Factors affecting effective implementation of Container Freight Station Management Information System (CFSMIS): A Case of Interpel Investment Limited.

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Abstract

Information systems implementation has been a challenging issue in the current dynamic business world especially with respect to Ports and its subsidiaries like Container Freight Station (CFS). Many stakeholders like suppliers, shipping lines, Government agencies, Clearing agents and importers are involved in the supply chain and each procedures/process need to be coordinated well and meet global standard.

The general objective of this research seeks to determine the factors affecting effective implementation of Container Freight Station Management Information System at Interpel CFS. The researcher reviewed existing literatures, come up with a conceptual framework, findings, Conclusions and recommendations.

Keywords: Container Freight Station, Management Information System, System Implementation.

1. Introduction

1.1 Background of the study

Interpel Investments Ltd (CFS) was incorporated on 2001 and operates and manages the leading car and container terminal at Mombasa Port. The facility houses all relevant authorities such as The Kenya Revenue Authority, The Kenya Police and The Kenya Bureau of Standards to facilitate quick and efficient clearance process.

Since ports are places where various tasks must be coordinated, utilization of information technology is inevitable to harmonize these activities. To compete favorably with other ports such as Tanzania and Durban port which have embraced the use of ICT, Kenya Port Authority (KPA) has implemented a number of systems in managing its daily operation including Kilindini Waterfront Automated Terminal Operating System (KWATOS) and accounts SAP System (Makokha, 2011).

Major business drivers behind CFS Management information system implementations have been the various technical, financial, operational and strategic benefits these systems promise. Expected benefits of CFSMIS include, for instance, quicker information response time, increased interaction across the enterprise, improved order management cycle, reduced financial and operating costs, improved interaction with customers and suppliers, improved on-time delivery and cash-management, and so forth.

However, these benefits are often difficult to meet. Implementing a CFS system is usually an extensive and costly process involving substantial amount of human and other resources, integrating different interest groups, and managing the time pressure and other challenges.

1.2 Statement of the problem

Interpel CFS started with a manual system, operational documents like verification slip, charges, receipt, gate pass all use to happen on MS Excel. One of the most important contributions of information technology and systems to business firms is the reduction in information uncertainty and the resulting improvement in decision-making (Laudon & Laudon, 2006), unfortunately that has not been easy for Interpel CFS when it commence operation in January 2006.

Interpel engaged local system developers to come up with a system after taking them through the entire organization process. The system developer was a very good programmer but had no prior experience in Shipping & Logistics industry putting him less equipped for the smooth implementation of the system. The Company had to change to a system well familiar with other CFS's.

Since inception of CFS in Kenya, a Pakistani Company dominated the implementation of CFS Management system. Currently it does not support the industry well and attempt to get local suppliers has not materialized at Interpel CFS and the entire CFS fraternity.

CFS Management systems are developed by vendors who draw on their existing sources of knowledge, resources and norms. These would include the developer organization's own business strategy and prevailing

norms about what constitutes best practice. Given that Sub-Saharan Africa cultural contexts embody organizational practices different from those encountered in North America, Europe & Asia where most CFS Management systems are developed, there are significant problems associated with the reengineering of local practices and processes.

Companies lack the financial resources to gain access to tailored world-class CFS systems; and CFS System suppliers are not prepared to deal effectively with the customization processes that these markets require e.g. CAPALLA CFS system of Kale Logistics from India.

This research will find out and seek evidence on the factors affecting effective implementation of CFS management system and use Interpel CFS as a case study.

2. Literature Review

While there are some research on the impact of information systems at Mombasa Port and CFS's (Makokha, 2011; Bakuly 2012; Jama, 2012), which all agree that for efficiency to be realized at Container Freight Stations Information systems is key; however little has been written on the factors affecting implementation of CFSMIS.

Ports are particularly affected by ever increasing container volumes as their operational capability becomes highly constrained. As acknowledged by (Cullinane & Wilmsmeier, 2011), lack of sufficient container storage space is one the critical challenges facing ports today. This situation leads to congestion as port user end up interfering with each other in the utilization of port resource (Talley, 2009). In light of these constraints, ports have embarked on implementation of inland container depots (ICDs) as operational and capacity enhancement strategy for easing pressure at congested maritime terminals (Haralambides & Gujar, 2011). Dry ports are mature and well established in developed countries and are increasingly embraced in developing countries.

