Evaluation of Factors Affecting the Implementation of Integrated Logistics Management System (ILMS) at Sri Lanka Navy

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A Dissertation By

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TABLE OF CONTENTS

CHAPTER FIVE - CONCLUSION & RECOMMENDATIONS

APPENDIX 1 – Questionnaire

APPENDIX 2 - Co-operate Plan for ILMS

APPENDIX 3 – Action Plan of ILMS for year 2015

APPENDIX 4- Pilot Project Approval Minute Sheet

DECLARATION

This research paper contains no material which has been accepted for the award of any other degree or diploma in any University or equivalent institution, and that to the best of my Knowledge and belief, contains no material previously submitted or written by any other person, except where due reference is made in the text of this research paper.

I carried out the work described in this Dissertation under the Supervision of Mr. J.M Wasantha Premarathne.

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ABSTRACT

The ILMS is considered as ERP solution that should offer greater flexibility and management information to the command to exercise effective, efficient and timely control over all forms of resources at disposal. ILMS will be an important component of ERP solution in SLN with the objective of enhancing the efficiency of Logistics Management System; the computerized Integrated Logistics Management System has been developed. Master plan of ILMS System indicated that full ILMS Module should implement before 2011. But still it was not achieved and great delay is there in Implementation process. Since 2007 some modules of ILMS are functioning in Sri Lanka Navy, but the system has not been functioning transparently or reliably. At the same time, the system has been unsuccessful to give credible, reliable information and to have satisfaction of users. Hence, the ILMS system has been an extra problem to the end users. This study evaluates five factors effecting the implementation of ILMS. The major objective of this study is to evaluate factors which affect in implementation of ILMS in Sri Lanka Navy. By identifying factors affected to the new system implementation, researcher needed to know how those factors really affect to ILMS system. For the purpose of reaching to the conclusion, comprehensive analysis has been done using both primary and secondary data and used graphical illustrations for easy reference. These include not only the system aspect, but also the human aspect of ERP influences. The study further uses data from ERP implementation studies. In this research, major theme is to identify how identified factors have been affected practically to the ILMS. The samples were 110 employees which include Officers and Sailors who are highly participating in the system usage and the data was analyzed qualitatively and quantitatively. At the end of the study, it has been identified that Top Management Support and experts' involvement, Reliability of information, Perception of end-users, Resource availability and Perceived accessibility and financial readiness have negatively impact to the implementation of the ILMS

Keywords: Logistics Management, ILMS, ERP

LIST OF TABLES

LIST OF PHOTOS

LIST OF FIGURES

LIST OF ABBREVIATIONS

CAC	- Computer Advisory Committee
ENA	- Eastern Naval Command
ERP	- Enterprise Resources Planning
ILMS	- Integrated Logistics Management System
IS	- Information System
IT	- Information Technology
MIS	- Management Information System
MRP	- Material Requirement Planning
NAD	- Naval Armament Department
NCC	- North Central Command
NHQ	- Naval Head Quarters
NW	- North West
NONSPDC	- Non Spare Parts Distribution Centre
SE	- South East
SNA	- Southern Naval Area
SPDC	- Spare Parts Distribution Centre
WNA	- Western Naval Area

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

At present, information and resources are not only recognized as one of the major assets of any organization, but they are considered as apparatus for effective management of other resources and assets of organizations such as financial resources, human resources. At present, organizations use information systems to attain strategic advantage, financial and business benefits. In fact, the literature has repeatedly described Enterprise Resources Planning (ERP) systems as a number of integrated applications, usually consisting of manufacturing, logistics, distribution, accounting, marketing, finance, and human resources.

There are various challenges that are directly associated with the implementation of ERP systems and their impact on logistics performance. First issue is logistics staff is not properly educated on ERP systems, which is necessary to each and every module of Logistics whether it is In-bound Logistics or Out-bound. Second, ERP systems usually effect the whole organization as they have had supply chain implemented in each and every part of the organization as in-plant, towards customer side and suppliers. Another issue with implementing an ERP system is to know what should be integrated, and what should not be integrated. It is complicated to know whether integrating systems in an organization can gain a competitive advantage and whether it will hamper the organization's framework.

Sri Lanka, which is located in the middle of the sea lanes of the Indian Ocean, was always an attraction of the sea routes. In 1937 the Ceylon Naval Volunteer Force (CNVF) was established. After independence from British rule, 100 Officers and Men prepared to form the Regular Navy step by step. On 9th December 1950 the Navy Act was enacted and Royal Ceylon Navy was formed. In 1972, with the beginning of new constitution Royal Ceylon Navy was renamed as the Sri Lanka Navy. During the past 61 years Sri Lanka Navy improved her capabilities in many ways. Sri Lanka Navy is a well-

balanced and cohesive force, capable of operating in waters around Sri Lanka effectively safeguarding our national interests. Navy's operational capability on land too was improved tremendously during the recent past. Sri Lanka Navy is the first line of defence of the Island. The areas and the way the Navy operates go unnoticed by others and are inconspicuous which is why the Navy is known as silent Service. As per the Vision and mission of the Sri Lanka Navy, it is proven that having an active operational fleet is critical and crucial. It's playing pivotal role behind Navy's mission and vision. As we are Sea guardian of "The Pearl of the Indian Ocean", plenty of Naval and non-Naval duties come across to discharge on behalf of it. To discharge those naval duties in effective and efficient way it is mandatory have an active operational Fleet. Without good logistics support no war can fought effectively, as in time of war. Logistics branch of the Sri Lanka Navy provides a silent service to execute battle design, effectively by gathering all available resources.

The Logistics is crucial over Effectiveness and Efficiency of Navy Role. Throughout the history, military Commanders have recognized the importance of logistics towards the overall success of their operations. Logistics is not just about gathering resources of manpower and material. It is about the well-timed and balanced presentation of those resources to the operational situation. Sri Lanka Navy is the armed force that has a separate logistics department and Two Director Generals at the helm and responsible to the Commander of the Navy for all logistics functions of the Navy. Director General (Procurement and Services) is responsible for all matters pertaining to Local and Foreign procurement, Victualing and clothing, Repairing, Building Construction where Director General (Budget and Finance) is responsible for all matters pertaining to budget, finance, pay and pensions, Integrated Logistics Management System, Naval Secretariat duties.

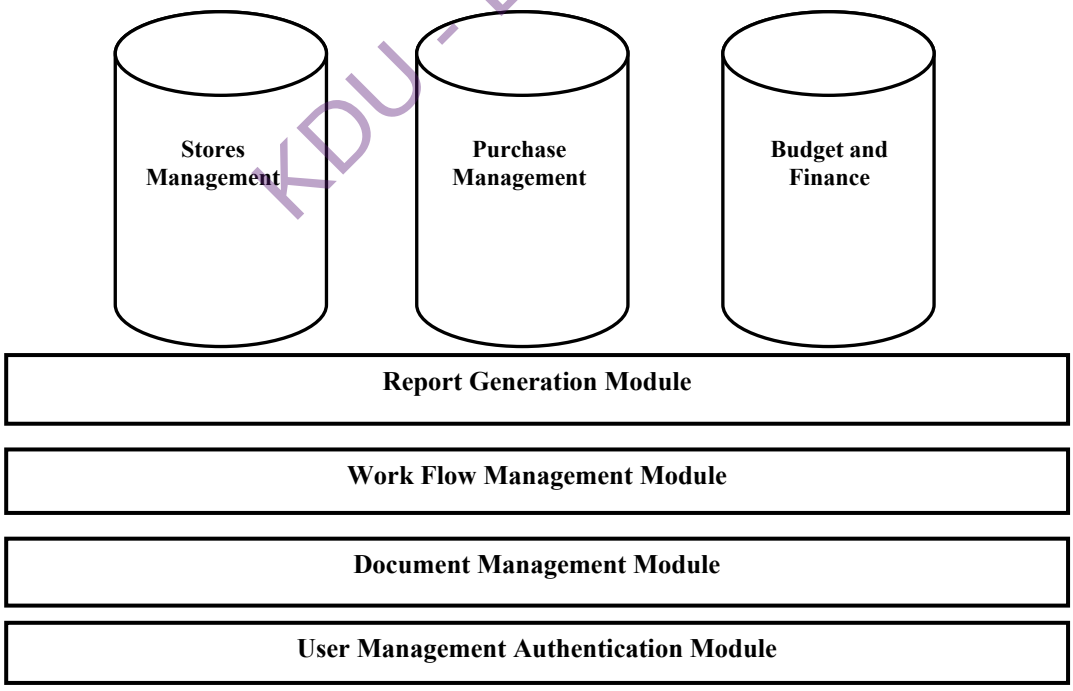
The existing Integrated Logistics Management System (ILMS) for logistics includes transactions of logistics activities at Naval Head Quarters (NHQ) level, command level, ships and establishment level and work shop or unit level. Sri Lanka Navy has a multifarious and decentralized logistics management system with physically dispersed storing facilities and inadequate set of decentralized functions. In addition,

different materials such as victualing, clothing, medical and Armory/ Gunnery are sourced and managed in a different way through ILMS.

The ILMS is considered as ERP solution that should offer greater flexibility and management information to the command to exercise effective, efficient and timely control over all forms of resources at disposal. ILMS will be an important component of ERP solution in SLN with the objective of enhancing the efficiency of Logistics Management System; the computerized Integrated Logistics Management System has been developed. It is functioned under the developing Officers and coordinating Officers. All those officers are directly responsible to the Director of ILMS which comes under Director General (Budget and Finance).

The Integrated Logistics Management System comprises of three sub modules such as Stores management module, Purchase management module and Budget and Finance management module.

Figure 1.1
Modules in the ILMS



Source: Constructed by the Author

This system can be sub divided in to software development and data capturing. Software development was done according to the modules in the figure 1.1 and its status at present as follows. Store management module consists with SPDC, Non-SPDC, Victualing, Clothing, Health and Naval Armament Department (NAD). All the sub modules were completed except clothing module since it was developed separately as the Kit System of SLN. DN(V&C) requested some modifications for the Victualing module and study on that requirement has begun. Purchase management module consists of Procurement, Repair and New Construction systems. Procurement module (SPDC) and Non SPDC) is completed up to purchase order and other twelve sub modules are under construction. Repair module developed is in progress and New Construction module has to be re structure again since some user requirements has been changed. Budget module is completed but it was integrated since purchase Management Module is not fully functioning. When the Purchase Management Module is completed this can be integrated and till then some functions of the Purchase Management Module make available with Budget module for functioning of the module. Finance module is in progress and it is n testing process. Data capturing of the completed modules were commenced and it is observed that usage of the system is not up to the expected level. Report Generation Module, Work Flow Management Module, Document Management Module, User Management and Authentication Modules are developing parallel with the core modules of the system

In addition, SLN has a limited set of individual sub systems of an ERP solution in place that has been developed in-house over the last few years. Examples are Human Resource Management System (HRMS), Uniform Issuing (Kit) System and Payroll System. The sub systems mentioned above have been developed as individual software platform and necessity to migrate these to a more scalable and flexible podium that would allow integration into an EPR solution has already been recognized. In this paper, researcher attempted to do the evaluation of the factors, affecting the implementation of Integrated Logistics Management System (ILMS) in Sri Lanka Navy. In order to conduct this research a review of the literature on the subject was conducted. Papers based on Study of ERP projects were reviewed by focusing on factors, affecting the implementation of ILMS of Sri Lanka Navy.

1.2. Research Problem

In today's world, the organizational environment of business entities is always changing predominantly due to the swift changes occurred in the technology. Although Sri Lanka Navy is a government organization and provide specific service to the country, it should adhere with the changes of technology as well as environment. In that context, it is mandatory to having a suitable ERP system in the Sri Lanka Navy and upholding it at the required levels to attain organizational goals efficiently and effectively. Hence SLN has introduced the Integrated Logistics Management System (ILMS) to increase the organizational effectiveness and efficiency with regard to Logistics Management.

ILMS system was introduced to the SLN in 2006 from that day onwards; many officers in the logistics branch as well as officers in Information Technology branch have highly involved seizing the development of the ILMS. At the initial stage, system outsourced the Project Management Team was expected to adopt necessary project management methodologies to confirm the fruitful implementation of the ILMS. It was mandatory to regularly update and maintain the wikipage at http://ilms.navy.lk at during the entire project development cycle.

