**Real- Time Operational Dashboards for Increased Efficiency in Supply Chain Management**

Research Proposal Presentation Transcript

*University of Essex online – Unit 10, Assignment 2*

**Introduction**

Hello and welcome. This presentation will be on “Real-time Operational Dashboards for Increased Efficiency in Supply Chain Management”.

This study aims to critically evaluate the role of RTOD in modern business operations, particularly within supply chain-related practices.

Additionally, this research will highlight real-world examples and academic insights in order to provide comprehensive analysis of the subject.

This study aims to cover the importance of RTOD, key literature, methodologies, and its potential challenges.

**Real-time operational dashboards (RTOD): A major contributing aspect for operational efficiency in Supply Chain Management.**

In order for sustaining growth and profitability, business must ensure operational efficiency at all times.

In this case, RTODs has the potential to transform the way businesses make decisions by providing real-time visibility into supply chain networks and processes (Transporeon, 2022).

Multiple literature has indicated that the three main factors for RTOD adoption includes visibility of the supply chain process, forecasting, and enhanced decision-making.

RTODs allows business to stay up to date with shipments, inventory levels and production in real-time reducing uncertainty and improving transparency.

Predictive modeling and advance analytics tools such as Tableau or PowerBI, for instance, allow supply chain managers to forecast demand fluctuations and optimize resources accordingly.

Finally, decision-making is another essential factor of RTODs. That is because the ability to process and visualize large quantities of datasets enables supply chain managers to make data driven decisions, improving response times and operational efficiency (Ivanov & Dolgui, 2020).

Despite the numerous benefits of RTODs, their implementation may encounter several challenges that can be related to data integration, work force adaptation, or even security concerns.

Therefore, this study also aims to address these challenges as well as bridge the gap between theoretical implementation frameworks and practical application.

This will enable business to gain evidence-based insights into RTOD’s benefits and Limitations.

That said, the core research question of this study is: “How does RTODs effect operational performance?”

This question will be guiding the exploration of key metrics such as efficiency, cost reduction, decision-making speed, and overall supply chain effectiveness.

**Aims & Objective**

The primary aim of this study is to investigate the impact of RTOD implementation tools and techniques on operational performance.

Therefore, there are 5 objectives that are critical to achieve this aim.

First, an evaluation of the role of RTOD in improving the decision-making process must be conducted. That is because its is critical to understand how real-time insights influence managerial actions and strategic outcomes.

Second, identifying the best practices for maximizing benefits of RTOD ensures that companies can define the optimal implementation strategy in order to harness RTOD’s full potential while minimizing operational risks.

Third, assessing how RTOD influences key performance indicators or (KPIs) such as inventory management, cost efficiency, and customer satisfaction. This provides measurable insights into RTOD’s direct impact on business efficiency.

Fourth, Analysing the challenges associated with real-world implementation of RTOD in supply chain management in order for business to devise effective strategies that mitigate potential disruptions.

Finally, Developing an RTOD system prototype and integrating it with supply chain network to test its impact on operational performance. This objective is essential in providing evidence on the feasibility and effectiveness of RTOD solutions.

**Key Literature**

Academic sources in this study are divided into two sections, studies that are relative to the industry, and sources that are related to implementation & digitization.

On one hand, several academic sources in supply chain management have examined the role of real-time data in supply chain process.

According to Gunasekaran et al. (2017), RTOD enhances supply chain agility by improving real-time decision-making and risk management strategies.

Similarly, Christopher (2016) highlights how real-time visibility enables businesses to respond to demand fluctuations more effectively, reducing lead times and minimizing costs.

However, studies such as **Ivanov, D., & Dolgui, A. (2020),** indicates some challenges related to improper implementation and highlights the need for identifying the right framework from implementation.

On the other hand, integration of RTODs with modern digital tools is a growing field of study, which is supplemental to this study in-order to identify implementation techniques.

Cloud computing, big data analytics, and business intelligence platforms such as Power BI, for instance, are instrumental in optimizing real-time data processing (Kamble et al., 2020).

