

Predictive Analytics: A Crucial Factor of Competitive Intelligence in Logistic Management

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ABSTRACT

In Today's digitalized society, the Predictive Analysis plays a crucial and vital role in performing competitive Intelligence to ensure success of a company's activities, like Marketing, Personnel Management, Production, Logistic Management etc. The Transportation and Logistics industry remains under constant pressure to adopt innovative ways to provide high quality services to the companies and consumers. Due to the lack of knowledge in the areas of topography, infrastructure facilities, warehousing and geographic limitations affects the growth of logistics industry. Therefore, this paper highlights the use of predictive analytics to ensure competitive advantage of market potential so as to sustain in this competitive world and ensuring a comprehensive Supply Chain Management and Logistic Management.

PREDICTIVE ANALYTICS

1.1 Meaning

The Predictive Analytics is the process of extracting information from existing data in order to determine the patterns and to predict the trends and future outcomes. The predictive analytics considers the risk assessment and helps to predict the future with an acceptable level of reliability. The Predictive models are used to analyze current data and historical facts to better understand customers, products and partners and to identify potential risks and opportunities for a company.

Predictive analytics is being functional towards all facets of business operations and processes to anticipate events, avoid risks and create solutions. By forecasting future supply chain and logistical events, companies can gain a competitive advantage. It also helps to prevent monetary loss due to inaccurate stocking, and mismanagement of goods, deliveries, in time.

According to Forbes, "establishing efficiency in the supply chain management is crucial". Inventory management, picking, packing, and shipping requires intensive processes and failing which, it has its own impact on business.¹

2.1 Competitive Intelligence

The Gathering, analyzing and distributing intelligence about products, customers, competitors, enemy states and any aspect of the environment needed to support executives, Military in strategic decision making for any organization is Competitive Intelligenceⁱⁱ. It is the act of collecting and analyzing actionable information about *competitors*. It's aim is to learn everything to know about the *competitive* environment outside the normal environment to make the best possible decisions.

The goals of competitive intelligence include discriminating potential Risks and Opportunities and enabling faster reaction to competitors' actions and events. Competitive Intelligence (CI) is gathering of publicly-available open source information and the secondary sources. It also enables to understand about the company's competitors or enemy countries through the sources of publicly available information. The use of such information is to gain a competitive advantage.

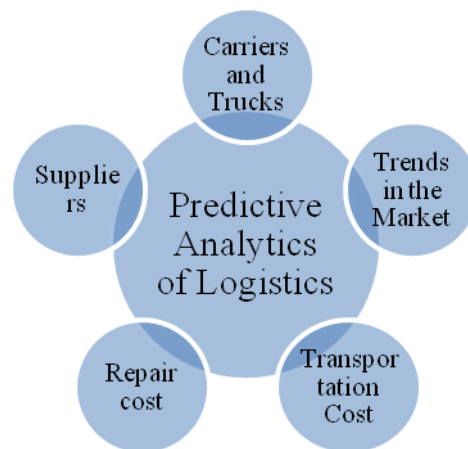
3.1 Logistics Management

Logistics Management is a vital component of all company to manage the Production, Supplies, and Distribution etc., According to Council of logistics management: "Logistics is the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from point of origin to point of consumption for the purpose of achieving the customer requirement"ⁱⁱⁱ

4.1 Challengesfor Logistics Management

Now a days logistics industry are facing various challenges like fluctuating fuel costs, trade restrictions and changing market trends which affect the business from the bottom line. To transform the business into profit making company, it has to observe the market fluctuations and historical trends.

Diagram - 1



The competitive intelligence of the above (Diagram -1) factors helps to understand the strength and weaknesses of the competitors, emerging trends and demand fluctuations. Moreover, competitive intelligence helps to identify gaps and potential risks. By leveraging the indicators, the logistics can be operated more effectively to increase consistency, reliability, and responsiveness across business processes and operations.

The following are the challenges faced by Logistics industry^{iv}

- ❖ To identify new market trends before the competitor,
- ❖ To acquire knowledge about the market changes,
- ❖ To assess the market opportunities for new products or services,
- ❖ To identify external and internal sources of information and
- ❖ To determine the growth potential for the new product

The above analysis helps to understand the consumer needs, expectations and satisfaction level

5.1 Forecasting of Logistics Management with Predictive Analytics

Predictive analysis is used to make forecasts by reading algorithms based on both current and historical data. Organizations can modify how and where they use resources in a better way to prepare for future events. It creates a framework for connecting the dots between trends, patterns, and associations in data to help businesses respond proactively to future developments.

Predictive analytics uses a mixture of analytics methodologies, combined with automated tools and technologies,^v to find patterns within data and anticipate specific future events.

Predictive analytics encompasses the following:

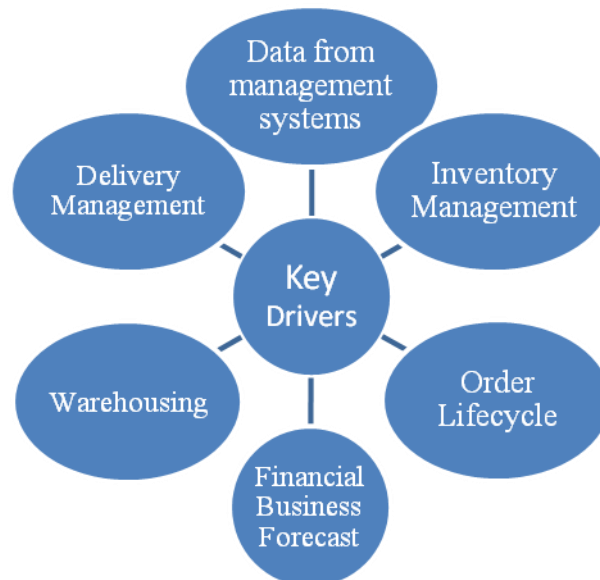
- Predictive Modelling
- Text Analytics
- Real-Time Scoring
- Ad-Hoc Statistical Analysis and
- Data Mining

Through intelligent application of these predictive analytics models, companies can prevent unnecessary expenses and errors related to their supply chain and logistics processes.