Master plan of ILMS System indicated that full ILMS Module should implement before 2011.but still it was not achieved and great delay is there in Implementation process. Although some modules of ILMS have been functioning in the Sri Lanka Navy since 2007, the system has not been functioning transparently and reliably. At the same time, the system has been unsuccessful to give credible, reliable information and to have satisfaction of users. Hence, the ILMS system has been an extra problem to the end users. Problems observed during the study as follows,

a. Proper set of SRS,s are not available with ILMS cell and there were changes done to the system without documented evidences as about the instructions/authorizations for such changes.
b. Victualing Procurement, Health Procurement and NAD Procurement systems are different from general Procurement and these sub modules has to redesign and programmed from the beginning.

c. When analyse the database, it is observed that some item codes are not generated properly and those in correct item cords are use for transactions as well. This is a major problem of the system and prior to commissioning the Procurement module it has to be rectified.
d. Further it is observed that there are duplicate records (Two or more item codes generated for same item).
e. Even though budget module is completed, it is impossible to integrate it to the system since procurement module is under construction.
f. There are many complains about the slowness of the network from other areas, especially from North/East/North Central Command and SLNS Mahasen.

1.3 Objectives of the Study

As per the above research problem, the following objectives are identified,

1.3.1 Main Objective

The Main Objective of this study is to evaluate factors affecting the implementation of Integrated Logistics Management System (ILMS) at Sri Lanka Navy"

1.3.2 Specific Objectives

a. To evaluate the effect of top management support and Expert's involvement towards the implementation of ILMS in Sri Lanka Navy.
b. To evaluate the effect of reliability of information towards the implementation of ILMS in Sri Lanka Navy.
c. To evaluate the effect of perception of end users towards the implementation of ILMS in Sri Lanka Navy.
d. To evaluate the effect of Availability of Resources and Perceived Accessibility of the System towards the implementation of ILMS in Sri Lanka Navy.
e. To evaluate the effect of financial Readiness towards the implementation of ILMS in Sri Lanka Navy.

f. To propose a required development of the existing ILMS in Sri Lanka Navy.

1.4 Significance of the Study

1.4.1 Theoretical Significance

Identification and evaluation of factors effecting the implementation of Integrated Logistics Management System creates some theoretical significance over this study. Evaluation and identification of significance of each factor towards implementation of ILMS System helps to build up theoretical background for studies over factors effecting the implementation of ERP Systems. This will help for future studies and references with regard to the ERP Implementations.

1.4.2 Empirical Significance

Evaluation and identification of significance of each factor towards implementation of ILMS System helps to determine suitable solution to overcome any obstacles towards implementation, if any. This will helps to ensure smooth function of the system.

1.4.3 Stakeholders Significance

Integrated logistics Management system have been started to deploy in year 2007 and it was supposed to complete before year 2011. But still it has not been completed. At the mean time failed to achieve its initial Objectives. One of the main significance for stakeholders of this study is to identifying and evaluating the factors affecting the implementation of Integrated Logistics Management System (ILMS) at Sri Lanka Navy and giving required attention over those factors in order to enhance the effectiveness and efficiency of the Logistics System at SLN. At the mean time this study help to identify ways of reducing unnecessary cost pertaining to the ILMS. This also aids to decrease the use of under-utilized manpower and equipment properly.

If the organization does not properly recognize the causes for unpleasant results of ILMS implementation and failed to address those difficulties, the organization has to bear much more expenses in the future. That is the most significant reason why the researcher is studying and examining reasons behind the problems and finds solutions for those problems to increase efficiency and effectiveness of the ILMS system in the logistics branch. This in turn affect to the achieving of Sri Lanka Navy's objectives and goals. Hence the researcher has been attempting to solve identified research problem in order to enhance capability of the ILMS of SLN.

1.5 Research Method

1.5.1 Sampling Design

Simple Random Sampling Method is used in this study and the main focus was on the officers and sailors who directly engage with ILMS system. By considering both time constrain and the quality of the study, sample size is limited to Western Naval Area employees who are directly using ILMS.

1.5.2 Data Collection Methods

Information can be gathered as raw data available (primary data) through a survey and secondary data through remaining documentation. Secondary data can be collected over hard copies, soft copies, and published documents available, subject to confirmation. Primary data can be collected through surveys, conducting interviews, distributing questionnaires, observing their behaviour, giving opportunity for practical sessions and so forth. In this research face to face interviews will be used for gathering information. Soft copies and hard copies were used for getting back ground information. Specific information gathered by distributing questionnaires. Computer system used for summarised the data collected.

1.5.3 Data Analysis Methods

The data collected from the primary sources and secondary sources were analysed by using Analytical Tools in Excel. It would help to calculate frequency and percentage values to compare the importance of the each variable. Frequency Graphic Tables expect to use in wide spectrum.

1.5.4 Limitation of the study

The sample described in the above section does not represent all the employees who are working with ILMS. This would limit the ability of simplifying of the outcomes. Nevertheless, it is assumed that sample will denote respondents having slightly comparable characteristics of employees. Furthermore, unwilling to provide information by users, lack of knowledge of users to understand profoundly, thinking that giving information will be a hazard to them were some of critical problems when collecting secondary data by researcher. In spite of these limitations it is expected that the research would be benefited to whole Sri Lanka Navy to rectify barriers of implementation of ILMS at present and in the future.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The main requirement of this chapter is to analyze available literature with regard to the research topic. In this research, researcher is to examine the crucial factors affecting the Integrated Logistics Management System (ILMS) which has been developed and being improving in the Sri Lanka Navy. A considerable amount of work has been done to examine why and how a modern, computerized MIS may not meet its goals effectively. Primarily, studies were focused on the sufficiency of the hardware and software that include the technical apparatuses of the new systems. More recently, however, the attention has moved to organizational and behavioral restrictions that may limit the effectiveness of the technical components. (Curlee and Tonn, 1987).

To achieve ERP implementation successfully, a high level ERP implementation success measure is mandatory (Radosevich, 1999).Implementation of a technical innovation is viewed as an energetic process of mutual adaptation, that is, re-invention of the technology and synchronized adaptation of the organization (Leonard and Barton, 1988). Implementation success is a significant outcome frequently neglected in IS research (Robey et al., 1999). The ERP implementation failure could be hazard to a firm: either wasting massive amount of money or abolishing the competitive advantage of the firm. A modern IT innovation that is improving organizational performance by providing end-to-end connectivity is Enterprise Resource Planning (ERP) systems. ERP software, which attempts to incorporate all departments and function across a company in to a particular computer system, is one of the fastest rising segments in the software market. At the strategic level, the ERP system is defined as an integrated application programme for enterprise business organization, management and supervision (Davenport, 1998).

Assigning the incapability to grasp value from IT investments to lack of configuration between the business and IT strategies, Henderson and Venkatramn (1993) developed the ‘strategic alignment model’, emphasizing the multivariate fit among business strategy, IT strategy, organizational infrastructure and processes, and IT

infrastructure and processes. Some of the vital factors are support of senior management, re-design of business processes to "fit" what the software will support, investment in user training, prevention of customization and use of "business analysts" with both business knowledge and technical knowledge.

This integrated methodology can have notable benefits, if enterprises implement the software properly because these features bring about an overall decrease of error occurrence due, for instance, to non-up to date data or manual data transfer operations between applications. The affect of such an integrated approach would mean that higher levels of efficiency in the processes could be achieved, as the system delivers superior information that enables sound decision-making. Robey et al., (1993) defined project success as the "extent to which the project team is productive in its task and effective in its interactions with non-team members". Because ERP implementation projects aim to bring superior information access, developed workflow, and better-quality customer satisfaction, such intangible benefits must be included into ERP implementation appraisal in addition to quantifiable costs and benefits. IS implementation researchers has emphasized that organizational soundness or fit as well as technical soundness was essential for the success of a technical innovation (Markus and Robey, 1983).

Unlike the design and development of custom software, implementation of packaged software requires that the implementing organization adapts some of its organizational processes to fit the elementary business practices that are fixed in such application packages (Davis and Wilder, 1998) ERP implementation might root for drastic organizational changes that essential to be wisely managed When ERP implementation involves adjusting the existing business processes to the standard business process of ERP, other organizational components (e.g., organizational structure, measurement compensation, organizational culture, training, etc.) and their relations must also be changed together (Bingi et al., 1999).

The general ERP architecture must be established before deployment, taking into account the utmost imperative requirements of the implementation. This stops re-configuration at every stage of implementation (Wee, 2000). Two criteria might be used. Project management based criteria must be used to measure against completion dates,

costs and quality. Then operational criteria must be used to measure against the production system. Monitoring and feedback comprise the exchange of information among the project team members and analysis of user feedback (Holland et al., 1999).

Under the pressure to proactively deal with the drastically changing external environment, majority of firms have altered their information system (IS) strategies by accepting application software packages rather than in-house development (Gremillion and Pyburn, 1983). One of the major information technology (IT) investments of the firms in the past decade has been the Enterprise Resource Planning (ERP) system (Stallaert and Whinston, 2000). In a survey of the IT managers accountable for managing their organization's ERP projects, two-thirds of the respondents observed their ERP systems as their organizations' most strategic computing platform (Sweat, 1998). Even though such perceived significance. However, it was reported that three quarters of the ERP projects were judged to be unsuccessful by the ERP implementing firms (Griffith et al., 1999). What makes ERP implementation so unsuccessful? Swan et. al, (1999) argued that the root of such a high failure rate is the difference in interests between customer and organizations who wish unique business solutions and ERP vendors who prefer a general solution appropriate to a comprehensive market. Such contradictory interests commanded us to discover an organizational fit perspective of ERP implementation. The relative invisibility of the implementation process for ERP is also identified as the major cause of ERP implementation failures (Griffith et al., 1999).

2.2 Top Management Support and Involvement of Experts

Crucial success factors in Krupp (1998) and Maxwell (1999) explained in extensive manner that the association of the executive level must be the most crucial and critical participant when there is a process of analyzing and rethinking of a company business process and therefore it is very important to have an executive management planning committee that is completely dedicated to enterprise integration, understanding the ERP system, fully aid to reduce the cost involve with the system, demand payback and champions the implementation project. Therefore the project must be led by the extremely valued executive level supporters. Top management contribution for the implementation of the IT system is identified as the second most significant Critical

Success Factor in a study of Material Requirement Planning (MRP) implementations in Singapore (Ang, Sum and Chung, 1995). Affirmative and successful implementation of an IT system necessitates a dynamic leadership, full commitment and a strong contribution of the top management (Oden, Langen walter and Lucier et al., 1993; Davis and Wilder, 1998; Laughlin, 1999).

Top management, although often being the ones deciding to implement an ERP, are seldom aware of the scale and technicality of the project. The lack of knowledge results in lack of commitment. This results in a dearth of resources as well as time for ERP implementations. Top management has an imperative role to play. They must strongly and unequivocally support the ERP project. A unthinking attitude from top management often spreads throughout the organization and affects the general attitude of the organization. The project should be strongly supported and the benefits of the project stressed upon. Employees should be closely involved in the project, their inputs and suggestions should be duly noted. (Ghosh, 2012)

According to McKersie, 1991(cited in Tony, Somers and Nelson, 2001) well developing an apparent understanding of the competences and limitation of the IT system within the entire organization, establishing rational goals that are expecting to attain by implementing the system and as the key role players of the organization, presenting a tough dedication to the effective implementation of the system while communicating the corporate IT strategy for the top to bottom of employees levels are the critical task of a company's top management.

Research pertaining to project failures shows that project cancellation take place when senior management delegates progress monitoring and decisions at critical junctures of the project to technical experts (Mensah and Przanyski, 1991).The significance of top management support was influential in the successful implementation of a great customized system (Ginzberg, 1981). This was the second most important Critical success factor in study of MRP implementations in Singapore (Ang, Sum and Chung, 1995) and appeared to be the forceful factor behind a successful ERP implementation at a manufacturing firm in the southern Midwest (Clemons, 1998). Senior management should be dedicated with its own contribution and enthusiasm to

allocate important resources to the implementation effort (Holland et al., 1999).Top management support is essential during the entire process of implementation. The project should be given approval by top management (Bingi, Buckhout and Sumner, 1999) and line up with strategic business goals (Sumner, 1999).

Suitable participation with specialist knowledge and expertise on precise industries and areas have a widespread knowledge about the correlated area and then get involvement the consultant will impinge on to the success of the implementation. Also they can be involved on the different stages of implementation such as analyzing the requirement of the company to upgrade the system, recommending most appropriate resolution for the issue contain in the company process and finely managing the implementation process. To complete a successful ERP system within the company, it is exciting to have a committee or group of supper users (Sumner, 1999 ; Chimni, 2000).

A steering committee allows senior management to directly monitor the project team's decision making by having authorization and approval rights on all major decisions, thereby ensuring that there are adequate controls over the team's decision making processes (Whitten and Bentley, 1998). To mark ERP succeed, it is compulsory to form a steering committee or group of "super users" (Sumner, 1999). A project management structure with a "steering committee" containing of senior management from across unlike corporate functions, project management representatives, and end users, who will have daily interaction with ERP, is an effective means of ensuring suitable involvement (Chimni, 2000).

