e-Library, e-Passport, e-Visa, e-Licence, e-Budgets, e-Lands, e-Voting have been used by different authors to refer to some levels of implementations of e-Government in Nigeria and indeed many other countries. In majority of the cases, the benefits include: providing members of the public with details of public sector activities; increasing the input of the members of the public into public sector decisions and actions; and improving the services delivered to members of the public along dimensions such as quality, convenience and cost. In all these electronic concepts, information is the basic resource. Consequently, all the structures revolve around the building blocks of presenting information making up the BPI.

The e-EPMS is an emerging concept whose structure revolves around developing an integrated electronic system based on the building blocks of information found in the framework of the PMS. In the next section, we present the components constituting the framework for the development of the e-EPMS.

3.1   Inter-Connectivity Structure

Figure 1 integrates data repositories that represent the computer systems located at the various business units of the organisation, where the business activities of the employees are tracked.
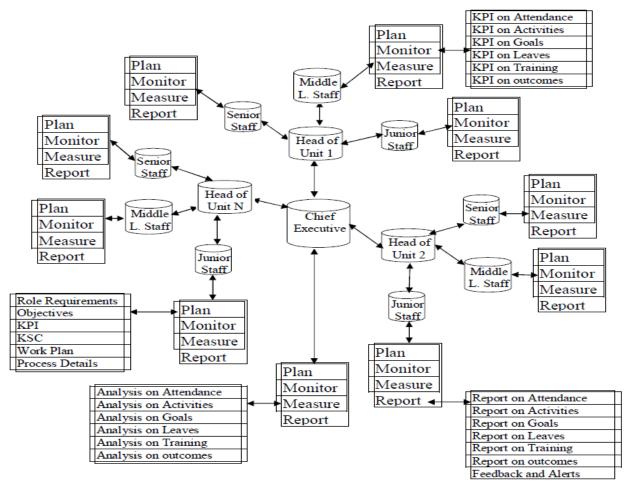
Figure 1: Interconnectivity Structure of the e-EPMS

It is a top-bottom structure with the root node as the central data repository identified as Chief Executive. Every other data repository is connected to the root node through the head of a unit. There can be as many units as possible in the structure, and this is indicated with the unit N.

This will enable the integration of performance management business intelligence and tools to work together to provide the information required for monitoring the KPIs. Consequently, it consolidates data in a repository, which is independently verifiable, available to management for prompt access, and used for monitoring, measuring, and providing performance-related feedbacks across the organisation. Fracturing organisational performance information with isolated data silos actually inhibits the ability to monitor and manage organisational-wide business performance information.

Since the operational activities of the different categories of staff are different, their performance management systems should also be different. As a result, we divided the staff into senior, middle-level and junior staff. The interconnection of the data repositories to the root node facilitates prompt and direct access to performance data emanating from any other node that is also associated with an employee's performance records.

3.2   High Level Model of the System

At the next level following the data repositories are the activities that constitute performance management. Furthermore, each of the activities is expanded further to showcase the atomic activities performed in each of the major tasks in the performance management framework. The high level structure of the proposed system is presented in Figure 2.
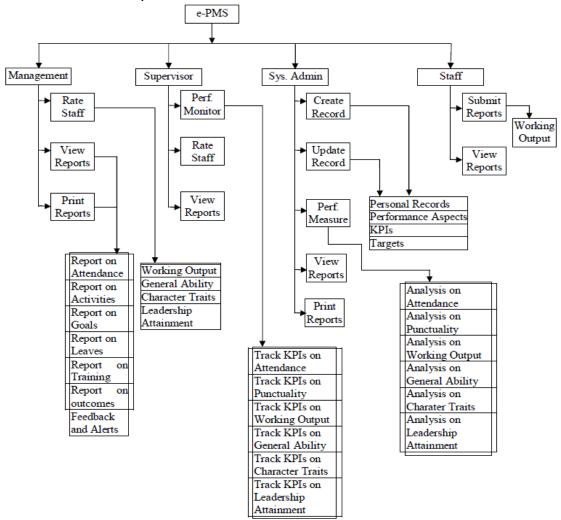

Figure 2: High Level Model of the e-EPMS

3.3   Algorithm for the Functional Components

The new system establishes a unifying framework that integrates the various phases of performance management (planning, monitoring, evaluation and reward) using the algorithm in Table 3 below:
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Table 3: High-Level Algorithm for the proposed system

STEP	DESCRIPTION	PHASE
1	*Define Performance Aspects*	Planning
2	*Define Key Performance Indicators for each Aspect*	Planning
3	*Track Performance Aspects using the metrics*	Monitoring
4	*Compute Quarterly Productive Performance*	Evaluation
5	*Determine need for Counselling and/or Coaching based on Quarterly Productive Performance*	Evaluation
6	*Provide Quarterly Productive Performance Feedback, including Statistics, Commendation or Caveat*	Reward
7	*Provide Yearly Supervisor Ratings for other Performance Aspects*	Evaluation
8	*Compute Employee Annual Overall Performance (EAOP) for all the Performance Aspects*	Evaluation
9	*Determine Employee Reward or Sanction based on the EAOP*	Evaluation
10	*Perform Trends Analysis*	Evaluation
11	*Provide Reports*	Reward
12	*Implement Employee Reward or Sanction*	Reward

4.0 Conclusion

Employees are the windows through which organisations deliver their products and/or services to the public. Therefore, it is expedient that the mechanisms for managing their behaviours and outputs in the workplace are necessarily effective. Empirical analysis of the psychometric perceptions of the existing PMS process in the NPS reveals that it is deficient in many aspects.

However, [9] reveal that when employees perceive the PMS process as deficient it can become a source of extreme dissatisfaction. And [10] asserts that when these kinds of perceptions abound, the workers undermine the real essence of the process. Consequently, [11] warns that when the workers undermine the real essence of the process, they resort to counterproductive behaviours in the workplace. But [1] insists that counterproductive behavioural symptoms are prevalent in the NPS, such as: truancy, loitering, lateness, incessant leaves, ghost workers syndrome, and unjust supervisor performance ratings.

In view of the foregoing, we posit that the employees in the NPS perceive the APER process as deficient in fulfilling its functionality. We further establish that, because of this perception, many of the employees undermine the real essence of the APER process, thereby resorting to counterproductive behaviours in the workplace. We therefore, conclude that majority of the employees in the NPS perceive the PMS process as deficient, and this is largely responsible for the widespread existence of

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counterproductive behaviours in the workplace, which further translates to the poor quality of service delivery to the public.

5.0 Recommendations

Since Government is always the highest employer of labour, it is therefore, expedient that e-EPMS systems which facilitate improved monitoring and feedback of workers behaviours and outcomes be established. Such systems should incorporate computer based data mining technologies in the aggregation, analysis, and reporting of employees' performance management systems. It is also important that the design of such systems should revolve around the Business Process Intelligence (BPI) of the e-EPMS, which will be substantially used to arrive at employees Performance Management decisions. Accomplishing this design will make information readily available to management, and will lead to the making of sound decisions, which will in turn lead to the workers being held accountable for their actions and inactions in the workplace. Consequently, workers will be more cautious in their dealings with the public.

This paper is therefore, recommended to provide the necessary first step to begin the reforms towards the enhancement of Performance Management Systems outcomes, by pioneering the efforts geared towards stimulating further research interests in the development of Computer based technologies in the area of employees' performance management systems in the public services across the world.

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