Medbudd App

[1]Aditya Patil, [2]Anurag Dubey, [3]Rahul Yadav, [4]Shailadh Shinde

Student
Information Technology,
MET Institute of Engineering
Nashik, India.

Abstract- **We are here to solve one of the major problems in the world's highest growing and leading industry, The Pharmaceutical industry, Medical Representatives are the front-end working professionals in the sales department of the pharmaceutical industry, their job function is to give details about their products to chemists and medicinal stockists, they have been allotted a target from their respective companies which they have to achieve on monthly/quarterly and yearly basis.**

We have come up with a solution, with an all-around solution to this problem. Our app will have modern features like photo-to-text conversion, automatic sales updates, live target details, quizzes, and interaction with the team. Furthermore, it will use OCR technology to read data which will reduce manual cost and time as well. It will also use Big Data Analysis that will help organizations to harness their data and use it to identify new opportunities. This, in turn, leads to smarter business decisions, more efficient operations, higher profits and more satisfied customers.

Index Terms- **Analytics, Big Data, MR - Medical Representative, OCR - Optical Character Recognition, Pharmaceutical, Sales.**

I. INTRODUCTION

In the pharmaceutical sector, marketing is one of the key factors influencing sales. Therefore, it is crucial to understand how doctors feel about pharmaceutical sales representation. The development of a theoretical model to depict how physicians build their perceptions of pharmaceutical sales reps is the goal of this essay. The following three topics are of particular interest: (1) Physicians' perceptions of the company for which the representative works; (2) Physicians' perceptions of the representative's values; and (3) Physicians' assessments of the representative's personal qualities. To provide prescriptive recommendations for pharmaceutical corporations in the areas of ethics training, hiring procedures, image management, and corporate communications to the medical community, research is required in these areas. Study on the relationship between corporate and personal values.

We are here to solve one of the major problems in the world's highest growing and leading industry, The Pharmaceutical industry, Medical Representatives are the front-end working professionals in the sales department of the pharmaceutical industry, their job function is to give details about their products to chemists and medicinal stockiest, they have been allotted a target from their respective companies which they have to achieve on monthly/quarterly and yearly basis. The problem comes when they have to give their Target reports and updates to their respective sales manager, even today in this modern world they have to prepare their reports and depend upon orthodox methods like excel sheets, and google documents, as they do not belong to a technical job they lack skills to create proper sheets and present them and also every time their hierarchy has to ask them for target updates manually, in totality this shifts a lot of their focus from achieving sales goal to presentation To solve this problem and lesser the Barrier between the company to a medical representative and medical representative to chemists 2 we have come up with the app called as Med-Bud, this app will have modern features like the photo to text conversion, automatic sales update, live target details, quizzes and interaction with the team.

II. RELATED WORK

1.   Existing Systems:
1.1.   Data Sources:

Combinations of the phrases pharmaceutical industry, drug information services, drug utilization, doctor's practice patterns and prescriptions, and medications were used in a MEDLINE search from January 1966 to May 1996. The research sources I found through this search were expanded upon with books from my personal library.

1.2.   Study Selection

It was necessary to undertake studies in industrialized nations that were based on direct observations of actual interactions between doctors and sales representatives and that provided quantitative data on the accuracy of the information relayed.

1.3.   Synthesis

There were four studies in total. Representatives typically only mentioned the drug's indications while leaving out safety information. Information provided by representatives frequently contained errors.

2.   Inaccurate Inventory Estimates:

Pharmaceutical brands and distributors occasionally need to estimate stockpiles and refill inventory in response to demand. Because most ailments are not seasonal, it is challenging to predict the need for medicine in the pharmaceutical sector. Pharmaceutical businesses lack access to previous sales data, making it difficult to predict the need for specific medications. Accurate sales data is frequently difficult to obtain with a tiered distribution strategy because brands and retailers frequently fail to communicate. Planning

and inventory replenishment will be based on assumptions in the absence of accurate sales data. Insufficient inventory could result from these presumptions, which could cause partial fulfilment, a delay, or incorrect completion of new orders.