2.3 Reliability of Information

Data accuracy is paramount factor behind the proper system function of an ERP system. If any person enters wrong data, the mistake can have a negative impact all over the entire enterprise. Hence, educating users on the importance of data accuracy and correct data entry procedures must be a top priority in an ERP implementation (Stedman, 1999). Work within the system is one of the crucial parameter for run the ERP system smoothly. At the mean time it requires that everyone in the organization must, not around it. Employees must be convinced that the company is dedicated to using the new system,

and it will entirely change over to the new system, and will not permit to continuing use of the old system. To reinforce this commitment, all old and informal systems must be eliminated. If the organization continues to run parallel systems, some employees will continue using the old systems (Hutchins, 1998).

Lack of user training and failure to understand entirely how enterprise applications change the business processes regularly appear to be responsible for problem of ERP implementations (Crowley, 1999; Wilder and Davis, 1998). Training and education aspect of users are very significant factors to maintain the reliability of system since proper trained users have aware of how they deal with transactions to maintain system accuracy. At a minimum, everyone who uses ERP systems need to be trained on how they work and how they relate to the business process early in the implementation process. Even though many companies use consultants to assist during the implementation process, it is utmost important that knowledge is transferred from the consultant to internal employees (Davenport, 1998).

There should be more training and uninterrupted support for staff as well as managers during the implementation stage. Training, re-skilling and professional development of the IT work force are vital. User training is supposed to be emphasized, with profound investment in training and re-skilling of developers in software design and methodology (Sumner, 1999). Employees require training to recognize how the system will transform business processes. Companies should offer opportunities to improve the skills of their employees by providing training opportunities repeatedly to meet up the changing needs of the business and employees (Bingi, Sharma and Godla, 1999).

Furthermore, the project team competence is one of major factors to uphold reliability of the system because it would help to develop system most correct manner. Thus, the element of ERP implementation success or failure is related to the knowledge, skills, abilities and experience of the project manager as well as selection of the exact team members, which should not only be technologically competent but also understand the company and its business nature and requirements (Kapp, 2000). Construction of a cross-functional team is also important. The team should represent a mix of consultants and internal staff so the internal staff can develop the necessary technical skills for design

and implementation since they can feel the essence of an organization (Sumner, 1999). Both business and technical knowledge are essential for success (Bingi et al., 1999; Sumner, 1999).The team must be familiar with the business functions and products so they can identify what needs to be done to support major business processes (Rosario, 2000).

2.4 Perception of End users

There are two set of employees, in an organization when the new system introduce to the company. One set of employees may think that new system will enhance their organization's performance and another set of employees may have opposite ideas of performance. That is basically called perceived usefulness. Nevertheless Perceived usefulness is defined here as "the degree to which a person believes that using a particular system would improve his or her job performance." This tails from the definition of the word useful: "capable of being used beneficially." Within an organizational context, people are usually reinforced for good performance by raises, promotions, bonuses, and other rewards. A system high in perceived usefulness, in turn, is one for which a user believes in the existence of a positive use-performance relationship. ERP implementation will affect most of the company's business platform and influence users directly. Resistance to a change stems from the change in job content and uncertainty of the new system (Jiang, 2000). The project team will face organizational resistance to ERP implementation (Laughlin, 1999). A review of the past empirical research reveals different emphases in conceptualizations of resistance. It has been defined resistance to change as the set of responses to change that are negative along three dimensions (emotional, cognitive, and intentional) (Piderit, 2000).

When a new system is implemented to the organization particularly in government organization the existing employees reluctant to adapting for new system. Attitudes were found differ depending on the type of MIS being implemented. Observed how attitudes toward a new medical information system changed over time and they grasped four major conclusions: (1) user attitudes toward the system became less favorable, (2) the level of job satisfaction increased, (3) user's role ambiguity and struggle decreased slightly, and (4) the daily activities of system users changed somewhat (Conte

et al. 1985). The significance of user attitudes toward a new MIS is strengthened by a recent survey of the Fortune Top 1000 U.S. corporations which concluded that positive user attitudes are the utmost significant factor in successful MIS development (Gupta, 1982).

The system users had become at ease execution their tasks in a confident way, and were not too thrilled about doing things any other way. Others were not involved in the requirements definition process. With the lack of strong efforts by the CEO and most department heads in pushing the use of the newly developed system, it was ordinary in nature that the foundation personnel would not make a great effort on their own will. This is a good example of the problem of user-resistance to new systems (Reel, 1999).

Through participation, operators of an information system (IS) can cooperate with system designers in the stages of planning, analysis, design, testing, and implementation and, hence, aid in many aspects of the system development process. User participation refers to the various design related behaviors and activities that the target users or their representatives perform in the systems development process (Hartwick, 1989).User contribution has long been regarded as an vital factor to improve the chances of the success in developing an information system (Hartwick and Barki, 1994).

A good number of bugs were revealed in the system as a result of performed acceptance testing. This process however, being carried-out by a non-expert in the subject matter of tested sub systems, did not capture missing functionality not stated through system requirements. This is another good example of the problem of resistance by system users (Reel, 1999) who were not eager to use the system and hence not testing it for completeness. The CEO and department managers unsuccessful to play a more visible role in making sure that end-user really performed their essential tasks.

2.5 Resources Availability and Perceived Accessibility of the System

There should be a plan for migrating reliable information to the system at the mean time cleaning up unnecessary data is also important for successful ERP Implementation (Rosario, 2000). Proper tools and techniques and skill to use those tools

with reliable data will aid in ERP success (Rosario, 2000).Resources lead to a superior organizational commitment and also help to eliminate organizational obstacles (Beath, 1991). Adequate resources also lead to organizational implementation success and project implementation success have found an important relationship between resources and IT project implementation (Wixom and Watson, 2001). They observed that having sufficient funds, appropriate people and enough time have had a positive effect on a project's outcome. Based on the above arguments, this study suggests that resources allocated to IT projects may have important impacts on IS success.

2.6 Financial Readiness

ERP Implementation is not an easy task. It required considerable financial investment throughout the implementation process. Even though managers try to gain financial improvements from ERP adoption, firms' may experience negative financial effects. Distinctive ERP implementation is complex. Governments have had a great deal of difficulty in integrating the ERP software with the hardware, operating systems, database management systems, and telecommunications suited to their organizational needs (Markus and Tanis, 2000). A lot of firms in the developing countries face numerous challenges in implementing technologies such as Enterprise Resource Planning (ERP) systems; including a lack of human and financial resources to support such initiatives .These reasons badly effects to the successful implementation of such technologies. (Wright et al., 2002). An organization's failure to commit the required financial resources has been found to be a problem in re-engineering implementations. Dedicated resources are critical to realize the benefits associated with an ERP package. Resource requirements need to be determined early in the project and often exceed initial estimates and the inability to secure resource commitments up front may doom project efforts (Toni and klara, 2001). The obvious place to begin an assessment of why an MIS (Management Information System) may fail is with the hardware and software that compose the capital component of the system. If the capital component is not adequate to respond to the intended purposes of the system, the usefulness of the MIS is obviously constrained. (Curlee and Tonn, 1987)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

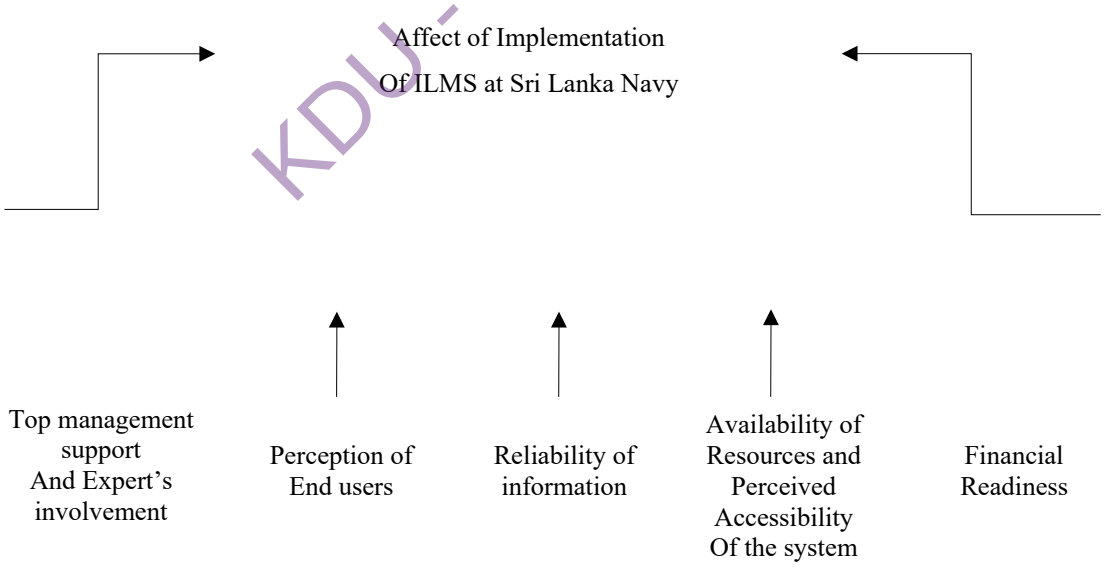
This chapter will elaborate the methodology used by the researcher. The contents of the chapter are categorized under the following major headings of Conceptual Framework, Definitions of the variables, Implementation, Sampling, Data collection methods and Data Analysis Methods

3.2 Conceptual Framework

The researcher has developed the conceptual framework with the support of literature review. It explains the variables focused on the research and their inter-relationships. The conceptual framework is presented in the Figure 3.1.

Figure 3.1

Conceptual Framework



Source: Constructed by the Author

Initially, this research needs to identify factors affecting the implementation of ILMS in SLN. Thereafter, the researcher needs to examine ILMS system administration focusing on each factors previously identified because, with those information, researcher will be able to understand the future arrangement for successful implementation of ILMS system. Therefore for the purpose of fulfilling research objectives, the conceptual framework is used. This framework provides independent variables as well as a dependent variable.

3.3 Definitions of the variables

The table 3.1 provides definitions of the variables in the conceptual framework

Table 3.1

Definitions of the Variables in Conceptual Framework

Variables	Definition
Top Management Support and Expert's Involvement	How and up to what extent top management and Expert support is involves for implementation of the system.
Reliability of the Information	Whether the information sharing each other from end user to top management can be trusted all the time.
Perception of End users	The manner of bearing in mind by end users regarding implementation of ILMS system.
Resources Availability and Perceived Accessibility of the System	How often resources are allocated to ILMS system and the ability to access to system all the time.
Financial Readiness	Being the government organization How financial readiness matter for implementation of ILMS System

Source: Constructed by the Author

3.4 Implementation

This subsection presents how the variables are used in the implementation of research. Variable implementation framework has developed and it's indicated in Table 3.2

Table 3.2

Variable Implementation Framework

Variable	Indicator	Source
Top Management Support and expert's involvement	Leadership capabilities	Question No 1.1, 1.4,1.6 Previous Five Year co-operate/ Action plan at ILMS Directorate
	Expert's Involvement	Question No 1.5
	Willingness and dedication	Question No 1.2, face to face interviews Past Minutes of the Meetings of Progress review meetings at ILMS Directorate
	Importance of top management support	Question No 1.3,1.7 face to face interview
Perception of End Users	User Friendliness	Question No. 3.1, 3.7
	Efficiency	Question No 3.3, 3.5
	Applicability or Suitability	Question No 3.6
	Job Performance	Question No 3.2
	Confusion on Task	Question No. 3.4
Reliability of Information	User Training	Question No.2.3, 2.6 Available data from ILMS Directorate pertaining to conducted workshops,

		Training Programmes of ILMS
	User proficiency	Question No 2.1
	Data accuracy	Question No 2.4, 2.5, 2.7
	System irregularities	Question No 2.2, 2.8 Researcher's own attempt to access to the ILMS System
Resources Availability and Perceived Accessibility of the system	Sufficiency of Resources	Question No. 4.2, 4.3, 4.4, 4.5 Available data about status of resources at each area to conduct ILMS.
	System Accessibility	Question No. 4.1 Available data about status of system accessibility at each Area to conduct ILMS.
Financial readiness	Sufficiency of Financial Contribution	Question No. 5.1, 5.2, 5.3 Available data about funds allocation for ILMS Activities. Face to face interview

Source: Constructed by the Author

3.5 Sampling Design

The sample comprises of 110 employees who are employed in the Western Naval Area due to the time constrain. There are few impinging reasons to select Western Naval Area. Western naval area is the only area to get comprehensive sample profile by including all Managerial levels. All top management personnel, including Policy decision makers undertake their duties at Naval Head Quarters in Western Naval Area. ILMS Directorate is also situated at Naval Head Quarters. This is the place where all administration activities pertaining to ILMS carried out. At the mean time huge number

of ILMS employees are employed here comparing to the other areas.The officers and sailors who have been selected for the data collection are presently engaging with the ILMS and they are capable of handling the system. Among those users, most of the employees are not equipped with ILMS system.

