The Implications of Ai In Enhancing Fmcg Industries

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ABSTRACT

With the technological advancement in recent years and unpredictable market conditions, industries are compelled to redesign and upgrade their system of operations performed in the organizational environment to guarantee better decision making and accurate prediction of consumer demand at large. Industries dealing with FMCG goods requires implementing technologies such as artificial intelligence that could enhance their performance among the competitors present in the market. Manufacturing industries that specially deal with consumer goods face challenging experiences in understanding the unstable change in taste and consumer preferences from time to time. As a result, industries have allocated resources that help to gather, analyze, and interpret relevant data to predict decisions that would amplify the overall supply chain management system. Integrating methods using AI, and Big Data Analytics helps in understanding the present market condition to cater to the needs of consumers, and improve the efficiency of the operational activities that are carried out within the organization. However, artificial intelligence methodologies have proved to be more effective as the response rate is faster and it is financially savvy. Implementing AI has enabled organizations to earn an increase in profits. With access to data collected in real-time and comparison of past accumulated data, FMCG industries are keen on adapting to AI tools and applications to better comprehend the necessities of their specific customer group, provide consumable goods to satisfy customer's needs, and improve organizational efficiency by minimizing expenses and maximizing profits. This research paper underlines the impact of AI in enhancing FMCG industries and their overall operational activities that would create a pathway towards organizational profitability and sustainability.

1. Introduction

Organizations are at the lookout in adapting to new methodologies that would allow them to stay on top of their competitors, and prolong continued sustenance to survive in on the current competitive business platforms and market conditions, by reducing and further eliminating resource wastage, and optimizing capital resources that would fuel the organization to expand and diversify in the global outreach. There is intense competition among the FMCG industries which are consistently growing along with the increase in demand among consumers (The P&G Company, 2018; Unilever Group, 2018). Industries that deal with the production of consumer goods have to forecast unpredictable demand, which is the ultimate component in the planning of production and supply chain management that requires efficient decision making on areas such as purchasing of raw materials, rate of production, stockpiling limit levels, warehousing, and Logistics, decisions related to marketing and Finance marketing (Yue et al., 2016; Arvan et al., 2018), as this information is very valuable especially when dealing with products that have a low period of usability and more noteworthy customer demand.

Consumer goods that are related to the production of products such as edible products and fresh food products, which generally have low durability and limited span of shelf life, have to consist of monitored capacities that are low to store and preserve which are ready for consumption. FMCG industries need to analyze and plan accordingly that would prevent situations to arise such as the return of goods and products from retail stores due to the completion of the expiry date and loss of sales due to spoiled products. Consistent planning of FMCG products can help organizations to reduce wastage of resources that would ultimately reflect on reducing the environmental wastage which is produced by FMCG products on a global scale (Doganis et al., 2005).

One of the key reasons for the failure of the FMCG industry to maintain sufficient inventories and expired goods is due to inaccurate orders resulting from incorrect consumer demand forecasts (Arunraj, Ahrens, 2015). Organizations that produce and supply fresh food products should emphasize forecasting customer demand that could improve the efficiency of supply chain management, inventory management, which have proven to reduce about 40% of wastage (Ochiai, 2015), and also maintain a harmonious relationship with retailers and customers. Several researchers, based on their study have concluded that the use of automation devices and applications has enabled organizations to increase consistency in gathering and analyzing data to predict future demands, which has made it a challenge for humans to accurately decide on futuristic decisions (Puchalsky et al., 2018).

1.1 Background of the study

The research paper focuses on artificial intelligence and its implications to enhance the Industry that deals with the production and distribution of FMCG products. A concise introduction of Artificial Intelligence and FMCG Industries will be discussed below.

1.1.1 What is artificial intelligence?

In straightforward words, permitting computers to manage, handle, and perform various activities that initially required humans to operate and perform using human intelligence which incorporates translating voice and speech commands from one person to another. A few researchers have identified artificial intelligence as a combination of programming language, coding, and algorithms that allows digital applications and computer devices to produce desirable human intelligence (Shankar 2018; Huang, Rust, 2018). The use of artificial intelligence tools and applications allows organizations to gather, analyze and interpret huge volumes of data accurately and predict future conditions (Kaplan, Haenlein 2019), allowing management to make decisions that could suit the changing demands of various organizational stakeholders comprising of employees, suppliers, distributors, and customers (Davenport, Ronanki, 2018).

