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PROJECT IMPLEMENTATION STRATEGIES FOR IMPROVED QUALITY PRODUCTS IN THE OIL AND GAS INDUSTRY IN NIGERIA

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Abstract

The study investigated project implementation strategies for improved quality product in oil and gas industry in Nigeria. The objectives of the study were to; determine the effect of monitoring on the product quality and ascertain the effect of new knowledge update on product viability of the oil and gas industry. The study adopted the survey design method and the sample size for the study was determined using Freud and William's formula and sample size of 233 was selected from a population of 4541. The study made use of primary and secondary data sources while primary data were collected through copies of structured questionnaire on a 5 point Likert Scale format while analyses were presented in tables and percentages. The hypotheses were tested using simple linear regression. The findings revealed that monitoring positively affected the product quality ($r = .674$; $F = 35.007$; $t = 5.917$; $p < 0.05$) while new knowledge update positively affected the product viability ($r =. 665$; $F = 33.329$; $t = 5.773$; $p < 0.05$) of the oil and gas industry. The study concludes that it has become imperative to highlight the role of project implementation strategies as major indicator for actualization of improved quality products in the oil and gas sector. The study recommends among others that new skill acquisition should be encouraged through training and skill development of project team members because new knowledge update significantly affected product viability of the oil and gas industry.

Keywords: Project Implementation Strategies, Monitoring, New Knowledge update, Product Viability, Product Quality

INTRODUCTION

Project implementation strategies are vital ingredients in project performance in both developed and developing Nations. Great human achievements are at the epicenter of successful project implementation strategies. Project implementation strategies are key drivers in a robust and sound economic environment. Job creation and employment opportunities thrive in an environment that is characterized by good project planning, implementation strategies and completion time. Project implementation strategies, monitoring and evaluation are rapidly becoming a standard parameter for both private and public sector businesses and organizations (Gray and Larson, 2008).

Igwe and Ude (2018) affirm that the growth and development of developed and developing economies are hinged upon very successful project implementation strategies and overall infrastructural development and sustainability. Project performance is anchored on adequate planning, implementation, funding and the availability of human resources. The implication is that any project embarked upon not only consumes resources but also denies

other sources needed funds for economic progress and success. Every project has an economic opportunity cost and should be given utmost priority to ensure its timely completion and use for the purpose or set objectives.

Project performance is concerned with evaluating the expected output against the achieved output. The essential pillars of project performance are project planning and implementation. While project planning is concerned with establishing a pre-determined action within an organized business environment towards project success and execution, it equally involves decision making aimed at choosing the best alternative course of action to achieve project goals which must be people centered, people propelled and people oriented.

Banjoko (2009) submits that project implementation strategies involve all managerial activities necessary in defining a course of action towards project performance. Consequently, project planning in the project environment must be systematic, flexible enough to handle unique activities, disciplined through reviews and ready to accept multifunctional inputs. Planning is not cast on stone rather it is a dynamic processes of improving project performance in a project cycle and value chain. Project implementation revolves around a structured plan of action designed to deploy all necessary resources which involves human and material resources considered appropriate and adequate to achieve positive project performance and set objectives in a competitive environment. Projects are implemented through programs, activities and tasks that serve in deploying interactive resources within the project environment. Achievement of Project performance goals are driven by the actions of very dynamic and flexible human resource personnel. On the other hand, non achievement of project performance goals can equally be attributed to the quality and non flexible nature of their human resource personnel.

A critical assessment of our environment in Nigeria and various states of the federation including the local governments show various uncompleted, abandoned and aborted projects in various forms, shapes and sizes belonging to the oil and gas industry especially in the Niger Delta region. Some have lasted for years while such sites are now inhabited by miscreants and mentally unstable persons with their consequential hazard to their environment. Drug dealing, smoking, rape, armed robbery and other vices are perpetrated in them unhindered with no hope of completion and no specific completion date or resuscitation in view. This study intends to reverse this trend that is negatively affecting the oil and gas industry in Nigeria. The study therefore seeks to examine project implementation strategies for improved quality products in the oil and gas industry in Nigeria. The research output will offer leeway to the stakeholders in the oil and gas funded projects for the purpose of timely actualization of the visions and goals of these projects and associated projects.