Simple Random Sampling Method is used in this study and the main focus is on the Officers and Sailors who are directly engage with the ILMS system. By considering the quality of the study, sample size is calculated as follows,

Table 3.3
Sample size calculation Table

Margin of Error	5%
Confidence level needs	95%
Population size	152 (C)
Response distribution	50%
sample size	110(A)

Source: Constructed by the Author

This Sample profile consists of various Managerial Levels of the System such as Director Generals, Heads of Departments, Senior Staff Officers, Staff Officers, Senior Sailors and Junior Sailors. Therefore it is required to give fair attention over each category as per their population. According to the above calculation Sample size is 110. Thereafter we need to calculate sample size requirement for each category. For that researcher has developed following simple formula to calculate Sample size for each category.

$\frac{(B)}{(C)}$**X (A):** Sample Requirement Formula

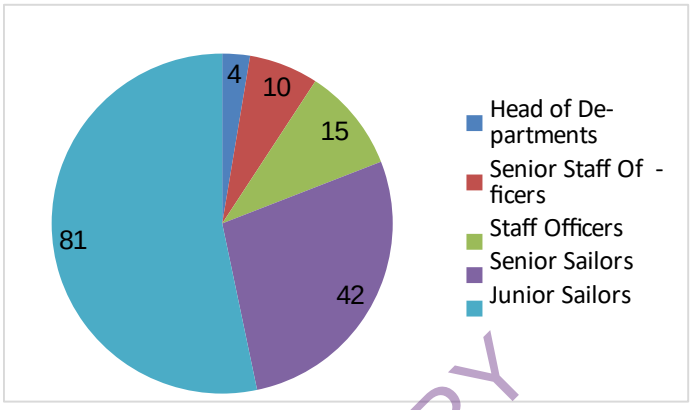
(A)**:** Sample Size

(B) : No. of ILMS users in each category

(C) : Total no. of ILMS users in Western Naval Command -152 (Reserved exclusively for ILMS)

Figure 3.2

Number of ILMS users in each category

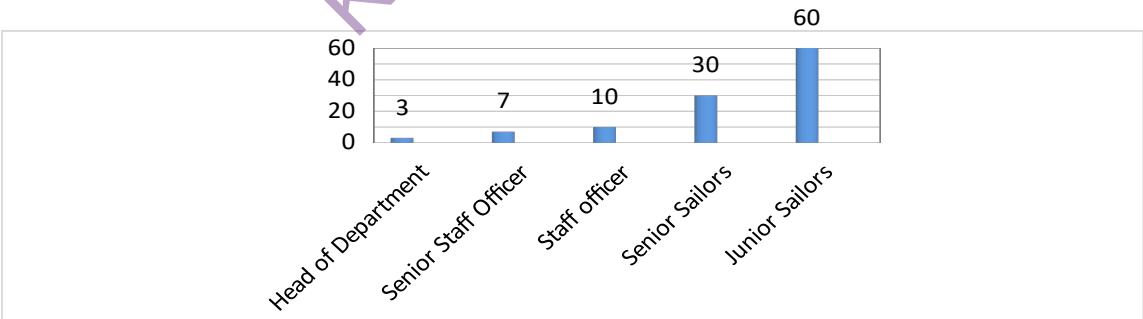


Source: Constructed by the Author

Figure 3.3 shows sample requirement from each category. These figures obtain through simple formula developed by the researcher.

Figure 3.3

Sample requirement from each category



Source: Constructed by the Author

3.6 Data Collection Methods

Data are collected as primary data through the survey and secondary data through existing documents and presentations. Secondary data was gathered through hard copies,

soft copies, and published documents available, subject to confirmation. Primary data was collected through questionnaires, observations on their behaviours, giving opportunity for practical sessions and so forth.

In this research to get some clarification, face to face interviews were used. Soft copies and hard copies were used for getting background information. Specific information was gathered by distributing questionnaires. Computer system was used to summarize the data collected.

3.7 Data Analysis Method

The major theme of this research is to evaluate factors that affect implementation process of computerized system with special reference to ILMS.The data collected from the primary sources and secondary sources were analysed by using Analytical Tools in Excel. It would help to calculate frequency and percentage values to compare the importance of the each variable. The results are presented and analyzed by graphical presentation.

3.8 Quality of Information

The quality of the information basically relies upon the correct selection of the sample and the way of answer to the questionnaire. Sometime researcher had to personally attend to clarify the questionnaires. Major hazard on quality of the information was the lack of understanding of some statement by users. Nevertheless researcher was capable enough to accumulate quality information at the end of the research. The quality of this research was amplified by some selected secondary data. These data were helped to evaluate factors in the most effective manner. It helped researcher to find out more truthful and precise information. As per the questionnaire, researcher required to analyses each variables giving attention to each questions under them. Users have given dissimilar types of opinions for questions raised by the researcher in the questionnaire. However researcher has provided conclusion for the research based on some selected secondary data and opinion given by users for each statement.

CHAPTER FOUR

DATA PRESENTATION AND ANALISIS

4.1 Introduction

This chapter contains the data presentation and analysis. The chapter organized under the five variables discuss under this research.

4.2 Evaluation of factors affecting the implementation of ILMS at SLN

This part of the analysis includes the comprehensive evaluation of the five variables recognized to be affecting the implementation of ILMS. These five variables are based on the relative literature reviewed by the researcher. The analysis is based on the statements developed as shown in Appendix 1 and available secondary data subject to confirmation.

4.2.1 Evaluation of Top Management and Experts involvement

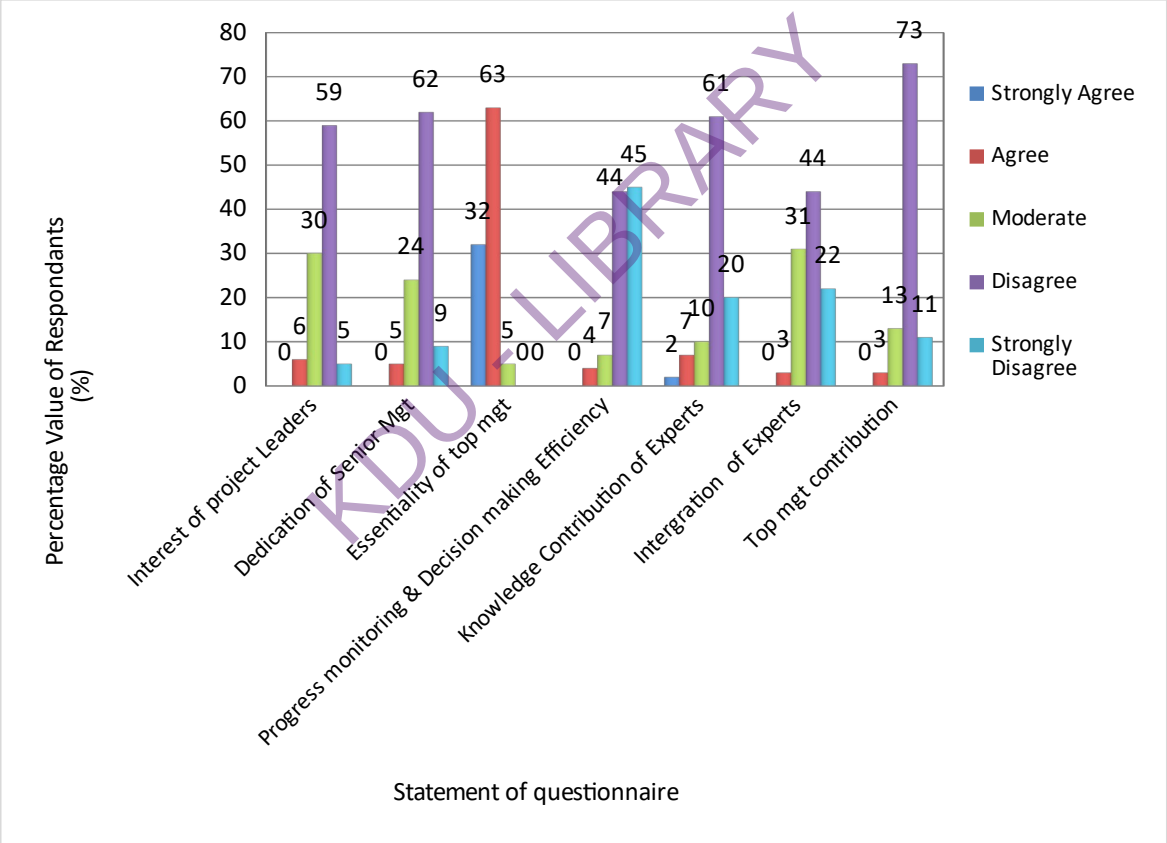
In any organization the top management, which involves in decision making, plays a significant role in implementing an ERP system. Top Management support and experts involvement is one of the main impinging factors towards effective implementation of automated computerized system. When it comes to Sri Lanka Navy, decentralized management system is practiced. There are separate hierarchies for the Naval Headquarters and Area Naval Commands. Nevertheless the Board of Management, headed by the Commander of the Navy and consisting of Chief of Staff, Area Commanders, Director Generals and Directors perform as the main body of decision making. Support of this each level requires for implementation of ERP in different stages. Following histogram shows how respondents have specified their opinion on each

statements under Top Management support and Experts Involvement. At the mean time it illustrate percentage value of respondents over the opinion on statements.

The statements raised under this variable were tested the importance of top management and expert's involvement and opinion of each level of employees about practical picture in the navy about this variable. As per the below Histogram, it shows the percentage value of each respondent's opinion on each statement asked by the Author

Figure 4.1

Percentage value for each statement on Evaluation of Top Management and Experts involvement



Source: Constructed by the Author

As per the Histogram in figure 4.1, 59% respondents disagree the statement asked about Interest of Project Leaders. Another 05% of respondents confirm that opinion as strongly Disagree. Out of all respondents 30% holds moderate opinion. At the

mean time there are 6% of respondents who are in an opinion of agreeableness with this statement. The Second Statement of Questionnaire under Top Management Suport and Experts Involvement is dedication of Senior Management.Under this 62% of respondents disagree with this statement and 9% of respondents have disclosed their opinion as strongly disagree. At the same time 24% of respondents given moderate opinion over this statement. As previous sub factor there are 5% of respondents who are in an opinion of agreeableness with this statement.

Next sub factor is Essentiality of Top Management. 32% of respondents thourougly accepted by giving their consent under strongly agreed, by confirming that Top management support is essential factor for ILMS Implementation. At the mean time majority of respondents hold opinion of agrees under this statement and value of this is 63%. This is the highest scale of agreed statement among all other subsections under this variable. Five percent of respondents hold moderate opinion over this statement. Next Statement of questionnaire is Progress monitoring and Decision making efficiency. Forty five percent of respondents in an opinion of strongly disagree with this statement while 44% of respondents given their opinion as disagree. This is the highest scale of strongly disagree statement which comes under Top Management Suport and Experts Involvement. At the mean time there are 7% of respondents in a position of neither agree nor disagree (Moderate). But 4% of respondents are in an opinion of agreeableness. No one is in a position of Strongly Agree under this statement.

Fifth sub factor is Knowledge contribution of experts. Sixty one percent of respondents have disagreed with this statement. At the mean time 20% of respondents have strongly disagree with the statement. At the same time 10% of respondents given moderate opinion over this statement .Even though the majority of the respondents hold negative opinion, there are few respondents who holds positive opinion over this statement and percentage values are 7% Agreeableness and 2% strongly agreeableness. Sixth sub factor is integration of Experts. Majority of respondents disagree with this statement. Percentage value for disagreement is 44. Twenty two percent of respondents strongly disagree with this statement where 31% of respondents hold moderate opinion and 3% of respondents agree with this sub factor. Last Statement of Questionnaire is Top Management Contribution. Highest percentage value of disagreement under this main

variable reported through this subsection. It is 73%. There are 11% of respondents also who holds opinion of strongly disagree with this statement. As previous there are 13% of respondents who holds moderate opinion over this statement. At the mean time there are 3% of respondents in an opinion of agreeableness. When analyzing all these data it is understood that majority of the respondents have accepted that Top Management and Experts involvement is an important factor for implementation of ILMS System. But majority of respondents are not satisfactory with practical situation of Top Management support and expert's involvement with regard to the ILMS in Sri Lanka Navy.