Organizations are likewise adapting to strategies that include Artificial Intelligence and machine learning programs to infer the best outcomes that would be favorable towards the growth of the organization. Machine-learning languages allow computer applications to adapt without being specifically programmed, as it identifies both raw data and polished data which could be accessible from various artificial intelligence devices.

1.1.2 What is FMCG?

Fast-moving consumer goods (FMCG), also known as consumer packed goods (CPG), are for the most part alluded to like products that are sold at a low cost and are largely demanded by consumers on regular basis, sometimes even on daily basis, depending on the specific product. Fast-moving consumer goods are generally sold at a low cost and are affected by a large consumer population.

FMCG products are generally non-durable consumption goods and household good consisting of a varied category that includes items, for example, vegetables, natural products, fruits, milk, and dairy products, food and beverages, skincare and individual care products (Cohen et al., 2017), which for the most part have exceptionally less term or period of usability and should be consumed within a predefined timeframe. FMCG products generally come with a limited expiry date after which the product will not be consumable. Most of the FMCG products are available in the local retail stores since the demand is generally on a daily basis and purchased by consumers regularly. These industries produce large volumes of products that are generally distributed in smaller quantities among various retail stores in and around the region so that consumers can have easy access to consumable goods (Singh, 2014). Most of the FMCG products are produced within the particular local community or state but can also be produced by industries that operate both nationally and internationally.

1.1.3 Why artificial intelligence in businesses?

The new digital age is undergoing an all-out transformation of conventional business activities into digital business strategic approaches. Organizations must adapt to these changes, which are necessary for survival and long-term

sustainability, along with their different evolving competitions. Even though the idea of artificial intelligence has been researched over a couple of decades before, organizations have in recent years understood the significance of inculcating artificial intelligence applications and devices to ensure that the overall business reflects towards a successful path. Several organizations have diverted their capital resources to invest in various AI devices that could enhance the decision-making process to be more effective as it has a major impact on the outcome of the business activities.

Learning from various multinational corporations and large scale enterprises, several small scale industries, and newbies in the business domain have started to implement AI technologies and applications to provide accurate solutions towards a specific activity. Stakeholders that support the business decisions are well versed with digital technologies and presently rely on making several decisions that could lead to meaningful experiences of interacting with various business activities, in reference to industries that produce FMCG products have more concern towards production function and warehousing facilities to meet unexpected demands of consumers and to avoid damage of non-durable products that could ultimately reflect negatively and cause a lot of loss for the company. Reduction in operational cost is an area of interest as it reflects largely on the capital allotment towards a specific unit of production in an organizational environment (Efthymiouet et al., 2012; Behera, Sahoo, 2016).
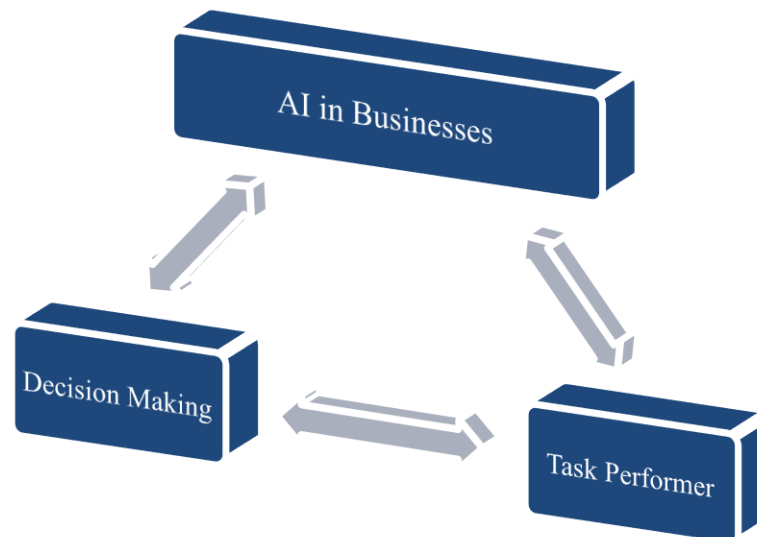

Fig 1: A graphical representation of the AI in general businesses.
The above fig 1 is a graphical representation of AI functioning in general businesses.

