Data Visualization for Micro and Medium Enterprises

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Abstract: In today's world of advanced technologies, the MSME industries are facing serious grave problems related to analytics. These industries generate enceinte volumes of data on a periodical basis that can help them to understand their business insights. On account of deficiency of capital support these manufactures cannot get approach to visualization tools such as Tableau, Power BI, etc. This paper confronts a very simple, cheap and holistic approach for such industries which can use the power of their operational databases and can draw rich and valuable insights from it. This will ultimately help these firms to gather key factors needed for their growth.

Key-Words: Data Mining, Visualization, MSME, Data Analytics, Regression, PowerBI

1 Introduction

Data visualization or is considered by various disciplined branches as a modern means of graphical communication. It contains the formation and analysis of the visual data, which means that the characteristics that have been educed in some preferred form, which contains attributes and variables for the insights of information [5]. The primary objective of data apparition is to convey those insights noticeably and in actual fact with the aid of statistics, data modeling and information graphics. Statistical insights can be arranged by means of scattered plots, or histograms, to inventively converse the results. Effective visualization will help the user to analyze and interpret the data. It will make intricate data more reachable, comprehensible and serviceable [7]. The user can have some exploratory tasks, such as to make comparisons or analyzing the perceptive validity of the data and the proposed principle of the result obtained. Rows and Column designs are more often used where the analyst will try to look up for a comprehensive dimension, whereas various charts are designed to show equivalence or bonding in the data for single or multiple variables.

2 Problem Formulation

Let us try to see and understand some of the data visualization tools that are prevalent within the industry and how they tend to prove inefficient for this present age of data analytics for the Micro and Medium Enterprises.

2.1 Weka Tool

Weka contains a compilation of data visualization tools and techniques for data investigation and predictive modelling, which includes an easy user friendly visual user interaction for easy admittance to these functions [8]. Weka provides support for several criterion based data mining analysis which includes data pre-processing, data clustering, data classification, data regression, data virtualization and feature extraction.

2.2 RapidMiner

RapidMiner works as a data analytics software application that provides the user data mining and also machine learning algorithms including: loading of the data and its transformation, data cleaning and data visualization, predictive analysis and statistical modelling of the data, data evaluation, and data deployment which gives the user ease of access [7]. RapidMiner has been implemented with the Java language.

3 Problem Solution

The above problems had been identified by various data analytics companies and have found and developed various tools for the MSME and other such enterprises which can work very effectively. The working costs with such data analytics applications are also very minimal and these MSME may not get worried about the expenditure for their data analysis. This paper mentions some of the tools that are easily available for the data analytics and

which can act as a great source of knowledge repository for such organizations.

3.1 Microsoft Power BI

Microsoft Power BI is an integration of various data analysis tools and techniques that helps any sort of organization to find and build insights from their data [1]. It produces beautiful reports, and then presents those reports for the enterprise to guzzle on the web platform and across multiple devices. Any user can create personalized dashboards with a distinctive and an elaborate view of the business and create a balance within the enterprise, with good governance and built-in security [2]. Power BI user interface is shown in Figure 1.
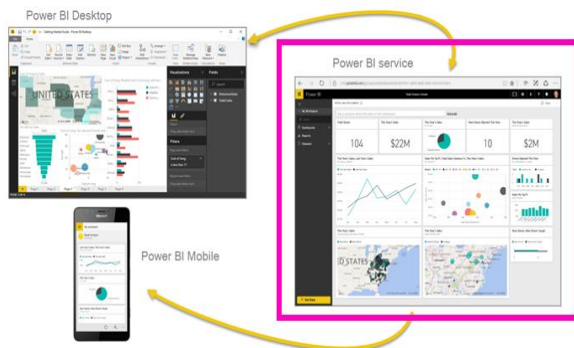

Figure 1: Power BI User Interface

3.2 FusionCharts

FusionCharts has an assortment of more than 90 charts and over 960 maps that can dole out the full listing of the needs of data analysts and trained data science experts [3]. With its hold going all over way back to the legacy IE6, browser compatibility does not seems to be an issue. FusionCharts is device agnostic and works perfectly fine with both JSON and XML data formats. Here is an example of its data visualization potentialities [4]. While FusionCharts is to some extent costlier as equated to other tools, although it lets you examine all the charts free of charge before the user decides to purchase it. Below Figure 2 shows an example of composition of internet traffic in Europe.
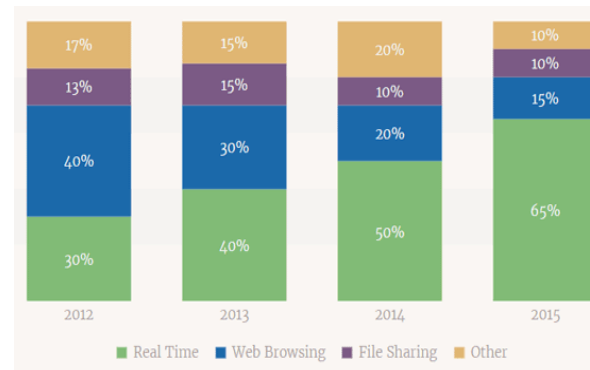

Figure 2: Fusion Charts User Interface

4 Conclusion

This paper analysis the traditional data visualization tools that are available in the industry but these tools are not suitable for micro and mini enterprises due to some constraints like pricing policies, lack of specialized workforce etc. This paper also presents some of the new data visualization paraphernalia that enable the MSME to work efficiently with less capital investment on data visualization due to deficiency of funding. To conclude with the data visualization market is evolving and this paper will surely help the micro and mini enterprises to decide and implement the use of various data visualization paraphernalia that best suits their requests.

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