

Employees' Level of E-Procurement Skills as a Challenge Facing the Implementations of Electronic Procurement System at *Nakuru Water & Sanitation Services Ltd, Nakuru, Kenya*

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Abstract: *Since the introduction of internet in the supply management subsector in the mid-1990s, enterprises have tried to gain the benefits electronic-procurement (e-procurement) can deliver. E-procurement is in use as a means to reduce operation cost, enable volume purchase, allow a wider choice of buyers and suppliers improve delivery, eliminate manual order processing costs and reduce paper work and administrative costs. E-procurement often includes streamlining corporate purchasing processes by eliminating such traditional paper based documents as purchase orders and requisition forms. The study analyzes employees' level of e-procurement skills as the challenges facing the implementation of e-procurement NAKURU WATER AND SANITATION COMPANY (NAWASSCO). The research employed descriptive research design and survey research method. The scope of the study was NAWASSCO with target population of 44 employees of the company. A census of the population was carried out and the response rate was 75%. The findings were presented in form of descriptive statistics (mean, percentages and standard deviation) and inferential statistics (Pearson's correlation). It was established that the management considered computer competencies and skills as prerequisite in e-procurement for efficient services. Employee's levels of e-procurement skills had a positive influence on the implementation of e-procurement at NAWASSCO.*

Keywords: NAWASSCO, E-procurement, IT, E-commerce, Employee, Security, Internet

1. Introduction

E-commerce is considered as an umbrella term which covers trade on the internet, it involves the buying, selling and marketing of goods and services [9]. E-procurement which is a subject and a sub set of e-commerce technology can be said to be the use of information technology (IT) to facilitate transaction of materials and services [14]. The increased competition amongst companies has made the managing of the supply chain essentials in order to ensure that all activities involved are working harmoniously and efficiently together [13]. It is estimated that carrying out procurement online could save up to 40% depending on the industry the firm operated in [11].

The technological advancements associated with e-procurement include websites, email, extranets, intranets; electronic resource planning and electronic data interchange [10]. Technology has enabled many different procurement activities to be carried out in business. According to [8] these can be classified as e-sourcing, e-evaluations, e-ordering, debriefing - through video conference, e-Maintenance Repair Operation (MRO), provisioning re-ordering for stocking replenishment while using bar-codes, and use of web based enterprise resource planning (ERP). A key business process impacted by e-procurement is the Procure to Pay (P2P) process that encompasses activities from need specification, sourcing decision, and contract/purchase-order generation, receipt of material/documents, and finally, settlement and payment. [8] stated that integration of information across firms within supply chain is a requirement for efficient and responsive operations. Integration has been described as the glue that holds supply chain together [3].

2. Statement of the Problem

Many developing countries suffer from the digital divide, and they are not able to deploy the appropriate infrastructure for e-procurement deployment [1]. [11] represented seven main challenges for e-Government development and implementation in developing countries as follows: ICT infrastructure, policy issues, and human capital development, change of management, strategy, leadership role, partnership and collaboration among others. In Kenya and at NAWASSCO, being a company like any other, it's prone to similar challenges. In such a highly competitive e-procurement environment nowadays, it is necessary for every firm to maintain an efficient and effective e-procurement system to cut administration cost and to keep abreast the market conditions to procure material and services at the right price, quality and time for the public and internal use.

3. Objectives of the Study

3.1 General Objective

The general objective of this research was to assess the challenges facing the implementation of e-procurement system at NAWASSCO.

3.2 Specific Objective

The research study also addressed the following specific objectives:

To determine the influence of employees levels' of e-procurement skills on the implementation of e-procurement system at NAWASSCO.

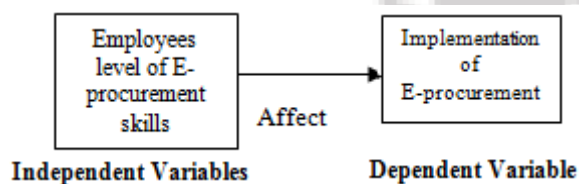
4. Research Question

The study sought to answer the following questions:

- Does employees' levels' of e-procurement skills pose a challenge in the implementation of e-procurement system at NAWASSCO?

5. Conceptual Framework

The conceptual framework explains the relationship between the dependent and the independent variables in the study



6. Literature Review

This section reviewed both theoretical and empirical studies that touched on the objectives of the study in relation to challenges facing the implementation of e procurement at NAWASSCO.

6.1.1 Technology Acceptance Model (TAM)

With the growing technology needs in the 1970's, and increasing failures of system adoption in organizations, predicting system use became an area of interest for many researchers [4]. However, the scholars have argued that most of the studies carried out failed to produce reliable measures that could explain system acceptance or rejection [5]. The Technology Acceptance Model (TAM) developed by Davis is based on TRA and tailored towards the acceptance of information technology (IT). A key purpose of TAM is to provide a basis for tracing the impact of external variables on internal beliefs, attitudes and intentions.