CONCEPTUAL REVIEW

Concept of Project Implementation Strategy

Maylor (2005) defines projects as vehicles for strategic project implementation. The term "implementation" is identical to terms like "execution" and "actualization of goals" which are frequently used in management (Wysocki & McGary, 2003). During project implementation, the Project manager is tasked with initiating, managing, and controlling all the activities of the project team to ensure delivery of the end product/service. Pinto & Slevin (2001) acknowledge that successfully implementing a project is a difficult and complex task. This is further made worse by constant change taking place during the project life, in an environment full of risk and uncertainty (Bricknell et al, 2012; Maylor, 2005).

Wysocki & Mc-Gary, (2003) define a project as a sequence of unique, complex, and connected activities with one goal that must be completed by a specific time, budget, and specification. From these definitions, it can be deduced that a project follows several stages, has an objective, and has limited resources. These stages are termed the project life cycle and are namely, initiation, plan, execution, control, and closure (Bricknell et al, 2012).

Having put a project strategic plan in place, the next step, is to ensure make that it works He asserts that formulating a strategy is a difficult task and making the strategy work is even more challenging. As such, it can be argued that this process of implementation should be given as much attention as possible. Otherwise, all the resources committed to the project will be of no relevancy if the implementation is haphazard (Hrebiniak, 2006).

Kotler & Armstrong, (2008) define Strategy implementation as a process of converting management plans into action and ensuring that these plans are attained. Lock (2013) is of the view that it is critical to monitor and evaluate every project to ensure it fits within the strategy before implementation. He maintains that it is importance that managers must as well evaluate projects to ensure the strategies, fit in within the organizational objectives and see how they relate to the key capability requirements, that is, the financial and other constraints. In addressing the above, if the projects are not properly evaluated, then the resources should not be committed to such projects.

Limitations in Project Implementation Strategies

Planning big projects is not an easy task for any project manager, let alone making the plan work, that is implementation (Hrebiniak, 2006). To monitor and ensure a project is still on schedule, project evaluating has also proved to be a challenge and sometimes quite problematic even after an organization has crafted a strategy, several challenges are still experienced during the implementation process. Good and effective strategies may still fail to

give desired results if they are not properly implemented. The most common constraints in project implementation are (Goel, 2009; Maruapula, 2008).

- Budgetary/Financial contracts
- Lack/Inadequate planning
- Staffing grievances
- Government bureaucracy
- Lack of project activity monitoring
- Political expediency and vested interests
- Too many similar projects under way at one time

Budgetary/Financial Contracts

Wysocki (2003) affirms that lack of financial resources and poor financial management are arguably the major courses of project failure. Every project that is operated is usually undertaken against a detailed budget. He indicates that most projects face resource limitations in the form of financial, human and machines related challenges.

Inadequate Planning

Goel, (2009) argues that difficulties in implementation are usually caused by lack of project planning at initial stages. In the Information Technology industry, they use the term "G.I.G.O", that is Garbage In Garbage Out, meaning that if a poor plan is rolled into action, poor results will be attained regardless of how stringent the implementation process is. This means that the strength of an implementation process lies in the original plan. If the planning process is wholesome, then the implementation phase will be wholesome as well. Inadequate planning usually leads to problems in schedule, cost overruns and ultimately poor performance. Planning, implementation, and evaluation need to be viewed as a critical process in project management, as these complement each other. This implies that before a plan can be concluded, a Project manager should have the implementation plan and evaluation plan in place.

Staffing Matters

Lack of properly trained personnel is another cause of incomplete and failed projects. It is a fact that without the properly trained technical staff, a project will fail. (Lock, 2013) indicated that when a project has been authorized, it is handed over to the contractor or project team. (Maruapula, 2008) emphasizes that in addition to training, staff who were originally involved in the project initiation should be the same allowed to implement projects,

which is not the case with most projects as this point is usually overlooked in project implementation.

Government/Organisational Bureaucracy

(Maruapula, 2008) notes that although it is important to have checks and balances, these at times bring problems that tend usually bring negative impacts on project implementation processes and its results. He further noted that most of the Government systems tend to be more focused on processes than the actual project implementation. Furthermore, even after project approval, the disbursement of project funds and other relates resources, takes too long to be availed thus ultimately delaying the actual in project implementation.

