

Effect of ICT and Business Strategy Alignment on the Nigerian National Petroleum Corporation's Productivity

***Okardi Biobele & Moko Anasuodei**

Department of Computer Science & Informatics,
Federal University Otuoke,
Yenagoa Bayelsa State,
Nigeria
*bokardi2001@gmail.com

Abstract

This research reports the result of a survey on the effect of Information and Communication Technology (ICT) and Business strategy alignment on the Nigeria National Petroleum Corporation (NNPC) in Nigeria. It identifies the various issues causing misalignment in the Corporation and better ways of aligning the organization's business process with its ICT strategy to enhance the desired organizational productivity. The report also outlines the strategic importance and value addition of aligning the corporation's business strategy and its ICT strategy. The research was carried out using the survey of 54 responses from the different level of staffs in the corporation, which includes Executives, Middle level and junior level staffs in order to gain awareness and better understanding of the importance of alignment to the corporation. This survey gives the management of the Corporation the awareness of investing on ICT infrastructures that would improve the efficiency of the organization and also prioritizing ICT infrastructure in order to avoid wasteful spending on infrastructures that would not benefit the organization's business. Various ICT-business alignment models were also highlighted to showcase the factors responsible for misalignment and best ways of resolving such factors in order to make NNPC a vibrant organization that is effective and efficient in all its business operations.

Keywords: *ICT, IT, Business Strategy, Strategic Alignment, NNPC, Organization, Productivity.*

Introduction

The Alignment of ICT and Business strategy in an organization is very important to the organization's productivity and most especially to the chief Information Officer (CIO) of that organization. Business-IT alignment is defined by Luftman (2000) as the application of information technology and business strategies, goals and objectives in harmony, so as to achieve the organization's business scope. The decision to align business strategy and ICT is fundamental to business executives.

The rapid deployment of ICT services nationwide has been influenced by the open market approach which has led to the exponential growth in the number of telephone lines in the country. It is interesting to note that the connection of lines in the four decades between independence in 1960 and the end of 2000 was only an average of 10,000 lines per annum but seven years from the beginning of 2001 to 2008, the average growth rate attained was 8 million per annum. Nigeria attained 64 million active-subscriber based as at the end of December 2008. The total teledensity that was less than 0.4% (0.4 lines per 100 inhabitants) in 2000 leapfrogged to 45.7% in December 2009, the active subscriber figure in was estimated to exceed 80 million. The economic growth of any nation is dependent on the

ability of the organization to maximize its business operations to yield potential and sustainable growth (Ojukwu 2006).

The NNPC through its awareness of the importance of ICT in the global economy, as a tool for effective service delivery has introduced a new Management Information System (MIS), which is simply a computer based data collection and analysis system that would enable easy access to service delivery and processing of information. It is understood that every large organization is supposed to be aware of the effect of ICT on their organization productivity (NNPC Group 2011). The Nigeria national Petroleum Corporation has been faced with many challenges over the years. These are Challenges such as diversion of crude oil and other products to different destination. The NNPC had to acquire state of the art tracking device to keep watch on In-coming vessels, and to ensure a good service delivery of petroleum product are reached. The deployment of the ultra-modern vessel tracker is simply to enable the NNPC War Room get rid of all activities of illegal ocean liners, who convey petroleum products to Nigeria.

The NNPC as an organization owned and managed by the Nigerian government is also faced with the challenges of the government and its organization process, which need to be addressed through the strategic alignment process. There is a need for CEO and CIO of organizations to understand how to properly align their Information technology strategy (IT) and business strategy, in order to improve their business performance (Luftman 2000).

Statement of the Problem

Information and Communication technology (ICT) has really affected Nigerian institutions and business organization in diverse ways. It has changed most of the traditional ways things are done into modern computerized way, which is more effective and efficient in the processing of data. The ICT adoption in Nigeria is faced with numerous challenges and problems, which need the support of the Government and private sector and other Non-governmental agencies in order to reduce the problem.

Despite the huge investment of ICT in Nigeria, The country is still faced with numerous challenges and not fully connected to the Global village, just because, it lack the basic strategies needed to achieve the full ICT potential for the socio-economic development of the country. The Nigerian business organizations like the NNPC are faced with very stiff problem that affect the alignment of ICT-business strategy. The NNPC is faced with problems such as lack of ICT infrastructure, lack of priority in ICT investment, lack of awareness of the impact of ICT-business strategy alignment among stakeholders, lack of funds, cost of implementation, lack of skilled ICT manpower and training, lack of Communication between Business and IT, lack of Government policies and support, and cultural and environmental factors, Non steady electricity supply (Apulum and Latham 2009). The implementation and acquisition of ICT infrastructure by most organizations in Nigeria is another big challenge faced by them, the cost of software and hardware investment in Nigeria and other Sub-Sahara countries has made some companies still maintaining the traditional way of running their business.

Purpose of the Study

The purpose of this research is to investigate the impact of ICT and business strategy alignment on the NNPC, and to come up with a framework that would enable executive and stakeholders of the organization on how to align their business strategy with ICT to yield efficiency and productivity. The research would also enable senior management to have a

good working relationship, effective communication and a better understanding of its business and technical environment. Once maturity is understood by senior executive and stakeholders in an organization, such organization would be capable of identifying opportunities that would enhance harmonious relationship between its business and information technology (Luftman 2000).

Research Objectives

- To critically investigate the impact of ICT in NNPC.
- To analyze the factors that causes misalignment on the organization.
- To understand the implication of misalignment of ICT and business strategy alignment in the Corporation.
- To evaluate the ICT infrastructure in the organization.
- To propose recommendation for proper alignment of ICT and business strategy in the organization.