With the use of various programming like computer coding and algorithms, AI tools and devices perform several tasks such as recording conversations over the call between clients and customers, making a certain system of updating content and data feed, operating pieces of machinery for the production of units, inventory check and storing, and so on, which require no human contact at all. Artificial intelligence systems and applications may also influence

industries to make effective production decisions by analyzing data that includes predicting consumer choice, taste and preferences, and target customer audiences by accumulating real-time data collection.

2. Objective

The main purpose of the research paper will be wholly to find out the concept of AI enhancing FMCG industries. The paper also emphasizes how AI implementation can benefit overall productivity and performance in an organization. The objective also includes understanding the challenges and provide measures that can be taken to by FMCG industries to forecast accurate consumer demand for products and services which would ultimately lead to maximize profits and enhance overall work productivity.

3. Methodology

The research conducted for this paper was purely based on materials from the secondary source of data analysis. The researcher conducted a systematic literature review (Webster, Watson, 2002; Vom et al., 2015), in which focus was given to the concept and principles that defined the search scope during the research work. The research study also implemented the three-phase method of collecting data, which includes identifying the research question, framing keywords to match the research question and perform an advanced search to extract information (Ridley, 2012).

3.1 Identifying Research question

The research perspective on artificial intelligence and its impact on FMCG industries to enhance organizational performance was used as the central focus to derive the following questions.

1) What are the implications of AI in FMCG industries?
2) What are some of the challenges in implementing AI in FMCG industries?

3.2 Research criteria - inclusion and exclusion

While collecting information from various articles through search using keywords, they were about 68 publications. The researcher has reduced the search criteria by including and excluding certain criteria that could help narrow data accumulated through secondary research sources.

Sl. no	Criteria for inclusion	Criteria for exclusion
1	Gathered data that addressed the research questions	Data gathered from non-English literature were excluded.
2	Content related to Artificial intelligence, fast-moving consumer goods, and FMCG industries.	Content not related to artificial intelligence were excluded

3	Research articles and conference papers where used for references	Reviews from the conference, editorials notes, and textbooks
4	Research publishing year: 2015 to 2020	Sources from trade journals and books were excluded.
5	Area of focus: content related to subject areas on artificial intelligence and its impact on FMCG industries to enhance organizational performance.	Area of focus: content related to other subject areas such as biology, chemistry, and physics were excluded.

3.3 Research study selection

Various research papers were removed from extracting data because the abstract did not connect with providing specific information that could provide information on the research question, even though the research paper title and keywords seemed relevant. The following steps were utilized to narrow down the literature and the result as shown below in fig 2 as follows.
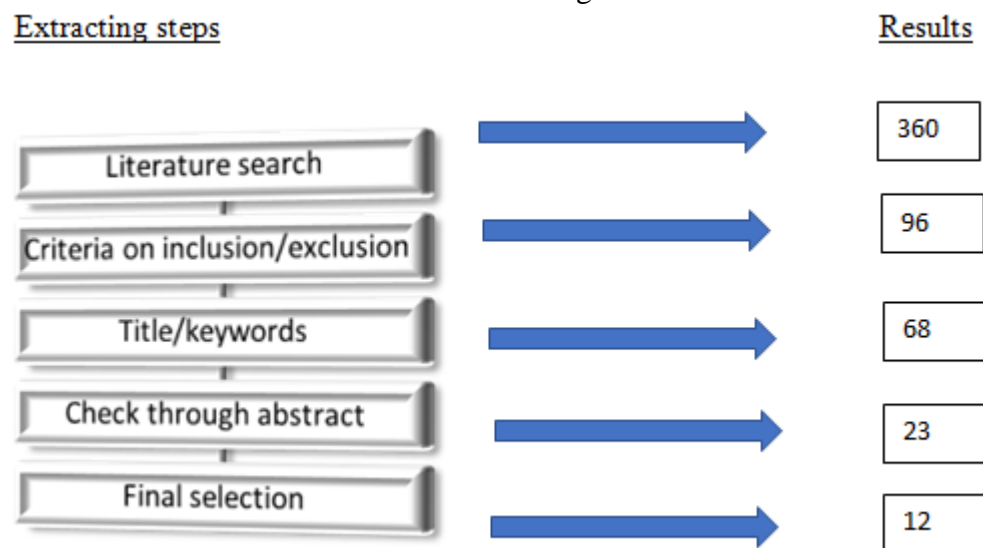

