Chapter 111
Analysis of Grievances in the Banking Sector through Big Data

Arushi Jain
Ambedkar Institute of Advanced Communication Technology and Research, India

Vishal Bhatnagar
Ambedkar Institute of Advanced Communication Technologies and Research, India

ABSTRACT

Banking sector is one of the sectors which face the problem because of the huge amounts of data coming in at a rapid pace. In this paper the authors analyzed grievances in the banking sector through big data. The customers may have a wide variety of complaints and suggestions regarding the working style and other procedural methods which are followed by the banks for effective customer dealing and satisfaction. Quick rectification of complaints and working on customer suggestions can help banks gain a good name in the market, win customers' loyalties and attract new customers. To accomplish this gargantuan task, banks must maintain a complaints database which stores the information on customer complaints across the above mentioned categories along with the response to the complaints by the relevant employees which is collected over a period of time can reveal crucial and critical information for effective CRM in the organizations. In this paper, authors had analyzed the grievances to uncover the valuable suggestions of the customer to provide them a higher level of satisfaction

INTRODUCTION

In recent years, there is a proliferation in the amount of data generated. Voluminous complex data is generated from various sources that cannot be processed by traditional tools (Azar & Hassanien, 2014; Hassanien et al., 2015). Big Data is a current and hot topic of IT industry. Harnessing such huge amount of data is a tough job and thus it requires business intelligence (BI) or analytics. Business Intelligence is required to explore new knowledge, relationships and patterns among different data elements (Labrinidis and Jagadish 2012). The banks have to make perpetual customer centric decisions and make sure they

are well informed about all the risks and stakes. One of the best ways to reach out to the customers is to constantly communicate with them. This is obviously difficult as the banks have thousands of branches and more than a million customers in countries which are populous and have a huge number of customers. Therefore, the use of Big Data is really important here. By asking the customers for feedback about products and services, banks can come to know about the customer's needs and preferences. In this paper, we focused on analyzing all the complaints from the customers that can help banks make well informed decisions in optimizing the services and business process along with region or time of the year specific schemes and offers which may attract more customers.

Big Data is diverse in nature; it contains different data types delivered at different speeds in the numerous forms (Chen et al., 2014). Big Data is not just about being big in size. It has various characteristics given by IBM that are worldwide renowned as 3 Vs of Big Data. These 3 attributes have cleared the myth that size do matters but variety and velocity too are important in the context of big data:

1. **Volume:** Size, (web log files, audio, video, text files, records etc.);
2. **Variety:** Data types (Structured, Unstructured, Semi structured, and mix of three);
3. **Velocity:** Arriving of data, speed (Batch, Real time, Streams).

Hadoop is an excellent and robust analytics platform for Big Data which can process huge data sets fastly and provides scalability. It can manage all aspects of Big Data such as volume, velocity and variety by storing and processing the data over the cluster of nodes. MapReduce **i**s a programming paradigm which can do parallel processing on nodes in a cluster. It takes input and gives the output in form of key-value pairs. MapReduce is able to achieve all this by simply dividing each problem into two broad phases, the map phase and the reduce phase (Al-Jarrah et al., 2015). Pig is a Hadoop project which was initially developed by Yahoo! and is now open source and free to use under Apache. Its scripting language is called as Pig Latin (Chen et al, 2014). The script consists of data flow instructions which are converted to MapReduce instructions by its framework and used to process data.

RELATED RESEARCH WORK AND MOTIVATION

To manage the growing demands, there is a need to increase the capacity and performance of tools and methods employed for analysis of data. Chen et al. (2014), in their work "Big data: A survey" focused on big data and reviewed related technologies and examined the application of big data in various fiels. Al-Jarrah et al. (2015), in their work "Efficient Machine Learning for Big Data: A Review" reviewed the data modeling in large scale data intensive field relating to model efficiency and new algorithm approaches. Hoffmann and Birnbrich (2012) proposed a conceptual as well as empirical link between retail bank activities to protect their customers from third party fraud in "The impact of fraud prevention on bank-customer relationships: An empirical investigation in retail banking". Srivastava and Gopalkrishnan (2015) revealed some of the best techniques which are used by the banks across the globe and can be used by the Indian banks to enhance their services offerings to the customers in "Impact of Big Data Analytics on Banking Sector: Learning for Indian Banks". Azar and Hassanien (2014) presented linguistic hedges neuro-fuzzy classifier with selected features (LHNFCSF) for dimensionality reduction, feature selection

Related Content

Design Challenges of Cloud Computing

Mouna Jouiniand Latifa Ben Arfa Rabai (2019). *Web Services: Concepts, Methodologies, Tools, and Applications (pp. 351-376).*

www.irma-international.org/chapter/design-challenges-of-cloud-computing/217839

DiALog: A Distributed Model for Capturing Provenance and Auditing Information

Christoph Ringelsteinand Steffen Staab (2010). *International Journal of Web Services Research (pp. 1-20).*

www.irma-international.org/article/dialog-distributed-model-capturing-provenance/42107

Workflow Discovery: Requirements from E-Science and a Graph-Based Solution

Antoon Goderis, Peter Liand Carole Goble (2010). *Web Services Research for Emerging Applications: Discoveries and Trends (pp. 465-491).*

www.irma-international.org/chapter/workflow-discovery-requirements-science-graph/41534

Specifying and Composing Web Services with an Environment Ontology-Based Approach

Puwei Wang, Zhi Jin, Lin Liuand Budan Wu (2010). *International Journal of Web Services Research (pp. 73-92).*

www.irma-international.org/article/specifying-composing-web-services-environment/45177

Analyzing Communities of Web Services Using Incentives

Babak Khosravifar, Jamal Bentahar, Ahmad Moazinand Philippe Thiran (2012). *Web Service Composition and New Frameworks in Designing Semantics: Innovations (pp. 330-351).*

www.irma-international.org/chapter/analyzing-communities-web-services-using/66966