3.   Poor Inventory and order visibility across the Distribution Network:

The same symptoms and diseases can be treated with a range of medicinal alternatives. The components and pricing points of these goods vary. Sales may fluctuate as a result of this. It might be difficult to determine which items are successful and which are not. If a company distributes through a tier-based distribution system, it could be quite challenging to determine which channels are successful for its products and which ones aren't. Finding best sellers will be equally difficult. With tiered distribution, the majority of brands see decreased visibility following sell-out. They are therefore ignorant of how much of their items are actually sold, how consumers feel about them, and which sales channels work best for them.

4.   Solutions to overcome the Pharmaceutical Industry Challenges:

Pharmaceutical companies may have tried various approaches to get beyond the aforementioned obstacles after growing weary of them. But using dependable technology is the most efficient method to overcome these obstacles. Here are a few technical solutions that directly address the issues raised above by streamlining procedures, doing away with mistakes, and relieving stress:

5.   Collection of Meaningful Consumer data:

Choosing the correct OMS can significantly improve a product's visibility. Brands and distributors will be able to integrate with the channels that their distribution network uses thanks to the ideal system. In this manner, businesses can determine which channels aren't doing well and where the majority of their sales are coming from. Realtime insights into consumer behavior and response based on various demographics are provided by a great OMS. Marketing, promotions, and inventory replenishment all depend on this information. Another thing to consider is making technology investments for competitiveness assessment. This will give information about what and how rivals are acting. Brands can compare their strategies properly and make changes to seize the market or stand out.

6.   Collection of Sales Data leads to Big Data:

Big data, or great volume, variety, and velocity data, cannot be stored or analyzed by traditional systems to provide information for decision-making. The process for formulating strategy in sales and CRM has evolved in the era of the big data 7 (BD) revolution, and firms should use a data analytics system to meet the needs of optimistic plan formulation. Organizations and customers can gain behavioral insights via BD, and analytics can be utilized to glean useful data from BD for decision-making. According to this report, big data analytics (BDA) refers to a technique or system that uncovers hidden patterns in business data (BD) to support the development of sales strategies. BDA uses customer data mining to obtain client feedback on goods, services, and businesses. Through the examination of possibilities and increased closure rates, sales performance successfully and efficiently reaches the goals set forth in the sales process. The information technology system (i.e., BDA) has been observed to aid salespersons in obtaining better closing rates and increasing revenue. The salesperson can increase their knowledge, targeting, and presentation skills by taking advantage of information technology system capabilities, i.e., BDA capabilities. In the current study, we consider that BDA will enhance sales performance

III. PROPOSED SYSTEM

The system we have developed aims to simplify the process of taking orders from chemists using OCR technology. Typically, orders are taken using receipts during visits by medical representatives (MRs) to medical shops. However, managing and keeping track of all these receipts can be cumbersome. To address this issue, we have created a web application where users can take a photo or scan the receipt, and the data is automatically pushed into a database and dynamically displayed on our application.

The MedBudd App serves two main use cases: one for MRs and the other for the admin or regional manager who assigns targets to the MRs working under them. The application features separate logins for MRs and the admin, with a signup option available only for the admin.

1.   Admin Login: Upon successful login, the admin can access various statistics, including the number of MRs, total sales, total products, and total orders. Additionally, the admin can view a table listing all the MR names who work under their region.

1.1.   Tasks Performed by Admin:
▪   Adding new MRs.
▪   Deleting MRs.
▪   Viewing statistics for a particular MR who works under them.
▪   Assigning targets to MRs.

