

Impact of Real-Time Analytics On Strategic Decision-Making In Large Organizations

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Abstract:

Real-time data analysis (RTA) has had an impact on strategic decisions in large organizations worldwide. Multinational companies must deal with large datasets, which can become challenging; implementing RTA technology can help resolve this issue. This research incorporates the importance of RTA Technology, which needs to be evaluated for upscaling the productivity of multinational firms. Essential factors of RTA have been discussed throughout the research. The implementation of the RTA Tool can enhance customer engagement and improve operational excellence.

Keywords - Real Time Analytics, Operational Management, Big Data.

I. INTRODUCTION

Real-Time Analytics (RTA) refers to a combination of complex and critical processes that facilitate the evaluation of large and complex datasets with ease, enabling improved decision-making. These datasets are typically based on velocity, volume, and a variety of insights. This study aims to evaluate the understanding of the importance of RTA Big Data Analysis in business operations. RTA removes the traditional data analytics method by providing its high integrity of performance. The large organizations are rapidly incorporating such technology to scrutinize their extensive range of databases and make informed decisions for effective operational management.

II. LITERATURE REVIEW

RTA refers to the collection of a wide range of data from databases and analysing it properly to make rapid and accurate decisions for effective business operation management of an organization. As per the research of [2], the traditional data analysis methods can analyse a limited amount of data using a batch process.

According to [10], procrastination in analytical tasks and difficulties in scaling insights are the features of the traditional analysis process. It used to focus on historical data based on its previous performance. On the other hand, RTA focus on operational intelligence based on the current performance with stream processing. Big Data Analytics process with high scalability and immediate insights into data segregation. RTA can process a vast number of databases and deliver the required results instantly.

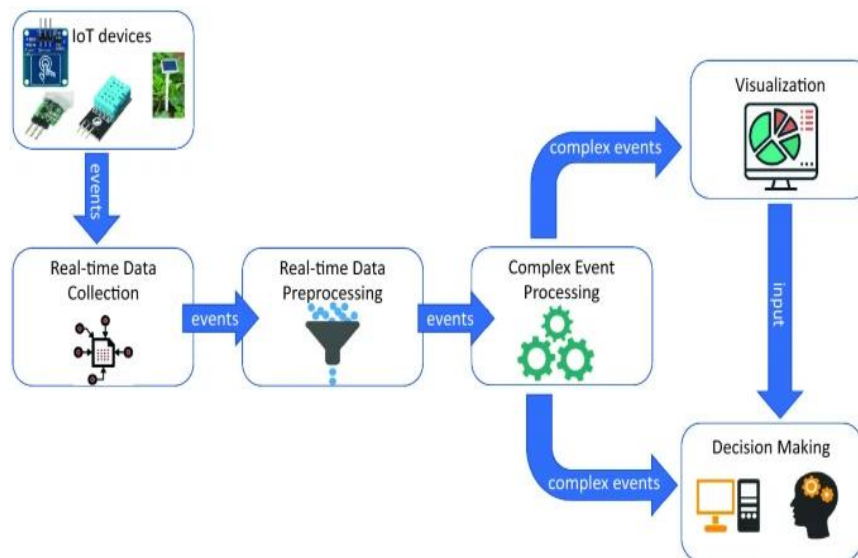


Fig. 1: Real-Time Analytics Process

The above picture illustrates the steps of real-time data processing, showing how the process circulates through IoT devices. Then, collection and processing help to simplify the complicated database for effective decision-making.

Real-time Big Data Analysis is essential in strategic business planning, particularly when analysing collected data. Incorporating Big Data technology, a company could gain its operational efficiency, optimize innovative business ideas, and gain a competitive advantage in the global market. As per the viewpoint of [1], a large organization needs to leverage real-time analytics for analysing both internal and external data to make effective decisions for developing a comprehensive understanding of the market situation, along with the process of its operational management. One of the significant advantages of real-time data analytics is enhancing the customer experience by evaluating personalized recommendation strategies, setting appropriate pricing, facilitating inventory navigation, and optimizing Supply Chain Management through the analysis of comprehensive data insights. These are the key elements for increasing customer experience and gaining business revenue. In this way, real-time Big Data Analysis has a profound impact on operational efficiency in large industries.

III. METHODOLOGY

The secondary data collection methods are considered suitable for this research approach. As this data collection process involves an existing database on the research topic, it enables the identification of patterns in the data [9]. Accordingly, research on the impact of real-time analysis on large industries needs to collect data from academic journals, industry reports from FY2020 to FY2025, and case studies up to FY2025. The secondary qualitative data collection process could help generate a comprehensive understanding of the upgradation of this technology, the depth of its effects on industry operations management, and the kind of changes that have been possible through the incorporation of RTA technology.

The theme of RTA's impact on industrial operating strategy could be portrayed through thematic analysis. This research needs to be flexible enough to analyse the database from various sources to develop an authentic conclusion. Collected data also needs to be recodified and appropriately refined to address the theme of the upgradation of RTA's impact on the large industries.

