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Digital Pharmaceutical Marketing System: A Review

* ¹Adepegba Oluwafunmilola Aderannibi & ²Adepegba Solomon Adedeji

¹Department of Computer Science, Adeleke University Ede, Osun, Nigeria

²Department of Computer Science, University of Ibadan, Ibadan, Nigeria

Corresponding Email: *adepegbafunmilola@adelekeuniversity.edu.ng

ABSTRACT

Abstract

Digital marketing is transforming the way pharmaceutical businesses have done business for decades. Digital has become an essential aspect of daily life. All industries have been rapidly adapting to the digital era. However, aside from the website, pharmaceutical companies have not been able to fully embrace digital marketing. In this day and age, many pharmaceutical businesses use social media or e-commerce sites as their digital marketing platform. The goal of this study is to identify existing pharmaceutical digital marketing systems, their shortcomings, and potential solutions that address the identified challenges in order to improve health care quality and reduce costs by facilitating better, real-time, and convenient communication and delivery of medical information between pharmacists and patients. There are some businesses that are quite innovative in terms of digital advancement, but the application is limited due to a lack of strong case studies of digitalization in the pharmaceutical sector. The pharmaceutical industry has not yet fully embraced web marketing. The sector's cautious approach, along with uncertain regulation, has held back the pharmaceuticals sector, whereas marketers in finance, professional services, manufacturing, and business services have rushed ahead online. However, online professional and patient communities have evolved in response to increased usage of mobile, social media, and online information by patients, healthcare professionals (HCP), key opinion leaders (KOL), and the larger medical fraternity, prompting pharmaceutical companies to invest in and explore digital marketing strategies within industry guidelines.

Keywords: Business, Marketing, Digital Pharmacy, Finances, Applications, Healthcare, Social Media

I. INTRODUCTION/BACKGROUND

According to Radatz, (2004), amongst the many commercial activities that are now flourishing in this environment are Internet Pharmacies (e-Pharmacies, Cyber Pharmacies), providing a variety of products (health and beauty products) as well as prescription drugs. Some pharmacies only dispense drugs with a valid prescription, some provide online consultations for prescribing and dispensing medicines, and some dispense medications without a prescription. There are number of reasons that may lead patients to the use of the Internet in search of medical care. It acts as a second opinion or second doctor for desperate patients. Also, it gives insight into patient problems, as well as the drugs that could cure them.

Medical services face a lot of challenges and bottlenecks ranging from death of trained and qualified personnel, ill-equipped facilities up to low utilization of modern technology in the delivery of health services (Ukaoha, & Egbokhare 2012). Most governments especially from developing economies are exploring better and cheaper alternatives of delivering health services to their citizens and the advent of technology especially ICT (Information and Communications Technology) has pioneered better concepts of delivering health care at affordable rates and with a high probability of targeting or reaching out to more people especially in remote habitations (Adewale, 2004).

Many traditional marketing methods have become ineffective and obsolete in a new digital era. Digital marketing is growing in importance, it is developing continuously and becoming more complex, as the technology, new digital channels, tools and platforms evolve, and the competition strengthens. It is estimated that the influence of digital marketing will continue to grow in the coming years.

2. LITERATURE REVIEW

2.1 Evolution of Pharmaceutical Marketing

The pharmaceutical industry is different from other types of industry (Stremersh & Van 2009). It's a science-based industry highly regulated when comparing to other industries. Because medicines have a massive impact on the quality of life of people, the global system constituted by regulators, healthcare providers (e.g., physicians or pharmacists) and payers (e.g., government and insurance companies) is architected in order to protect the welfare of patients at a tolerable cost.

Ding *et al.*, (2014), the pharmaceutical industry has been growing in a steady way, around 4% to 7% annually and is getting quickly to a market value of 1 trillion American dollars, while facing difficult challenges in innovation and marketing. These authors declare that stores with a low capability for innovation will have a low differentiation potential, leading to lower margins, while a stores with weak marketing skills will not fully leverage the value that innovation can bring, and consequently will have potential losses of billions of dollars which are required for their stakeholders and for a constant innovation. Therefore, stores who have a robust innovation and marketing skills have been able to manage effectively their challenges and will keep generating value for their stakeholders.

As stated by Ding, *et al.*, (2014), society sees two conflicting features in medicines. Not only they view them as a normal commodity that satisfies some consumer needs, but also as something that people consider as a basic necessity. These authors express that pharmaceutical stores must be aware of these two features while they capitalize on their innovations.