Relationship between I.S & I.T
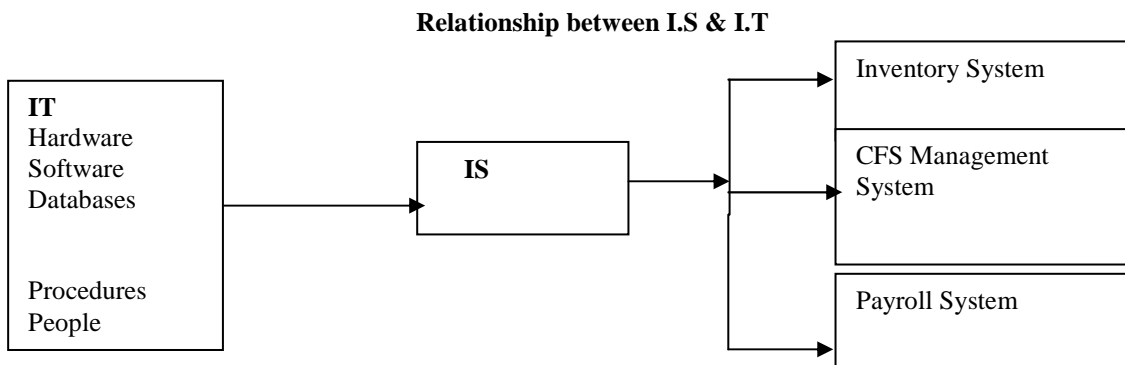
Figure 2.1 Relationship Between IS & IT.

Sources (Author 2013).

A case study of interrelations between critical success factors.

The article of Akkermans and Helden (2002) had taken the list of critical success factors of Somers and Nelson previous research (2001), The research proved that the list of Somers and Nelson is helpful and appropriate in analyzing and explaining the root causes of success and failure of general Information System implementation process.

Table 2.1: The ranked list of CSF by Akkermans and Helden (2002).

	Critical Success Factors	Mean
1	Top management support	4.29
2	Project team competence	4.2
3	Interdepartmental co-operation	4.19
4	Clear goals & objectives	4.15
5	Project management	4.13
6	Project champion	4.03
7	Vendor support	4.03
8	Data analysis and conversion	3.83
9	Steering committee	3.97
10	User training	3.97
11	Business Process Re-engineering	3.68
12	Minimal customization	3.68
13	Architecture choices	3.44

Source: Akkermans H., Helden van K. (2002).

Most of the success factors listed here hold for any IT implementation project but some are more relevant to CFSMIS implementation projects.

2.1 Port of Singapore.

Port of Singapore authority (PSA) runs one of the most technologically advanced ports and information technology is the tool behind making it the most efficient port in the World (lee Partridge, Teo & lim).

The country is in severe lack of land hence, the efficient utilization of existing land is crucial for the port and this was achieved by the sophisticated technology used in the port. This is a good example of overcoming physical limitations by the proper utilization of information technologies.The information system in port of Singapore is separated into three levels (applagate, dustin, & macfarlan, 2003).

In the first level main operations are streamlined, synchronized and integrated by a program called computer integrated terminal operating system (CITOS). In the second level, PSA staff offers real time management, coordination and control of the operations. In the third level, propriety software called PORTNET, connect the port to the other organizations including shipping lines, hauler truckers, customs, marine service provider etc.

CITOS is defined as comprehensive enterprises resource planning (ERP) system specializing in real time command and control of information and resource for container terminals. It supports all planning requirements, including berth allocation, yard planning, ship planning, rail planning and resource allocation. It keeps track of all activities related to terminal operation and movement in the yard, regulate gate operations and enable real-time terminal operation through connections with control centers.

2.2 Portfolio Management Model.

One of the first and most well-known matrices for classification of IS environments is the Strategic Grid, which was developed for the purpose of assessing an organization's total application portfolio and determine the management approach required from the business. The Strategic Grid relates; How IS/IT is affected by the market forces in which the business competes and How it is currently contributing to the business (Ward, 1987).