Lack of Project Activity Monitoring

The implementation process should be subjected to constant monitoring and evaluation to ensure corrective measures are taken early and improvements identified for future project design (Goel, 2009). Without an effective project monitoring and evaluation, projects would always behind schedule. Stakeholder's' expectations need to be monitored and controlled as-well as managing potential risk. The Earned Value Management (EVM) is one tool and technique frequently to monitor and control the performance of projects. The EVM model provides organizations with a mechanism to assist monitor and control costs and scheduling of projects.

Political Expediency and Vested Interests

Maruapula (2008) argues that Members of Parliament often use projects for their political mileage. Generally, most politicians are not really concerned about the project per se, but about driving their political agenda. Mostly when politicians get the votes, the projects become a thing of the past. Also, in some cases the politicians can divert funds allocated to a particular project or other projects where they have an interest.

Too Many Similar Projects under Way at One Time

According to (Goel, 2009), for quick and successful implementation of projects once a project has been approved, no new similar projects should be undertaken unless there is no option. This ensures that funds and other project related resources earmarked for the project are not diverted elsewhere. In addition, no material project variations should be allowed unless where it is very necessary.

THEORETICAL FRAMEWORK

Theory of Project Implementation

In the theoretical review, the study was anchored on the theory of project implementation. Project implementation theory as Nutt, (1986) puts it is a series of steps taken by responsible organizational agents to plan change process to elicit compliance needed to install changes'. Managers use implementation to make planned changes in organizations by creating environments in which changes can survive and be rooted. Implementation is a procedure directed by a manager to install planned changes in an organization. There is widespread agreement that managers are the key process actors and that the intent of implementation is to install planned changes, whether they be novel or routine. However, procedural steps in implementation have been difficult to specify because implementation is ubiquitous. Amachree, (1988) made several important distinctions pertinent to these processes of planned change, identifying four procedures called the entrepreneurial, exploration, control and implementation sub processes. From this perspective, implementation can be viewed as a procedure used in planning change process that lays out steps taken by the entire stakeholders to support change.

Project implementation strategies have evolved in order to plan, coordinate and control the complex and diverse activities of modern industrial and commercial projects. All projects share one common characteristic – the projection of ideas and activities into new endeavors. The ever-present element of risk and uncertainty means that the events and tasks leading to completion can never be foretold with absolute accuracy. For some very complex or advanced projects even the possibility of successful completion might be in serious doubt (Amachree, 1988). The purpose of project management is to foresee or predict as many of the dangers and problems as possible and to plan, organize and control activities so that the project is completed as successfully as possible in spite of all the risks. The aim is for the final result to satisfy the project sponsor or purchaser, within the promised timescale and without using more money and other resources that were originally set aside or budgeted.

A study by Baker, (1998) strongly confirms the importance of including client satisfaction within any measure of project success. After sampling six hundred and fifty (650) project managers, the researcher concluded that project success is something much more than simply meeting cost, schedules and performance specifications. In fact, client satisfaction with the formal result has a great deal to do with the perceived success or failure of the project. Findings from the above research support the following definitions of project success. "If the project meets the technical performance specifications and or mission to be performed and if there is a high level of satisfaction concerning the project outcome among the people in the client

organization and key users or clients of the project effort, the project is considered on the overall successful" (Baker, 1998). Perception plays a strong role in this definition. Therefore, the definition is more appropriately termed 'perceived success of project'; Baker, (1998) hence concluded that 'in the long run what really matters is whether the parties associated with and affected by a project are satisfied. Good scheduled and cost performance means very little in the face of a poor performing product'. It may be shown that in many ways, measures of project and implementation success are parallel and complement each other

METHODOLOGY

The study adopted the descriptive survey design method and sample size of 233 was selected from a population of 4541 using the Freud and William's formular. The study was conducted in five oil and gas companies using purposive non-probability sampling technique on the key stakeholders in Rivers state, South-South Geo political area of Nigeria. However, the study covered selected oil and gas companies in Rivers State involved in the production of petroleum products. The study made use of primary and secondary data sources while primary data were collected through copies of structured questionnaire on a 5 point Likert Scale format. Data were presented in a frequency distribution table, analyzed and interpreted using descriptive statistics of frequency, simple percentages, mean and standard deviation to evaluate the research questions. The hypotheses were tested using simple linear regression analysis. All the hypotheses were tested at 5% error using Statistical Package for Social Sciences (SPSS, version 20). The Cronbach Alpha reliability test was utilized to conduct the reliability test where Cronbach Alpha reliability coefficient of 0.70 and above was considered acceptable.

