

Identification of the Benefits of the Usage of Information Technology in Managing Warehouses in Supply Chain

Jouhara Al Habsi¹, Ali Al Kalbani¹ & Asad Ullah¹

¹ Department of Management Studies, Middle East College, Muscat, Oman

Correspondence: Department of Management Studies, Middle East College, Muscat, Oman. E-mail: Jouhara.alhabsi@yahoo.com;bur3d.x@gmail.com, contactasad1985@gmail.com

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Abstract

The aim of this research is to identify the most important benefits of using the Information technology in managing the warehouses. Knowing that the warehouse departments make use of the Warehouse management Systems (WMS) to manage their warehousing activities, but the system performs limited functions such as contacting the suppliers, as for the rest of operations such as knowing the amount of inventory, information regarding stock movement, knowing the arrival and departure schedules of trucks and many other functions etc., are performed by the warehousing staffs manually by using the papers in order to the record data. The study seeks to highlight the current use of IT in managing warehouse and identifying the shortcomings of WMS in managing warehouse. This paper will make use of literature review methodology, which will identify publications related to study highlighting the benefits of usage of information technology in managing the warehouse. The findings of the study will highlight the important benefits of using information technology in managing the Warehouses leading to more profits and efficiency for the organizations. The use of modern technology, such as big data in stock management improves the pace of work, if there is sufficient knowledge and skill when using these techniques.

Keywords: information technology, warehousing, efficiency, management, benefits

1. Introduction

According to Moore (1991), it has been found that information technology plays a very significant role in the success of any organization as it works to ensure smooth performance for all departments of the company and meets the operational needs and functional requirements. This study focuses on understanding the benefits of using information technology in managing the warehouse as highlighted in the literatures. The researcher collected the information through the use of literary reviews and thus was able to obtain a lot of data that are specialized and belong to this study.

The significance of the study lies in highlighting and identifying the benefits of using information technology in warehouse management, and to study the current use of IT in warehouse management, to identify challenges in using WMS in managing warehouses of the company and how to overcome this problem so that it becomes easier for the companies to continue its work without making much use of the papers and find a suitable solution to this problem.

1.1 Aim and Objectives of the Study

1.1.1 Aim

The main aim of this research is to highlight the benefits of using information technology (IT) in managing warehouse as highlighted in various literatures pertaining to the subject.

1.1.2 Research Objectives

1. To study the usage of information technology in warehouse management.
2. To identify the benefits of the use of IT in managing warehouse.
3. To identify the shortcomings of information technology in warehouse management.

1.1.3 Research Questions

1. What is the use of information technology in managing warehouse?
2. What are the benefits of the use of IT in managing warehouse?
3. What are the shortcomings of information technology in warehouse management?

2. Method

This section presents a description of the research process followed in this research and how the data was collected to identify papers relevant for this study. As the first step the research questions addressed by this study are:

RQ1. What is the use of information technology in managing warehouse?

RQ2. What are the benefits of the use of IT in managing warehouse?

RQ3. What are the shortcomings of WMS in managing warehouse?

The followed step was to define the inclusion/exclusion criteria: (1) Search limitations to papers, (2) considering only papers written in English language, and (3) Exclusion of papers not accessible as full text.

For the next step, data collection, the keywords used were defined as: Information technology, Warehouse Management, Supply Chain Management, benefits, challenges. Then used to search them in online journals databases and scholarly databases (Emerald insights, Taylor & Francis Group) and Google Scholar. The keywords should be found in the paper title, paper keywords and/or paper abstracts. Then the papers were read to assess their relevance and contribution to the present study, and as a final step the discussion of the findings for the future work.

3. Results

In this research it has been found through the literature reviews, the answers to the research questions. It can be said that it is necessary to use the information technology to manage the warehouses because it facilitates the procedures and conduct many operations in lesser time. Some of the technologies that facilitate warehouse management are also identified, such as RFID, ERP System and SAP System. The study also highlights towards the strong relationship between the information technology and warehouse management because it facilitates communication and maintains the workflow with high efficiency, and it is difficult to carry out any task at the moment without the use of information technology. Moreover, there are many challenges that a company. In conclusion, it can be said that information technology in general has a lot of benefits at the present time because it works to speed up the operations and make them more efficient and more competitive.

4. Discussion

4.1 Information Technology

According to Froilan (2017), the word Information Technology (IT) has been found to be an expression of the use of computer software and hardware to manage information. It can also include all systems within the company, such as physical devices, applications, databases, operating systems, servers, and storage space. According to Margaret (2018), information technology is designed, analyzed, implemented, developed, supported, and managed by computer-based information systems. According to Venkat (2018) information technology functions as an agent in data management, i.e. it can be text, sound, image or any other form. According to Bharat` (2018), a set of IT tools, processes and methodologies include encryption, programming, data conversion and retrieval, data storage, communications, systems monitoring and systems modeling. According to Margaret's (2017) research, Information Technology is an area that encompasses all disciplines of computing, including computer science, software engineering, and information systems. He confirmed that this area is based on the practical side of the computer, as it offers high quality software. According to (Report, 2016), information technology is defined as the study, activation, support, and development of information systems, which are the fastest way to facilitate access to and access to information and data users.