Figure 4.2

Experience of employees over ILMS

Source: Constructed by the Author

As per the data shown in figure 4.2, Even though Heads of Department and Senior Staff officers have relatively long service in the Sri Lanka Navy, they are lack of experience in ILMS and also their contribution with the system is minimum in the operational level due to this reason. Therefore the sequence of the system process has been collapsed at many stages. This may be a reason to reduce willingness to support the system implementation by the Top Management. Researcher personally involved in collecting secondary data available at ILMS Directorate in order to determine how top management support and expert's involvement effect on ILMS Implementation process in the past and at present. Gathered data are presented as follows,

a. Director Integrated Logistics Management System received letter from Director Naval internal Audit on 12th February 2013 (Reference of Letter is DNIA/11/13) by indicating following irregularities and drawbacks which they have identified during annual audit.

I. Inaccuracy data output in stock reports and no appropriate actions taken to overcome such issues till 2013.

II. ILMS Directorate has been failure to fulfill required accessories to run ILMS effectively.

III. Even though, Officers are there in each command as ILMS Co-coordinator, Directorate has failed to designed particular work scope for them.

b. After this Letter, ILMS Directorate initiated duties and responsibilities for Command ILMS Coordinators by a Temporary memorandum (Reference ILMS/4dated 10th June 2013) and that was after 08 months from the date of requested to initiate such duties and responsibilities (Reference CS/(SPDC)/26/2012 Dated 22 November 2012). These are clear evidence of inefficiency in Top Management Support. These reasons led to degrade effectiveness of implementation process. These drawbacks cause to delay of implementation in the process of ILMS. Even though the situation as such, some available secondary data reveals some improvement of top management support and experts involvement from last year. following facts can be used to justify above argument.

c. Experts involvement

I. Table 4.1 shows Letter details about experts' involvement from last year to up to date.

Table 4.1

Details of Experts Involvement

Sr.No	Date and Reference	Designation of Expert	Opinion
01.	08.07.2014	Commodore Superintendent	Proposals for System

	CLOGD(NCC)/30	Logistics Department, North Central Naval Command	modifications
02.	23.08.2014 CLOGD(N)/16/14	Captain Logistics Department, Northern Naval Command	Proposals for System modifications
03.	22.08.2014 CS.17	Commodore Superintendent Logistics Department, Eastern Naval Command	Proposals for System modifications
04.	21.08.14 CLOGD(NW)28	Captain Logistics Department, North western Naval Command	Proposals for System modifications
05.	30.07.2014 CLOGD(W)ILMS/2	Captain Logistics Department, western Naval Command	Proposals for System modifications

Source: Constructed by the Author

d. Top management initiated 05 year cooperate plan in year 2015 for effective implementation and development of ILMS. (Co-operate plan attached as Appendix 2). Further they have designed a detailed action plan for Year 2015 and nominated suitable officers to be responsible and to follow up each and every task. (Attached as Appendix 3)

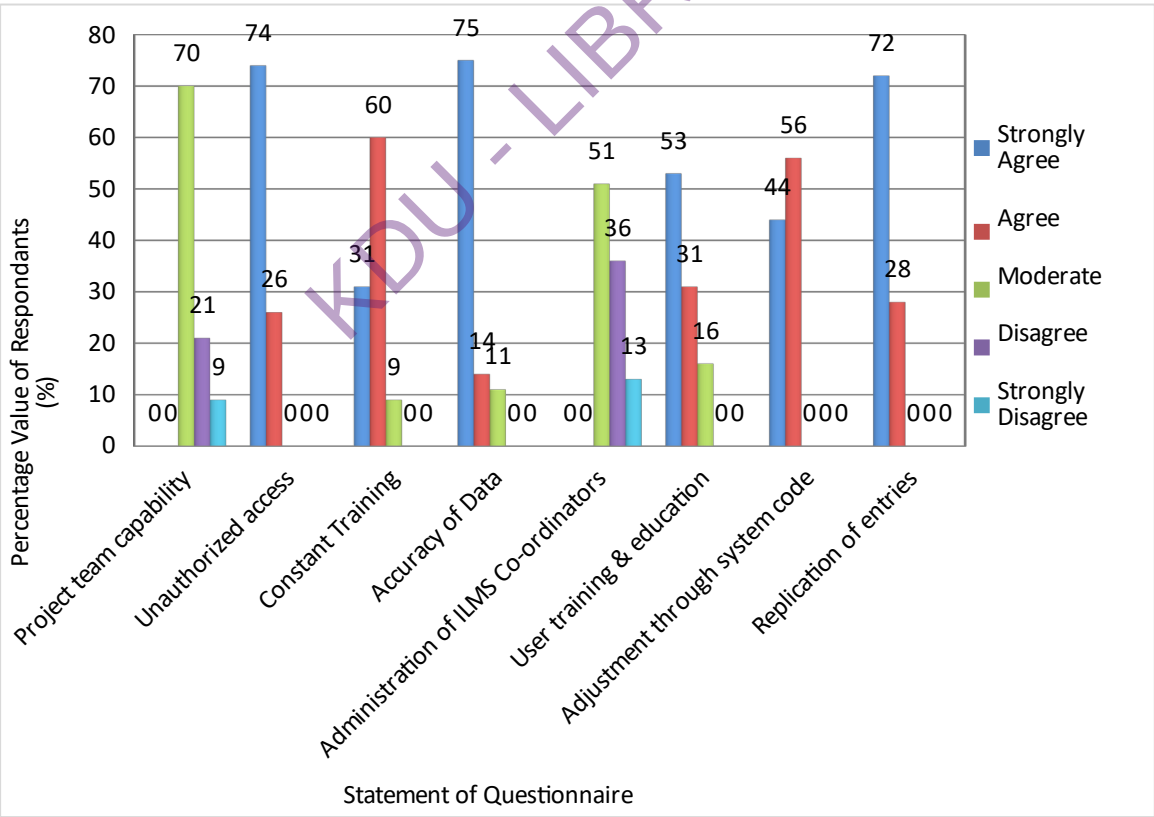
e. Action has been taken by the Top Management on 21st April 2015 to implement ILMS pilot project (Referred Minute sheet attached as Appendix 4) in North Central Naval Command collaboration with all departments concern and put all the effort to implement ILMS successfully in that area and to discontinue the manual ledger system upon the success of ILMS with the approval of Computer Advisory Committee (CAC). Upon the success of implementation of ILMS at North central Naval Area same project apply for other Naval Areas as well in order to complete the Implementation of ILMS Project. By Analyzing all these Primary and secondary data it reveals that majority of the End-users are not satisfied with practical situation of Top management support and expert's involvement with regard to the ILMS in Sri Lanka Navy. In order to confirm same opinion researcher found some secondary data to prove it. But at last researcher found some secondary data which is challenging end-users perception over current Top management support.

4.2.2 Evaluation of Reliability of Information

According to the study, reliability of information has been tested by adding related statement to the questionnaire. Since Sri Lanka Navy utilizes thousands of products value of Billions and having hundreds of demanding units, maintaining a 100% accurate data base which is directly affect to the reliability of the information is clearly a huge challenge. Decentralized nature of stores makes it more complex. However, in this nature of system, maintaining the reliability of information is critical in order to built user confidence and effective functioning of the system. Outcome of this study too reveals the same.

Figure 4.3

Percentage Value for each statement on Evaluation of Reliability of Information



Source: Constructed by the Author

The first statement of questionnaire under this variable is project team capability. It asked opinion over project team proficiency towards reliability of information.70% of respondents holds moderate opinion over this statement. 21% of respondents holds opinion of disagree where 9% of respondents strongly disagree with this statement. Unauthorized access is the next sub factor under this. It asked opinion of respondents about unauthorized access as demolisher against accuracy of data.Here the opinion of Strongly agree was at the peak of 74% while another 26% agreeing about it.Third statement of questionnaire is constant training. Author develops this statement to get the opinion of respondents about continuous training towards reliability of ILMS System.
31% of employees in an opinion of strongly agree and opinion of Agree was at the peak of 60%. Nine percent of respondents hold moderate opinion on this statement.

Next sub factor is Accuracy of data. In here the author tried to get an opinion of ILMS employees with regard to impact of data accuracy towards improvement of reliability on the system. As per the Histogram, 75% respondents strongly agreed that the accuracy of data is one of main driving factor in implementation of ILMS system. Another 14% of respondents confirm that opinion by agreeing with the statement. Eleven percent of respondents in an opinion of moderate. This statement reveals that, majority of ILMS Employees believe that data accuracy should be ensured in order to improve the reliability on system. Administration of ILMS Coordinators is next Sub factor under this variable. Accordingly, a pecentage as high as 51% are holding moderate opinion for its current scenario. Thirty six percent is disagreeing about this factor. Balance 13% totally disagrees with this statement. As per these data it reveals that ILMS Employees are in a grey picture about task carried out by ILMS Coordinate Office.

Sixth sub factor is user training and education. Accordingly, 53% have held a strong opinion over agreeableness that this factor is significant towards implementation of the system while another 31% agreeing and 16% are in a moderate opinion.The seventh sub factor under this is the Adjustment through system code itself where all the 100% respondents have rated it to be either strongly or fairly agreeing. The percentages are 44% and 56% respectively. Replication of entries is the last factor under this variable.

As previous factor 100% respondents have rated it to be either strongly or fairly agreeing. The percentages are 72% and 28% respectively.

The statements developed as shown in Appendix 1 contains separate section at last to mention anything special to mention with regard to the ILMS in Sri Lanka Navy. Researcher found there are six junior sailors, one Senior Sailor and two Staff officers they mentioned about the quality of training programmes of ILMS. They revealed that though they participated for continuous training programmes which were arranged by the ILMS Directorate, they did not get required practical training sessions to brush up their professionalism over ILMS. Automated system like ILMS required more practical sessions rather than having workshops only with power point presentation. Researcher personally attended to gathered data with regard to the training workshops conducted by the ILMS Directorate. As per the available records table 3.3 shows number of training sessions conducted by the Directorate from 2012 to up-to-date.

Table 4.2

Conducted workshop details for ILMS

Date Conducted	**Areas**	**No. of participants**		**Conducted place**
		Officers	**Sailors**	
01.03.2012	All Areas	34	122	NHQ General Mess
02.03.2012	All Areas	34	93	NHQ General Mess
12.03.2012 – 16.03.2012	All Areas	02	07	IT Department Computer Lab at NHQ
22.03.2012	Only SNA	-	92	SNA General Mess
23.03.2012	Only SNA	04	52	SNA General Mess
29.03.2012	Only SNA	07	33	SNA General Mess
30.03.2012	Only SNA	-	22	SNA General Mess
02.04.2012	Only SNA	-	154	SNA General Mess
03.04.2012	Only SNA	-	62	SNA General Mess
04.04.2012	Only SNA	-	38	SNA General Mess
05.04.2012	Only SNA	2	38	SNA General Mess
17.04.2012	Only SNA	-	30	SNA General Mess
18.04.2012	Only SNA	-	24	SNA General Mess
19.04.2012	Only SNA	-	21	SNA General Mess
11.06.2012	Only WNA	-	6	IT Department Computer Lab at NHQ
17.07.2012	All Areas	9	-	IT Department Computer Lab at NHQ
09.08.2012 - 10.08.2012	All Areas	38	-	NHQ General Mess
23.08.2012	All Areas	1	17	NHQ General Mess

24.08.2012	All Areas	-	15	IT Department Computer Lab at NHQ
08.01.2013	Only WNA	-	16	CSLOG Dept (w)
11.01.2013	Only WNA	-	29	CSLOG Dept (w)
18.03.2013	Only NCC	-	18	CLOG Dept (NCC)
19.03.2013	Only NCC	-	20	CLOG Dept (NCC)
27.05.2013 - 05.06.2013	Only ENA	20	-	CSLOG Dept (E)
30.05.2013	All Areas	50	132	NHQ Auditorium
31.05.2013	All Areas	41	131	NHQ Auditorium
06.06.2013	Only ENA	20	-	CSLOG Dept (E)
16.07.2013	All Areas	9	-	IT Department Computer Lab at NHQ
19.07.2013	All Areas	-	11	IT Department Computer Lab at NHQ
30.09.2013 - 01.10.2013	Only NW	5	-	CLOG Dept (NW)
07.10.2013	Only NCC	4	23	CLOG Dept (NCC)
08.10.2013	Only NCC	2	9	CLOG Dept (NCC)
11.10.2013	Only NCC	6	24	CLOG Dept (NCC)
04.11.2013	Only ENA	1	51	ENA Auditorium
05.11.2013	Only ENA	1	31	ENA Auditorium
06.11.2013	Only ENA	7	24	ENA Auditorium
07.11.2013	Only ENA	5	25	ENA Auditorium
08.11.2013	Only ENA	4	71	ENA Auditorium
05.03.2014 - 07.03.2014	Only NCC	-	3	IT Department Computer Lab at NHQ
20.03.2014	All Areas	-	25	IT Department Computer Lab at NHQ
16.06.2014 - 19.06.2014	Only ENA	20	-	ENA Auditorium
10.07.2014 - 11.07.2014	All Areas	35	141	NHQ Auditorium
14.08.2014	Only NNA	-	22	CLOG Dept (N)
15.08.2014	Only NNA	-	17	CLOG Dept (N)
20.09.2014	All Areas	-	11	Directorate of ILMS
04.11.2014	Only SE	1	19	CLOG Dept (SE)
05.11.2014	Only SE	-	13	CLOG Dept (SE)
25.11.2014	WNA	-	11	IT Department Computer Lab at NHQ
02.03.2015	Only ENA	-	24	CSLOG Dept (E)
03.03.2015	Only ENA	-	13	CSLOG Dept (E)
19.03.2015 - 20.03.2015	Only ENA	-	18	CSLOG Dept (E)

Source: Constructed by the Author

As per the Table 3.3, during the time of year 2012 to up-to-date there are 51 occasions where IT Department and ILMS Directorate conducted training sessions for

ILMS. But out of these 51 occasions there are only 09 occasions where they conducted these training sessions in IT Dept Training Lab. This is the only suitable place to conduct successful practical session on ILMS. It means out of all these training sessions only 18% of sessions outfitted with practical Training. Therefore Sri Lanka Navy should immediately pay their attention to overcome this training matter since effective continuous training is an important factor to maintain reliability of Information.