Fig 2: various steps in extracting information from the literature search and results

The researcher reviewed various titles and abstracts of 360 articles which were oriented based on Fast Moving Consumer Goods, AI technology, and organizational based literature before examining. The researcher searched for various publications in Elsevier (Science Direct), IEEE (Xplore) and ACM (Digital Lib) with the keywords "Artificial intelligence", "fast-moving consumer goods", "FMCG industries", and identified 68 publications, some of which were included in this review. The researcher also searched with the keywords, "artificial intelligence and its impact on FMCG industries to enhance organizational performance." and found several research papers. Using the same keywords, the researcher also searched the following

databases: EBSCO. Web of Science, Jstor, and Scopus. No additional publications were identified. This study was performed as a qualitative literature review, which means a limitation to the result is always the researcher's bias, specifically when analyzing the results. The researcher considered research papers published from the year 2015 to 2020, to have more authenticity and relevance of data gathering. The researcher excluded papers in languages other than English and focused on artificial intelligence and its impact on FMCG industries to enhance organizational performance.

4. Literature review

The literature review in this research paper has identified relevant papers related to artificial intelligence enhancing the FMCG industry, with attention on utilizing AI applications over traditional techniques of marketing consumable products and interacting with customers at large. A few researchers have identified various factors that can influence the overall operational activities in FMCG industries and their interaction with the economic environment (Guo et al., 2013). Several models based on machine learning applications and algorithms have presented forecasting of sales based on accumulating and analyzing past and historical data that provides information on product specifications, sales volume, customer preferences, competitors, economic factors, and various other relevant data to improve the supply chain management activities. In determining the consumer demand predictions and sales optimization (Qu et al., 2017), analyzing sources of data which include both internal and external data, and using Artificial Intelligence and machine learning applications to better understand the economic market and narrow down prediction zone volume of sales and customer demand.

FMCG Industries that produce short shelf-life products have to adapt by using AI and machine learning applications to improve and enhance the supply chain management system to keep up the smooth pattern of demand and supply to the retail chain of stores. Researchers have also initiated computer programming and algorithms that are designed to predict the future consumer demands on perishable products such as food and beverages, dairy products, vegetables and fruits and so on which are supplied to various retail stores to prevent any shortage or surplus stockpiling of items that could maintain a strategic distance from wastage of resources and minimizing expenses (Ochiai, 2015). Other research studies on fashion apparels purchased on the digital platforms have shown revenue growth by using AI and machine learning, with the help of accumulating previous data on sales which could help predict future consumer demand for various products that are yet to launch in the market (Ferreira et al., 2016). It is immensely important for organizations dealing with consumable products to produce necessary goods as per the requirement to avoid overstocking or understocking of products.

Several organizations have learned to adapt using techniques combining Artificial Intelligence and machine learning to better understand the requirements of inventory management and to predict accurate short term sales volume to reduce and eventually eliminate wastage of products which would

expire due to limited duration of shelf life, and also prevent situations of limited stocks produced to meet the increasing demand from consumers which would ultimately result in losing potential buyers for the product and increasing their profits in the economic market (Tsoumakas, 2018). AI applications have also benefited organizations to reduce human error due to a lack of relevant real-time information by adapting to an automated forecasting system of analyzing raw data to predict future possibilities of desirable outcomes.

4.1 Implications of AI in the FMCG industries

Throughout the years with the advancement of technology and the implementation of artificial intelligence and Big Data Analytics methodologies, organizations, especially those dealing with FMCG products, have observed the difference in a change in the supply chain management system. This segment will highlight the various implications of artificial intelligence to enhance FMCG industries to achieve a competitive advantage in the global market.
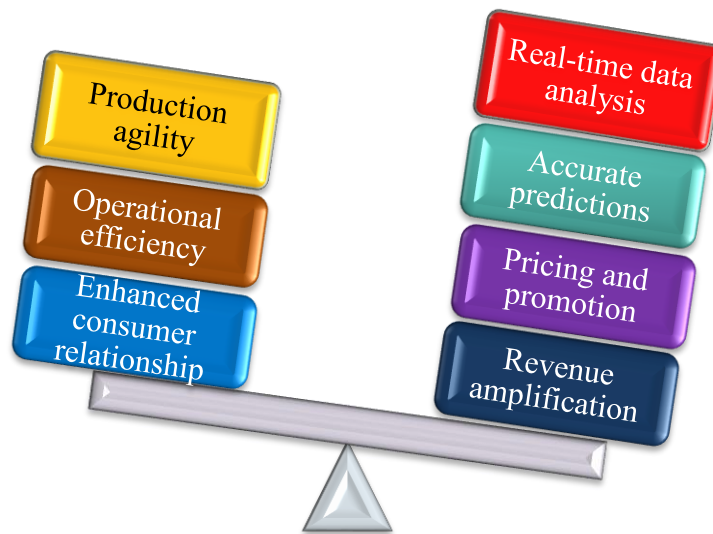