While the Strategic Grid is intended to plot the overall expected contribution of IS/IT to business success, Ward and Peppard's Application Portfolio Matrix is used to plot the applications based on their potential contribution to achieving future business goals and the degree of dependence of the business for achieving overall business performance.
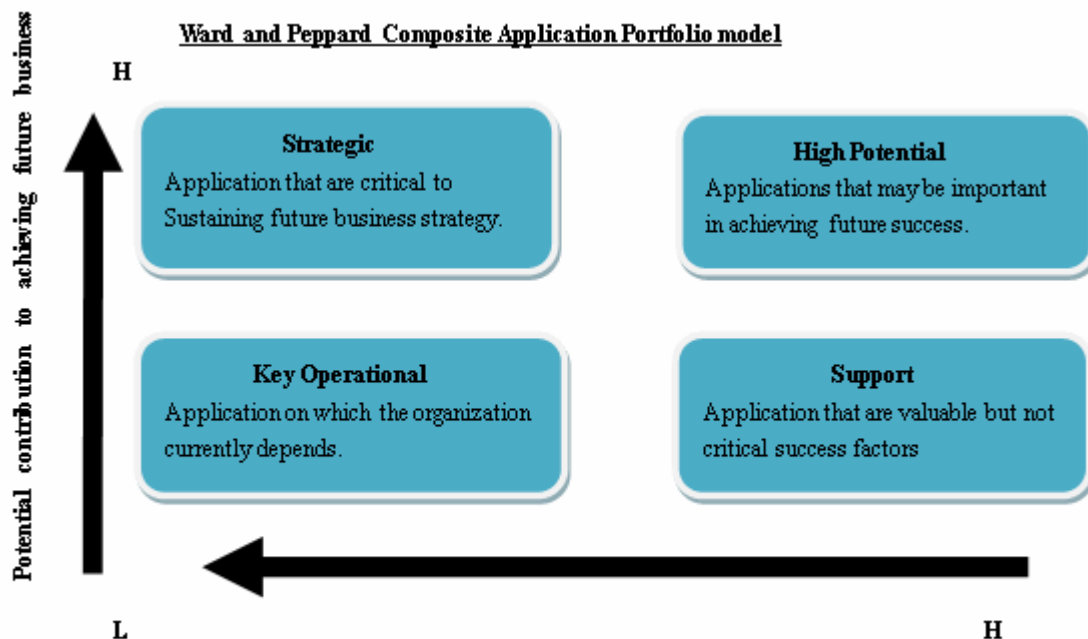
Figure 2.2 Degree of dependence of IS/IT application in achieving Business performance

Application Portfolio Matrix (Source: Ward & Peppard, 2002).

2.3 Summary of Literature.

There are many stages involved in the successful creation and application of information systems. Successful development of CFSMIS is not guaranteed as failure can occur at various stages of development.

Liebowitz (1999) observed that 55% of projects fail during problem scoping and inception; 20% during requirement analysis; 15% during testing, 5% during design; 5% during implementation and none during coding. Once the decision has been made to embark on such a project, a thorough planning at each stage is essential for the success of the overall project. Implementation is the final critical stage, although it constitutes 5%; if not properly managed the entire efforts of the system development may fail. The factors affecting implementation of each stage varies and needs to be managed properly.

3.0 Research Methodology.

This research study adopted descriptive survey research design. This is because; the study aims to describe the effective implementation of CFSMIS using different set of independent variable cluster. Descriptive survey research design was used to obtain information concerning the current status of the phenomena to describe what exists, with respect to variables or conditions in a situation (Mugenda & Mugenda, 1999).

3.1 Sampling Techniques.

Stratified random sampling technique was used to select a sample size of 100 employees out of the total 200 employee of the study population from the list obtained from the Human Resource department.

a sample size of 50% is appropriate for generalization of the gathered findings in descriptive research.

3.2 Data Collection & Instrumentation.

Primary data collection was done through the questionnaire using a semi-structured questionnaire that is interviewer-administered. Secondary data was done through review of theoretical and empirical literatures sourced from books and scholarly journals, Internet and conference papers among others.

3.3 Data Processing & Analysis techniques.

The data was presented quantitatively and analyzed using descriptive statistics such as use of frequency tabulation tables, charts and graphs.

The system analysis used was excel worksheet for tabulation and statistical analysis to show results obtained from the data collected from instrument such as the questionnaire, record analysis, interviews and observation.

4.0 Research findings & Discussion.

4.1 Response Rate

The researcher distributed 100 questionnaires to the respondents and received 80 questionnaires back.

This translates to 80% response, which is adequate, and findings acceptable.

4.2 Work Span of Respondents

The researcher sought to know the work span of employees of Interpel CFS. This enabled the researcher to interpret the working experience of the respondents. The work span given in years is shown in table 4.1.

Table 4.1 Work Spans of Respondents

Work Span of Respondents in Years	Frequency	%
1-5 years	30	37.5
5-10 years	40	50
10 and above years	10	12.5
Total	80	100

From the above table the work span of employees is such that those who have worked between 1-5 years are 30%, those who have worked between 5-10 years are 50%, those who have worked 10years and above are 12.50%.

It can therefore be concluded that the majority of employees at Interpel CFS have worked between 5-10 years and followed by those who have worked between 1-5 years, which is 37.50%. This means that the organization has many employees who have worked for long and thus we can conclude that Interpel CFS has many employees with working experience.

