CHAPTER 12

Digital Health Requirements for Pharma Industry

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INTRODUCTION

Pharmaceutical companies are facing heightened pressure to demonstrate the real-world benefits of their products beyond traditional randomized controlled trials, as market access and premium pricing become contingent on such evidence. Payors and institutions are prioritizing cost reduction while seeking improved patient outcomes. In this landscape, technology-enabled solutions, incorporating not only medications but also devices for data collection and analysis to monitor patients' health between medical facility visits, play a crucial role. These technologies prove instrumental in meeting the interests of both payors and pharmaceutical companies by ensuring treatment adherence, desired outcomes, and providing valuable data to substantiate drug efficacy. In the digital era, patients rely less on clinicians for advice, empowered by abundant health information available online and through applications. With the rise of exercise equipment like Fitbit, Apple Watch, and other IoT devices, patients actively engage in managing their health. As patients bear an increasing share of healthcare costs, their interest in evaluating various healthcare products and services grows, potentially influencing the success of pharmaceutical companies in the digital age, hinging on their ability to engage effectively with patients during these assessments [1].

Historically, pharmaceutical companies maintained complete control over the generation and dissemination of information regarding their products. However, the advent of digital technology has disrupted this traditional authority, giving rise to numerous independent communication channels. Patients now have the ability to share and discuss their treatment experiences in online forums, utilize sensors and apps for real-life therapy tracking, and employ advanced batch processing and

analysis to integrate diverse and complex datasets. This evolution challenges pharmaceutical corporations to adapt by acquiring the skills needed to anticipate and swiftly respond to these novel sources of data, ensuring they remain the foremost authority on the effectiveness of their medications [2].

RESEARCH AIM

To investigate, assess, and analyse the influence of digital health within the pharmaceutical industry. Additionally, the aim is to identify and delineate emerging digital health needs specific to the pharmaceutical sector in India.

RESEARCH OBJECTIVES

1. To identify the digital requirements for pharma industry in India.
2. To suggest digital measures to improve customer satisfaction & processes in India.

RESEARCH METHODOLOGY

The research question aimed to explore the new digital health requirements for the pharmaceutical industry in India. The chosen research design was a secondary research method, specifically a narrative literature review, structured as an observational study. Data sources included consulting reports, Google Scholar, government publications, and articles provided by TATA ELXSI, with the study setting focused on Tata Elxsi. Despite the exclusion of Electronic Medical Records (EMR) and Electronic Health Records (EHR) data due to its challenging extraction for analytics in the pharmaceutical industry, and the omission of current digital operationalization platforms for small-scale industries, the study showcased strengths. These strengths

encompassed the incorporation of various digital techniques such as Artificial Intelligence (AI), Machine Learning (ML), Blockchain, consideration of the effects on large-scale industries, and a comprehensive literature review providing insights into the future impact of digitalization on improved supply chain management. The research approach involved analysing secondary data through a desk analysis of studies conducted globally, contributing to the formulation of strategies for enhancing patient satisfaction and medication development processes in the pharmaceutical industry.

RESULTS AND DISCUSSION

In 2015, David Champagne highlighted the readiness of the pharmaceutical industry for digital transformation, emphasizing digitization's potential impact. Subsequently, the COVID-19 pandemic underscored the significance of digitalization, prompting the industry to earnestly embrace new technologies to enhance customer satisfaction. Notable trends driving this transformation include the rise of E-Pharmacy services, where companies like "PharmEasy," "1mg Technologies," and "Apollo Pharmacy" leverage technology to deliver medicines efficiently to customers' doorsteps. Artificial Intelligence (AI) and Machine Learning (ML) have revolutionized consumer behaviour, enabling real-life medical consultations and shopping experiences. Digital records, cloud computing, and digital training courses further contribute to the industry's evolution. Blockchain technology and Big Data, expected to play pivotal roles in 2022, enhance data security, compliance, drug traceability, and streamline transactions. The Biopharma digital transformation study underscores key drivers reshaping the industry, emphasizing the role of digital health in personalized drug development, quicker market launches, and improved

customer satisfaction. Telehealth, telemedicine, and e-detailing emerge as crucial components addressing patient non-adherence, potentially enhancing treatment outcomes and market positioning. Overall, the pharmaceutical industry's digital adoption signifies a transformative shift driven by technological advancements and a deeper understanding of customer needs.

Pharmaceutical companies are actively leveraging various digital technologies to enhance customer satisfaction and improve their overall operations. The acceleration of drug discovery and development is facilitated by pharmaceutical analytics, which sifts through extensive datasets from control groups, academic research papers, and scientific publications, employing predictive algorithms to inform better decision-making. Big data analytics plays a crucial role in increasing the efficacy of clinical trials by analysing diverse data points, such as participant demographics and historical information, thereby lowering costs and expediting trials. Personalization and the creation of targeted medications are achieved through big data analytics that integrates gene-based information, patient health sensor data, and electronic health records. This approach allows pharmaceutical companies to develop more effective and tailored therapies for individual patients based on their distinct genomic profiles.

To address the growing pressure on pharmacy operating margins, pharmaceutical analytics contributes to operational efficiency by analysing critical metrics like medication costs, rebates, and drug utilization efficiencies. This aids in making informed decisions to boost revenue and reduce costs in drug development and utilization. In sales and marketing operations, pharmaceutical business analytics assists in identifying emerging markets, evaluating sales channel efficacy, and enhancing

decision-making by assessing sales rep performance. This integration of big data analytics and cutting-edge technologies enables pharmaceutical companies to explore new markets and enhance the effectiveness of their sales and marketing strategies.

Moreover, pharmaceutical companies utilize data analysis and insights to enhance current operations and processes, leading to substantial cost reductions. Advanced analytics helps predict the effects of machine settings, operator skill levels, and feedstock inputs on output quality, guiding decisions on optimizing and enhancing overall procedures. Forecasting and big data analysis in the pharmaceutical industry are employed to predict external indicators, such as quality issues, equipment failures, or significant changes in demand.

CONCLUSION

In conclusion, the research highlights several crucial insights for pharmaceutical firms navigating the landscape of digital innovation. Firstly, addressing fundamental concerns related to budgetary allocations, strategy, and talent is paramount before embarking on leapfrogging digital innovation. Shifting from incremental innovation to a more transformative approach necessitates modifying traditional budgetary methods and fostering a forward-thinking mindset. The impact of the COVID-19 pandemic has accelerated the integration of technological innovation into every facet of pharmaceutical operations, emphasizing the need for firms to enhance patient and partner experiences continually.

The current market juncture presents a pivotal moment for pharmaceutical enterprises to either seize the opportunity and intensify their investments in digital innovation or risk falling behind digitally. Successful firms are adopting operational

structures with dedicated digital innovation resources at the core, fostering collaboration between business and IT. This approach enables the translation of corporate goals into technological requirements and facilitates agile portfolio management and collaboration with external partners.

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