ANALYSES AND FINDINGS

Distribution and Return of Questionnaire

A total of two hundred and thirty-three (233) copies of the questionnaire were prepared and distributed to the respondents from the five selected oil and gas companies. Out of the above number, a total of two hundred and twenty - three were properly completed and returned. None was rejected by the researcher. Therefore, the researcher based the analysis on the total number of 223 copies of questionnaire duly completed and returned.

Descriptive Analysis of Research Question One

Answers to Research Question one: To what extent does monitoring affect the product quality of oil and gas industry?. Reactions from respondents were analyzed as follows:

Table 1: To what extent does monitoring affect the product quality of the oil and gas industry?

	Oil and Gas companies											
	Shell Pital		Chevron		Millenium Oil and Gas		Exxon Mobil		Nigeria Agip Company		Freq.	%
Rating	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior		
S. Agree	15	25	2	5	1	4	1	5		2	60	27
Agree	10	30	7	10		8		2		2	69	31
Undecided	15	20	5	9	7	4	2	3	1		66	29
Disagree	3	5		3							11	5
S. Disagree	1	8	1	2		3	1	1			17	8
Total	**44**	**88**	**15**	**29**	**8**	**19**	**4**	**11**	**1**	**4**	**223**	**100**

Table 1 showed that 60(27%) and 69(31%) of the respondents strongly agreed and agreed respectively that monitoring affects the product quality of the oil and gas industry, 66(29%) were undecided while 11(5%) and 17(8%) disagreed and strongly disagreed respectively with this statement.

Answers to Research Question two: To what extent does new knowledge update affect product viability of oil and gas industry?. Questionnaire items were designed to provide answers to the research question two and reactions from the respondents were analyzed as follows.

Table 2: Responses on whether new knowledge update affect product viability of oil and gas industry?

	Oil and Gas Companies											
	Shell Pital		Chevron		Millenium Oil and Gas		Exxon Mobil		Nigeria Agip Company		Freq.	%
Rating	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior	Senior	Junior		
S. Agree	16	35	7	7	4	8	2	2		2	83	37
Agree	26	40	5	20	2	10	2	4	1	2	112	50
Undecided		6	3			1					10	5
Disagree	2	1									3	1
S. Disagree		6		2	2			5			15	7
Total	**44**	**88**	**15**	**29**	**8**	**19**	**4**	**11**	**1**	**4**	**223**	**100**

Table 2 demonstrated that 83(37%) and 112(50%) of the respondents strongly agreed and agreed respectively that new knowledge update encourages product viability, 10(5%) were undecided while 3(1%) and 15(7%) strongly disagreed and disagreed respectively with this statement.

Test of Hypotheses

The two hypotheses postulated were tested with various test statistics aided by computer through the application of Statistical Package for Social Sciences (SPSS .20 version) of Microsoft. Specifically, hypotheses one and two were tested with simple linear regression analysis.

Hypothesis One

H_0: Monitoring does not positively affect the product quality of the oil and gas industry?

H_1: Monitoring positively affects the product quality of the oil and gas industry?

To test the hypothesis 1, a Simple Linear Regression analysis method was used. It was assumed that when there is a relationship between monitoring as it will affect the product quality of the oil and gas industry.

Table 3: Regression Analysis Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.674[a]	.455	.442	.79769	.379

a. Predictors: (Constant) Monitoring

b. Dependent Variable: Product quality

Table 4: ANOVA[a]

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	22.275	1	22.275	35.007	.000"
Residual	26.725	42	.636		
Total	49.000	43			

a. Dependent Variable: Product quality

b. Predictors: (Constant), Monitoring

Table 5: Regression Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	-8.650	2.057		-4.205	.000
	Monitoring	2.475	.418	.674	5.917	.000

R	=	.674
R^2	=	.455
F	=	35.007
T	=	5.917
DW	=	.379

Regression sum of squares	=	22.275
Residual sum of squares	=	26.725
Std. Error of the Estimate	=	. 79769

The regression sum of squares (22.275) is less than the residual sum of squares (26.725), which indicates that more of the variation in the dependent variable is explained. The significance value of the F statistics (0.000) is less than 0.05, which means that the variation explained is not due to chance.

