Thomas Huang

Storage Technologies – Big Data Management

Traditional database management systems cannot efficiently and effectively process the data that we collect at our hypermarket facilities. A Big Data and extreme information processing and management system (Big Data management) however, can handle the terabytes of data we collect from our customers on a daily basis. The McKinsey Global Institute estimates that retailers utilizing Big Data analytics to its fullest potential can increase operating margins by as much as 60%. As a player in the retail industry, which relies on large volume sales and miniscule margins, it is imperative that we take advantage of even marginal increases in profits. With Big Data management, we can extrapolate information from data previously deemed useless and leverage it to create powerful models to predict trends, behaviors, and markets.

Big Data refers to datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze. Big Data management allows companies to store, aggregate, and combines structured and unstructured datasets for deep analyses. Data that are organized and of the same format are considered structured and those that are unorganized and contain many different formats are considered unstructured. Structured datasets are required for traditional database analytics while Big Data analytics allows for unstructured analysis of datasets, such as images, videos, and sound to spot trends. While traditional data management and analytical techniques mine historical datasets to understand what has happened and answer why it happened, Big Data analytics sifts through large amounts of near real-time information for actionable insight. Big Data practices introduce the concept that all data can be integrated so that once obsolete data can be re-examined to find new opportunities. The near real-time information will allow the company to be more efficient and responsive to consumers and to make decisions in time to materially affect transactional events.

The ability to anticipate what consumers need before they realize that they need it is a distinguishing characteristic of a market leader. Big Data management allows us to detect and measure lost sales as well as helping us to better understand what caused the consumer to not make the purchase. By mapping a store’s foot traffic with Big Data, we can figure out what parts of stores customers prefer and what items they spend a lot of time perusing. This will result in a better understanding of how to determine store layout, product placement, pricing, and promotions. The use of Big Data technologies allows for analysis of changing data over time that reveals behavior and patterns that can help us predict sales. According to Forbes, ignoring Big Data would cost the company an average of $71.2 million a year, totaling $213.6 million over the next three years, which comes in stark contrast to the $13.4 million price tag of implementing a Big Data system. With Big Data, we will gain a competitive edge by making attractive offers to get a customer's business before they even realize they need our product.

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