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Applicationof ERP and Decision Support Systemsin SMEs

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ABSTRACT: In this study, a simple ERP system has been designed for small and medium-sized businesses working on stock-based and purchasing and selling businesses. In the design, Oracle software was used for the database, and the user interface was prepared with the help of Oracle Developer software. The prepared software can be a stand-alone logistics tracking system, or it can be considered as a module for a large-scale ERP system to be prepared later.

KEYWORDS: Enterprise Resource Planning, Decision Support Systems, SME

I. INTRODUCTION

Today, taking advantage of ERP solutions, which are becoming increasingly complex and expensive, is pushing the possibilities of SMEs. In addition, SMEs, which are relatively simple in terms of structure, may not need complex and detailed information systems. However, regardless of its size, every business needs to manage, store and quickly access and use the information it obtains according to its field of activity.

[1]. Firms producing ERP software developed software for large enterprises in the early periods. This situation has led to the adoption of the understanding that the information systems in question are only suitable for large enterprises. Due to the fact that the size of ERP software is quite large and comprehensive and very high costs are mentioned, SMEs have inevitably stayed away from these applications. However, software companies that reached the saturation point in terms of large enterprises had to turn to the SME market, which constitutes the majority of enterprises in all countries of the world. In addition, all kinds of information
system requirements of SME companies have started to increase and they have started to tend to benefit from ERP software. Therefore, nowadays, it is discussed how the application of these systems to SMEs can be done more successfully, rather than whether ERP systems are suitable for SMEs.

II. CORPORATE RESOURCE PLANNING

Enterprise Resource Planning is a system that presents all departments of an enterprise under a single computer system. This common information system provides functionality by collecting all data in a single database due to its integrated structure, contributes to the harmonious operation of different departments with different needs and to better information sharing between them.

[2]. The ERP system is an organizational information system that facilitates the flow of information between the "Production Planning Control" units of the different systems of the enterprise by integrating the business functions.

ERP is a detailed information management system for organizations, a package of programs that connects all the various functions of the organization. The functions mentioned are finance, manufacturing, sales, human resources etc. are functions. ERP also includes software aimed at product planning, sales forecasting, analysis of quality and other organizational functions. ERP forms the backbone of an organization by standardizing its information system, offering a wide-ranging solution system and thus transmitting the right information to the right people at the right time.

III. DECISION SUPPORT SYSTEMS

Decision Support Systems are systems that provide convenience to the decision maker at many points and use databases and models. Decision support systems act as an important supporter at the point of benefiting from data and making strategic decisions, and they serve to gain competitive advantage by enabling businesses to have more detailed information about their customers and operations.

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[3]. Although decision support systems are mostly used for solving semi-structured problems, they can also be used for structured and unstructured problems. Systems are data and model based. Users can make faster and more accurate decisions with the help of such systems, which provide the opportunity to build models within the framework of unique and specific problem data and one or more methods.

Although businesses have a lot of data about their ustomers, operations, processes and activities, most of the said data could be brought to light through decision support systems and managers were able to make rational decisions and add value to their business activities as a result of the evaluation of these data. The source, type, development, quantity and quality of the data have become easily available through decision support systems.

The changing competitive conditions of today's business world have made it necessary for businesses to follow and apply new technological methods. Business managers need intelligent decision support systems to determine strategy, produce policies and access the data they need instantly. In particular, the fact that businesses cannot use all the data they have or have difficulties in using them has increased the need for intelligent decision support systems.

IV. SMALL AND MEDIUM SIZE BUSINESS (SME)

Various public institutions and non-governmental organizations working on, researching and supporting SMEs have different definitions of SMEs. When it comes to SMEs, small manufacturing enterprises that make production come, and the existence of tradesmen and craftsmen should be taken into account.

According to HalkBankası A.Ş., which has been providing loans to SMEs for years with reasonable opportunities, manufacturing industry enterprises employing 1-150 workers and the fixed investment amount does not exceed 100.000 TL, SMEs with Incentive Certificate, employing 1-250 workers, fixed investment amount is TL. Manufacturing industry enterprises that do not exceed 400 thousand are called Normal SMEs.

[4]. According to the Turkish Statistical Institute (TUIK), enterprises employing less than 100 workers are called medium-sized enterprises, enterprises employing less than 50 workers are called small-scale enterprises, and enterprises that do not employ workers are called very small enterprises.

As can be seen, very different definitions have been made for SMEs. Moreover, definitions differ according to different economic, cultural and geographical characteristics of different countries. Despite many different definitions, the most widely used definition is the one made by the Small Business Administration (SBA). The SBA has defined Small businesses as “enterprises that operate independently and are not sovereign in the field in which they operate”.

V. IMPLEMENTATION ON ERP SYSTEM AND DECISION SUPPORT SYSTEMS FOR SMES

In this section, the structure, logic and operation of the ERP system, which has basic components designed for the use of small and medium-sized enterprises, will be explained.

As a result of the development and widespread use of information technology products, corporate information systems, which started with MRP and continue to exist under the name ERP, continue their rapid development. However, for many years, only large enterprises with relatively more resources could benefit from this development. Small and medium-sized enterprises could not use expensive ERP systems due to their relatively limited opportunities and tried to develop some simple solutions within their own means.

[5]. On the other hand, in recent years, small and medium-sized enterprises have also increased their interest in ERP systems, as more powerful and faster computers and equipment can be purchased much cheaper than in the past, the widespread use of the internet, the increase and cheapening of internet access speeds.

VI. CONCLUSION

Today, taking advantage of ERP solutions, which are becoming increasingly complex and expensive, is pushing the possibilities of SMEs. In addition, SMEs, which are relatively simple in terms of structure, may not need complex and detailed information systems. However, regardless of its size, every business needs to manage, store and quickly access and use the information it obtains according to its field of activity.

Firms producing ERP software developed software for large enterprises in the early periods. This situation has led to the adoption of the understanding that the information systems in question are only suitable for large enterprises. Due to the fact that the size of ERP software is quite large and comprehensive and very high costs are mentioned, SMEs have inevitably stayed away

from these applications. However, software companies that reached the saturation point in terms of large enterprises had to turn to the SME market, which constitutes the majority of enterprises in all countries of the world. In addition, all kinds of information system requirements of SME companies have started to increase and they have started to tend to benefit from ERP software. Therefore, nowadays, it is discussed how the application of these systems to SMEs can be done more successfully, rather than whether ERP systems are suitable for SMEs.

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