In Figure 2.1, this task demands a cautious management not only of the relationship between the stores with its 3 key stakeholders (patient, healthcare provider and payer), but also the relation between these stakeholders, all subject to tight regulatory pressures from regulatory bodies. Table 2.1 shows the key players and their characteristics in the pharmaceutical market.

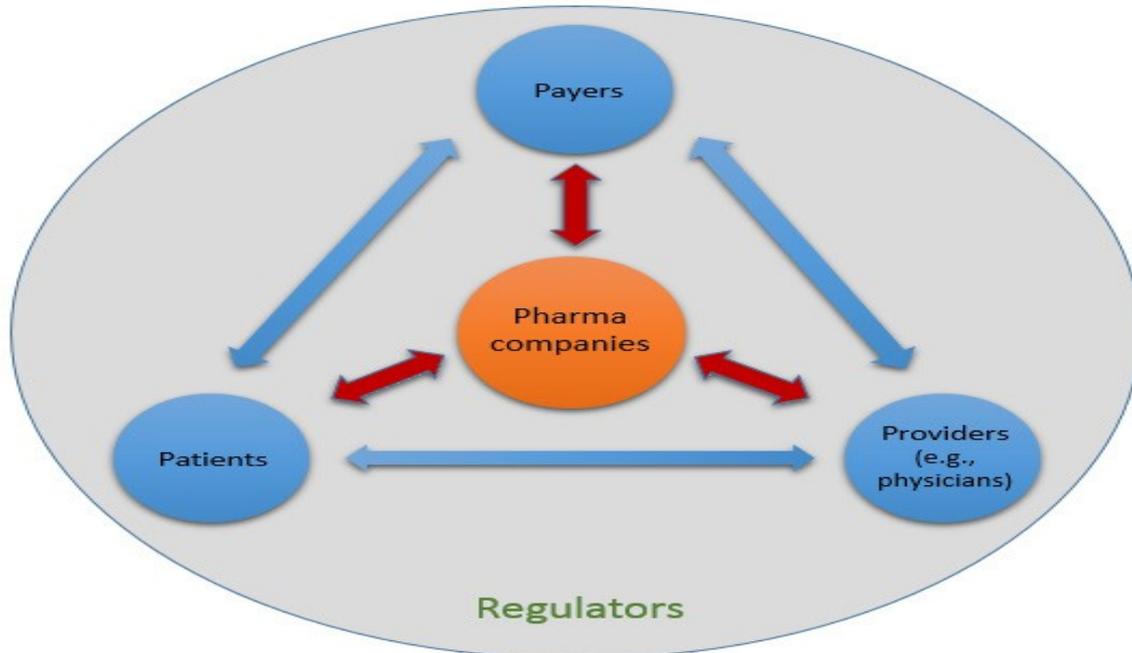


Figure 2.1 – Players and relationships in the pharmaceutical market (Ding, et al., 2014).

According to Rollins and Perri (2013), pharmaceutical marketing has been changing radically since the 90s. These authors affirm that before the 90s the promotion of pharmaceutical products was focused almost on healthcare professionals. They also state that pharmaceutical marketing had a model of direct sales oriented to prescribers (e.g., physician) that was associated with a high investment in the promotion of the product. Nowadays, diverse stakeholders are involved in the marketing and sales practice. Payers and pharmacists are a part of the distribution channel, and can have a major role in the decision of the dispensed product to the patient. Sales representatives of pharmaceutical stores do not have the same easy access to the physician of the past and their promotional tools are more regulated. In order to change this trend, pharmaceutical stores started to explore the power of the internet, through websites and mobile technologies, allowing them to spread information to physicians.

Rollins and Perri (2013) express that the pharmaceutical industry is far behind when comparing to other traditional industries that use direct-to-consumer (DTC) marketing. For these authors, it is clear that this industry needs to change its marketing model based on a push approach into a pull model that is oriented to the consumer (e.g., DTC advertising). They also state that nowadays, social media (e.g., social networks) is having a crucial role, allowing not only the passage from a one-way conversation to a dialogue between the consumer and pharmaceutical companies, but also a shift of power from the pharmaceutical stores to the consumers.

In this way, the consumer becomes an active participant in the choice of his treatment and is integrated in the pharmaceutical marketing environment (Rollins & Perri, 2013).