Fig 3: A graphical representation of the Implications of AI in the FMCG industries

The above fig 3 is a graphical representation of the Implications of AI in the FMCG industries. They may be discussed below as follows:

- **Real-time data analysis**

Organizations have understood the importance of gathering relevant data that would provide accurate forecasting decisions to ensure maximum returns and desirable outcomes. Without the help of AI technologies, organizations and data specialists have found it a challenge to gather and analyze huge volumes of data that would help in strategic decision making. Machine-learning programs have been designing to adapt to gather and analyze data regarding past scenarios and present supply chain management activities to forecast accurate future decisions. Relevant real-time data gathered by artificial intelligence applications have created several opportunities for organizations to

improve and adapt to changing environments and avoid huge financial losses over a period of time.

- **Production agility**

In view of the FMCG industry, operational areas such as supply chain management, production decisions, warehousing, and logistics are factors that need to have accurate planning and precise decision making on consumer goods to be produced. The ultimate focus of the supply chain management system would be to plan the production of convert consumable units that would suit the needs of supplying the demand. Manufacturing products that have less shelf life needs accuracy in inventory decisions so that overstocking or understocking of products doesn't occur, which could ultimately lead to huge financial losses in sales. Inaccurate inventory decision making and misjudgment in productivity could create a negative scenario impacting the entire organization. Organizations that have implemented artificial intelligence programs and machines which are functioning through various algorithms and coding languages can avoid issues related to production decisions and inventory management. With the use of AI, accuracy in detecting a serious problem and minimizing wastage in production are achievable which can avoid mishaps to occur in the future (Kushmaro, Philip, 2018)

- **Accurate predictions**

Organizations can improve predictions related to consumer goods based on real-time data collected through AI applications giving more insight into customer preferences. Understanding the required demands of the consumer is exceptionally basic as FMCG Industries produce consumable goods that have low shelf-life value and must be catering to the needs of the consumers to ensure there is uninterrupted flow in the demand and supply cycle. Manufacturing firms can make necessary transformations in their business practices related to manufacturing goods and services with the use of AI devices to understand the behavioral patterns of purchases among consumers and come up with creative ways to market their products to the large communities of consumers. With the use of artificial intelligence, organizations can make managerial decisions on the type of products to be produced based on customer preferences, and the expected price range that consumers would be willing to pay for the particular product (Shankar 2018).

- **Operational efficiency**

Supply chain management decisions need to be accurate when dealing with FMCG industries to achieve operational efficiency in their overall performances. And with the help of advancements in technology and digital algorithms, industries can utilize these AI applications to identify possible deficiencies and make immediate changes that are required to ensure efficient and effective operational outcomes. Industries manufacturing FMCG products have to stress delivering quality goods to their potential consumers while maintaining the parameters related to standards (Jones, Tim, 2015). With the use of AI, organizations can gather instant data which helps in reducing wastage of resources while maintaining standards of production-related to consumable goods. Maintaining efficiency in the operational scenario has

always been a concern for many FMCG industries in the previous decades, as it was a major challenge for or organizations to get access to real-time data that would be relevant to take managerial decisions to ensure smooth functioning of the supply chain. However, with the use of machine learning and AI applications, FMCG industries can make accurate decisions that provide meaningful wastage with maximum output and profit that reflect on over operational proficiency.

- **Pricing and promotion**

FMCG Industries consist of certain elements that determine the success rate of its operational activities, one of which being the pricing and promotion strategy, which is essential to increase and sustain the sales volume of products produced by the FMCG industries (Biswas et al., 2013; Guha et al., 2018). Henceforth organizations have understood the importance of consistent market research to better understand the consumer needs and specifications on consumable products. With the use of AI, FMCG industries can accurately make decisions related to the pricing of a specific product and also promoting the same to a large group of consumers. In the present digital era, advertisement through various applications and digital platforms has created consumer awareness on products available in the market which are designed in satisfying the taste and preferences of consumers.