4.3 Whether Environmental factors affect implementation of CFSMIS at Interpel CFS.

The researcher wanted to find out whether Environmental factor affects implementation of CFSMIS at Interpel CFS. This is shown in figure 4.1.
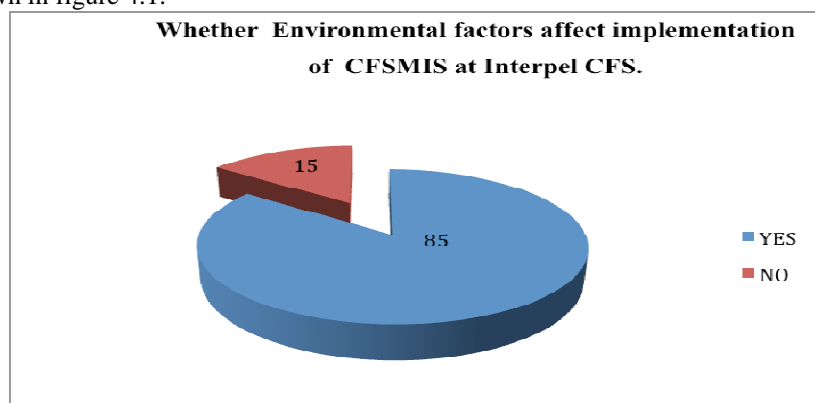
Figure 4.1 Whether Environmental factors affect implementation of CFSMIS.

From the above figure 4.1, 85% of the respondents feel that Environmental factor affects implementation of CFSMIS. 15% feel that Environmental factor does not affect implementation of CFSMIS at Interpel CFS.

It can therefore be concluded that Environmental factors affect implementation of CFSMIS at Interpel CFS since majority of the employees have confirmed the same.
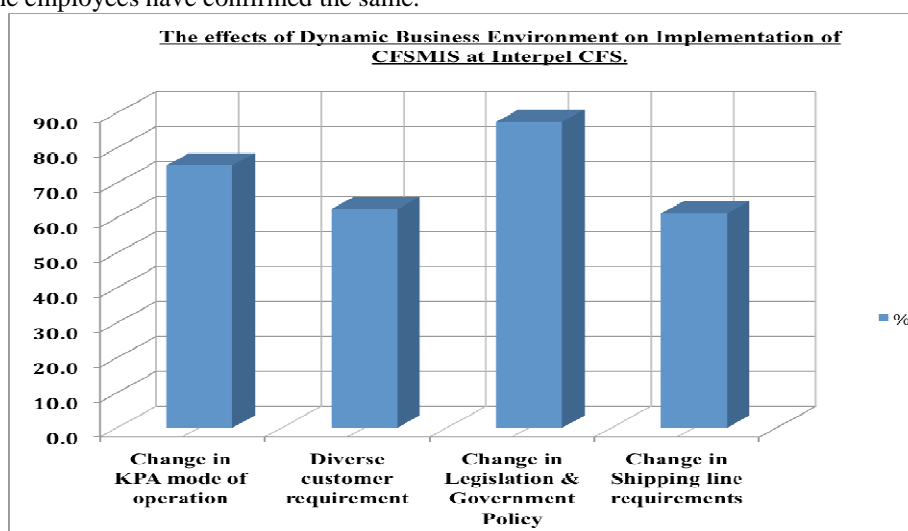
Figure 4.2 Effects of dynamic business environment on CFSMIS Implementation.

From figure 4.2 above, the respondents gave 4 main stakeholders that can have effects on the dynamic business

environment. 75% of the respondents said that change in KPA mode of working e.g. Tariff change affects the billing module of the CFSMIS and hence affects the implementation process. 62.5% of the employees said that diverse customer requirements and anticipated periodic change of the same affects system implementation. 87.50% of the respondents said that Government legislations and policies affects CFSMIS implementation e.g. the introduction of Single window system will have major effect of the existing systems in the CFS's. Finally 61.25% of the respondents confirmed that change and requirements of shipping lines which is a major stakeholder of CFS business affects implementation of systems e.g. change in reporting data/ style.

It can thus be concluded that dynamic business environment is one of the major factors that affects implementation of CFSMIS at Interpel CFS.

4.4 Whether Internal organizational structure affects implementation of CFSMIS at Interpel CFS.

The researcher wanted to establish if organizational structure affects implementation of CFSMIS at Interpel CFS. 81.25% confirmed that it affects while 18.75% reiterated that it does not affect CFSMIS implementation.

### Reasons how organizational structure affects CFSMIS Implementation.

The researcher further wanted to know the reasons how organizational structure affects CFSMIS Implementation. The results are shown in table 4.2

Table 4.2 Reason how structure of the organization affects implementation of CFSMIS.