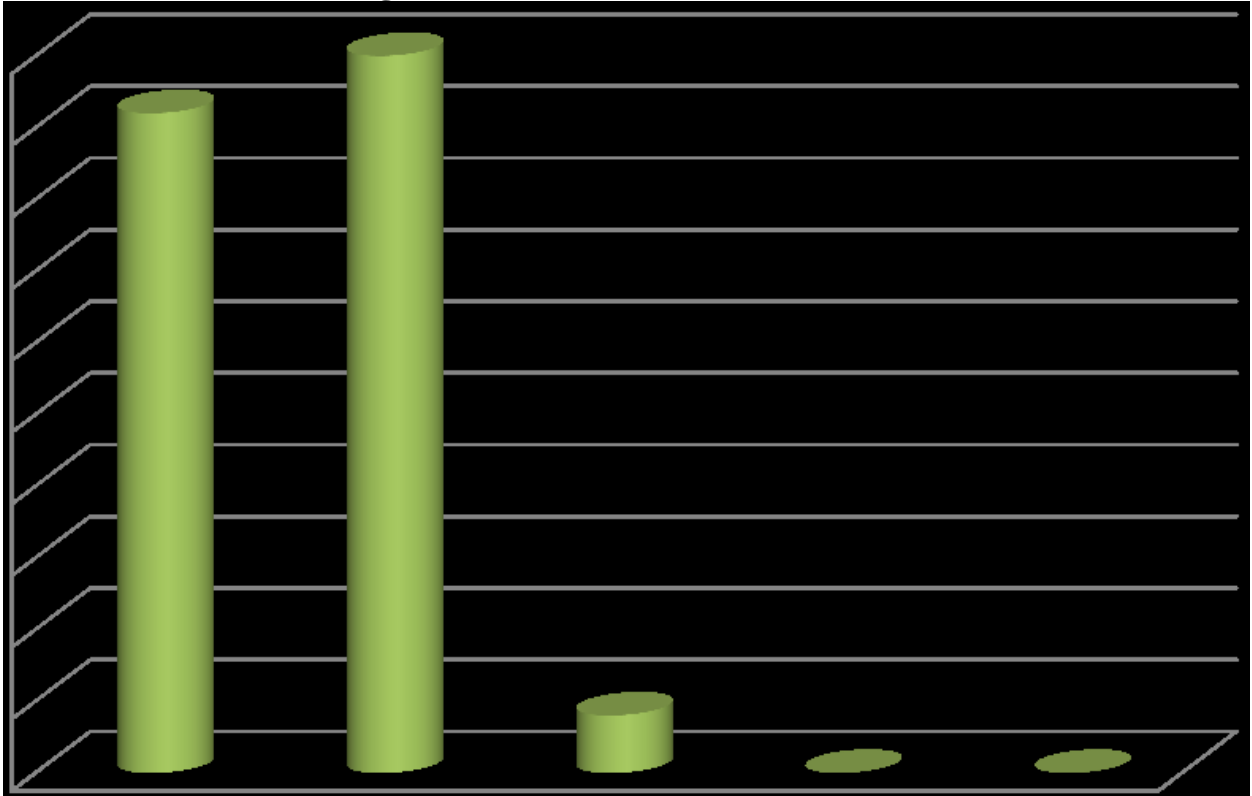
Research Questions

1. To what extent has ICT and business strategy alignment been employed in NNPC?
2. What are the factors that cause misalignment in ICT- Business strategy alignment in the Organization?
3. To know how efficient and effective is the use of ICT resources in NNPC?
4. Why is ICT- business strategy alignment necessary in the organization?

Methodology

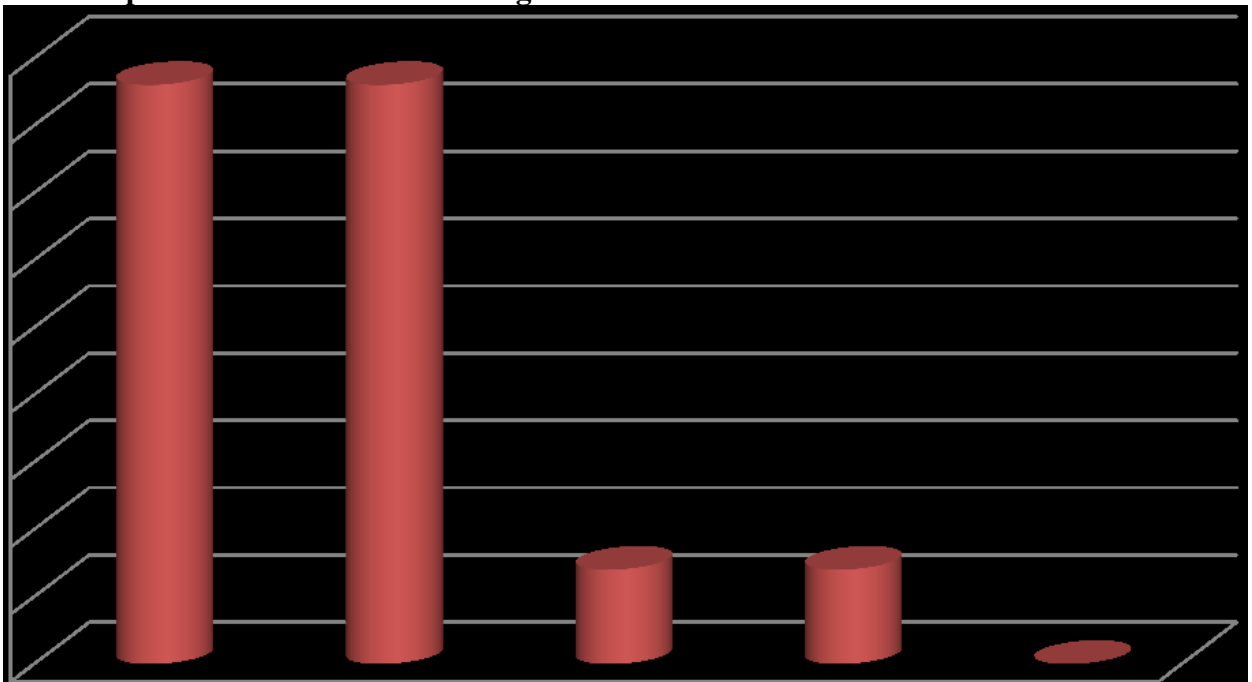
The implementation of this research was based on quantitative research technique. The Research was based on technique such as questionnaires, study on different documentation and previous research work done on the area of ICT- Business alignment and ICT development was included in the research. Quantitative Research method was used to evaluate research problems that are represented in terms of numbers or statistical values (Breach, 2009). Data collection was done through the collection of Primary and Secondary sources. Primary data collection was done through a survey, using questionnaires. The primary data was gathered through a self-administered questionnaire using the Likert scale type of question for examining the response. The Likert scale is a scaling technique that is designed to test how questions are subjected to respond in a range of strongly agree to strongly disagree on a 5- point scale (1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5 = Strongly Agree). The Respondents were asked to choose agree or disagree on the object of interest. The focus of this research is on the effect of ICT-Business strategy alignment on NNPC to increase productivity. This chapter showcases the analysis and discussion conducted on the survey, which would enable the corporation forestall organization breakdown that would have been easier to improve through the alignment process.

Results of the Findings



The survey shows that 46% of the respondents strongly agree that the IT reflect on the organization's mission, 50% of them agreed while about 4% of the responses were taken as not applicable. The researcher observed that the use of IT infrastructure is very vital in the corporation business operations. ICT as stated by the Group General Manager Information and Communication Division of NNPC as a vital business enabler which is capable of transforming the corporation into a world class integrated oil and gas company in the future (See section 2.7 above) (NETCONews 2008).

