KEY PERFORMANCE INDICATOR TOOL USING DATA MINING TECHNIQUES

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Previously on The Description Presentation

- What is a KPI?
- Why do we need a tool?
- Addressing the issue
  - Need for a Generic tool
  - Adaptation of CRISP-DM
- Key Results Indicator vs Key Performance Indicator
  - A speedometer is a KRI
  - KPIs can be Gear setting, Engine RPM, Fuel Economy, Engine Temperature, etc.
- Why use data mining?
MILESTONE 1 DELIVERABLES

- Begin tool development
- Write a formal Proposal
KEY PERFORMANCE INDICATOR TOOL USING DATA MINING TECHNIQUES

Rahul Yadav

What is this tool?

Key Performance Indicators are used by various organizations to monitor their performance and make informed decisions. Tools are preferred means to access this information by such organizations. With developments, the data generation has increased, and mining huge amounts of data has become increasingly difficult [1]. The use of certain data mining methodologies like CRISP-DM has increased significantly as well. However, there's not enough information about how these methodologies are used or adapted by organizations [2]. Understanding the issues related to these methodologies while being used in a software and adapting as per the need is an important part for developing any tool for a company. The tool also needs to be generic in a way that it is suitable for majority of the organizations without having the need to customize and use as is.

We need KPIs in order to measure the business impact and make sure that the client/user needs are met. They can also be used to understand the underlying patterns and mine what's important within the data. The crucial part of this process is defining the right KPIs. This means selecting some business objectives which hold important roles in the operation. However, it is not easy as it sounds and not all KPIs fulfill the business objective requirements. This leads to us performing additional analysis on data and hence, data mining comes into picture. With the introduction of using data mining techniques in defining and developing KPIs, the KPIs will never go obsolete and will always remain relevant.

I propose to develop an interactive tool that will let the users upload raw data and visualize the KPIs. I will use the CRISP-DM methodology for this project. The tool will use data mining techniques to perform analysis on the data. The tool will generate the results and display it on the interface by using user interactive controls. Once the results are generated, the user will easily be able to understand the data. The user does not need to have the knowledge of data mining to use the tool.

The hypothesis of this project is that we can develop a tool that visualizes key performance indicators, forecasts by using data mining. We can build a user interactive tool using popular languages like C#, Java, etc. rather than languages like Python or R which are heavily used for Data Science. We will address two issues. First, the tool needs to be suitable enough for its use case. It should not become obsolete with the development in the field and continue to give improved results. Second, we need to address the gap between data science methodologies and its usage in software development. To support this,

Tool Progress

- ASP.NET MVC Technology
- ASP.NET CORE Framework
Seoul Bike Sharing Demand Data Set

- Maintain a stable supply of rental bikes
- Problem Statement?
- # Attributes: 14
- # Records: 8760

Database Setup

- SQL Server
- SQL Server Management Studio
Proposal Progress

- 70% Complete
- Expected date of completion 09/18/2020
- What's remaining?
NEXT STEPS

- Data understanding and cleaning
- Research about ML Libraries in .NET
- Begin Model Development
- Define KPIs for the Data