6.1 Source of Information

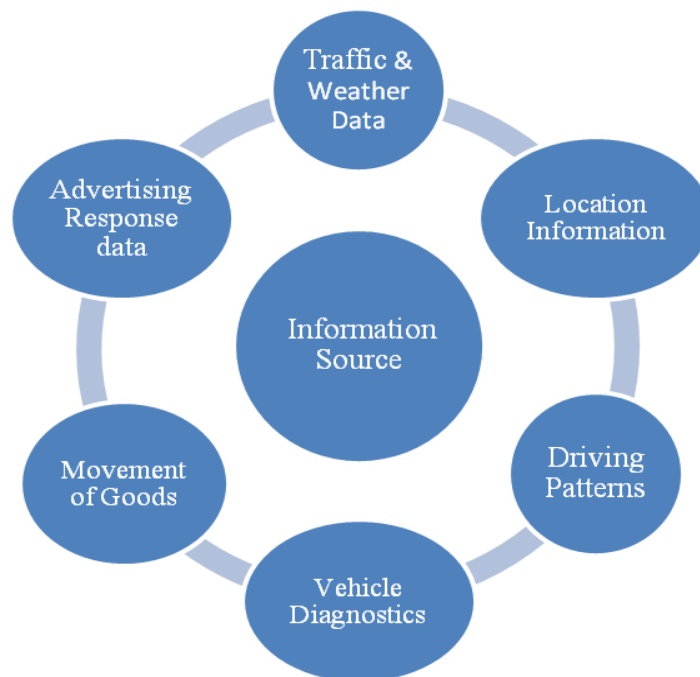
Predictive analytics is improving the supply chain of logistics industry by enabling to collect and analyze data that helps in management decisions. It can also help to address issues like damaged inventory, stock errors, and supply and demand miscalculations. Predictive capabilities allow organizations to accurately address customer service and traffic patterns, labor unrest, and weather changes that affect shipping and port behavior

Diagram - 2



The above Diagram -2 helps to identify the key performance drivers in Supply chain management and logistics management through Predictive analytics. It provides the organization's capability to improve key performance drivers in supply chain and logistics.

Diagram - 3



The Diagram – 3 helps to identify the sources of information right from delivery management, costs of goods, movement of goods, shipping and warehousing costs, inventory management, vehicle diagnostics, driving patterns and customer service can be forecasted through predictive analytic models.

Organizations can use predictive analytics in supply chain and logistics, firstly, the Transportation Management Systems where the Supply chains to ocean shipping addressed by predicting future disruptions, secondly, the Third Party Logistics wherein Predictive analytics can create more value by developing partnerships with technology providers to apply Big Data to their services, thirdly, the inventory and shipments based on customer demand and buying behavior, fourthly, the Customer Visibility may be improved by obtaining market insights about customers, suppliers, and trading partners, as well as seasonal buying patterns and consumer forecasts to make quick decision, fifthly, the organizations can better prepare for short-term behavioral changes that affect supply chain and logistics such as news, weather, shortages of goods and any unexpected conditions, that they can better adjust in response to specific time-sensitive and avoid wastages, sixthly, the Predictive analytic models can be used to ensure that the correct seasonal products that are delivered to customers based on geographical region and finally, predictive analytics used extensively in supply chain logistics more towards focused way, particularly in operations on picking and packing, and across fleets of transport ships and trucks.

COMPANIES UTILIZE PREDICTIVE ANALYTICS

Large companies are taking advantage of predictive analytics to improve their supply chain and logistics. They are setting targets for their companies using predictive analytics, and updating to facilitate business growth. For example the Companies Like Apple, Amazon etc are effectively adopting the predictive analytics in real time data to the best choice available to the customers; specifically the

- Apple and the Supply Chain Model: They are using forecasting capabilities to establish real-time visibility into demand patterns, and anticipate online orders for products like Apple Watch, iPhone, and prevent delayed shipments.
- Amazon and Whole Foods: Amazon acquired Whole Foods to gain access to physical stores and their shoppers and the corresponding data. They're using predictive analytics to optimize supply chain analytics in anticipatory shipping and stocking using real-time data. They are making a more effortless experience for shoppers and suppliers while helping to reduce food waste in the United States.

I. CONCLUSION

It is evident from companies like Apple and Amazon, predictive analytics can provide more certainty regarding shipment ETA's, reduction of network latency, protection of profit margins, and shortened cycle times. Predictive analytics helps companies to adopt Competitive Intelligence techniques to optimize supply chain and logistics across both small and large-scale operations to improve their forecasting abilities and responsiveness via real-time analytics. Predictive analytics as a crucial factor in Competitive Intelligence is increasingly important to Supply Chain Management in making the process more accurate, reliable and at reduced cost.

II. REFERENCE

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