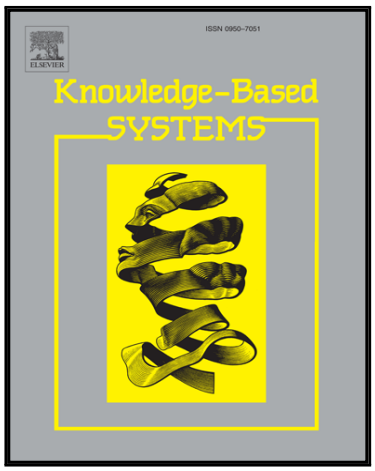

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Statistics-based CRM approach via time series segmenting RFM on large scale data

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Abstract

Conventional customer relationship management (CRM) is typically based on RFM model, whose parameters are the recency, frequency and monetary aspects of target customers. The latest comprehensive analysis has enabled CRM to present parameters with time series. For example, researchers can account for changing trends based on an RFM model for flexible marketing strategies. Such changes might inspire telecommunication service scenarios that user value relies on long-term performance. In this study, we propose a statistic-based approach to value latent users via time series segmenting time interval of RFM in large scale data set. Apart from utilizing in Spark platform, we integrate multiple corresponding analysis (MCA) to regularize clustering results by the RFM model and extend these approaches to multiple levels. A comprehensive set of experiments, revealed interesting observations regarding the coexistence of time interval and RFM model. First, the clustering method along time interval in three dimensions of the RFM model outperforms the method along the three dimensions in each interval.Subsequently, the cooperation of RFM and MCA provides a convenient methodology for exploring CRM in large–scale data.Therefore, the RFM model with time intervals integrated with MCA in CRM are essential.

Keywords: CRM, RFM, large–scale data, MCA, time interval

1. Introduction

The main task of customer relationship management (CRM) is to value and retain users by exploring the potential relationships among users and deriving innate values of their own characteristics [1], because the characteristics interact with these relationships [2]. Characteristics are quantitative and qualitative ones; both are supposed to reflect different relationships [3]. Given the intense competition of telecommunication operators and rapid growth of telecom service data generated by smart phones, CRM for telecom service data has been a strategic initiative method for identifying high-net–worth clients and providing improved service [4].

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