Optimizing the Efficiency of Preparing Dangerous Good Declaration Report at Spence Shipping (Pvt) Ltd

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ABSTRACT

Implementation was carried out at the Spence Shipping (Pvt.) Ltd. in order to provide solutions for issues arisen with the process of preparing the dangerous goods (DG) declaration report. It was found that the Spence Shipping (Pvt.) Ltd. faces difficulties in preparation of this report. Main problems in the current system are wastage of stationery, waste of time and careless mistakes made by employees. In this paper, a computer based system is presented to optimize the efficiency of dangerous goods declaration report also no need spend money for any new resource. This improved system will reduce time wasting directly and reduce cost indirectly.

KEYWORDS: Dangerous good declaration report, DG, SDLC, SLPA, PDF file format

INTRODUCTION

Spence shipping (Pvt) Ltd is controlled by Aitken Spence Maritime department (www.Aitkenspence.com). It was established in on 15th of October 2006 as acquired the agency for Hapag Lloyd (HL) Container Line which is the fifth largest shipping line in the world. Spence has rapidly claimed its stake as a front runner as container operations in Aitken Spence maritime and also inland.

Declaration report of dangerous goods is of utmost importance. It should be accurate and sent on time. The details of dangerous goods in a particular shipment are given in the declaration report. This report is sent by the operation department of the agent company to the port. After checking the report thoroughly, if the approval is given, the ship is allowed to be berthed at the port.

This report should be sent to port authority 24 hours prior to berth of vessel at Colombo port, for getting the permission to allocate the berth from port Authority and Sri Lanka Navy. Therefore, arrangement should be made by the port authority to allocate separate wharfs for each vessel.

RESERCH OBJECTIVE

The key objective of this study is to introduce a better system which enhances the efficiency of preparing dangerous goods declaration report. To meet this ultimate goal, it is needed to find out issues is the current system used by the company. The new system of generating DG declaration report which reduces the problems and find ways to improve the efficiency and accuracy in preparing Dangerous goods declaration Report

LITRETURE REVIEW

The system development life cycle (SDLC) is used for the development of the new system. Five phases, named as preliminary investigation, system analysis, system design, system development and System implementation and Evaluation, are consisted in this life cycle. The SDLC is sometime called waterfall model. That means the result of each phase flow into the next phases is similar to a series of water fall.

The initial phase of the SDLC is written requests. The purpose of this phase is to

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clearly identify the nature and the scope of the problem mentioned in the system requirements. If no problem is found and no further action is needed then next phase can be proceeded. If problems and solutions are minor then phase 4 can directly be proceeded.

The second phase is to represent what the users of the system want from the system. During analysis part, the system requirements are to be discovered by the analyst. Requirement discovery techniques are used to find out the requirements of the new system. System modeling methods are to be used to document the requirements.

During the third phase of this design, the system is designed so that the expected system requirements are met. The programmer must have a clear understanding of what he wants the program to do. This phase is the most important step in the program development because basically the program depends on this design. Then structured program design method is used to build the best-structured program. Once we complete a system design in structured chart, it is converted into pseudo code statements which are closer to program statements. The syntax of pseudo code is independent of a programming language. Pseudo code is then converted into a program by coding it using an appropriate programming language.

After that, in forth phase, application programs are to be written, tested and documented; operational documentation and procedures are to be completed and management approval is to be obtained.

Finally, in system implementation and evaluation phase, the system is begun to use by end users who are in the management. Installing the program in the real environment, training the users, establishing procedures and submitting the program officially are included in system implementation. System evaluation is done at regular intervals. The maintenance is identical to managing some work which is already accomplished. Once the program is written and debugged properly and run, it is still needed to be maintained. Sometimes the program is needed to be modified, i.e. add or remove certain functions, to meet the system requirements efficiently.

RESEARCH METHODOLOGY

Research design is the science of planning procedure for conducting studies so as to get the most valid and suitable findings. The first step in research design is to identify a research problem. The purpose of this research is the optimization of the efficiency and accuracy by finding the shortcomings and issues in the current system used by the organization. Therefore, this research is classified as an analytical/applied research. After the application of the system development life cycle, it is realized that the problem identified in the preliminary investigation can be solved by using a computerized system. In the current system used by the organization, difficulties and/or problems are identified in accessing manual data and keeping records manually. Therefore the problem is solved by the new computerized system with large data store which supports to store large number of data in a well-organized manner.