- **Enhanced consumer relationship**

With the end goal for organizations to survive among their competitors, consumer relationship, consumer engagement, and consumer interaction should be one of the top priorities, as it helps in distinguishing customer prerequisites and offering products and services that tailor suit consumer preferences. There is a substantial shift from the usual interaction with consumers to the digital platform, creating more opportunities for companies or organizations to maintain sustainable consumer relations. FMCG industries using AI are more prone to adapt to the changing environment and with the use of relevant real-time data, consumer needs are better understood (Barro, Davenport, 2019). Industries producing FMCG products have to be vigilant in their operational activities related to marketing and sales that are closely connected with customer interaction. Organizations have understood the importance of producing consumable goods that are more customer-focused to achieve greater revenue growth and a sustainable business venture.

- **Revenue amplification**

There are a few different ways through which organizations can maximize revenue through certain strategic decisions related to marketing of products and services which include pricing of the product, promotional activities such as advertisements, superior customer engagement, and so on. With the use of AI, organizations can reduce the cost incurred with traditional marketing strategies taking a shift into digital and automation marketing activities. FMCG Industries producing consumable products with less durability have ensured product specification required to satisfy consumer needs, hence preventing negative outcomes of operational activities (Gaudin, 2016).

4.2 Challenges of AI in FMCG industries

Although there are several benefits of using AI in business activities, many researchers have found that only a few businesses are currently integrating AI systems. Various factors make it difficult for businesses to implement AI methodologies in their operational activities. Some of the challenges of implementing AI in FMCG industries are explained below as follows:
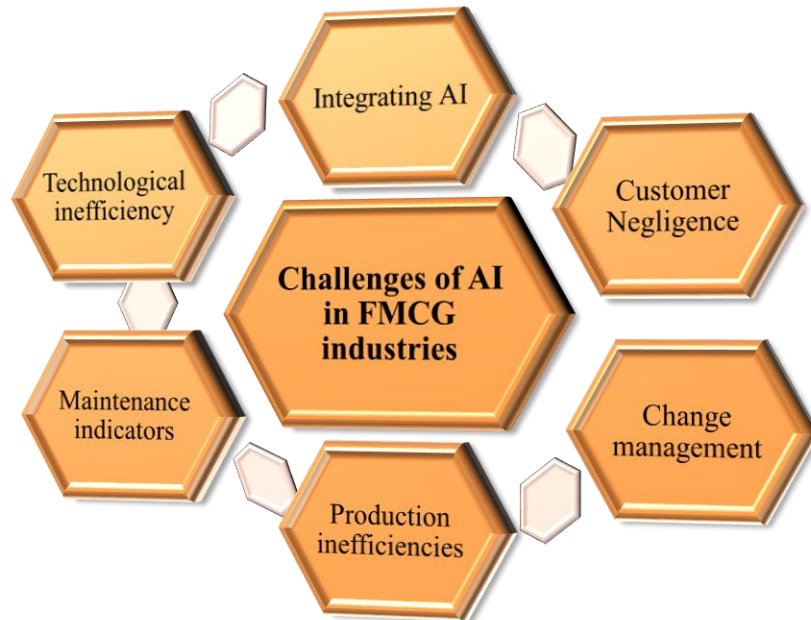

Fig 4: A graphical representation of the challenges of implementing AI in FMCG industries

The above fig 4 is a graphical representation of the challenges of implementing AI in FMCG industries. They may be discussed below as follows:

- **Integrating AI**

Implementing AI Technologies into the overall operational activities conducted by the organization can provide profitable and desirable outcomes. Integrating AI methodologies into the organization's information and communication systems will help define specific goals that companies foresee to achieve. It can help companies deliver wholesome products produced at a lower cost within less time by adapting to differentiated processes that would help organizations perform more efficiently. But a major reason in which companies fail to integrate AI into their supply chain management is due to poor communication among various departmental undertakings such as demand planning, executing sales orders, warehousing and inventory management, retail management, online and e-Commerce marketing segments.