R shows the degree of relationship between independent variable monitoring and the dependent variable product quality the correlation coefficient which has a value of .674, indicates that there is a strong positive relationship between monitoring and product quality. R square the coefficient of determination, shows that 45.5% of the variations in project quality are explained.

With the linear regression, the error of estimate is low with a value of about 0.798. The Durbin-Watson statistics of .379, which is not more than 2, indicates there is autocorrelation. Monitoring of 0.445 indicate a weak impact between monitoring and product quality, which is statistically significant (with t = 7.920). Therefore, the null hypothesis should be rejected and the alternative hypothesis accordingly accepted. Hence; Monitoring positively affects the product quality ($r = .674$; $F = 35.007$; $t = 5.917$; $p < 0.05$) of the oil and gas industry.

Hypothesis two

H0: New knowledge update does not positively affect the product viability of the oil and gas industry

H1: New knowledge update positively affects the product viability of the oil and gas industry

To test the hypothesis 2, a Simple Linear Regression analysis method was used. It was assumed that when there is new knowledge update it would impact on the product viability..

Table 6: Regression Analysis Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.665[a]	.442	.429	.95565	.843

a. Predictors: (Constant),: New knowledge update

b. Dependent Variable: Product viability

Table 7: ANOVA[a]

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	30.438	1	30.438	33.329	.000[b]
Residual	38.357	42	.913		
Total	68.795	43			

a. Dependent Variable: Product viability

b. Predictors: (Constant),: New knowledge update

Table 8: Regression Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	-4.429	1.455		-3.043	.004
1	New knowledge update	1.786	.309	.665	5.773	.000

a. Dependent Variable: Product viability

R = .665

R2 = .442

F = 33.329

T = 5.773

DW = .843

Regression sum of squares = 30.438

Residual sum of squares = 38.357

Std. Error of the Estimate = 95565

The regression sum of squares (30.438) is less than the residual sum of squares (38.357), which indicates that more of the variation in the dependent variable is explained. The significance value of the F statistics (0.000) is less than 0.05, which means that the variation explained is not due to chance.

R shows the degree of relationship between independent variable new knowledge update and dependent variable product viability the correlation coefficient which has a value of .665, indicates that there is a strong positive relationship between new knowledge update and product viability. R square, the coefficient of determination, shows that 44.2% of the variation in product viability time is explained.

With the linear regression, the error of estimate is low, with a value of about 0.798. The Durbin-Watson statistics of .843, which is not more than 2, indicates there is auto correlation New knowledge update of 0.442 indicates a weak impact between new knowledge update and product viability, which is statistically significant (with t = 5.773). Therefore, the null hypothesis should be rejected and the alternative hypothesis accordingly accepted. Hence; New knowledge update positively affects the product viability ($r =. 665$; $F = 33.329$; $t = 5.773$; $p < 0.05$) of the oil and gas industry.

CONCLUSION AND RECOMMENDATIONS

The conclusion of the study is that the objective of the research which was aimed at examining project implementation strategies for improved quality products in oil and gas sector in Nigeria came to fruition. Though there could be some other issues that were not revealed that could be evaluated on the importance of project implementation strategy in the outcome of improved product quality in the oil and gas industry, the data from the questionnaire were explicitly in favour of the two objectives that were studied. It has become imperative to highlight the role of project implementation strategies as major indicator for actualization of improved product quality in the oil and gas sector in Nigeria. The study justified their importance as a tangible asset in promoting and improving product quality in the oil and gas industry. The variables of project implementation strategies studied include; monitoring and new knowledge updates were positive and significant in improvement of product quality induced proxies of product quality and product viability of the oil and gas industry studied.

The study recommends that mechanisms should be put in place for effective monitoring of product production processes as it was discovered that monitoring positively affected product quality of the oil and gas industry. Finally, new skill acquisition should be encouraged through training and skill development because new knowledge update significantly affected product viability of the oil and gas industry in Nigeria. As a way forward in the improvement of product

quality in other sectors of the Nigerian economy, the study should be replicated in other productive sectors of the economy and other geo political zones as a stepping stone towards improving the fortunes of the manufacturing sector in Nigeria.

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