Reason how structure of the organization affects implementation of CFSMIS.	Frequency	%
Flat structure aids faster planning and decision-making.	60	75
Flat structure encourages teamwork.	70	87.5
Suitable organizational structure helps to align organizational structure infrastructure & IT structure infrastructure.	43	53.75
Hierarchical structure brings about bureaucracy, delay in decision making.	45	56.25
Hierarchical structure frustrates innovation & promotes status quo	50	62.5

4.5 Whether Project team skills affect implementation of CFSMIS.

The researcher wanted to know whether project team skills affect implementation of CFSMIS at Interpel CFS.
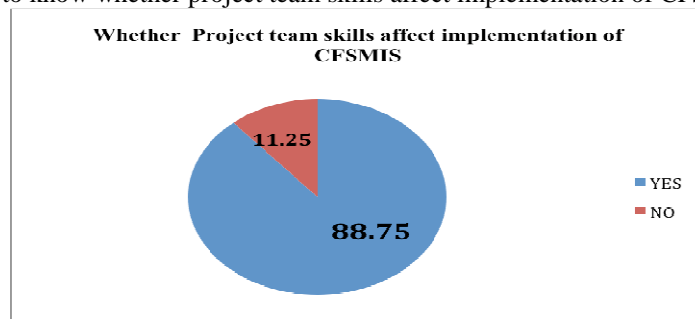
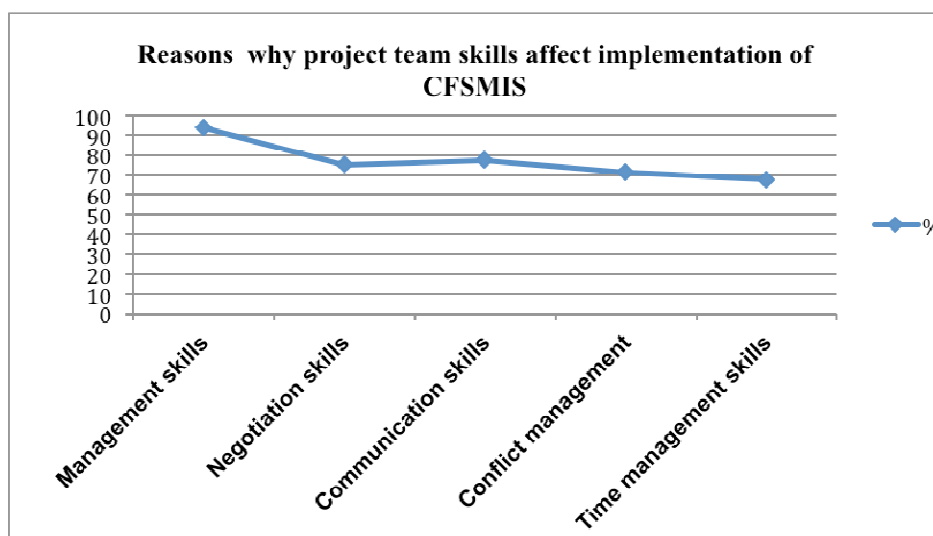**Figure 4.3 Whether Project team skills affect implementation of CFSMIS.**

From the above figure 4.3, 88.75% of the employees said that project team skills affects implementation of CFSMIS while 11.25% disagree that it does not affect.

Reasons why project team skills affect implementation of CFSMIS.

The researcher further wanted to know the reasons why project team skills affect implementation of CFSMIS. The results are shown in table 4.3 and figure 4.4.

Table 4.3 Reasons why project team skills affect implementation of CFSMIS.

Reasons why project team skills affect implementation of CFSMIS.	Frequency	%
Management skills- helps overall Planning, Co-ordination	75	93.8
Negotiation skills- helps in Procurement, negotiating Resource, Scope & Budget	60	75
Communication skills- help in communicating well with stakeholders and team members.	62	77.5
Conflict management skills- people get in to squabbles & disagreements on projects. They have to be resolved.	57	71.3
Time management skills -Many simultaneous actions happen at the same time, how do you keep on top of them? You need time management skills.	54	67.5

Figure 4.4 Reasons how project team skills affect implementation of CFSMIS.

4.6 Whether Supplier affects implementation of CFSMIS at Interpel CFS.

The researcher wanted to establish whether suppliers affect implementation of CFSMIS. The results are shown in the table 4.4.

Table 4.4 Whether System suppliers affects implementation of CFSMIS.

Whether System supplier affects implementation of CFSMIS.	Frequency	%
Yes	75	93.75
No	5	6.25
Total	80	100

From the table above, 93.75% of the respondent strongly believes that the type of system supplier affects implementation of CFSMIS; while 6.25% confirm that system supplier does not affect system implementation.

Reasons how system suppliers affect implementation of CFSMIS.

The researcher wanted to establish how suppliers could affect implementation of CFSMIS at Interpel CFS. The results are shown in the table 4.5.

Table 4.5 Reasons how suppliers affect implementation of CFSMIS.