- **Customer Negligence**

Customers play an integral part in providing guidelines for businesses to make marketing decisions based on data collection and analysis to enhance accuracy in demand cycle predictions, however, customers will, in general, refuse to

disclose certain information with the mindset that AI bots and organizations might misuse their data. In modern business practices, marketing activities are performed through the online portals where customer feedback and review can help organizations modify and implement production models that would produce products of consumers best interest, but many fail to provide necessary information with a negative thought that AI technologies aren't capable to feeling human thoughts and emotions (Gray, 2017), as they are merely robots and fear on privacy issues on the collection of personal data.

- **Change management**

The overall scope of FMCG industries, with the use of AI Technologies and computer-aided machinery, is very vibrant in the upcoming years, provided there is a reflection of efficiency in operational activities performed by the organization. The management must be prepared to make the necessary changes to adapt to the present global economic market. The business should grasp these opportunities which lie ahead of them but due to several constraints, organizations fail to change with the changing environment due to lack of resources, fear of losing existing markets, and negligence to improve existing operational activities.

- **Production inefficiencies**

In FMCG industries, there is intense stress on the production and Manufacturing sectors as there are limitations in cost and available resources. Most of the manufacturing industries try to utilize limited resources that are available to maximize the output to ensure an efficient system of production. Mainly in FMCG Industries that produce daily consumption products that have limited durability, production management must be very efficient to avoid overstocking and understocking of products, which could result in encouraging huge losses on the firm. There is a range of issues that create huge space between the FMCG industries and the manufacturing sector (Heymans, 2009), which pose a challenge to the efficient utilization of AI technologies. FMCG industries should maintain a system of inspection for the availability of machinery and equipment that are used in the production to ensure consistent quality of production outputs (Waeyenbergh, Pintelon, 2004).

- **Maintenance indicators**

FMCG industries wholly rely on the strategies involved in the maintenance of the overall operational activities that are conducted within the internal environment and outside the external environment as well. Many of the programmed activities in the production facilities have a specific system of maintenance which overlooks several activities such as running hours, equipment failure, inventory charts maintenance, supply, and stock, which could prevent in loss of production breakdown of a particular set of activities due to certain negative outcomes. In certain situations when maintenance issues are identified at the earliest, an immediate course of action could avoid interruptions in the supply chain cycle (Alsyouf, 2007). In the event of a stoppage of critical operations, FMCG Industries could incur a huge loss of revenue, as production and marketing of services and products are performed on daily basis.

- **Technological inefficiency**

In the course of recent years, with the advancement in technology, several computer-aided types of machinery, and programming systems have been assisting FMCG industries with their operational activities. FMCG industries that have manufacturing activities of consumer goods which are fast pace consumable products must have to enhance their operational efficiency by implementing various emerging digital technologies such as Big Data Analytics, machine learning, artificial intelligence technology, and upgrade strategy to cope up with the present standard of production efficiency requirements. Collection of reliable data that are based on real-time has become a key factor to many FMCG industries to use this information that could help predict accuracy in overall performances related to various operational activities and maintenance strategies that could positively affect the business cycle (Karimet et al., 2016). However, several FMCG Industries fail to adapt to this model of technological advancement as they are more confined to traditional approaches of their business activity due to various factors that pose challenges for businesses to grasp this opportunity that lies ahead of them.

5. Analysis and discussion

The utilization of AI in fast-moving consumer goods industries has added advantage over accurate demand prediction by gathering real-time data and analyzing past performance and present operational scenarios to predict future outcomes. A few exploration papers have likewise discussed the utilization of AI programming over customary techniques for accurate future consumer demands. To improve the supply and distribution of consumer goods, inventory management should reflect a more efficient decision on forecasting sales, unnecessary expenditures, and loss. To increase the overall revenue returns from operational activities, inventory of products should be replaced with shortages in stocks available at the retail stores to meet the required demands of consumers and ultimately acquiring customer satisfaction. As organizations tend to grow and expand with their business activities, tracking and maintaining relevant data on operational activities becomes a hassle when dealing with large-scale operations and diversified FMCG products especially those that have a short shelf life. It is only relevant that the FMCG industry must learn to adapt by using AI programming and algorithms that would enhance the factors influencing sales by analyzing and forecasting future business opportunities with reference to accumulated data on regular operational activities

FMCG industries produce various products that are consumed on a regular basis and are available in several retail and departmental stores that are located in and around the society. Industries supplying food products, dairy products, and meat products have a disadvantage of product durability due to narrow option available for preserving specific product which has limited consumption period. FMCG industries have to maintain accuracy in the inventory of such consumer products to avoid expenses that would result from expired or spoilt

goods and prevent huge loss on sale due to products being sold in the retail stores due to unpredictable changes in customer taste and preferences.

