

Chapter 2

Quality and Effectiveness of ERP Software: Data Mining Perspective

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ABSTRACT

Over time, the adoption of ERP systems has been wide across many small, medium, and large organizations. An ERP system is supposed to inform the strategic decision making of the organization; therefore, the information drawn from the ERP system is as important as the data stored in it. Poor data quality affects the quality information in it. Data mining is used to discover trends and patterns of an organization. This chapter looks into the way of integrating these data mining into an ERP system. This is conceptualized in three crucial views namely the outer, inner, and the knowledge discovery view. The outer view comprises of the collection of various entry points, the inner view contains the data repository, and the knowledge discovery view offers the data mining component. Since the focus is data mining, the two strategies of supervised and unsupervised are discussed. The chapter then concludes by presenting the probable problems within which each of these two strategies (classification and clustering) can be put into place within the mining process of an ERP system.

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OBJECTIVES

At the end of this chapter, the reader is expected to;

1. Explain the value and place of data in an ERP system
2. Describe the metrics of data quality desirable in an ERP system
3. Explain the importance of data quality in ensuring the quality and effectiveness of an ERP System
4. Understand the various ways in which data mining can be integrated into an ERP System
5. Understand the different approaches to extract information from the data collected in an ERP system

INTRODUCTION

Enterprise Resource Planning (ERP) is a software which an organization uses to integrate all its data and processes into one single system. This has several implications. Since all the data is centralized, it is much easier to draw data insights from multiple business processes at once. Similarly, new mechanisms are required to analyze and understand the data in order to draw some intelligence from them. Given their myriad advantages, ERP adoption rates have been constantly on the increase since their inception. Even though they were initially viewed as majorly applicable in only large organizations; the narrative has since changed and their adoption has been witnessed in both small and medium organizations including learning institutions, non-governmental organizations and even health facilities. This in effect has proliferated the demand for ERP systems across the various domains in which they are expected to operate while meeting their anticipated expectations. Whereas it is greatly acceptable and desirable for an organization to streamline information flow and control, reduce labor and operations costs, and enhance efficiency; the success of an ERP system is greatly reliant on the quality of its data and its interaction with the various organization's data points.

Like any other software system, an ERP will automatically fall victim to the computer adage of “Garbage in Garbage Out”. This is so because, in its design and implementation, an ERP software is typically an integrated collection of applications that collect, process, store, manage and interpret data from multiple points spread across the organization. This data is centrally stored in a database or a repository from which each of the business applications draws its lifeline. Consequently, in its salient nature, the effectiveness of an ERP system can greatly be measured by the

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