System supplier affects CFSMIS implementation at Interpel in the following ways	Frequency	%
Lack of reliable support & upgrade	65	81.25
Not meeting project implementation schedule	56	70
Providing sub standard hardware/Software	50	62.5

From the table above, the respondent gave 3 reasons why System suppliers affect implementation of CFSMIS. 81.25% observed that lack of reliable support and upgrade will immensely contribute to poor system implementation. 70% of the staff sited that poor suppliers have problems in meeting project implementation schedule and finally 62.50% highlighted that poor suppliers will not mind about their supplies (Hardware/Software).

4.7 Whether Choice of technology & methodology affects implementation of CFSMIS at Interpel CFS.

The researcher sought to know whether choice of technology and methodology affects implementation of CFSMIS at Interpel CFS as shown in Table 4.6

Table 4.6 Whether Choice of technology & methodology affects implementation of CFSMIS.

| Whether Choice of technology & methodology affects implementation of CFSMIS	Frequency	%
Yes	46	57.5
No	34	42.5
Total	80	100

Reasons why choice of technology and methodology affects implementation of CFSMIS.

The researcher further wanted to establish how choice of technology and methodology affects implementation of CFSMIS. The results are shown in the table 4.7 below.

Table 4.7 Whether Choice of technology & methodology affects implementation of CFSMIS.

Whether Choice of technology & methodology affects implementation of CFSMIS.	Frequency	%
Selection of software	54	68
Selection of Hardware	48	60
Management of system development life cycle	45	57

From the above table 68% of the respondent observed that poor selection of software (Type, Version) would impact negatively on project success. 60% noted that selection of hardware is key in system implementation. 57% noted that the methodology of implementation (SDLC) is critical in the success of CFSMIS Implementation. The researcher further wanted to find out other factor, which has not been mentioned in the questionnaire that affects CFMIS at Interpel CFS and the responses are analyzed in figure 4.5.
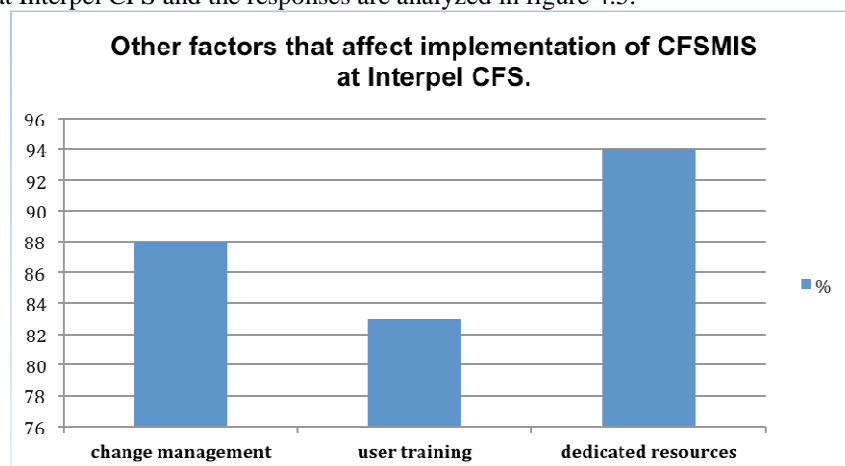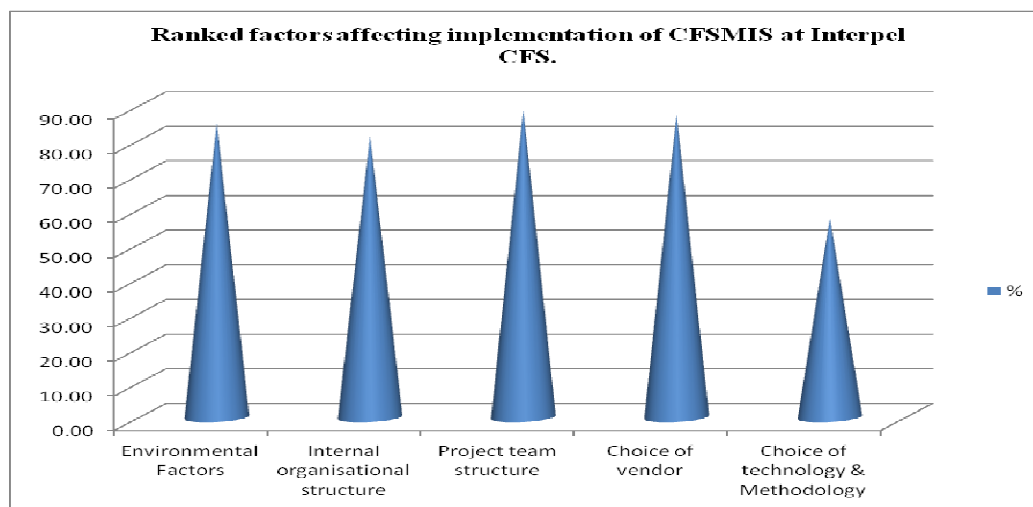

Figure 4.5 Other factors that affect implementation of CFSMIS at Interpel CFS.