2.   Medical Representative (MR) Login: MRs have a login option, as their accounts are created by the admin and mapped to a specific admin.
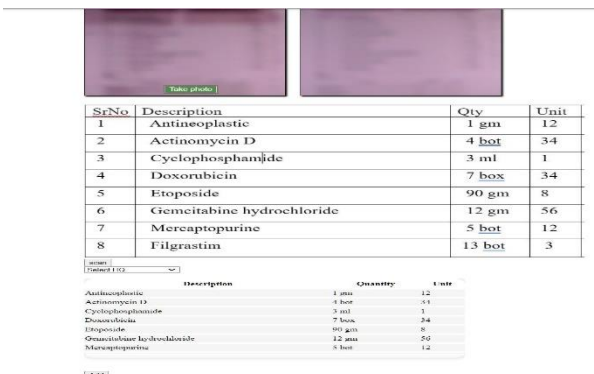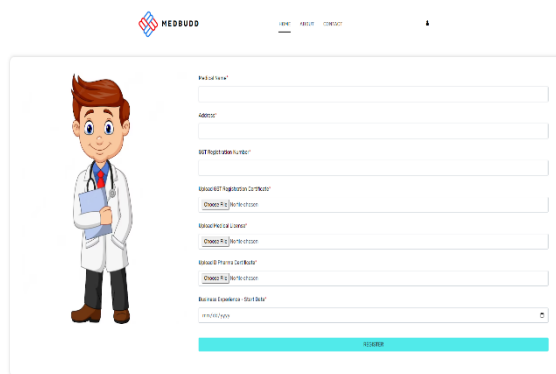
2.1.   MRs have access to three main options within the application:
▪   Scan: This feature utilizes OCR technology to capture orders by simply taking a photo of the receipt.
▪   Orders: The "Orders" tab allows MRs to check all completed orders.
▪   Add Medical: MRs can add new medical products into the system.

In cases where an MR goes to take an order but the receipt is not ready, they can manually add products from their homepage by entering the units and selecting the products.

All the data stored in the system is then used to visualize market trends and develop different marketing strategies. Additionally, the research and development team can leverage the same data to create more effective medicines and identify the underlying factors contributing to the sale of a particular medicine in a specific region.

IV. RESULTS

The results are presented as a series of snapshots highlighting the user interface and functionalities of the implemented system. The first screenshot is of the homepage, which serves as the primary landing page for all users. The screenshots below depict the admin login and signup interfaces, which allow authorized users to securely access the system.

In addition, the admin profile snapshot demonstrates the extensive functionalities available to admins. Admins can easily add new team members, see a list of MRs working under their supervision, and access relevant statistical data from their profiles. The inclusion of such features and functionalities in the system aims to simplify the management and supervision of MRs, increasing efficiency and productivity in the pharmaceutical industry.

The MR profile snapshot highlights features that allow Medical Representatives (MRs) to add medical professionals, manually manage orders, and use a scanning function for efficient order placement. These features streamline the sales process while increasing MR productivity and improving the customer experience.

CONCLUSION:

We have developed a web-application, our application is user-friendly, open source and is free to use. It positively impacts the environmental situation by using fewer products a greater number of times. Concentrating on customer satisfaction and the four dimensions, "Reliability", "Responsiveness", "Tangibles" and "Quality" helps us to serve the users in a better manner and thus give us a competitive edge over the others. Thus, Med Bud app can be found improvising operational efficiency, much improved internal communication, stronger and better sales analysis, tracking of MR trips, keeping a track of sales target, manage expenses and maintaining personalized profile of Medical Representative.

REFERENCES:

1. Hung, Y., Huang, S., Lin, Q. and -Tsai, M. (2005)," Critical factors in adopting a knowledge management system for the pharmaceutical industry", Emerald Group Publishing Limited 2005.
2. Joel Lexchin," What information do physicians receive from pharmaceutical representatives?" Canadian Family Physician MAY 1997.
3. U Rivett, R Wood, D de Jager, S L Brown, U Rivett, R Wood, D de Jager, S L Brown, "A pharmacy stock control management system to effectively monitor and manage patients on ART", 2006 the 4th Institution of Engineering and Technology Seminar on Appropriate Healthcare Technologies for Developing Countries.
4. Sagdoldanova Aiym; Atymtayeva Lyazzat, "Using intelligent systems in pharmacy", 2016 IEEE 10th International Conference on Application of Information and Communication Technologies (AICT).
5. Sophia Rahaman; Shahid Mohammed; Tejasvi Manchanda; Raj Mahadik, e-Pharm, "The Future Approach for Dispensing Medicines in Smart Cities", Published in 2019 International Conference on Digitization (ICD).
6. Karez Abdulwahhab Hamad, Mehmet Kaya," A Detailed Analysis of Optical Character Recognition Technology", Published: Advanced Technology and Science 2013, AMEC.
7. Najib Ali Mohamed Isheawy, And Habibul Hasan," Optical Character Recognition (OCR) System", OSR Journal of Computer Engineering (IOSR-JCE)-Mar-Apr. 201.