1.0 Introduction

Business Analytics (BA) is a scientific process of discovering and communicating the meaningful patterns which can be found in data. It is the use of data, information technology, statistical analysis, quantitative methods and mathematical or computer-based models to help managers to improve their insight about their business operations and turning the raw into insight for making better decisions. It is especially useful in areas which record a lot of data or information, analytics relies on the simultaneous application of statistics, computer programming and operations research to quantify performance. The examples of applications of analytics are in deciding the customer segmentation in retail, insurance or in trading. Next is analytics is applied in merchandising which helps in determining what brands should be buy, the quantities and the allocations of the merchandise. Other than that, analytics very useful in deciding the price of the goods or contracts and in finding the best location to service the industrial equipment.

Analytics cannot fit in all blanket strategy. In fact, what differentiates a best data analyst from others, is their ability to identify the kind of analytics that can be supported to benefit the business. The three dominant types of analytics are Descriptive, Predictive and Prescriptive analytics and each of these analytic types offers a different insight. The simplest way to define descriptive analytics is that, it answers the question “What has happened?”. The main objective of descriptive analytics is to find out the reasons behind precious success or failure in the past which refers to any particular time in which an event had occurred and this could be a month ago or even just a minute ago. While predictive analytics is used to predict the future by examining historical data and then extrapolating those forward in time and to find answers to the question “What could happen in the future based on preceding trends and patterns?”. In the other hand, prescriptive analytics is basically uses simulation and optimization to ask “What should a business do?” and it works to identify the best alternatives to minimize or maximize some objectives. However, three of it helped the companies make the most out of the big data that they have.

The importance of analytics are it is a procedure to make a better commercial decision to make an optimum business. It impacts the functioning of the whole organization. Therefore, it can help in improving the profitability of the organization, improve its market share and revenue, and provide a better return on investment. Next it helps in understanding the available primary and secondary data more comprehensively, which will affects the operational efficiency of several departments in the organization. In addition, analytics is important in having a competitive edge. It fully utilized the data available with several thought models to enhance business decisions. Last but not least, it converts available data into valuable information and helps in attaining the desired outcome and give positive results for the organization to be more success in the future.

As we know that analytics is used in many businesses and it is really helps in many ways. In here, we will see how analytics works in several industries to maintain and optimize all data in the business in order to get a better business performance.

2.0 Application of Business Analytics across Industries

2.1 Manufacturing Industry

Manufacturing is primarily process-driven industry. These various processes involved in manufacturing create countless data-points that can be used for effective reporting and decision support systems. Historically, manual analysis (audits and statistical reports) was relied upon by decision-makers for various purposes. In the present day, business analysts use software and tools for real-time data analysis and historical trend help in making a decision for an organization. The industry is embryonic and leveraging the available tools and technology like IIoT and Cloud that allow them to connect with the supply chain and customers like never before. Every connection and communication are delivering access to huge volumes of data, for instance, big data. Big data expose hidden patterns, unknown correlations, market trends, customer preferences, and other useful information. In the specific case of the manufacturing sector, the previously mentioned McKinsey report highlighted four main areas in which business analytics proves to be a differentiating factor for industry leaders at the expense of late adopters.

2.1.1 Research & development and product design

The first domain in which business analytics could help manufacturing is research and development (R&D) and product design. In this regard, technologies that aid interoperability along the value chain play a central role. For example, cross-enterprise Product Lifecycle Management (PLM) systems provide a platform for co-creation of products using designs and inputs from numerous players along the supply chain. This collaboration and experimentation moves the burden of innovation across the OEM organizational boundaries, and in this process aids decision making as well as the selection of appropriate suppliers while reducing costs and time to prototyping.

2.1.2 Time-to-market

Time-to-market is the time that it takes from the conception of a new product until it is available for sale. Basically, it is used as a metric to determine competitiveness in terms of product development. To make sure the continuous of the

product life-cycle shortening and increased international competition, the manufacturing industry make every effort to reduce the time-to-market of new product offerings for multiple reasons. In first place, reduced time-to-market extends sales life and as a result it will improves profitability. In addition, getting to the market ahead of the competition results in the application of best fees to products which increases revenues, a bigger market share, as well as giving the manufacturer the opportunity to establish industry standards and develop a technological advantage. Furthermore, a shorter time-to-market has been related with increased flexibility to respond to changing customer trends leading to improved levels of customer satisfaction and customer loyalty.