Usage of AI in FMCG Industries has shown superior advantages in promotional activities as interaction with consumers in recent years are being done through online platforms, where industries can understand the behavioral changes with the consumer purchase pattern and innovate products that would benefit both the organization and the consumers. Organizations have also learned to understand the combination of marketing trends in promoting various products and categorize them based on the specific needs of consumers available in certain regions. The current consumer market is extremely dynamic in nature and the taste and preferences differ from one place to another which are largely influenced by the demographic variation and differences.

6. Recommendations

A generally essential methodology is fundamental for FMCG industries when implementing AI automation to ensure that there are collaborative organizational activities performed by prioritizing relevant data. These data are accumulated by AI applications and devices that contained data specifications from consumers that purchase products especially focusing on Industries that produce dairy products, meat products, fruits, and vegetables that have low durability due to less shelf-life capability, which will spoil or damage easily if not consumed within the limited time frame. FMCG industries must focus on improving customer experiences by creating value for their products that would be creating customer retention for a longer time which can be achieved through improving the supply chain management. An automated supply chain that runs through AI can improve overall efficiencies in operational activities by measuring outcomes through past and present performances that would determine future prediction on the supply and demand activities.

FMCG Industries should also divert resources to promote AI Technologies that could be a valuable asset for the organization. As organizations grow to expand and diversify their products and services, automated process monitored by AI is the key to success. It's about time that FMCG industries that deal with the production of consumable products embrace utilizing AI as it would enhance the overall performances by minimal usage of resources and maximizing profits that would create a pathway for a sustainable journey among its competitors present in the business environment.

7. Limitations

• The research paper relied on the information collected through secondary data resources.

• The broad use of AI, in general, was narrowed down to its uses in FMCG industries.

8. Conclusion

The aftereffect of this research paper focuses on showing the benefits of using AI techniques to enhance FMCG industries by providing a deeper understanding of accurate forecasting methods, which could be analyzed by collecting relevant data that could benefit both the manufacturing unit and the supply chain cycle. One of the major advantages in producing fast-moving consumer goods is to obtain an advantage on information that would be reliable for predicting how much volumes of products would be demanded by consumers within the given time, understanding the limitations of FMCG products which are less durable and have a low shelf-life capacity. With accurate forecasting techniques, FMCG industries can maintain a good relationship with their retail stores of supply line by performing regular inventory check on improving store management related activities such as restocking products when required which are highly demanded by consumers.

Sales forecasting also benefits both the retail stores and the consumers as it provides satisfying consumer needs through the availability of expected products as per the customer requirements. Several studies have also found out an increase in sales volume and efficient functioning of the supply chain management system in FMCG industries as they have transitioned from traditional marketing techniques and statistical analysis into using AI Technologies and programmed machines that provide higher accuracy prediction models for organizations to make better managerial decisions. The use of AI technologies in operational activities has reduced the burden from manpower labor of analyzing and gathering relevant data and comparing past records of business activities to analyses future predictions, which is possible with the use of AI technologies in business models.

FMCG Industries have benefited from using AI as business operations in the present era are being conducted over the digital platforms which bring more accessibility to information on-demand on various business activities such as receiving feedback from consumers on specific taste and preferences expectations, expected price references on specific products, enabling organizations to make better demand predictions and necessary strategic decisions that would have an overall impact over the supply chain management. The contributions of AI Technologies have also enormously enabled businesses to save a lot of time on performing specific routine tasks, bringing about more accuracy in the results obtained, and facilitating organizations to increase profits through accurate demand forecasting and production of consumer goods that satisfy and meet consumer requirements.

As AI is becoming more popular in the present era, it's about time that businesses learn to embrace these technologies into daily business activities that could augment intelligent decision-making through accurate foresight that would benefit the overall organizations' performance. As we are living in the fast-paced digital era, the future of the FMCG industry has a wider scope with AI implementation that helps organizations in analyzing real-time data to gain more actionable insights on adapting to do the changes in the economic world.

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