IV. DISCUSSION AND ANALYSIS

A. Organizational Agility

Real-time Big Data Analysis enables rapid decision-making by incorporating an accurate database [8]. Therefore, the operational management of big industries facilitates effective operational efficiency, a productive working process, and attracts more customers, along with their retention. This technology helps to leverage an effective risk management strategy through relevant data insight.

B. Performance & Innovation

Effective decision-making aptitude and management quality enhance employee performance [7]. The operating managers could become aware of the insights and outside requirements for business progression. Accordingly, management can make informed decisions to enhance performance through practical ideas. For instance, Tesla is developing an electric vehicle (EV) venture with a data-driven decision-making process. Analysis of market changes, customer preferences, and rapid experimentation helps to foster innovation among business operations to be competitive in the market.

C. Governance & Data Quality

Real-time data technology helps showcase effective rules and policies through the analysis of current performance data and market needs [6]. This technology also enables the identification of risk factors; consequently, the governing process becomes crucial for preventing risk and maintaining competitiveness.

D. Cultural & Human Factors

Real-time data technology optimized data-driven decision-making culture within a large organization by designing a proper quality system. RTA provides a conceptual framework for managing business operations. For instance, Amazon is completely running on the concept of a data-driven decision-making process. Human function in the context of business operations is mainly executing the outcomes of RTA.

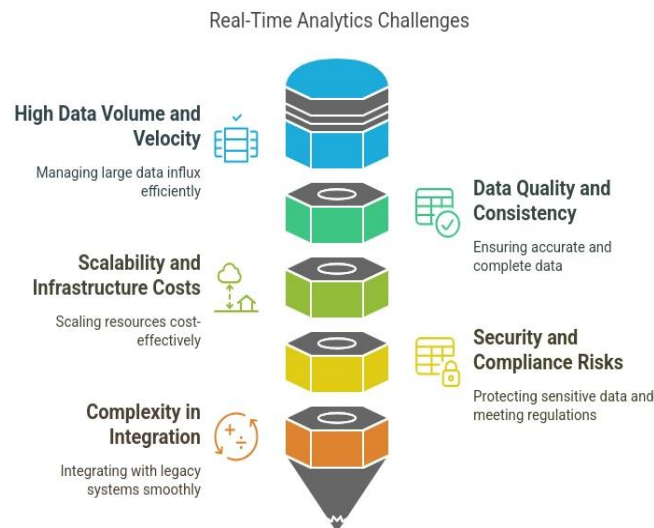


Fig. 2: Various Utilities of RTA in Business Operations

The above picture illustrates the functional diversity of RTA, underscoring the importance of this technology and its relevance in modern business operations.

V. RESULTS

A. Enhanced Strategic Agility

Real-time analysis technology enables the development of strategic efficiency through accurate and valid decision-making [3]. Large-scale multinational companies basically work with a large amount of data; therefore, it is challenging to evaluate effective decisions regarding business strategy. For instance, Google is working with a massive amount of information and data [4].

B. Improved Risk Mitigation

Real-time data analysis is crucial for optimizing a wide range of databases and analysing them in conjunction with a robust data security protocol [5]. Consequently, operational efficiency also develops simultaneously through accurate decision-making.

C. Challenges in Integration and Governance

Several segments of operational management require proper governance through policies, rules, and regulations. This strategy enables the implementation of innovative business ideas based on market predictions and customer preferences.

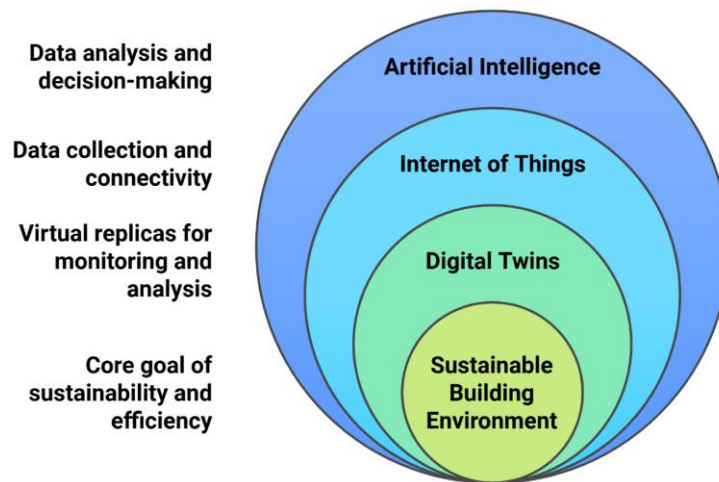


Fig. 3: Additional Technologies with Real-Time Data Analysis in the Upcoming Days

This picture illustrates the segmentation of the relevance of real-time Big Data technology in the upcoming days, where these tools can function collaboratively with other advanced digitization tools.

VI. CONCLUSION

Real-Time Big Data technology is the backbone of business operational management. This technology helps acquire essential insights to enhance productivity, operational excellence, and predict market risk. RTA also evaluates the proper strategy for risk prevention and effective governance in large-scale business practices. Incorporating a data-driven decision-making culture and analytical approaches into market decisions is the key function of this technology. Therefore, it is clear that Real-Time Big Data technology will become a primary digital tool for business operational management in the near future.

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