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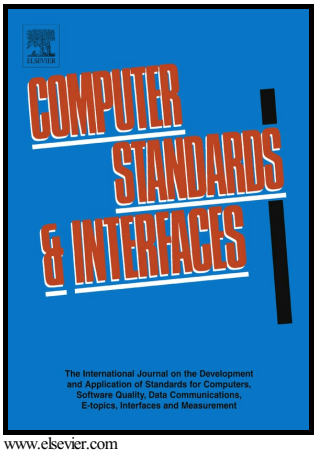

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Application of Data Mining techniques to identify relevant Key Performance Indicators

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Abstract

Currently dashboards are the preferred tool across organizations to monitor business performance. Dashboards are often composed of different data visualization techniques, amongst which are Key Performance Indicators (KPIs) which play a crucial role in quickly providing accurate information by comparing current performance against a target required to fulfil business objectives. However, KPIs are not always well known and sometimes it is difficult to find an appropriate KPI to associate with each business objective. In addition, data mining techniques are often used when forecasting trends and visualizing data correlations. In this paper we present a new approach to combining these two aspects in order to drive data mining techniques to obtain specific KPIs for business objectives in a semi-automated way. The main benefit of our approach is that organizations do not need to rely on existing KPI lists or test KPIs over a cycle as they can analyze their behavior using existing data. In order to show the applicability of our approach, we apply our proposal to the fields of Massive Open Online Courses (MOOCs) and Open Data extracted from the University of Alicante in order to identify the KPIs.

Keywords: KPIs, Data mining, big data, decision trees, Open Data

1. Introduction

Dashboards and Scorecards [15] allow decision makers to quickly assess the performance of an organization by visualizing aggregated data using different kinds of visualizations. This capability makes Dashboards the preferred tool across organizations for monitoring business performance. From among the different visualizations included within Dashboards, Key Performance Indicators (KPIs) [22] play a crucial role since they provide quick and precise information by comparing current performance against a target required to fulfil business objectives.

However, KPIs are not always well known and sometimes it is difficult to find an appropriate KPI to associate with each business objective [2]. In these cases,