IBM NALAIYA THIRAN PROJECT

Global Sales Data Analytics

THIAGARAJAR COLLEGE OF ENGINEERING

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ABSTRACT

Data is being generated very rapidly due to an increase in data generation in day-to-day life. Huge amount of data gets accumulated from different organizations that is difficult to analyze. Processing, analyzing and communicating this data is a challenge. Online shopping websites get flooded with voluminous amounts of sales data every day. Analyzing and visualizing this data for information retrieval is a tough task to carry on. Therefore, a system is required which will effectively analyze and visualize data. This paper focuses on a system which will visualize sales data which will help users in applying intelligence in business, revenue generation, and decision making, managing business operation and tracking progress of tasks. By using IBM Cognos Analytics and the global sales data we are going to identify patterns, relationships, connections using dataset, exploring relationship in the data, and visualizing the data and it will provide a conjecture and guesswork of events and will help to find answers that can be sufficiently disguised for a particular problem to come up with an optimal conclusion and a convincing solution.

Literature Survey

1. Walmart's Sales Data Analysis - A Big Data Analytics Perspective

Manpreet singh states that,Information technology in this 21st century is reaching the skies with large-scale data to be processed and studied to make sense of data where the traditional approach is no more effective. Now, retailers need a 360-degree view of their consumers, without which, they can miss the competitive edge of the market. Retailers have to create effective promotions and offers to meet its sales and marketing goals, otherwise they will forgo the major opportunities that the current market offers. Many times it is hard for the retailers to comprehend the market condition since their retail stores are at various geographical locations. Big Data application enables these retail organizations to use prior year’s data to better forecast and predict the coming year’s sales. It also enables retailers with valuable and analytical insights, especially determining customers with desired products at desired time in a particular store at different geographical locations. In this paper, we analyzed the data sets of the world's largest retailers, Walmart Store to determine the business drivers and predict which departments are affected by the different scenarios (such as temperature, fuel price and holidays) and their impact on sales at stores’ of different locations. We have made use of Scala and Python API of the Spark framework to gain new insights into the consumer behaviors and comprehend Walmart’s marketing efforts and their data-driven strategies through visual representation of the analyzed data.

2. Impact of big data analytics on sales performance in pharmaceutical organizations: The role of customer relationship management capabilities

Muhammad Shahbaz briefs about CRM,which is a cross-functional mechanism by which organizations create, maintain, and strengthen a long-lasting relationship with the customer. CRM capabilities strategically link information technology and marketing strategies for long-term customer relationships .The success of CRM capabilities depends upon the data and analytics that are being used. CRM is an essential part of the success of every organization and has many capabilities, including customer knowledge capabilities, information infrastructure capabilities, customer strategy capabilities and structure capabilities. The key elements that enhance CRM capabilities are data collection and analytics systems .In this study, they believed that BDA will increase CRM capabilities.

3. Fostering B2B sales with customer big data analytics

Heli Hallikainen questions whether a firm's marketing efforts are directed effectively toward the right customers remains one of the main difficulties for marketers. With customer big data analytics, marketers can better understand the heterogeneity in their customer base and respond to specific customer needs, enabling a more accurate targeting of marketing activities and hence better firm performance. In line with Wamba et al. (2017), this study suggests that the use of customer big data analytics can improve firm performance. The study operationalizes firm performance through two constructs: 1) customer relationship performance, capturing non-monetary outcomes such as achievement of customer satisfaction, and 2) sales growth, describing a firm's financial performance and achievement of monetary objectives.

4. Data analysis and visualization of sales data.

Kiran Singh aims to communicate data effectively and clearly to the user through graphical representation via data visualization. Effective and efficient data visualization is the key part of the discovery process. It is the intermediate between the human intuition and quantitative context of the data, thus an essential component of the scientific path from data into knowledge and understanding. It is a powerful new technology having a great potential to help researchers as well as companies for building revenue decisions. Extracting relevant information and useful knowledge from large mixed-mode data spaces is complex by various challenging marks such as the limitations of data storage formats, a deficit of expert prior knowledge for real-world databases, the difficulty of visualizing the data using inefficient data mining tools, etc. Data mining is a series of steps in the knowledge discovery process, consisting of the use of particular algorithms for generating patterns, as required by the real world.

Reference

1. Singh, Manpreet; Ghutla, Bhawick; Lilo Jnr, Reuben; Mohammed, Aesaan F S; Rashid, Mahmood A (2017). [IEEE 2017 4th Asia-Pacific World Congress on Computer Science and Engineering (APWC on CSE) - Mana Island, Fiji (2017.12.11-2017.12.13)] 2017 4th Asia-Pacific World Congress on Computer Science and Engineering (APWC on CSE) - Walmart's Sales Data Analysis - A Big Data Analytics Perspective. , (), 114–119. doi:10.1109/apwconcse.2017.00028
2. Shahbaz M, Gao C, Zhai L, Shahzad F, Luqman A, Zahid R. Impact of big data analytics on sales performance in pharmaceutical organizations: The role of customer relationship management capabilities. PLoS One. 2021 Apr 28;16(4):e0250229. doi: 10.1371/journal.pone.0250229. PMID: 33909667; PMCID: PMC8081224.
3. Heli Hallikainen Emma SavimäkiTommi Laukkanen. .,Fostering B2B sales with customer big data analytics
4. Singh, Kiran; Wajgi, Rakhi (2016). [IEEE 2016 World Conference on Futuristic Trends in Research and Innovation for Social Welfare (Startup Conclave) - Coimbatore, India (2016.2.29-2016.3.1)] 2016 World Conference on Futuristic Trends in Research and Innovation for Social Welfare (Startup Conclave) - Data analysis and visualization of sales data. , (), 1–6. doi:10.1109/STARTUP.2016.7583967