Studies by Waller and Fawcett (2013) emphasize that companies that successfully integrate RTOD tools with their supply chain operations experience improved forecasting accuracy and reduced operational costs.

**Research Design Development**

This research will employ a mixed-methods approach in which qualitive analysis, quantitative analysis, development, and testing will be conducted.

The study will be initiated by performing a literature review on available resources related to RTOD impacts on supply chain management and implementation strategies.

Case studies and expert interviews with leading supply chain companies and professionals will be conducted to understand best practices and challenges as well as gain insights into real-world applications of RTOD.

In addition, surveys will be conducted among supply chain professionals to assess their perspectives on RTOD implementation.

It is also crucial to analyse key performance metrics (e.g., order fulfillment rates, cost savings, and decision-making speed) from secondary datasets.

During development, several studies will be assessed to identify applicable implementation frameworks of RTODs that can assist the development phase.

Hence, the effectiveness of different RTOD tools (e.g., Power BI, Tableau, and SAP HANA) will be compared.

This will allow for an RTOD system prototype to be implemented among supply chain networks and tested for its impact on operational performance.

Finally, an evaluation of the entire process will be conducted and recorded in the final study.

**Ethical Consideration**

There are several ethical risks that are associated with this research in which will be considered during the development of this study.

Ensuring compliance with data protection regulations such as GDPR when collecting survey responses and secondary data is vital during data collection phase (Zhou et al., 2021).

Also, maintaining anonymity of survey participants and interviewees during the development of case studies.

Ensuring a balanced representation of participants across different industries and roles.

That said, the research may be influenced by the specific companies selected for case studies, leading to skewed conclusions.

Security risks should also be considered as RTOD implementation can expose organizations to cybersecurity threats If not properly managed.

**Artifacts**

The two main artifacts of this study are RTOD system Prototype, and RTOD implementation Framework.

A prototype RTOD system will be developed and integrated into a test supply chain network.

The prototype will provide real-time visibility into inventory levels, shipment tracking, and production efficiency.

Performance indicators such as lead time, cost savings, and forecasting accuracy will be assessed to determine the impact of RTOD implementation.

In other words, the system prototype will by integrate across all supply chain related network such as, factories, warehouse, and transportation.

Data will then be collected and processed into a centralized system that will feed real-time network activates to the RTOD.

This in turn, will allow mangers to extract insights from the current state of the network enabling them to make decisions accordingly.

A structured framework will be designed to guide businesses in effectively integrating RTOD solutions within their supply chain operations.

The framework will address data collection, processing methodologies, system interoperability, and security best practices.

Additionally, this system will utilize real-time data analytics tools such as Power BI, Tableau, and SAP HANA to visualize and analyse operational performance metrics.

Case studies of leading supply chain companies such as Amazon, Walmart, and Maersk will be used to validate the framework’s applicability.

**Research & RTOD Development Time Line.**

This study will be conducted over the course of 6 month.

That said, the following activities will follow a structured timeline as shown in this slide.

Data collection will take place during the first 4 months of the study, which includes the initial literature review, case studies, expert surveys and the analysis of vital KPIs to the industry.

Following this, the selection of applicable framework and platform will take place in order to identify the best tools for RTOD development.

This will provide insights on the best systems for implementation based on the supply chain network.

RTOD prototype implementation and integration also takes place during the 3rd month, as data needs to be collected from supply chain networks such as warehouse and production sites.

An evaluation of operational performance post implementation will take place during the last 2 months of the study.

Finally, Insights will be actively recorded during the study in which the final research report will be concluded by the end of the 6 months development period.

**Conclusion**

In summary, RTOD has the potential to revolutionize operational performance by enhancing decision-making, reducing costs, and improving efficiency.

However, businesses must navigate significant challenges such as data security, integration complexities, and system reliability.

Therefore, this research will contribute by developing a practical RTOD system and an implementation framework that can guide businesses in leveraging real-time data for optimized performance and allow them to gain insights onto the benefits of RTODs.

**References.**

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