The ICT plan reflects on the business goals



Here 43% of both the strongly agreed and agreed respondents accepted that the ICT plan reflects on the organization business goals, 7% of the respondents disagreed that ICT plan reflect on the organization business plan while 7% were referred to be non-applicable. The researcher observed that NNPC as an organization is into the sales; exploitation; exploration and management of the Nigeria crude oil market and needs ICT in carrying out their business plan to gain comparative advantage. The management of the corporation through its ICT initiative, embarked on an Electronic Document Management System (EDMS) in order to implement electronic process of data process in all its business operations, so as to add value that would reflect on the business goals (NETCO News 2008).

Senior business executives champion IT initiative and implementation

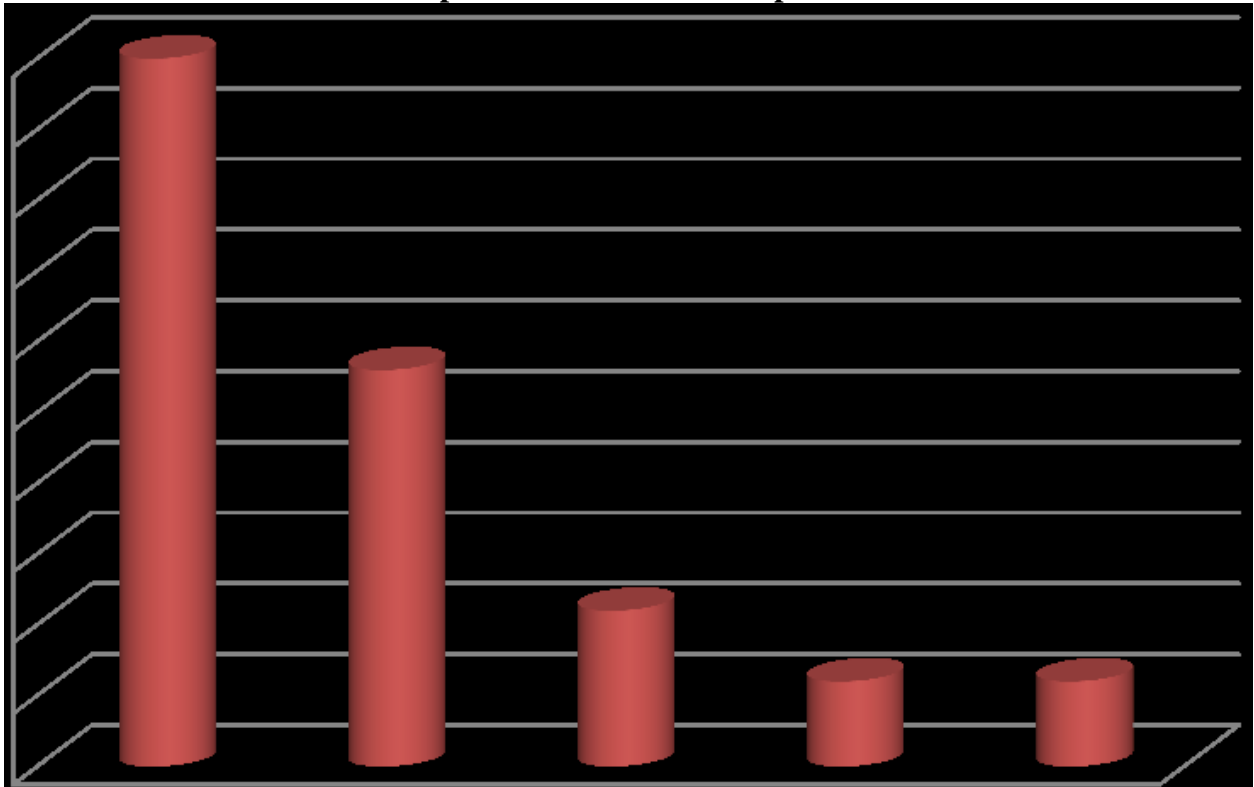
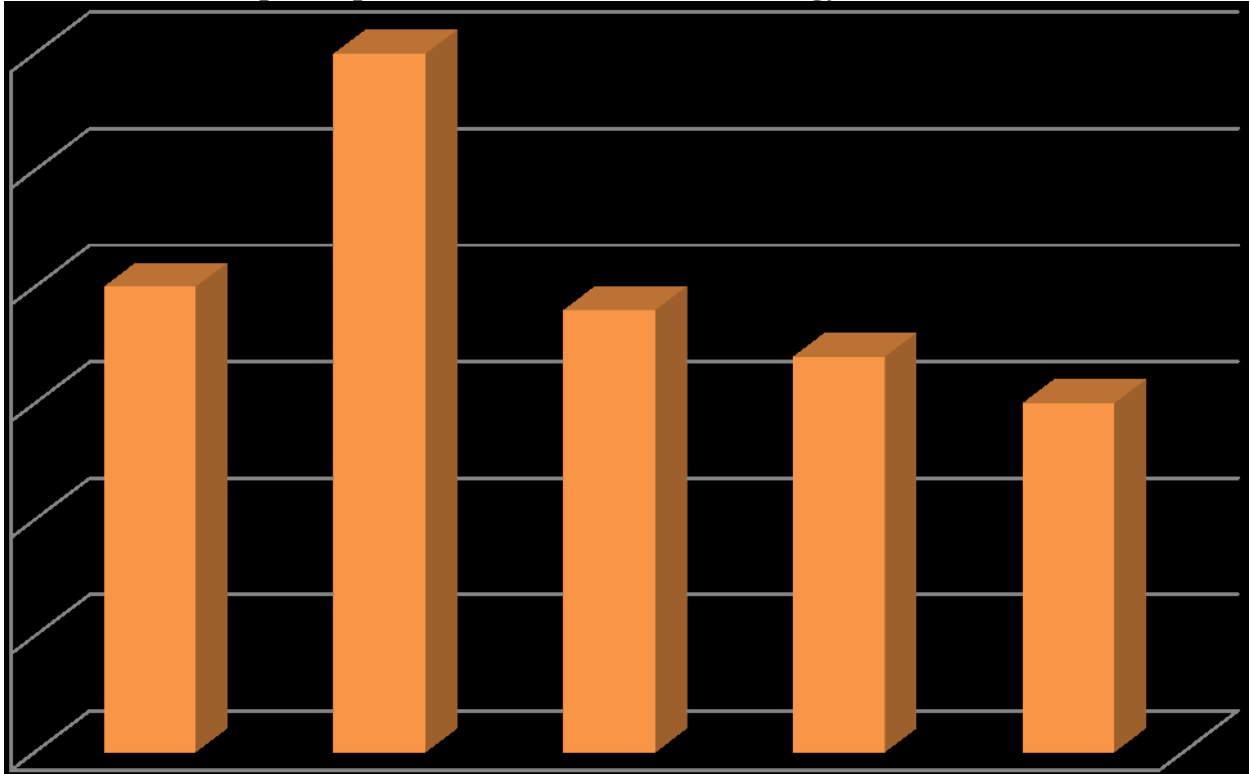