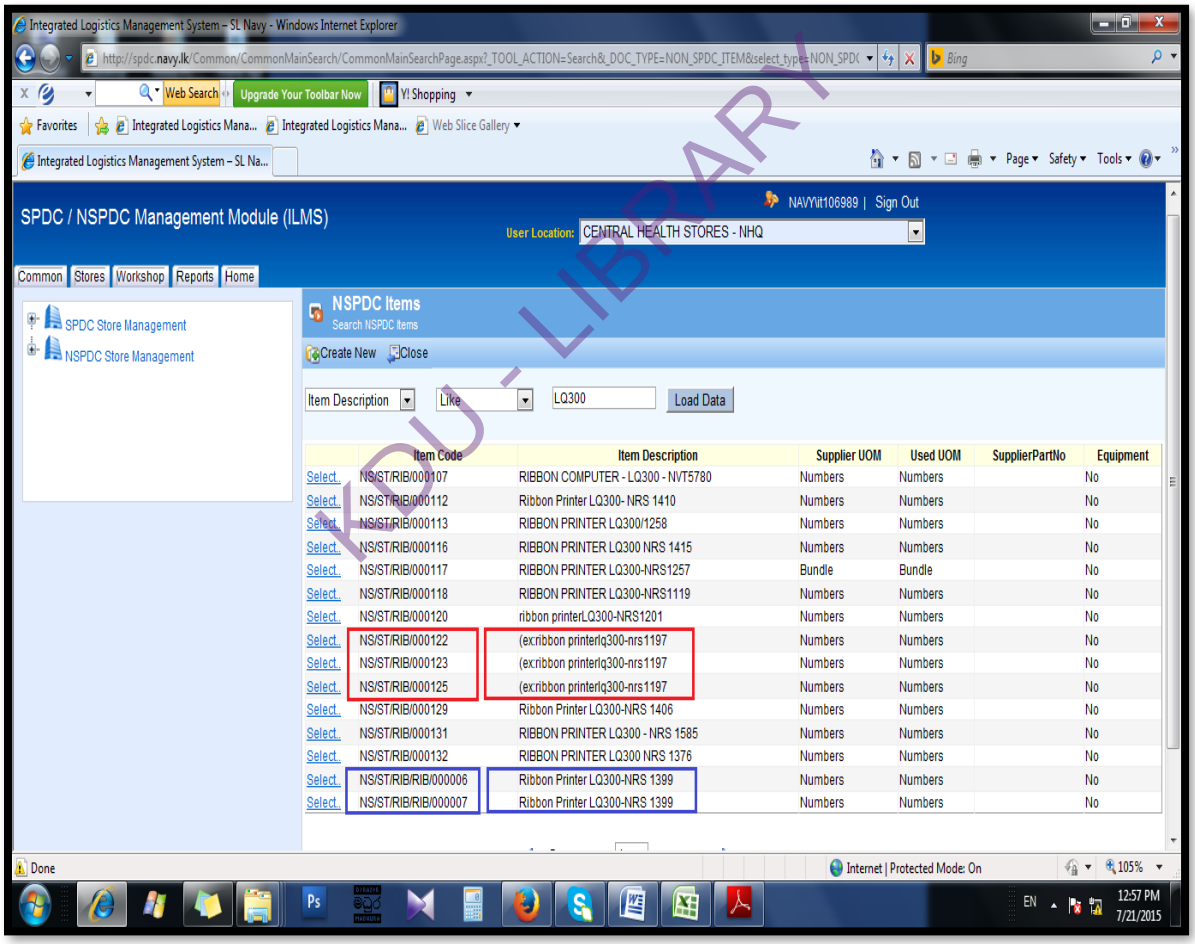
Further researcher accessed to the system personally, in order to confirmed present status of reliability of the information generated through ILMS. For that purpose researcher have selected 10 items frequently used by Sri Lanka Navy and checked how these items are existing in the system. In ILMS system, item identified through Item code. If any demanding unit requires that particular item they can access to the system and should enter particular item code to check the availability of that particular item. But in the system researcher found out of these ten items two items have different item code for same item. Ribbon printer LQ 300 – NRS 1197 is one item use by the navy as computer accessories. But in system this item indicates under three item codes. It shows inside the red square in Photo 4.1. At the mean time same consequence occurred for item called Ribbon printer LQ 300 – NRS 1399. This item indicates under two item codes. It shows inside the blue square in Photo 4.1. Discussion held with Staff officer (ILMS) in order to identified reasons for these irregularities. As per his view this situation occurred due to unauthorized access to the system. Lack of security measures are major caused for unauthorized access. Still the system unable to rectify this matter. Therefore any ILMS User can log in to the system and create item code. Replication of entries is the major hazardous result of this. At last this caused to produce wrong information through the ILMS System. Following example show how vulnerable this matter.

Most of the medicine items are ordered in large quantity and almost all the items carrying specific date for expire. Amount pay for medicines is considerably high, and cost will be more than millions in most of the occasions. These items also included into the ILMS System under Health Store Management module. Assume due to unauthorized access, Medical item no 1(example) duplicated and it shows under 04 item codes. Now demand authority for medical items access to the system in order to check availability of medical item no 01. They access to the system by using only one item code. Suppose

under item code ‘A’ no stock available. But available stock indicates in item code ‘B’. If medical items demand authority use item code ‘A’, they are in wrong picture of Non availability of stocks. If they ordered Medical item no 1 due to non availability of stocks, stock levels are increasing unnecessarily and it leads to various difficulties. At last all these difficulties cause to increase cost unnecessarily. ILMS Introduced in order to increase effectiveness and efficiency of Logistic Management System. But due to this kind of irregularities it is questionable whether we have achieved our primary objective through implementing ILMS.

Photo 4.1

Item duplication errors in ILMS System



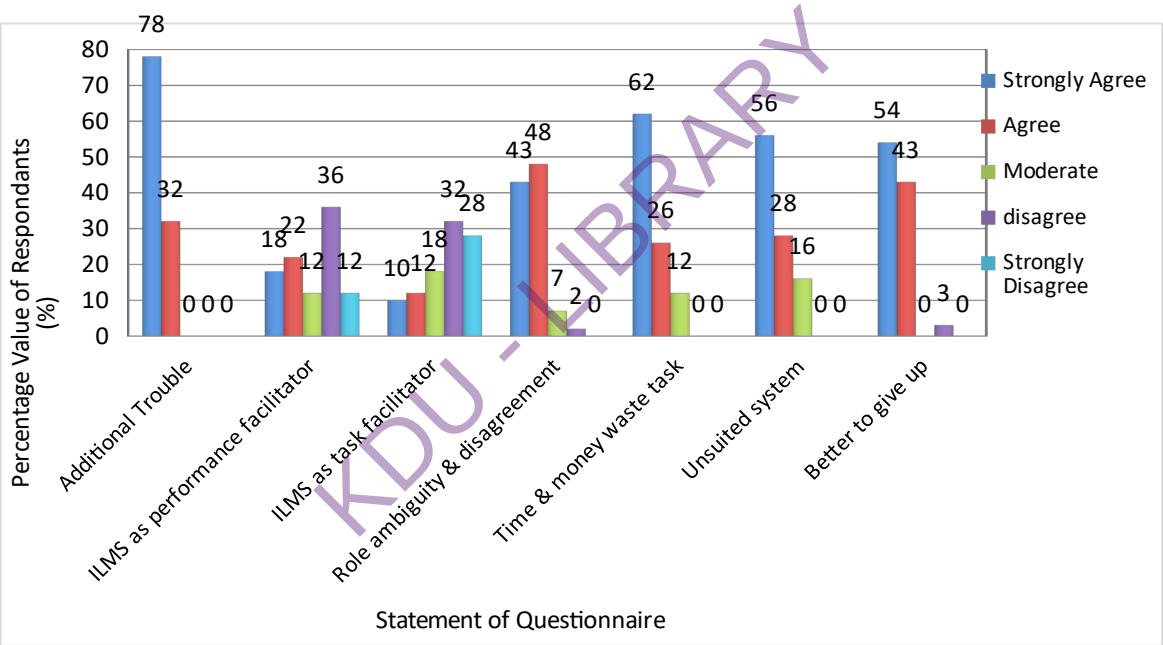
Source : Screen shot from ILMS

4.2.3 Evaluation of Perception of End-users

The one of very important variables that researcher tested in this study is perception of End-users. Since in any organization, attitudes of the employees makes massive impact on implementing and functioning of a system of this nature. All those statements were tested whether the employees have positive or negative attitude regarding the newly established system.

Figure 4.4

Percentage Value for each statement on Evaluation of Perception of End-users



Source: Constructed by the Author

First sub factor under this variable is Additional Trouble. Researcher tried to get the perception of end-users whether this system is additional trouble to them or not. Majority of the respondents have shown a strongly agreeing opinion on this with a percentage of 78% and balance 32% are agree about it. ILMS as performance facilitator is the second ststement of questionnaire under this. Here the 36% of respondents are disagreeing with satement. That means the respondents belive that ILMS does not increase performance of the users.by confirming above fact 12% of respondents are

strongly disagreeing with this statement.Eventhough the situation as such, considerable percentage value of respondents are there to confirm this statement.they believe that ILMS cause to increase performance of the them.Twenty two percent of respondents are agreering with this statement.by confirming above fact 18% of respondents are strongly agreeing with this statement.at the mean time 12% of respondents hold moderate opinion over this statement.Third sub sector is ILMS as task facilitator. In here researcher tried to gathered data over opinion of end-users that how they thinks on ILMS as task facilitator towards smooth function of Logistics Activities. As per the Histogram, 32% of respondents disagreeing while 28% of respondents are holding an opinion of strongly disagree with this statement. However, 12% of respondents are in agreed position and 10% strongly agree with the statement. Further 18% of respondents hold moderate opinion. Therefore most of users' opinion is that ILMS is not performing as a task facilitator.

The next sub factor under this variable was role ambiguity and disagreement among the users.In here researcher required to get the opinion of endusers whether this ILMS cause to amplified role ambiguity and disagreement among the users.Accordingly, 43% have strongly agreed that this factor has influenced to role ambiguity and conflict in the organization at the same time as another 48% is agreeing with it.Seven percent of respondents hold moderate opinion on the satement.The next statement of questionnaire under this was Time and money waste task. In here researcher needs to get the picture of end-users whether they consider this ILMS as Time and money waste task. 62% of respondents are strongly agreeing with this statement. Further 26% of respondents are also in same track by holding fairly agreement with this. Twelve percent of respondents hold moderate opinion over this.

The sixth sub factor under this was unsuited system. This elaborates user perception over computer based system appropriateness for armed forces. Fifty six percent of respondents are strongly agreeing with the statement by confirming that a computer based system like ILMS is not compatible with armed forces. Further 28% of respondents are also agreeing with this statement. Another 16% holds moderate opinion over this statement. The last variable is better to give up the ILMS system. Accordingly a pecentage as high as 54% are strongly agreeing for being withdrawn from ILMS system.

