Chapter 6

Appraisal of Transactional Data Through Visualisation for SMEs

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**ABSTRACT**

E-commerce has proven to play a pivotal role in the economy growth. One of the key e-commerce functions is the collection of the vast amount of useful transactional data to help businesses in understanding their consumers’ behaviour. With the rapid and large volume of data collected, it is posing a great challenge for businesses to analyse the data on a day-to-day basis. The key issue is not in the generation or collection of data; it is in the manipulation of the collected data to churn out new and insightful information. Information visualisation is an effective tool in converting data into interactive interfaces to unearth hidden trends. It provides a platform to explore the data in a more rapid and intuitive approach. There are several existing techniques to analyse multidimensional data. This chapter seeks to introduce a comprehensive and robust visualisation model and framework for adoption. The visualisation model consists of four major layers, which include acquisition and data analysis, data representation, user and computer interaction, and result storage.
INTRODUCTION

The cloud based systems are getting popularity amongst individual, institutes and small and medium size businesses across the globe - exploiting the Web 2.0 true potential. Web 2.0 where the focus is on the content which is mainly produced or created by its users (Graham & Caverlee, 2008).

Similarly, data mashup systems are getting the same reception from various small and medium size businesses on the World Wide Web. The industry leading companies such Google, Yahoo, Microsoft are providing free cloud based services, such emails, mapping tools and cloud based storage (Yu, Benatallah, Casati, & Daniel, 2008). A mashup application can be characterised as a lightweight (simpler and faster) and a tactical (competitive activities) presentation layer that uses the web platform – Web-Oriented Architecture (WOA) (Ketter, Banjanin, Guikers, & Kayser, 2009) - in order to integrate multiple sourced applications into one web-based offering.

Enterprise 2.0 contributes greatly to generate, coordinate, collaborate and communicate content, applications, and data in business and enterprise environment (McAfee, 2009). Enterprises such as small and medium size businesses require tools which could address its core values (success and failure prediction), but also assist in decision making and providing extensive research based solutions from the existing data streams which will lead to effective resource utilisation and not much has been done to answer these burning questions.

However, information visualisation and data analysis is a field which holds the key value in taking any business to the next level (expected and unexpected outcomes readiness). A business could do well and produce some quality figures in sales, but after all, it’s about the techniques, how sustainable the practice is, and what further could be learned.

Information visualisation is converting data into interactive interfaces in order to easily understand problems, hidden patterns, scope and explore data with a more rapid and intuitive approach - usually abstract data are transformed into visual images (Tufte, 1997) to see the big picture at a glance. In addressing data problems, a number of techniques, (Pillat & Freitas, 2006), (Eick, 2000), (Stolte, Tang, & Hanrahan, 2002) have been invented to explore data for trends, patterns and to analyse multidimensional data. The famous among these techniques are pixel-oriented visualisation (Keim, Hao, Ladisch, Hsu, & Dayal, 2001), prisma (Godinho et al., 2007), pixel bar charts (Keim, Hao, Dayal, & Hsu, 2002) snap-together (North & Shneiderman, 2000) - but the stand out theoretical model which was introduced by Fry (Fry, 2004) is a complete model for analysing data, however the procedure is very complex and almost impossible without help from specialists on a regular basis to process and analyse data to generate business reports.
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