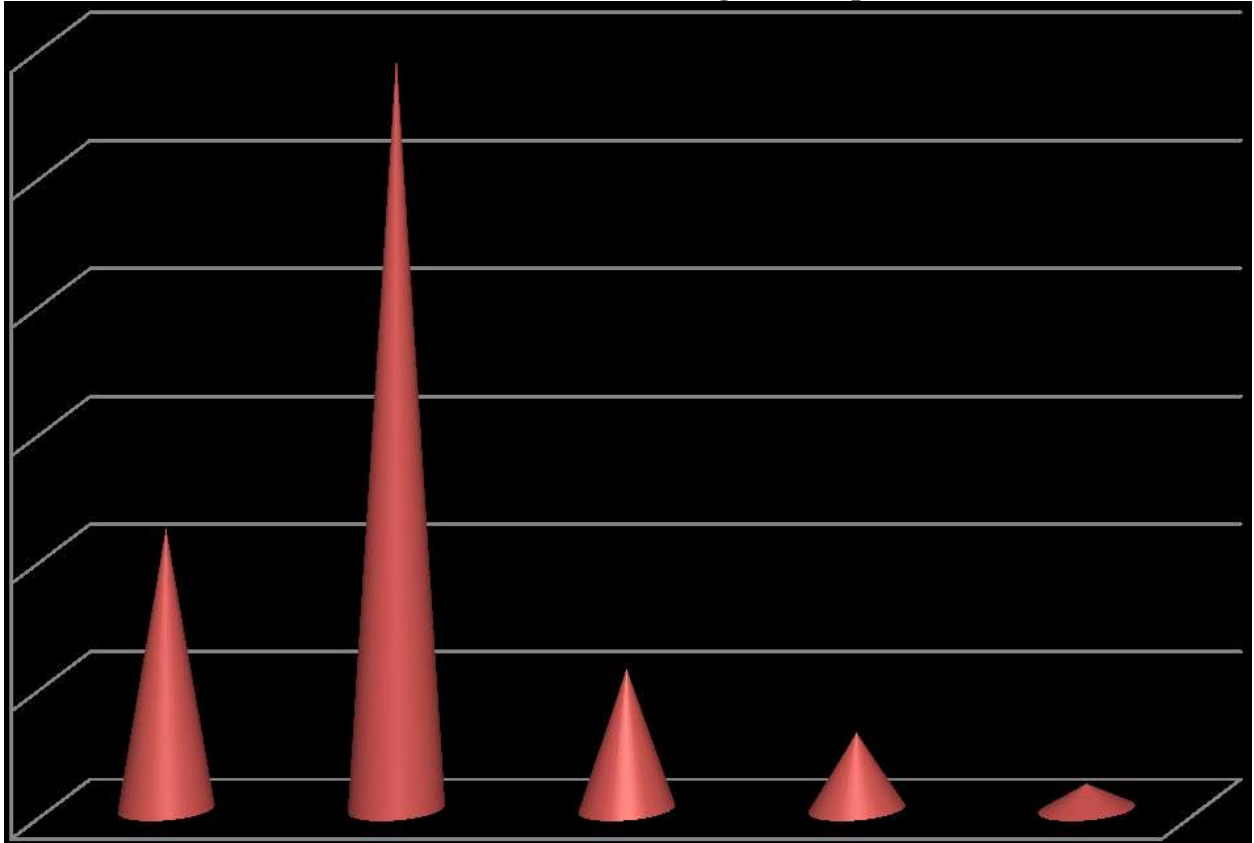
Figure above showed that 50% of the respondents strongly agree that senior business executives champion IT initiative and implementation. 28% of the respondents agreed that the corporation's senior executives champion IT initiatives and implementation. 6% of respondents disagreed and also 6% of the respondents strongly disagreed that senior executives of the organization champion IT initiative and implementation. The researcher observed that there is big proof that senior executives are involved in the initiation and implementation of ICT projects. According to Campbell and Peppard (2009) that better participation of both business and IT managers in the execution of a new project will enable the completion and implementation of such project to be successful. Both IS and business managers need to immensely contribute towards the successful implementation of ICT projects in order to increase the organization's productivity.