2.1.3 Supply chain management

Another domain in which business analytics can develop visions to boost performance is Supply Chain Management (SCM). Benchmarking allows you to compare the process or method used against an industry standard or best practices from other companies. In an interviewed executive, business analytics helps build a stronger relationship with our suppliers as a means of shortening lead times, and improving delivery reliability and certainty. In fact, one of the most critical issues in supply chain management relies on the instability of demand coupled with insufficient flexibility and responsiveness from suppliers to continuously shifting consumer demands. Research has shown that business analytics has the potential to reduce these effects given the “volume”, “variety”, “velocity”, “value” and “veracity” controls of big data. As a consequence, the Holy Grail of business analytics for supply chain management is transparent information flow to help accurate market trend predictions and guarantee data-driven decision-making. Incidentally, a competitive advantage is to be gained from aggregating high quality data from production, inventories and retailers.

2.1.4 Improved Inventory Management

Analytics allows you to understand how much inventory you have. Accurate inventory can enhance ordering and lower loss, making it possible to optimize your inventory expenses. Inventories represent a huge capital commitment and loss of liquidity for the manufacturing industry. In addition, keeping safety stocks requires physical space and thus its cost is increased as the result of storage, additional

personnel requirements and administration. Inventoried items also suffer the risk of uselessness, and essentially conceal production problems and prevent their removal. To respond these costly disadvantages, the industry constantly searches for an evenness that allows it to minimize safety stocks but, at the same time, ensure delivery reliability and customer satisfaction. To achieve this, inventory tracking has been widely programmed using barcodes or more sophisticated Radio-Frequency Identification (RFID) technology in the form of tags attached to individual products. The data produced can be used for inventory analytics to identify any potential stock shortages and to avoid any incidents in customer delivery.

2.2 Hospitality Industry

In the hospitality industry, business analytics can be used in numerous ways in order to improve business operations, marketing strategies, and occupancy rates. For example, through analytics the concierge can know which local tours to recommend that fit a guest's preference based on his past behaviour. It allows the kitchen department to predict which menu items are likely to be ordered, based for example on the local weather. It allows the reservation department to predict the optimal rate for a room. It enables the sales and marketing team to create and send tailored messages across different networks. Analytics can also help hoteliers cut down their unnecessary costs without sacrificing guest comforts. Here are some of the hospital analytics software used in the hospitality industry.

2.2.1 Hotels SAS

The SAS hospitality analytics solution helps hoteliers in marketing & customer loyalty, price & revenue management, data management, operations analytics, digital marketing and more. It is streamline the data mining process to create highly descriptive and predictive models based on enormous volumes of data. SAS also produce large numbers of forecasts and automatically improve in planning and decision making process.

2.2.2 Neubrain

Neubrain's Business Analytics for Hospitality solution combines the entire Profit and Loss (P&L) planning and Sales and Operations planning (S&OP) processes into

one integrated framework. Through fast deployment, powerful analytical capabilities, accuracy, and automation, the solution enables the management to make informed financial and operation decisions. The solution features key components for both P&L and S&OP planning are adaptable to any chart of accounts model, including accounts settlement to group accounts. Next is uses top down and bottom up approaches and links effortlessly with Micros Opera, Fidelio, Aloha (POS), Menu Link and other operational and financial systems. Besides, Neubrain analyses a variety of business revenue drivers such as room availability, occupancy rate, multi-level discounts, and conducts driver-based or impromptu calculations.

2.2.3 Duetto

Duetto provides revenue strategy solutions to the world's leading hotels and casinos using cloud-based technology. There are three types of Duetto. The first one is Duetto Edge delivers powerful insights on pricing and demand through a 100% cloud-based application. Next is Duetto Insight provides a cloud-based revenue strategy solution to better forecast demand and optimize pricing, with a simplified interface and feature set designed specifically for focused-service properties. The last one is Duetto Game Changer ensures hotels always select and retain their most profitable customers, accounting for vibrant demand, occupancy and segment volumes, independently assessed by each individual customer segment, room type, offer or discount.

3.0 Conclusion

As a conclusion, analytics is very beneficial for the industries. The uses of three types of analytics in the industries makes the industries improved in a good way and have come out with a better performance in every aspects. The descriptive analytics helps in a way which the manufacturing and hospitality industries utilized data to understand past and present situation and identify reasons of what is happened in past situation.

The predictive analytics is used to help manufacturing and hospitality predict the future by examining historical data and then extrapolating those forward in time in order to improve in the performance of their operations. In the other hand, prescriptive analytics is works to identify the best alternatives to minimize or maximize some objectives towards the industries goals.

Besides, the used of analytics in the industries makes the operations way more better compared to previous days. The existing of many software makes the operations smoother and systematics and also easy to be understand by all people in the industries.

Lastly, business analytics is benefits all companies in the industries to store all the information in the big data lab so that everything regarding the company will store safely, especially the confidential data. Business analytics can also bring our industries to the next level and be in the same level with other developed countries.

1949 Words

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