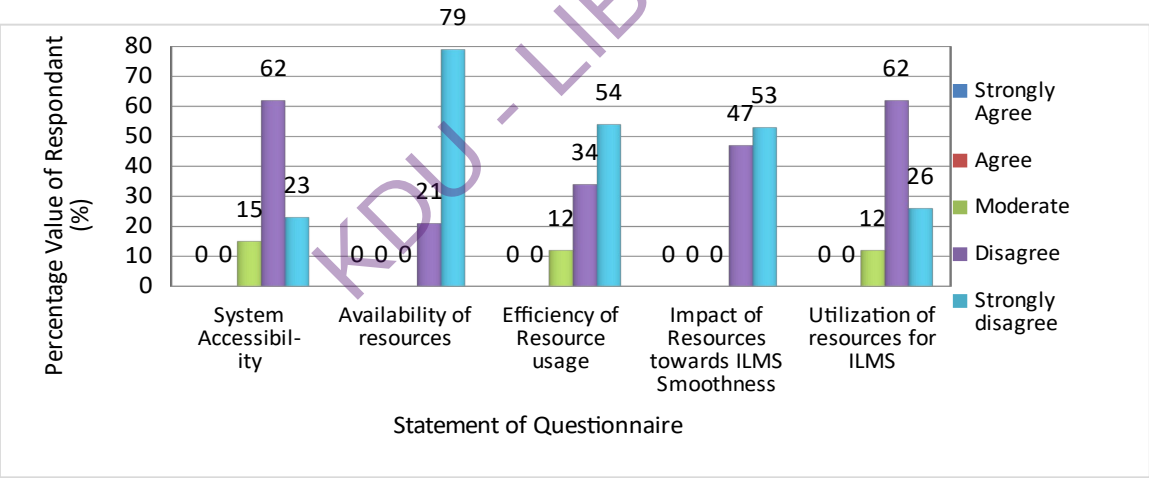
Another 43% confirmed by agreeing to withdraw from the ILMS. Only 3% of respondents are disagreeing with this statement. Here, majority of end users have answered negatively. It shows their unwillingness to engage with system while performing day to day regular activities. The statements tested too are emphasized that attitudes of almost all the employees have to be changed and thus it is very significant to focus on this variable, as it would badly impinge on to the implementation and functioning of ILMS System.

4.2.4 Evaluation of Resources Availability and perceived accessibility of the system

When introducing an ERP, it is mandatory to fulfill required software components and hardware components, such as servers, computers, networking equipments etc.

Figure 4.5

Percentage Value for each statement on Evaluation of Resources Availability and perceived accessibility of the system



Source: Constructed by the Author

System accesibility is the first sub factor under this varable. It emphasized system accessibility condition of Sri Lanka Navy. Here majority of respondent hold a fairly disagree opinion with 62%. Strongly Disagreeing percentage was at the low of 23% while another 15% in a moderate opinion. By analysing these data it is understood that system accessibility is not in a positive condition at all the time.The next statement is about Availability of resources. Here researcher needs to identify whether resources are

sufficient to cater ILMS requirement. The 79% of respondents are strongly disagreeing with this statement while 21% of respondents are disagreeing. It means that end-users are not satisfactory with practical scenario with regard to equipment and resource personnel. When concerning the third factor which is the Efficiency of Resource Usage is holding 54% of strongly disagreeing while 34% are holding disagree opinion. However 12% of the respondents are in a moderate opinion. Next sub factor is Impact of Resources towards ILMS smoothness. Fifty three percent of respondents holds strongly disagree opinion against this statement while balances 47% of respondents are disagreeing with this. It means majority of Employees accepted that there is a significant impact of resource personnel and essential equipment over smooth functioning of ILMS.

Last statement of questionnaire is utilization of resources for ILMS. Accordingly, 62% have disagreed that resources are effectively utilized. According to majorities' view, the resources are underutilized. Another 12% are holding moderate opinion on this factor. 26% of the respondents are totallty desagreeing. While introducing ILMS, the Navy had to face many difficulties due to insufficient hardware. Nevertheless later based on a survey carried out on the requirement of computers and other equipments, actions have been initiated to acquire same. Even though the situation as such still the Navy could not meet 100% requirement of hardware component due to financial constraints and swift development of user stations (Bases/Detachments).

This finding too implies the having Infrastructure facilities as required, critically affects the ILMS System. Researcher personally involved gathering secondary data in order to clarify opinion of respondents with regard to availability of resources and Perceived Accessibility. As per the data gathered from ILMS Directorate it reveals that there are 24 Letters received to ILMS Directorate from various naval commands from 03rd August 2012 to 14th July 2015 by indicating their difficulties to implement ILMS Due to Lack of required accessories and poor system accessibility.

Table 4.3

Details with regard to insufficiency of resources from various commands

Sr.No	Date And Reference	Letter Received From	Reason indicated
01	03.08.2012, TS/01/2012	Western Naval Command	Lack of Computers
02	16.08.2012, SURA'36	Eastern Naval Command	Lack of Computers
03	04.09.2012, CLOGD(W)/63/2012	Western Naval Command	Lack of Computers
04	12.10.2012, NH(SC)09	Sothern Naval Command	Poor Network Connection
05	03.12.2012, PRO/NW/BA/02	North Western Naval Command	Poor Network Connection
06	19.04.2013, NH(EC).14	Eastern Naval Command	Lack of Computers
07	02.08.2013, CLD(S)/9C	Sothern Naval Command	Lack of Computers
08	09.09.2013, NAD/ADM/1	Eastern Naval Command	Lack of Computers
09	11.11.2013, CITOE/01/13	Eastern Naval Command	Lack of Computers
10	12.11.2013, CSE.114	South East Naval Command	Poor Network Connection
11	19.12.2013, CLOGD(NCC)30/3	North Central Naval Command	Lack of Trained personnel to Handle the system
12	20.01.2014 ILMS/21	Western Naval Command	Lack of Trained personnel to handle the system
13	16.04.2014, GJ.57(wand	North Central Naval Command	Lack of Computers
14	08.04.2014, DGCE/GEN$81	Western Naval Command	Lack of Computers
15	05.06.2014, CS(SPDC)/26	Eastern Naval Command	Lack of Computers, Printers and UPS
16	05.06.2014, CLOGD(N)	Northern Naval Command	Lack of Computers and Shortage of human resource. Poor Accessibility of Network.
17	06.06.2014, ILMS/01/2014	Sothern Naval Command	Lack of Computers and shortage of Human resources
18	07.06.2014, CLOGD(NCC)/30/3	North Central Naval Command	Irregularities of Homan resource utilization, shortage of Resources
19	08.06.2014, CLOGD(NW)/28	North Western Naval Command	Lack of resources and restriction of network accessibility. Lack of Training and human resource. Unavailability of network Access.
20	09.06.2014, CSLOG(W)34$2014	Western Naval Command	Shortage of Human resource and Lack of training
21	10.06.2014,	Western Naval Command	Lack of Computer

	ILMS/10		
22	17.06.2014, CLOGD(SE)/31	South East Naval Command	Lack of Computer and Human Resource
23	16.03.2015, CLOGD(SE)/31	South East Naval Command	Lack of Computer
24	14.07.2015, CSLOGD(W)/63	Western naval Command	Lack of Computer

Source: Constructed by the Author

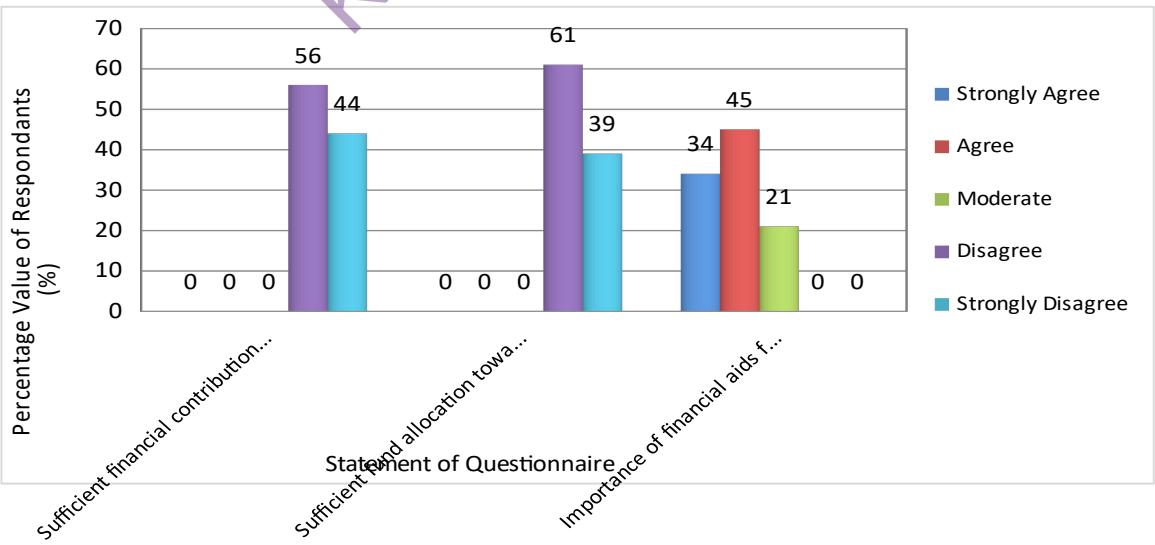
When concern about both these primary and secondary data it reveals that Resource availability and perceived accessibility is an important factor towards ILMS Implementation. Even though situation as such Sri Lanka Navy fails to pay favorable attention to overcome this matter. It cause badly to the implementation process of ILMS.

4.2.5 Evaluation of Financial Readiness

ERP Implementation is a challenging task. It required extensive financial investment throughout the implementation process. Therefore financial readiness plays vital role towards successful implementation of ERP System. Statements of questionnaire developed in such a manner to identified practical scenario in Sri Lanka navy with regard to financial readiness over ILMS Implementation.

Figure 4.6

Percentage Value for each statement on Evaluation of Financial Readiness



Source: Constructed by the Author

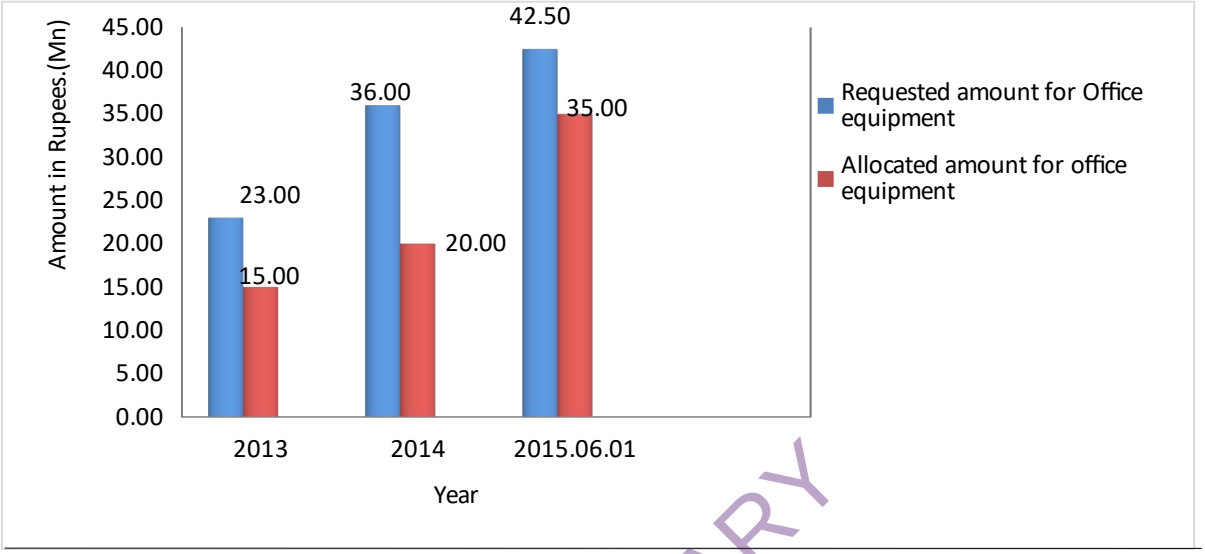
First statement of questionnaire is sufficient financial contribution towards proper system function.56% of respondents are disagreeing with this statement and balance 44% of respondents strongly disagreeing with that. Therefore it is understood that as per the opinion of end-users, financial readiness is not sound enough to address proper system function of ILMS. Second sub factor is sufficient fund allocation towards ILMS Accessory purchase. Sixty one percent of respondents are disagreeing with this statement and balance 39% of respondents strongly disagreeing with that. Therefore it is understood that as per the opinion of end-users, financial readiness is not sound enough to purchase required accessories to ILMS Project.

Last Sub factor under this variable is importance of financial aids for smooth system function. Here researcher needs to get an opinion of employees whether sufficient funds are vital driven factor for smooth function of ILMS. Thirty four percent of respondents strongly agree with the statement while 45 % of respondents confirmed same opinion by giving fair agreeableness. Twenty one percent of respondents hold moderate opinion. It is fact that being a government organization in a country which still developing financial aspect is always limited. Therefore it is difficult to maintain sound financial readiness at all the time in any government activity.