In his research, two main factors are of prime relevance in explaining system usage: Perceived ease of use which refers to the degree to which a person believes that using a particular system would be free from effort, and perceived usefulness that refers to the degree to which a person believes that using a particular system would enhance his or her job performance. In case the new technological innovations (e-procurement) are compatible to the existing technology (ERP & EDI) then the new technology becomes easy to use by most of the employees, hence the e-procurement systems will be easily implemented.

6.2 Empirical Literature Review

This section reviewed studies that have been carried out globally, regionally and locally touching on e-procurement.

6.2.1 Employees Levels' of E-procurement Skills

[6] suggested that skills and knowledge of employees influence the future adoption of a new technology in a large

extent. Implementing a new technology needs skills and knowledge to operate in the organizations and most organization do not implement because organizations employees are not familiar with new technology. Implementing e-procurement necessitates knowledgeable and skilled employees, such reasons may cause delay in e-procurement implementation. Lack of appropriate abilities and skills can limit workers productivity. Competence based theorists frequently suggest that firms' abilities to acquire, assimilate and exploits new technological knowledge is directly related to their portfolio of human resources [2]; [13]. Lack of IT skills makes it difficult to implement supplier relationships. This is more so where the supplier has adopted e-procurement while the buyer employs the traditional approaches.

According to [12] shows that IT in its simplest and complex forms is essentially specialized knowledge, skills and tools. He further added that there is a general feeling of helplessness among many employees in public organizations due to their inability to use appropriate technology to further the goals of their organizations and this makes majority of them shun away from implementing e-procurement. The reluctance nature of public organizations may lead to employee's reluctance in learning and using new technologies associated with e-procurement [13]. Empirical evidence identifies that organizations whose employees have the necessary skills and technical knowledge are more likely to implement e-government applications [7].

7. Methodology

The research employed descriptive research design and survey research method. The scope of the study was a census of the employees of NAWASSCO, with target population of 44. The researcher employed structured questionnaires which contained close-ended questions to collect primary data. The research instruments for all categories of respondents were pre-tested. The researcher used Cronbach's alpha coefficient to test for reliability of research instruments.

7.1 Research Findings

The study involved a census and there was 75% response rate. The high response rate enhanced the credibility of the data collected relative to the objectives of the study. The reliability of the research instruments was determined by use of Cronbach alpha. The instruments returned $\alpha > 0.77$ for employees' level of e-procurement skills. Cronbach alpha greater than 0.7 ($\alpha > 0.7$), is deemed to be reliable

7.1.1 Influence of Employees' Level of E-Procurement Skills

The researcher carried out descriptive analysis with a view of understanding the influence of employees' level of e procurement skills on the implementation of e-procurement at NAWASSCO. These aspects were categorized into the one independent variables and one dependent variable. The responses for all variables were on a 5-point scale (where; 1: Strongly Disagree, 2: Disagree, 3: Undecided, 4: Agree, and 5: Strongly Agree). In the descriptive analysis tables, 'N' represents the accessible population which responded to the items in the questionnaire, 'Min and Max' stand for

minimum (strongly disagree) and maximum (strongly agree) responses respectively. This was accomplished by analyzing the data using descriptive statistics to illustrate both the measures of central tendencies (mean) and variability as shown in table 1.

Table 1: Status of Employees' Level of E-Procurement Skills

	Min	Max	Mean	Std. Deviation
The management considers computer competencies and skills as prerequisite in e-procurement	1	5	3.77	.941
There is sufficient in-house computer competency training to ensure that procurement staff can interact well with the company's computerized systems	1	5	3.67	.994
Only procurement staff have adequate computer competencies and skills to embrace e-procurement	2	5	3.50	.682
ICT experts are readily available in the organization for consultation on issues touching on e-procurement	1	5	3.59	.750
All employees in the procurement department are trained on basic computer system maintenance	1	5	3.47	.837
Whenever there is an IT system breakdown the company contracts experts to fix it	1	5	3.07	1.052
Procurement staff consults their HOD when they experience challenges in using the company's e-procurement system	2	5	3.53	.937
Staff in the company are encouraged to develop their own computerized systems to ease their work	1	5	2.66	1.003

According to the descriptive statistic findings, it is clear that most of the statements returned means inclined towards 4.00 (agree). Only three propositions returned means inclined towards 3.00 (neutral). Moreover, the statements that returned "agree" responses had standard deviations less than 1.00 (STD DEV < 1.00). Explicably, the study findings illustrated that employees' level of skills has a positive influence on e procurement implementation at NAWASCO.

