

# Chapter 60

## Web 2.0 Mash-Up System for Real Time Data Visualisation and Analysis Using OSS

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### ABSTRACT

*The arrival of E-commerce systems has contributed a lot to the economy and also played a vital role in collecting a huge amount of transactional data in the form of online orders and web enquiries, with such a huge volume of data it is getting difficult day by day to analyse business and consumer behaviour. There is a greater need for business analytical tools to help decision makers understand data properly - and understanding data will lead to amazing things such as hidden trends, effective resource utilisation, decision making ability and understanding business and its core values.*

### 1. INTRODUCTION

Organizations which can tap into and rapidly clout the cumulative creativity of their staff and users have greater potential to rattle the status quo and plunge the competition. In fact the same practice of initial adaptation of web 2.0 and business analytics technologies by leading organisations, have no doubt made them front runners in their industries.

Business analytics (Vera-Baguero, Colomo-Palacios & Molly, 2013) is a critical science to understand transactional data properly. Business managers don't always get the right information since most of the reporting is in tabular form or static visualisation, which again leads to incomplete information and

DOI: 10.4018/978-1-5225-3422-8.ch060

business managers have to rely on guesses(trial and error) rather than well calculated discussion. This research is focused on analysis part of analytical process and outcome of the tools will help decision makers to execute their plans to 'win and compete' in enterprise environment.

Business analytics is comprised of solutions used to build analysis models and simulations to create scenarios, understand realities and predict future states (LaValle et al, 2013). Business analytics is the process of data execution to analyse facts and figures in more detail through information visualisation and graphical representation of data to understand and help in business execution and decision making.

## **1.1 Information Visualisation**

Information visualisation is an act in which an individual establishes a strong connection between an internal construct and something to which access is gained through the senses. Information visualisation has addressed many of data analysis issues but the current visualisation tools either focus on one dimensional data or they are not always well coordinated with multi-attribute data or business transactions. Research like multiple coordinated visualisation (Keim et al, 2001), pixel bar charts visualisation and value- cell visualisation (Keim et al, 2007) and multi-coordinated tools (Robert, 2007) greatly contributed to understanding data in-depth and also through various aspects.

Primary focused in any business analytical tools or in information visualisation is on data. Simple visualisation models as shown in Figure 3 are basic visualisation of data included with software packages, which serves basic data analysis needs. Complex visualisation models are out-come of research mostly at Ph.D level, these models provide in-depth analysis but are very hard to practiced in enterprise and in a real time data environment.

We think that there is still a lot to be done in information visualisation, therefore we propose an easy to 'use and integrate' visualisation model - which will focus on non-aggregated, multi-attribute, multi-dimensional and multi-coordinated visualisation which is a tremendous task and very fresh approach in information visualisation, because the greatest contribution of information visualisation tools are to make it possible for the decision makers to identify the expected and discover the unexpected, which we believe could be achieved through our proposed visualisation model.

## **2. AIMS AND OBJECTIVES**

The aim of this research is to develop an information visualisation framework through data-mashups using web 2.0 technologies, which will represent highly complex data in visualised form. The framework is targeted to reduce technical requirements of system usage, as the indented system is to provide customised data representation for multiple die-missions data usage. Decision making within the system is accomplished using built-in a pre-developed logical set of rules based on the data types and their sources. The architecture design will be so versatile that each data element could be utilised in the visualisation process upon request from the user for analysis and reporting, some of the key aims and objectives are highlighted below.

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