From the above figure 4.5, 88% of the respondent felt that change management is key as system implementation forces staff's to change in their working mode and this causes distress and discomfort among the staffs.

83% confirmed that user training is very important for the system to be smoothly implemented at Interpel CFS.

94% observed that for the project to be successfully implemented, dedicated resources (Finance, HR, and time) are vital.

Finally the researcher wanted to know the factors that affect implementation of CFSMIS at Interpel CFS in their order of importance as summarized in figure 4.6.

Figure.4.6 Ranked factors affecting implementation of CFSMIS at Interpel CFS.

4.8 Summary of the findings.

From the research as per figure 4.1, 85% of the respondent confirms that business environmental factors affect implementation of CFSMIS at Interpel CFS while 15% feel that it does not affect.

According to figure 4.2, dynamic business environment including change in KPA mode of operation, diverse customer requirement, change in legislations and government/stakeholder policy will all affect system implementation at Interpel CFS.

From findings 4.4, 81.25% of the respondents observe that internal organizational structure affects implementation of CFSMIS while 18.75% confirm that it does not affect the system implementation process.

On the same note, reasons were given on how internal organizational structure affects the above including hierarchical structure was observed to frustrate information flow, innovation and decision making while flat structure enhances the same.

Moreover from figure 4.3, 88.75% of the respondent felt that project team skills affect implementation of CFSMIS and on the other hand 11.25% observe that it does not affect system implementation.

Many reasons were given for the same but respondent confirmed that Management, Negotiation, Communication, Conflict resolution and time management skills is paramount for successful CFSMIS implementation at Interpel CFS.

In addition to above, the researcher sort to establish whether vendor/suppliers affects implementation of CFSMIS, from Table 4.4, 93.75% confirmed that choice of vendor affects implementation of CFSMIS while 6.25% feel that it does not affect system implementation.

Reasons were given by the respondent on the above, from Table 4.5, it was pointed out that vendor is responsible for the supply of materials (Hardware/ Software), meeting project implementation schedule and providing support in the overall project implementation.

The researcher also wanted to find out whether choice of technology & methodology affects CFSMIS implementation, from Table 4.6, 57.50% of the respondent confirmed that it does affect while 42.50% feel that it choice of technology and methodology does not affect CFSMIS implementation.

Finally, the researcher wanted to know some of the other factors that can affect CFSMIS implementation at Interpel CFS and from figure 4.5, Change management, User training and dedicated resources were pointed out as other key elements that can affect implementation of CFSMIS at Interpel CFS.

5.0 Conclusion.

The researcher concluded that there is close relationship between environmental factors and CFSMIS implementation. External environment often requires a firm to utilize strategic information system applications in order to survive. The environmental dynamism is a factor because environmental uncertainty affects the system design and implementation at Interpel CFS. In a stable and simple environment firms generally pursue defensive strategies based on high efficiency and cost effectiveness.

Internal organizational structure also affects CFSMIS Implementation because there should be a high harmony between company's structure and infrastructure and IS structure and infrastructure. The compatibility is crucial milestone to implement CFSMIS at Interpel CFS otherwise project will fail. Interpel IT capabilities should match to its organizational needs and goals. Organizational structure of the company also affects the success of IS project because traditional hierarchical organizations is not the best structure to respond to the current new businesses models.

Interpel CFS project team must have enough managerial and technical skills to handle the IS project. The lack of managerial, Negotiation, Communication and time management skills among others leads to inappropriate project goal, scope definition and project monitoring & control. Technical knowledge, technical investment and technological capabilities are grouped as technical skills of company and these skills must be sufficient to successfully implement an IS project otherwise project will fail.

Whether the IS project is critical or not top management support is important to end up the project with success. If top management commitment is high in the IS project, project never faces with lack of resources in terms of money, time and human power and project will end within its budget and schedule successfully.

As the most important part of the project team the experience of the project leader is a very crucial for the success of IT project.

Adequate training to the team members is important factor that needs to be considered. Whether or not the team members are experienced they should get the needed project specific trainings during the project duration in order to have more control over the project scope.

Evaluation of vendor about their company operations, customers, community and track record is an integral part of CFSMIS project. Since the organization is buying mission-critical software, the vendor should understand the need for his thorough investigation on his potential capability to provide the service/products. This process is crucial and need to be transparent otherwise the company may end up with functionally stagnant software that is more of an obstacle to success than a platform for growth.