4.2 Warehouse Management

According to a study by Veego (2016), warehouse management is a process that aims to regulate and monitor everything in the warehouse, to ensure that all operations and jobs go as required. Warehouse management includes warehousing management, inventory control, ensuring that appropriate equipment is available when appropriate, providing equipment maintenance, stock management, controlling transport operations, and improving packaging, tracking, and performance. According to the Industrial Concepts (2018) report, warehouse management has been found to cover a wide range of activities, such as storing materials, repairing goods as soon as they reach the warehouse, and providing care at the same time. all stored materials and their safety.

4.3 The Usage of Information Technology in Warehouse Management

When it comes to warehouse management, it is important to rely on information technology. One of the most important information technologies used for warehouse management is radio frequency identification (RFID). It creates a clear and complete display of inventory and is used to reduce the risk of losing ingredients. It also relies on the use of the electromagnetic field found in items such as barcodes. It is invisible and thus is detected by radio waves and thus is used to build a safe depository (Richard, 2012). Enterprise resource planning (ERP) is used to integrate a set of comprehensive and deep operational applications, processes and processes such as distribution, industry, and supply chain. According to Gartner (2018), an ERP system automates warehouse activities, including inventory management, and helps facilitate the flow of information so that it can be easily managed. This system is an integrated solution as it performs multiple tasks simultaneously without resorting to other technologies. To manage the warehouse better and more efficiently, it is essential to use ERP software. It also enables warehouse managers to view plans and costs at any time, provide access to information and store data with accuracy. According to studies by Martin (2018), it has been confirmed that IT is important to warehouse management and the most important example of these technologies is the SAP system, which is defined as an acronym for all systems, products and applications. SAP system is used for inventory management, where this process is done by controlling the flow of products within the warehouse, controlling the process of receiving products and preventing the high percentage of inventory. In addition, this system monitors the receipt of goods by knowing whether the material is available for immediate use or that its quality must be checked and tested to ensure that it meets the agreed specifications. SAP also provides flexible support for handling cargo transactions, supporting logistics, scheduling, and inventory management. SAP allows developing a plan for the warehouse, provides a complete overview of inventory quantity and organizes and controls everything that happens in the warehouse.

4.4 The Benefits of the Use of IT in Managing Warehouse

According to a study by Chandler (2015), IT has many benefits and can help it manage warehouses. The most important of these is ERP technology, as it has many advantages, such as efficient storage management, complex storage operations, transparency of storage operations and control over storage. It also allows producers to determine the size of the stock to achieve balance. In addition, ERP technology has many benefits, such as increasing productivity to enable you to do more work and complete more tasks in less time. It also reduces operating costs and ensures accuracy. It also automatically updates information to prevent errors. This system also helps with classification. This means that it helps to select the modules and that warehouse management is assigned to facilitate special tasks. Integrate warehouse management units with quality control units to store untested members. This technology helps to formulate the company's policies regarding sales orders, transportation and customer service in order to ensure a steady supply of products in the warehouse, which according to RDII according to a report issued by Mohammed leads to customer satisfaction. the importance of using the D system in the management of the warehouse, including the following: RFID technology is used to store the tracking number. Depending on the quantity, size, product line, products and information, the expiration date is because the reader can read up to 200 signals at a time, which increases the speed and productivity. It also helps to increase the vision on assets, which has the ability to identify lost products, and the growing vision is solving all the problems caused by the weakening of control processes and to reduce human error. Helps to establish a line of sight and reduce the risk of theft and loss (LOWRY, 2015) Professor With this system you can monitor inventory space and identify products in the warehouse and easily share information and warehouses so that you can work efficiently without having to wasting time and in any case helping to properly prepare reports on the collection and gain access to the information. Helps create time, buy budgets, compile inventory assessments, and improve operational efficiency and data analytics. It also keeps all the information in one place and helps to understand the fast-selling products, identify unwanted products and attract customers, streamline the order and supply chain. In addition, this technology works by making the supply chain visible so that distributors monitor product movement during the transition. And to identify the causes of the delay and identify and determine the causes of the disruption. This technology helps reduce damage and loss and is useful for combining all warehouse operations into one application (2016).

4.5 Challenges of WMS in Managing Warehouse

According to studies conducted by researcher Dick (2016), he explained that the use of information technology in warehouse management is positive, but each technology has some disadvantages. The main challenges of using WMS in the repository are: Users need to update the system, otherwise they do not seem to have made changes to the system, and this may cause a change between balances due to the size of the data, as this system does not report to In case of inventory transfer, it does not provide accurate data on the amount of inventory and any change in the program sheet will affect the storage of products. In addition, invoices are often inaccurate; there is no contact

between employees, it affects small details and thus can reduce their value, leading to unexpected problems, it does not work exactly in time management. Distributing products to customers and leads to loss of customer trust and exposure to problems and issues. In addition, the belief in using WMS to manage the warehouse is one of the most complex programs to solve problems that occur during work, and it must be maintained from time to time, which increases the cost and also requires expert intervention in order to benefits are achieved. Furthermore, the researcher mentioned that one of the main challenges of using the WMS system is the possibility of system failure due to damage or power outage, leading to data failure and other technical issues such as the cause of data loss. The researcher added that this system should update the walls of protection and use of antivirus software (Dick, 2016)

5. Limitations

- The time factor is very important because it affects the quality of the research. In this study, the researcher encountered problem about the time, as the time was very short and the researcher was unable to collect a lot of information from different sources.
- Inherent limitations associated with any single study provide avenues for future research. This paper uses a qualitative approach. Therefore, one direction consists of empirically testing the generalizability of the proposed findings. Further research using a quantitative approach to study would be desirable regarding companies making use of information technology in managing their warehouse.

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