

# Requirements Engineering for Data Warehouses

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**Abstract.** Data Warehouses (DWs) aim at supporting the decision-making process of an organization. In the Requirements Engineering (RE) domain, several methods were proposed for the development of DWs, most of them based on the Goal-Oriented Requirements Engineering (GORE) approach. However, there is not yet a comprehensive and unified perspective of the various methods proposed. In this paper, a coherent view of the GORE approach for the development of DWs is presented, by classifying existing methods according to the decision-making process, integrating them together, and linking modeling and analysis techniques throughout the overall process. The result of our study is an integrated GORE-based method for the development of DWs. We illustrate the method with a concrete example from the health care sector.

## 1 Introduction

Business Intelligence (BI) systems deliver the capability of data analysis in order to contribute to the decision-making process. A Data warehouse (DW) is a fundamental component of BI systems. A DW aggregates data from different data sources and specifically structures them to be used in BI systems. To develop a transaction-oriented system, we often need to take into account the requirements of how to perform automatically the repetitive operations of an organisation. However, the analytical requirements supporting the decision-making process in an organisation need to be captured in order to develop a DW. Such requirements are not easy to elicit and specify, so that DWs are sometimes developed based on an incomplete and inconsistent set of requirements, causing many of BI projects to fail. Therefore, the success of the system under the development can be strongly affected by Requirements Engineering (RE) (Prakash and Gosain, 2008). RE is defined as the process of discovering the needs of involved

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