There is a strong relationship between the success of CFSMIS project and the technology and methodology selected. If companies fail to select appropriate technology and methodology the project will fail. To gain the success the firm should clearly define the objectives that also help to define proper project scope. With well-defined objectives and project scope, it will enhance the selection of appropriate technology and methodology, which increase the chance of implementing successful IT projects. However if these factors are not complemented with a detailed project plan the success may not be gained.

In system implementation, regardless of the organizational industry and environment, the above factors can be fully deployed to realize successful implementation of IS Projects since factors affecting success and failures are mostly common to all, only the weights and priorities change according to company's structure, culture, region and IS project volume.

5.1 Recommendation.

From the study of this project, the researcher comes up with the following recommendation for the smooth implementation of CFSMIS at Interpel CFS.

Environmental Factor.

In order to avoid wrong planning and design of the system, Interpel CFS should carefully understand and analyze the external and internal environment of the organization prior to commencement of the IS project so that the system meets its objective.

Organizational structure.

The traditional hierarchical organizations which Interpel CFS is running on frustrates the alignment of the IS business needs, organizational legislation and regulation therefore, successful implementation of IS project at Interpel CFS requires proper alignment of the organizational structure with IS project requirement hence the organization should adopt flat organizational structure that enhances CFSMIS implementation.

Project team structure.

In order to manage a successful CFSMIS Project at Interpel CFS the team structure should be such that it has diverse knowledge/ skills on project planning, analysis, control and co-ordination of resources, change management and teamwork among others. This is crucial for the overall success to be realized; therefore Interpel CFS must compose all inclusive project team to implement the project successfully.

Choice of Vendor.

The organization should source for a reliable vendor through fair and transparent selection that can supply the right material (Hardware/ Software) and technical expertise required to implement the IS Project in the organization.

Choice of technology & Methodology.

In order to successfully implement CFSMIS at Interpel CFS, the organization must select the right technology and methodology for it to meet its requirement. Therefore the project team must have the diverse knowledge and skills required for them to make appropriate choice as regards technology and methodology to be used.

5.2 Suggestion for further studies.

As many arguments for IS planning prove, IS project implementation is a complex, continuous exercise and the researcher recommends a more focused research on change management at Interpel CFS since it's one of the factors that affect successful implementation of CFSMIS project at Interpel CFS.

REFERENCES.

Akkermans H., Helden van K. (2002): Vicious and virtuous cycles in ERP implementation: A case study of interrelations between critical success factors. *European Journal of Information Systems*, Vol. 11, p. 36

Applegate, L.M., Dustin, R.D., & McFarlan, F. W. (2003). *Corporate Information Strategy and Management: Text and Cases.* New York: McGraw-Hill/Irwin.

Bakuly, R. (2012). *Effects of ISO 9000 Certification on organizations quality performance- A case of Interpel Investment Limited.* Pg20

Cullinane K, Wilmsmeier G (2011). The Contribution of the Dry Port Concept to the Extension of Port Life Cycles. In Böse, J. W. (Ed.) *Handbook of Terminal Planning,* Springer, pp. 359-379.

Haralambides H, Gujar G (2012). On balancing supply chain efficiency and environmental impacts: An eco-DEA model applied to the dry port sector of India. *Marit. Econ. Logist*., 14: 122-137. doi:10.1057/mel.2011.19.

Jama, M. (2012) *Effects of working capital on organization performance: Acase of Interpel Investments Ltd.* Pg 4. Lewis, B. (1998). Learning to Allocate IS Resources Will Help You Climb to Tactical Success. *Info World,* 20(25), 106.

Lee Partridge, J. E., Teo, T. S. H., Lim, V. K. G. 2000. Information technology management: the case of the port of Singapore Authority. *Journal of Strategic Information Systems,* 9:85-99.

Laudon, Kenneth C. and Laudon Jane P., (2006) *Management Information systems, managing the digital firm,* (9th edn) Pearson Prentice Hall .

Makokha, G.N, (2011). *Challenges of decongesting Container Freight Stations for effective port performance. A case study of Container Freight Stations – Mombasa*. Pg 9.

Mugenda and Mugenda (1999). Research Methods: Qualitative and Quantitative Approaches. Nairobi: Act press. Talley WK (2009). *Port Economics*, London and New York., Routledge.

Ward, J. (1987). *Information Systems & Technology Application Portfolio Management -* An assessment of matrix based analyses. Cranfield school of Management, Cranfield University.

Ward, J., & Peppard, J. (2002). *Strategic Planning for Information Systems*. Third edition. John Wiley & Sons, Ltd.

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