There is lack of emphasis placed on the ICT-business strategy



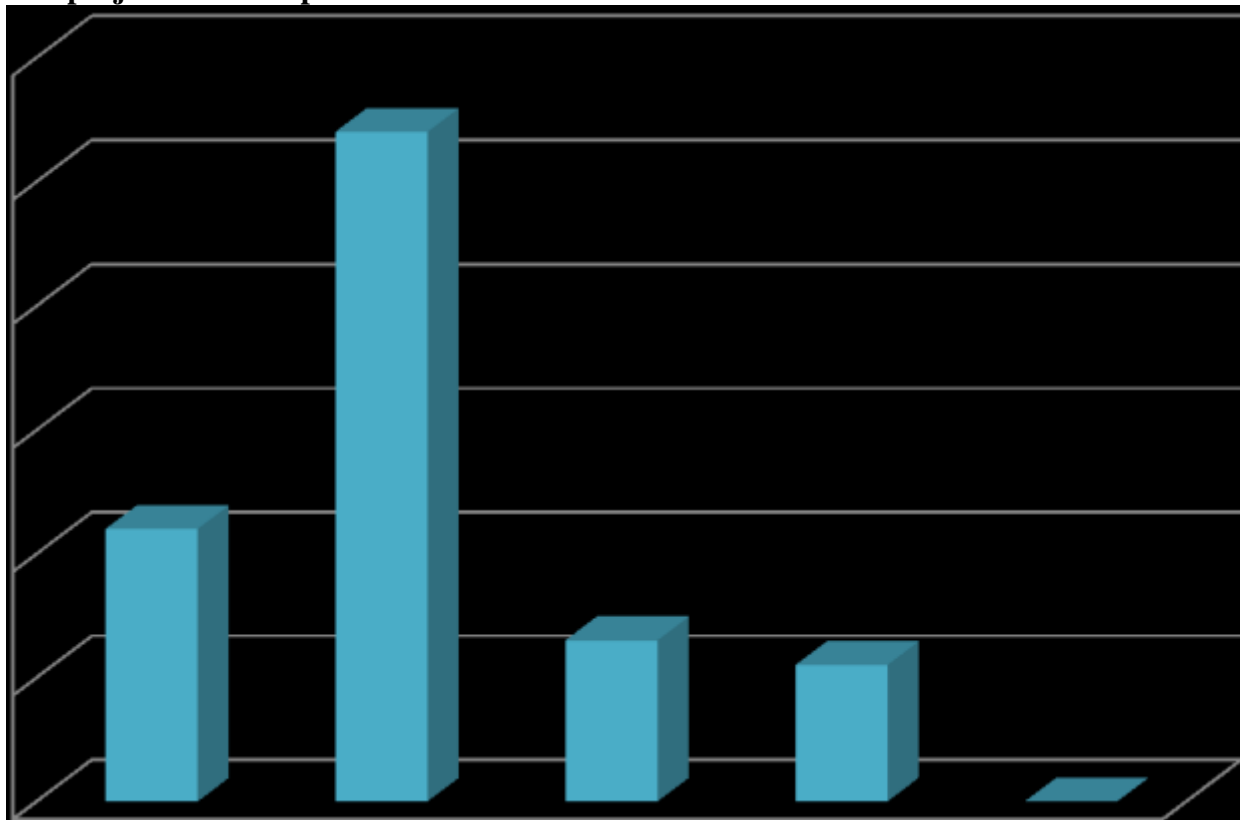
The survey shows that 20% of the respondents strongly agreed that there is lack of emphasis placed on ICT business strategy. 30% of the respondents agreed that there is lack of emphasis placed on ICT-business strategy. 17% of the respondents disagreed that there is lack of emphasis placed on ICT-business strategy. 15% of the respondents strongly disagree that there is lack of emphasis on ICT-business strategy. The researcher observed that there is less emphasis placed on ICT-business strategy due to the challenges faced in the alignment of its ICT and business strategy. From the responses it can be observed that there is much push and pull from the respondents that agreed and disagree on this particular question. Campbell and Peppard (2009) stated that for organization to sustain strategic alignment there should be proper collaboration and communication between ICT/business strategy managers and staffs. (See section 3.5).

Senior IT executive(s) are involved in business strategic development



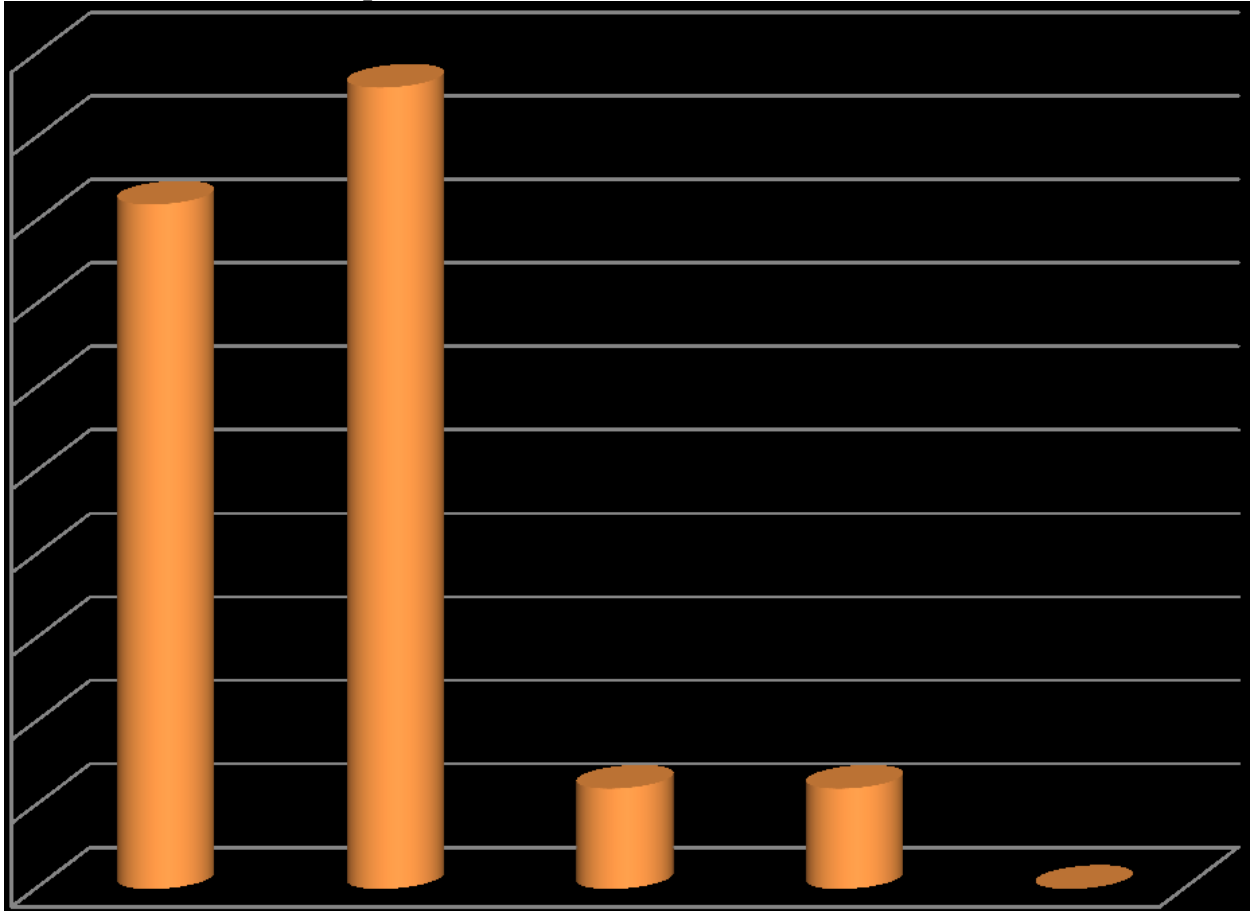
The survey shows 22% of the respondents strongly agree that senior IT executive(s) are involved in business strategy development. 59% of the respondents agree that senior IT executives are involved in the development of the organization business strategy. 6% of the respondents disagree while 2% strongly disagreed that senior IT executives are involved in the development of the organization business strategy. The researcher observed that Senior IT executives are part of the corporation's decision making staffs, so they are also involve in business strategy development. According to Campbell and Peppard (2009) that a better participation of IS managers in the execution of a new project eventually leads to successful completion of the project (see section 3.6).