Researcher personally involved in here also to collect secondary data in order to clarify opinion of respondents with regard to funds allocation by treasury to Sri Lanka Navy for purchase computers, printers, servers, Routers, etc for last two years. Purchasing of Computers and other necessary equipments comes under Vote particular No.2103. Computer and other Accessories categorized under Office Equipment. Details shown in Figure 4.7

Figure 4.7

Allocated funds requirement against Requested funds requirement



Source: Constructed by the Author

As per the above histogram it is understood that Sri Lanka Navy fails to fulfill total Computer and other accessories requirement for last couple of years due to insufficient funds received from Treasury. Since we are a developing country it is difficult task to obtain sufficient funds to carry out all the tasks forecast on particular time period. Due to the limited funds received by government Sri Lanka Navy has to manage these funds among all Naval Activities. Therefore all ways allocated among will be less than requested amount. This cause to degrade effectiveness of implementation process of ILMS. As we are totally relying on government funds, it is very difficult task to find solution to overcome this financial matter.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

There are many drawbacks in this study. First, researcher focuses on a small number of variables that can be affected for ERP implementation. More relevant variables associated with ERP implementation must be added to improve the understanding of factors to be affected for ERP implementation. The content is categorized under following major headings of Conclusion and Recommendations

5.2. Conclusion

5.2.1 Recognizing factors affected in implementation of ILMS System

The major objective of this study is to evaluate factors which affect in implementation of Integrated Logistics Management System in Sri Lanka Navy. In order to achieve that it is mandatory to recognize whether these factors effected in implementation of ILMS System. Based on the details collected by the researcher, it is clear that the identified variables directly or indirectly affect in implementation and functioning of ILMS system. This study clearly says that how recognized variables affect to ERP system.

5.2.2 The Influence of Variables towards ILMS

By identifying factors affected to the new system implementation, researcher needed to know how those factors really affect to ILMS system. For the purpose of reaching to the conclusion, comprehensive analysis has been done using both primary and secondary data and used graphical illustrations for easy reference. Based on these illustrations, researcher said that importance of each variable and how it's really affect to ILMS system. Gathered data vary according to way of users thoughts. Because, users expectations were tested by using statement in order to come to final decision. Some

questions (statements) were asked focusing on ILMS system which has been currently used in the Navy. In those statements, users have responded in their practical sense. Findings of the study summarized under each factor and present as follows,

5.2.2.1 Top Management support and Experts involvement

In the analysis of first variable called Top Management Support and experts involvement. The majority of users disagreed with practical scenario happening in the organization. The researcher in the analysis has identified the disagreement of users over the each statements regarding top management support. In order to confirm same opinion researcher found some secondary data to prove it. Subsequently researcher found some secondary data which is challenging end-users perception over current Top management support. At the meantime researcher identified that constant Top Management support and experts involvement is the real impinging factor which influence to the implementation process of ILMS System. As per the all gathered data it is proven that Top management support and experts involvement have been affected negatively for implementation process of ILMS. Here, according to the response given by users, Top management involvement to system implementation, Commitment of senior Management, Incorporation of Management in the implementation process are the remarkable factors to be considered in the future.

5.2.2.2 Perception of End-users

According to the third variable majority of the respondents are dissatisfied with ILMS system implementation. Here, researcher tested whether the users are interested with ILMS system. Further, End-users showed their unwillingness to engage with system while performing day to day regular activities. Further, the users showed on their opinions that the system is no more required to the Sri Lanka Navy. As per the majority of users' view, role ambiguity and conflict, ILMS as extra burden, Incompatible to Armed Force and Time and Money Wasting Task have been resulted in the implementation of ILMS within the SLN. The statements tested too are emphasized that attitudes of almost all the employees have badly affected to the implementation process of ILMS.

5.2.2.3 Reliability of the Information

Reliability of Information was next variable studied by the researcher. According to this variable, researcher wanted to check whether the requirements have been fulfilled to protect reliability of information. For that, the researcher asked eight statements. The reliability of information over the ILMS system is not at a satisfactory level, because, the responses on system reliability was very poor. Above argument was proved by both primary and secondary data. Researcher have identified that constant training is one of the paramount driven factor for seize reliability of the information. Even though navy provides continuous training it's revealed through both primary and secondary data that training is not effective and worth. Moreover administration of the ILMS coordination office has been pointed out as factors to be concentrated because Unauthorized Access, Duplicate Entries, Coding Errors are administered by ILMS coordination office.

5.2.2.4 Resources Availability and perceived accessibility of the system

Researcher checked whether there are enough resources and the ability to access to the system under this variable. Primary and secondary data reveals that Resource availability and perceived accessibility is an important factor towards ILMS Implementation. Even though situation as such Sri Lanka Navy fails to pay favorable attention to overcome this matter. Based on answers given by respondents, the study shows that shortage of equipment and resource personnel. Further, data shows efficiency of resources and skills of resource personnel are not up to the standard. Therefore this variable cause in a bad manner to the implementation process of ILMS.

5.2.2.5 Financial Readiness

Finally researcher checked status of financial readiness towards implementation of the ILMS. All most all the respondents not in a positive position with regard to the present position of financial readiness. As per the available data, it is understood that Sri Lanka Navy fails to fulfill total Computer and other accessories requirement for last couple of years due to insufficient funds received from the Treasury. This cause to degrade effectiveness of implementation process of ILMS. As we are totally relying on

government funds, it is very difficult task to find solution overcome this financial matter. However, at last this variable caused to degrade effectiveness of Implementation process.

Based on this study researcher obviously has identified that those all factors have made even a little impact. However researcher wanted to evaluate these variables that affect to system implementation. At the end of the study, it has been identified that Top Management Support and experts' involvement, Reliability of information, Perception of end-users, Resource availability and Perceived accessibility and financial readiness have negatively impact to the implementation of the ILMS.

5.3 Recommendations

Based on above conclusion, followings can be recommended to system administration to carry out in future success of the system.

5.3.1 Top Management support and Experts involvement

Top management support and experts involvement have to be incorporated with system implementation under following elements of Change Management, Process, People and project. Under Change Management element Top management has to focus on following aspects,

a. Dedication to Change Management
b. Dedication throughout the whole Project
c. Develop process- oriented Vision
d. Develop change plan and monitor throughout the implementation process.

The next element is process. Following points to be focused by top management in order to enhance effectiveness of ILMS implementation process under this element.

a. line up ILMS project with Organizational strategy
b. Identification of errors difficulties and drawbacks of the modules already in placed.
c. Develop method to deal with unforeseen difficulties

d. Contribution in requirement analysis.

Third aspect of Top management support is people. This is one of the most challenging aspects to be concerned. Following points to be focused by top management.

a. Motivate End-users
b. Ensure commitment at all levels
c. Identified best people and assigning them to earmarked task of the system
d. Delegate authority to project team leaders
e. Ensure effective communication.

Final aspect is project. Following points to be focused by top management in order to enhance effectiveness of ILMS implementation process under this element.

a. Project monitoring and control
b. Involvement in decision making
c. Provide the necessary resources throughout the project
d. Support project leaders.
e. Arrange progress review meetings regularly.
f. Providing of required computers and accessories to respective departments.
g. Finalizing items to be purchased under capital expenditure and up to placing the purchase orders.

It is propose to follow up and achieved following tasks by top management and experts during the year 2016.

a. Develop New Construction Module.
b. Proposed to implement high availability solutions for commands.
c. Error handling, Database Tuning and Query solutions for commands.
d. Providing of required computers and accessories to respective departments.
e. Fine tune and modifications in all modules according to user requirements.
f. Training of staff in liaison with IT department.
g. Modification and maintenance of developed modules.

5.3.2 Perception of End-users

Inculcating positive user attitudes towards ILMS system functioning is utmost requirement in present context. It is required to educate users regarding the importance and long-term advantages of having automated system. Change management plan should focus all end-users. Awareness programmes to be conducted by covering all end-users in order to make them aware about advantages they can gain through this kind of automated system.

5.3.3 Reliability of information

Users are to be trained more effective manner which includes practical sessions. So that system can smoothly function without failures. At the mean time security measures to be strengthen up in order to eliminate unauthorized access. Project team proficiency should be build up by arranging required practical training sessions in house. At the mean time Local and foreign exposures to be arranged for them with ERP management teams.

5.3.4 Resource Availability and Perceived Accessibility

Infrastructure facilities must be improved to keep system efficiency and effectiveness. Top Management support to be in cooperated with resources in order to ensure sufficient resources throughout implementation process of ILMS. Proper mechanism to be developed in order to ensure and follow up effective ILMS resource utilization in each area.

5.3.5 Financial Readiness

As we are totally relying on government funds, it is very difficult task to find solution to overcome this financial matter. However, following action can be taken to streamline financial aspect over ILMS Implementation. Sri Lanka Navy has not focused up to now to allocate separate funds under the project called ‘ILMS’. Requirements of ILMS for resources, manpower, Training, process development, etc have been projected under various vote particulars since 2006. Therefore next year onwards can prepare separate budget estimate for ILMS which includes all financial requirements for the

project. Five year cooperate plan which developed by top management (Attached as Appendix 2) can be incorporated as basement for this funds allocation up to 2020. This proposal leads to ensure proper funds utililization of ILMS and sound financial readiness over ILMS implementation.

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Appendix 1

QUESTIONNAIRE

Evaluation of the Factors Affecting the Implementation of Integrated Logistics Management System (ILMS) at Sri Lanka Navy

- **Answer the question by mark off the most suitable answer as per your view in given boxes**

  Strongly Agree – (05 Marks) **Agree – (04 Marks)** **Moderate – (03 Marks)**

  Disagree – (02 Marks) **Strongly Disagree – (01 Marks)**

- Gender : ……..
- Age : ……..
- Your Managerial Level

Head of Department	Senior Staff Officer	Staff Officer	Senor Sailor	Junior Sailor

- Your Rank : …… (Only applicable for Officers)
- Your Rate : …… (Only applicable for Sailors)
- Your Service : ……
- Your Experience with ILMS :……
- Education Qualification

GCE (O/L)	GCE (A/L)	Basic Degree	Post Graduate Degree	PhD or relevant

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01. Top Management support & Experts involvement

		Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
1.1	The ILMS project has been spearheaded by highly-respected, executive-level project leaders.					
1.2	Top Management in Sri Lanka Navy has extremely dedicated with its own interest and willingness to allocate sufficient resources to ILMS implementation effort.					
1.3	The top management support and experts involvement are essential factors for implementation of ILMS system.					
1.4	Progress monitoring and decisions making powers are successfully driven by top management at significant point in the process of implementation.					

1.5	Expert's knowledge has been optimistically contributed to upgrade the ILMS system.					
1.6	System experts such as business analysts have been giving expert knowledge at any time according to user's requirement.					
1.7	Sound leadership, dedication of top management and contribution of steering committee have been supportive factors in ILMS implementation process.					

02. Reliability of Information

		Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
2.1	The project team proficiency with regard to ILMS has been helping to uplift reliability of the system.					
2.2	Unauthorized access to the system has impacted to have incorrect information in the system and it caused to create wrong information.					
2.3	Continuous training workshops to update and test user's knowledge with regard to the system have been influential to have reliability of ILMS system.					
2.4	Data accuracy is one of paramount driven factors in successful implementation of ILMS system.					
2.5	The projected level of accuracy of ILMS system is maintained by system coordinate office.					
2.6	User training and education have been very significant factors to maintain the reliability of ILMS system.					
2.7	Corrections done through the system code in coordinating with ILMS office have badly affected the accuracy and reliability of the system.					
2.8	Replication of entries is one of major hazard to trustworthiness of the system.					

03. Perceptions of End-users

		Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
3.1	This system is additional trouble to both officers and Sailors when both manual and computerized system use at the same time.					
3.2	Employees in SLN consider that using ILMS system would improve his or her job performance.					
3.3	ILMS system is one which can smooth the progress of all logistic activities in Sri Lanka Navy.					
3.4	User's role ambiguity and clash among the employees have amplified due to ILMS.					
3.5	Try to complete the system is time killing and not cost effective task.					
3.6	A computer based system is not well-matched with organization like armed forces.					
3.7	Retreating from ILMS is better than using such a burden system.					

04. Resources Availability and Perceived accessibility of the system

		Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
4.1	System accessibility is in a positive condition at all the time.					
4.2	Resources (Equipment & Manpower) are sufficient to continue the ILMS system properly.					
4.3	Speed of apparatus and resource personnel are in satisfactorily level for smooth functioning of ILMS					
4.4	Resource personnel and essential equipment has not impacted to smooth functioning of the system.					
4.5	Resources allocated for ILMS functions are completely utilized in this area.					

05. **Financial Readiness**

		Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree
5.1	Annual Funds allocations are sufficient To continue the ILMS system properly.					
5.2	Annual Funds allocations are sufficient to Purchase required accessories to ILMS Project					
5.3	Sufficient funds are vital driven factor for smooth function of ILMS					

Do you have anything special to mention with regard to the ILMS in SLN?

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