7.3 Correlation Analysis

In this section, the researcher sought to establish the degree of relationship between the independent variables (employees' level of e-procurement skills,) and the dependent variable (implementation of e-procurement). A Pearson correlation was computed between employee levels of skills and e-procurement implementation with the aim of establishing whether there was a causal relationship between these variables. The study findings are illustrated in Table 2

Table 2: Relationship between Employees' Level of E-procurement Skills and E-Procurement Implementation

		E-Procurement Implementation	Employees Level of E-procurement Skills
E-Procurement Implementation	Pearson Correlation	1	.928**
	Sig. (2-tailed)		.000
Employees Level of E-procurement Skills	Pearson Correlation	.928**	1
	Sig. (2-tailed)	.000	

** . Correlation is significant at the 0.01 level (2-tailed). N = 30

According to the findings, it was established that the level of e-procurement skills amongst the staff largely affected the implementation of e-procurement. This is evidenced by the fact that the analysis returned a very strong and positive correlation results ($r = 0.928^{**}$) which was at 0.000 significance level. It was further observed that the relationship between the two variables under analysis was almost perfect implying that a given change in the level of skills had an almost equal change in the implementation of e-procurement.

8. Summary, Conclusion and Recommendation

Employees' level of e procurement skills positively influences the implementation of e procurement. Most of the statements touching on level of e-procurement skills returned means inclined towards 4.00 (agree). This implied that respondents were largely in agreement that levels of skills in e-procurement affected implementation of e-procurement and those who had different opinion were averagely indifferent. The correlation analysis results indicated that employees' level of e-procurement skills was positively and almost perfectly related to implementation of e-procurement given that the findings of the inferential analysis were $r = 0.928^{**}$.

8.1 Conclusion

Following the findings of this study it was concluded that indeed the aforementioned skills very hugely influenced implementation of e-procurement and thus for e-procurement to be implemented successfully, the relevant personnel ought to be equipped with the necessary e-procurement skills. E procurement skills plays a major and crucial role in the implementation of e-procurement at NAWASSCO as long as, the nature, quality and quantity of both hardware and software are updated to ensure that e-procurement is implemented effectively. More so, the government of Kenya considers IT as a key pillar for the attainment of vision 2030, which aims at transforming the country into an industrialized nation by the year 2030.

8.2 Recommendations

After drawing inferences based on the study findings, it was recommended that the employees in the procurement department should be trained on the subject of e-

procurement to ensure that they have the requisite skills that can enhance the implementation of e-procurement.

References

- [1] Boer, F., & Previtali, P. (2007). Organisational pre-conditions for e-procurement in governments: The Italian experience in the public health care sector. *The Electronic Journal of e-Government*, 5(1), 1-10.
- [2] Chaffey, D. (2004). *E- Business and E-Commerce Management: Strategy, Implementation and Practice* 2nd edition. Prentice – Hall, New Jersey
- [3] Child, F., & Faulkner, J. (1998). *Integrated information in Supply chain*, 4th Edition.
- [4] Chuttur, M. (2009). Overview of the Technology Acceptance Model: Origins, development and future directions. *Sprouts Working Papers on Information Systems*, 9(37), 1-23.
- [5] Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13
- [6] Dholakia, R. R., & Kshetri, N. (2002). Factors Impacting the Adoption of the Internet Among SMEs. *Small Business Economics*, 23 (4): 311-322.
- [7] Hawking, P., Stein, A., Wyld, D. C., & Foster, S. (2004). E-procurement: is the ugly duckling actually a swan down under? *Asia Pacific Journal of Marketing and Logistics*, 16(1), 3-26.
- [8] Kalakota, R., Tapscott, D., & Robinson, M. (2001). *E-Business 2.0: roadmap for success*, 2nd Edition, Addison-Wesley Publishing Company, New Jersey USA.
- [9] McGaughey, (2002). *E- Commerce*, Pitman London
- [10] McIvir, & Humphreys, (2004) *Technology Associated with E- Procurement*, Pitman
- [11] Ndou, V. (2004). E-government for developing countries: opportunities and challenges. *The Electronic Journal of Information Systems in Developing Countries*, 18(2)
- [12] Schoenherr, T., & Tummala, V. R. (2007). Electronic procurement: a structured literature review and directions for future research. *International Journal of Procurement Management*, 1(1), 8-37.
- [13] Stevens, D.I. (1990). *Supply Chain Management*, 2nd edition Oxford University Press
- [14] Wu, G. A., Zsidisin., & Ross, A. (2007), "Antecedents and outcomes of E-procurement adoption: An integrative model," *IEEE Trans. Eng. Manag.*, vol. 54 (3): 576–587

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