ICT projects are well prioritized



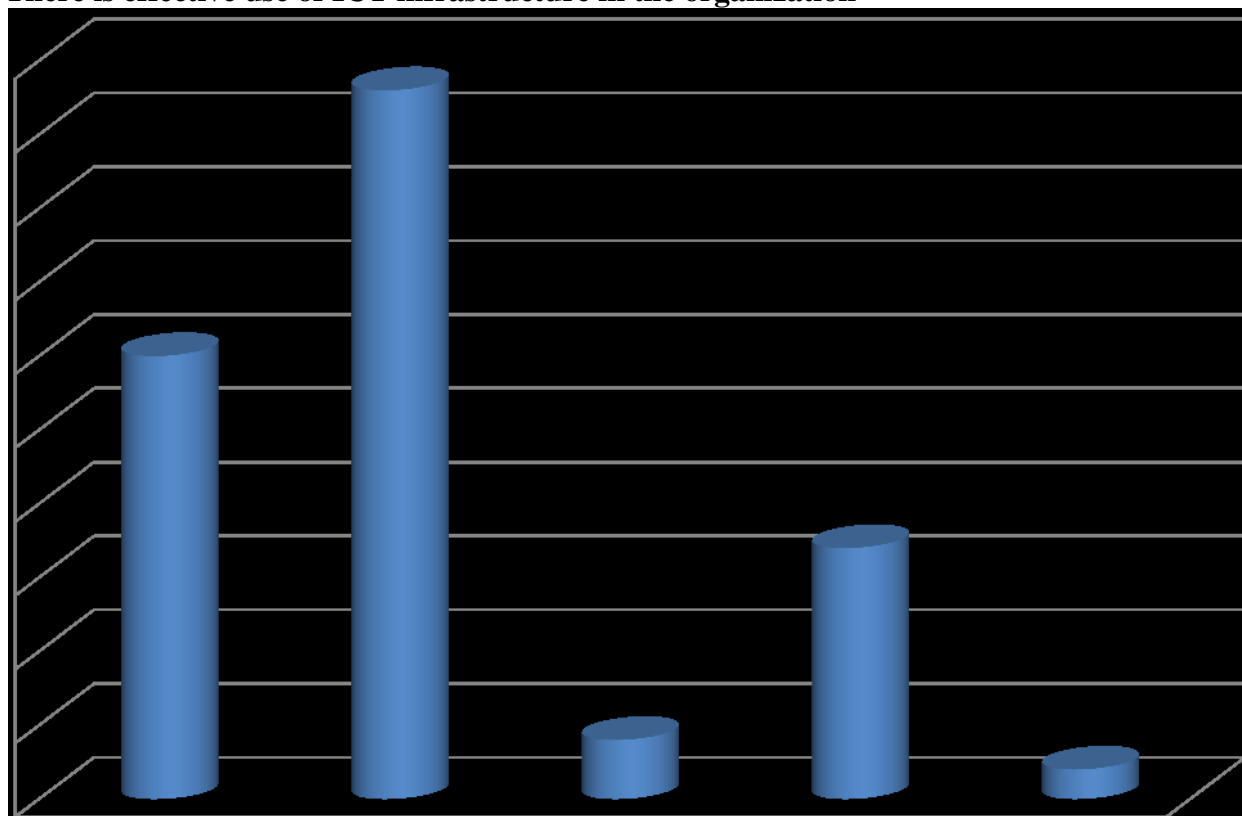
In this survey, 22% of the respondents strongly agreed that ICT projects are well prioritized. 54% of them agreed that ICT projects are well prioritized. 11% of the respondents disagreed that ICT projects are prioritized in the organization. The researcher observed that ICT projects are well prioritized in the organization.

There is a close relationship between ICT and business



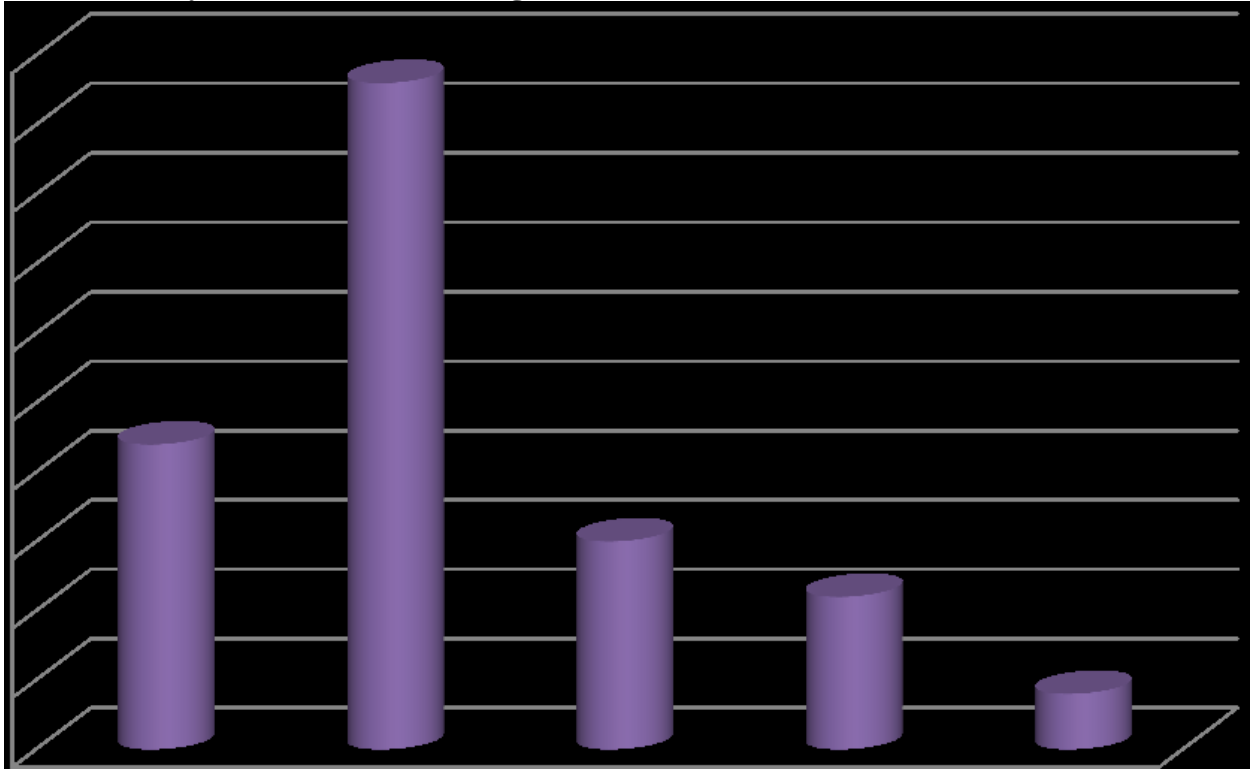
The result unveiled that 41% of the respondents strongly agreed that there is close relationship between ICT and business. 48% of the respondents agreed that there is close relationship between ICT and business strategy. 6% disagreed that there is close relationship between ICT and business and also 6% of the respondents strongly disagreed that there is close relationship between ICT and business strategy in the organization. It is observed by the researcher that close relationship exist between the organization ICT and its business strategy. Luftman (2000) argues that the process of achieving alignment needs full support from both senior executive IT/business staffs of organization in order to improve better relationship, trust, effective communication and understanding within the technical and business environment.