DATA COLLECTION AND ANALYSIS

Sampling data from existing documents, observations, interviews and use of questionnaires and site visit are used as requirement discovery techniques. Duration for the preparation of the DG declaration report and problems faced by the users are also collected during data collection.

To get a perfect idea of the system, the author is directed to work as a user of the current system for preparing DG declaration report. Further, author is directed to study final lists of dangerous goods documents and DG Declaration reports. After that, I had several discussions with the executive officer and the manager of the vessel operation department and got their

suggestions and requirements. But the majority of the data were collected through observations also I did a research on similar systems. After that several discussions with the executive officer and the manager of the vessel operation department were conducted and their suggestions and requirements were taken into account for the design of the new computerized system. But the majority of the data was collected through observations. Interviews with the executive officers were also held to get some facts about DG declaration report. It was stated that the time duration for preparing DG declaration report is two and half hours on average. More time is needed to type the details such as container number, name of substance, consignee address, etc. Also a lot of time is required for referring to the data from SLPA (Sri Lankan Port Authority) DG book and the final list.

The indentified issues in preparing the DG declaration report are waste of resources to get print out of final list, e.g. 15 pages are used to get a printout and that even sometimes needed to be revised, difficulties in entering DG details such as container number, name of substance, consignee address etc. and improper ways of checking SLPA number and group. All these issues are related to time and resources.

RESULTS AND DISCUSSION

The issues and problems in preparing DG declaration report were identified. Considering requirements of the management and the users of the current system, a new system was developed by which information and relevant data were collected from relevant documents.

NEW SYSTEM

VB Macro in the visual basic programming language is used in the newly developed system. The Microsoft Excel is used to analyze data. In the new system, different procedures are used to extract relevant data in different ways from original data file which is originally in PDF format and the extracted data are stored in temporary files. After the removal of unnecessary data, the information needed is arranged in the form of a table and Search for SLPA (Sri Lanka Port Authority) group and page number from the e-book version of the SLPA. Finally, the report is created according to shipment such as in-transit, transshipment, etc.Figure1show whole process of new system. It will take less than two minutes time for the above task.

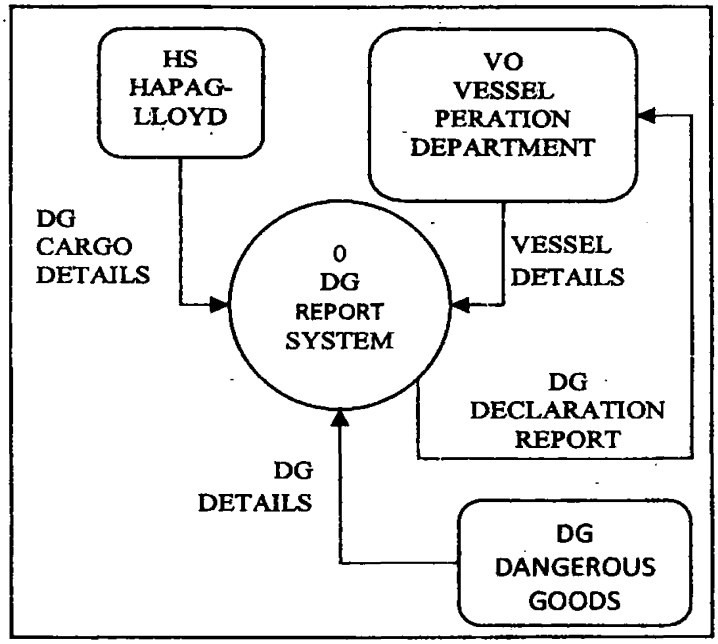

Figure 1: Context Diagram of system

When compared with present system not only that wastage of Stationery papers, ink and human errors be occurred but also it takes almost half a day for this task, reason is it requires a lot of time for referring to the data from SLPA DG book and the final list. This improved system will reduce time wasting directly and reduce cost indirectly. Also easy to use for users and accurate details are given to users, members and students. But A responsible officer is needed to execute the new system and it is not an online system.

CONCLUSION

After analyzing the whole system of the company, issues and difficulties in the current manual system of generating DG declaration report are identified. A new automated software system is was developed and implemented. The newly developed system was tested by the experts in the company and accepted by the management of the company. Further, the users were satisfied with the new system.

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