There is effective use of ICT infrastructure in the organization



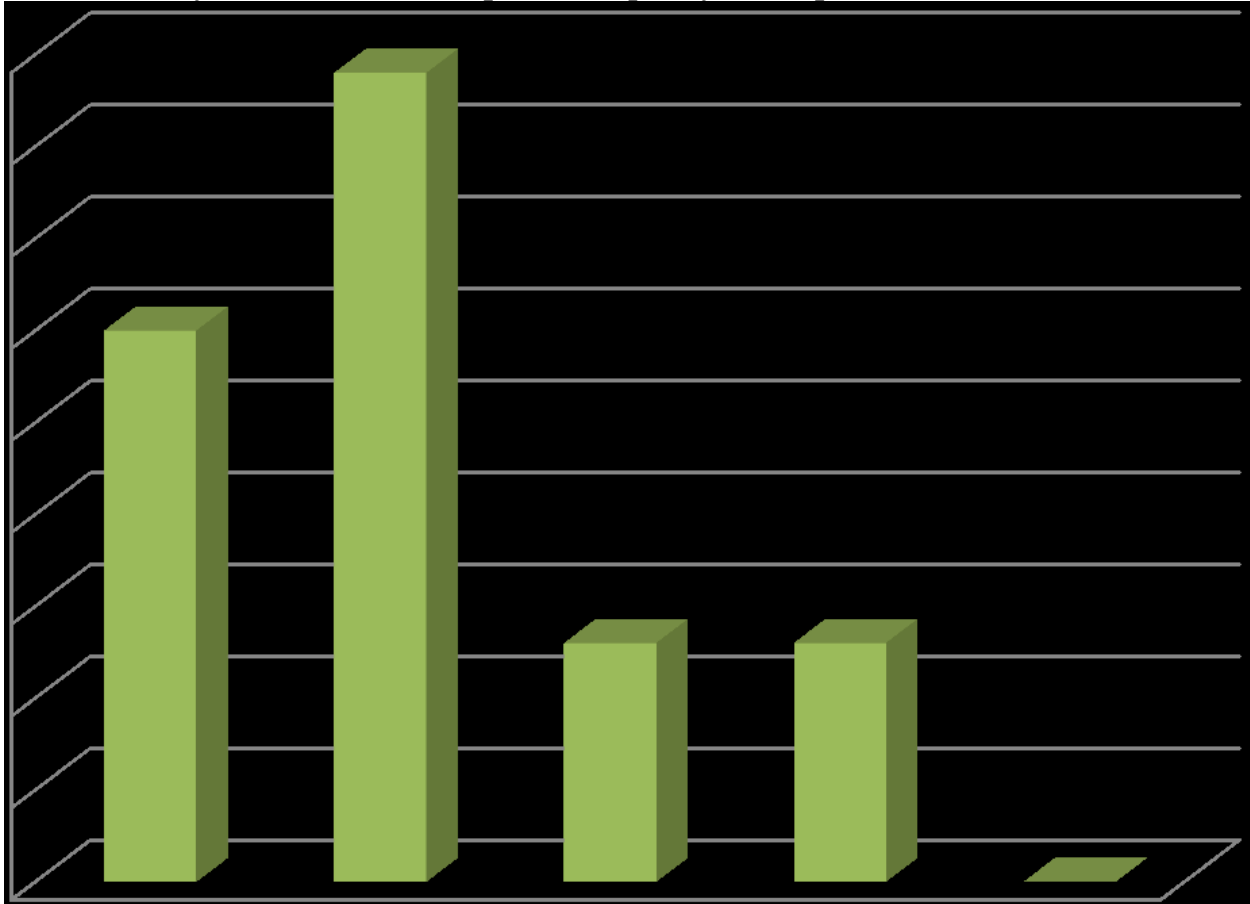
It was unveiled in the result that 30% of the respondents strongly agreed that there is effective use of ICT infrastructure in the organization. 48% of the respondents agreed that there is effective use of ICT infrastructure in the organization. 17% of the respondents disagreed that there is effective use of ICT infrastructure in the organization and 2% of the respondents strongly disagreed that there is effective use of ICT infrastructure in the organization. The researcher observed that ICT is a vital tool in the operations of any business organization.

Our current systems assist in reducing cost



The result showed that 22% of the respondents strongly agreed that the current systems in the organization assist them in reducing cost. 48% of the respondents agreed that the organization's current system assist in reducing cost of running the business. 11% of the respondents disagreed, the fact that their current system assist in reducing cost. 4% of the respondents strongly disagreed that the current systems of the organization assist in reducing cost. The research observed that the current systems in NNPC have enabled the corporation to reduce cost of processing and sharing data. According to Bloom *et al* (2009) that firms have suffered high cost in their means of communication over the past thirty years and they have attained high level reduction in communication cost due to advanced ICT, which allows them communicate and share resources between their corporate headquarter and other local offices. The process of processing and sharing data is now faster and less expensive due to the use of the current system in the corporation (NNPC).

Our current Systems allow us to improve the quality of our product



The survey shows that 30% of the respondents strongly agreed that the current systems improve the quality of the organization product. 44% of the respondents agreed that the current systems improve the quality of the organization's products. 13% of the respondents disagreed that the current systems improve the quality of the organization's products. The researcher observed that the current systems enable them to gain competitive advantage in the crude oil business sector.

Discussion of Findings

From the research carried out I found out that the alignment of ICT and business strategy in NNPC is a very critical task, which need a good balance of all the variables that are involved in the alignment process. NNPC as an organization is rich and capable of achieving strategic alignment with ease, but for strategic alignment to be achieved, such organization need to put those factors that causes misalignment aright. The organization ICT strategic and business strategy need to be properly align in order to gain competitive advantage. The investment in ICT is very vital to the development of every organization, because ICT is an enabler of an organization's business process in terms of improving its productivity, but that does not justify competitive advantage. What really justifies competitive advantage is simply how ICT can support the business plan in order gain the said advantage.

The research as already mention in the analysis stage, implore the use of a survey questionnaire that is compose of 18 questions, which is divided into three sections so as to enable the researcher measure the level of ICT-business strategy alignment in NNPC. The first section of the survey have questions that measure the ICT-Business alignment, the

second measure ICT managerial resource measurements and the third section measure the strategic value of the organization's current systems.

The first section of the survey question measures the level of alignment in the organization. The respondents' response to the questions asked in this section enable the researcher to understand that NNPC's level of alignment to a large extent is close to maturity but its management need to show more commitment to the issue of ICT-Business alignment in order to gain competitive advantage. According to Turban and Volonino (2010) that organizations whose ICT and business strategy are properly aligned tend to sustain competitive advantage than organizations that are not aligned.

From the literature, the NNPC level of ICT adoption is obviously shown as being very high but the issue of prioritization, according to the findings as mapped out in the analysis shows that a good percentage of the respondent strongly supported the fact that ICT is prioritized (Figure 5.7). The NNPC is a government owned establishment, so its organizational structure is bureaucratic in nature. The executives tend to have more authority in terms of implementation of business processes and the involvement of Senior IT executives in business strategy development is responded by the respondents (figure 5.6) as being efficient and which shows that the level of alignment in the corporation is absolutely working to achieve competitive advantage. According to Campbell and Peppard (2009) that better participation of IT managers in the implementation and execution of a project enables the organization gain efficiency, which is one of the remedies to the factors that cause misalignment.

The third section of the questionnaire (section 5.4) contains eight questions which talks about the strategic value of the current systems used in NNPC. The current systems used in the organization are deemed to provide quality service and improve their efficiency in production processes. The respondents were strongly in support of the fact that their current systems strategically enable them carry out their business operations successfully. This shows the level of ICT adoption in NNPC and how the ICT resources are efficiently used in improving the organization business process.

The findings in this research show that strategic alignment in NNPC is really a strategic process that is capable of improving the organization's productivity. The acceptance of senior managers of NNPC in championing and implementing ICT initiative, and also the prioritization of ICT projects show the extent of alignment is better but need to improve so as to enable full participation of the entire staffs in ICT/business processes. According to Campbell and Peppard (2009), the productiveness of most organizations is adversely affected by lack of collaboration among senior ICT/business managers. However, Luftman (2000) argue that for organization to achieve and sustain strategic alignment, such organization needs full support of its senior executive staffs, better relationship, trust, and better understanding of the technical and business environment in which it operates. The management of NNPC has a lot to learn from the findings of this research in order to improve its organization growth and sustainability.

Conclusion

The process of achieving and sustaining strategic alignment between ICT and business strategy is a very serious task for the Corporation. The alignment process needs the attention of all variables to operate optimally in order to sustain strategic alignment. The basic reason why it is difficult to sustain optimal alignment is due to the dynamic nature of

the organization business and technological infrastructure. They tend to change with time while the alignment process lags behind. For an organization to sustain maximum alignment, such organization like the NNPC has to improve on its organizational structure, culture and technological know-how in order to yield productivity.

The reason why most businesses fail is due to the total neglect of the parameters that enable strategic alignment in organizations. Most Managers in various organizations tend to do things their own way, instead of seeking advice from experts and lower level staffs. And such results end up in derailing the organization.

This research shows the critical and dynamic nature of strategic alignment in an organization, the factor that causes misalignment in ICT-business strategy, and how strategic alignment can be sustained in NNPC. The alignment of an organization's ICT investment does add value and increase organization performance efficiently, but it is only organizations with high degree of alignment between its ICT strategy and business strategy that can easily sustain better productivity.

Recommendation

In achieving Strategic alignment in an organization, the management of NNPCs should have a better understanding of the factors that causes misalignment and put forward a framework, in order to sustain a mature strategic alignment mechanism to enhance its organizational productivity.

- There should be collaboration and proper communication among ICT and business strategy staffs
- There should be proper training of ICT/ Business skills in the corporation.
- Business/ICT managers should be fully involved in project planning and implementation
- ICT project should be prioritized
- Senior ICT executive should be involve in business strategy
- ICT infrastructure should be in place
- Most Proficient staffs should be positioned in the right job placement
- ICT should support business plan in the corporation

Reference

- Apulum, I. and Latham, A. (2009) Information and Communication Technology Adoption: Challenges for Nigerian SMEs. *TMC Academic Journal*, 4(2):64-80
- Bloom, N., Garicano, L., Sadun, R., and Van Reenen, J. (2009) *The Distinct Effects Of Information Technology and Communication Technology On Firm Organization* [online] available from <<http://www.stanford.edu/~nbloom/w14975.pdf>> [24 August 2011]
- Campbell, B. and Peppard, J. (2009) *The Co-evolution of Business/Information Systems Strategic Alignment: An Exploratory Study* [online] Available from < <http://www.som.cranfield.ac.uk/som/dinamic-content/media/ISRC/Coevolution%20of%20Strategic%20Alignment.pdf>> [20 October 2011]
- Luftman, J.N. and Ben-Zvi, T. (2010) *Key Issues for IT Executives 2010: Judicious IT Investments Continue Post-Recession* [online] Available form < <http://blog.cionet.com/wp-content/uploads/2010/12/MISQE-2010-Key-Issues-for-IT-Executives-2.pdf>> [24 August 2011]
- NETCONEWS (2008) NETCO signs Collaboration Agreement with AMEC on Mobil

- Integrity Project. Vol. 4 NO. 2 [online] Available from <
[http://netco.nnpcgroup.com/Portals/2/PDF /Netco_News1.pdf](http://netco.nnpcgroup.com/Portals/2/PDF/Netco_News1.pdf)> [28 August 2011]
- NNPC Group (2008) Information Technology Div. Strategic Management Workshop [online
available from <[http://www.nnpcgroup.com/PublicRelations/NNPCinthenews/tabid/92
/articleType/ArticleView/articleId/197/Information-Technology-Div-Strategic-
Management- Workshop.aspx](http://www.nnpcgroup.com/PublicRelations/NNPCinthenews/tabid/92/articleType/ArticleView/articleId/197/Information-Technology-Div-Strategic-Management-Workshop.aspx)> [20 September 2011]
- Ojukwu, D. (2006) Achieving Sustainable Growth through the Adoption of Integrated
Business and Information Solutions: A Case Study of Nigerian Small & Medium
Sized Enterprises *Journal of Information Technology Impact Vol. 6, No. 1, pp. 47-60*
- Turban, E. and Volonino, L. (2010) Information Technology for Management: Transforming
Organizations in the Digital Economy 7th edn, International student version Hoboken:
John Wiley & Son