Table 2.1 – Key actors and influences on medicine use (Jimoh & Oliver, 2014)

Actor	Role	Actor's own expansionary ideas and actions	External pressures
Pharmaceutical industry	Developers, producers, promoters and sellers	Desire to increase profits mechanisms: (a) Marketing/promotion to physicians and public (b) Control over science (c) Disease mongering	×(a) Cost controls of governments and insurance stores ×(b) Drug licensing and safety regulations
Physicians	Prescribers and gatekeepers; sometimes researchers	(a) Interventionism (b) Imbalances in risk assessment (c) Limited knowledge (d) Medicalization	++(a) Industry's promotion of medicines +(b) Patients' requests +(c) Greater risk consciousness ××(d) Cost controls of governments and insurance stores
The public	Potential users	(a) Desire to get better (b) Belief in the value of medicines (c) Active consumers/expert patients	++(a) Industry's promotion of medicines +(b) Growth of consumer-oriented culture +(c) Government focus on choice and the expert patient
Governments and insurance stores	Set framework of health care including access to medicines; funders of health care; responsibilities in safety	(a) Improving access to health care (b) Supporting choice (c) Value of industry to the economy	++(a) Industry's promotion of medicines ××(b) Growing cost of health care provision
<p>Note: ++ = strong expansionary pressure; + = weaker expansionary pressure ×× = strong constraint on expansion; × = weaker constraint on expansion</p>			

2.2 Related works

Telepharmacy

Telepharmacy is another growing trend for providing pharmaceutical care to the patients at remote locations where they may not have physical contact with pharmacists. (Peterson and Anderson, 2004). It encompasses drug therapy monitoring, patient counseling, prior authorization, and refill authorization, monitoring formulary compliance with the aid of teleconferencing or videoconferencing.

Hospilog

According to David (2005), Medication error is a major source of problems during drug dispensing, particularly when this process is performed manually. Computerized medication dispensing cabinets can help reduce the rate of errors. On that background Hospilog was developed. Electronic medicine dispensers, make the handling of medicines in hospitals and other healthcare facilities safer, more transparent and economical. Hospilog is based on electronic cabinets of the American enterprise Pyxis. The prescription is made electronically. Then the cabinets hand out the demanded medicament. The whole system is connected to the existing hospital information system. The system was also successfully tested at the HCUG (Hôpital de l'université de Genève). It recently won the award of the Swiss eHealth care congress (David, 2005).

Predimed

David (2005) mentions that Predimed controls all the data of patients. The expenditure of medicaments is not controlled through electronic cabinets. The focus lays on the software and availability of data. Electronic drug prescription is included and even one of the main points. The users have mobile online touch-screen computers and also fix base stations. The system is currently tested at the CHUV Lausanne. In the near future it will be introduced at several departments of the hospital. The hospital in Nyon is also interested in the system.

Boxpicker (Swisslog)

This is a robot controlled logistic system for pharmacies. The system is not only used in hospitals. The medicaments are stored automatically by a robot. The system keeps also track of outdated drugs or the stock amount. Especially in Germany there are several systems running. A bigger system has also been introduced at a hospital in the UK (Nishaminy 2013).

2.3 Current Scenario and challenges of digital Pharmaceutical

Digital Marketing in any sector is a more cost-effective and less time consuming method to communicate with customers compared to traditional marketing. Digital marketing allows pharmaceutical marketers to use data to create more strategic engagement with prescribers and physicians. However, many companies are still not able to integrate digital into the wider business strategy. The pharmaceutical sector faces many challenges in adopting the digital marketing strategies some of which are explained below. (Rice B, 2001)

- i. **Inadequate company vision:** Most of the companies lack a proper vision for implementation of the digital marketing solutions. The strategies are not clearly defined, agreed upon and shared internally. A strong management is required to confirm the vision, set out the objectives and monitor the pace of work. The identification of the field force and marketing champions promoting the digital pharma vision is usually not found in the companies. (Rice B, 2001)

- ii. **A lack of digital minds:** The pharmaceutical sector lacks workforce that is skillful and wish to drive digital change. To establish digital marketing in the company, employees should have knowledge about the digital marketing, as well as the complexity of implementing digital in the pharmaceutical industry. Most of the companies lack the efficient workforce who understands the industry as well as the new digital marketplace simultaneously.
- iii. **A digital catastrophe:** Many pharmaceutical companies have started implementing digital channels and campaigns; however, the marketers in this field are unable to execute an overall effective digital strategy. Increased data has resulted in difficult analysis and utilization of data in digital strategies has thus created a digital catastrophe. The pharmaceutical marketers should unify data across channels; utilize the data in real-time, refine digital strategies accordingly using their digital minds.
- iv. **Poorly maintained websites:** Biopharmaceutical manufacturers are slow to use social media. The old “Web 1.0” world is still followed by some of the pharmaceutical companies. Pharmaceutical sector has preferred one-way flow of information which has carefully screened, legally approved, and protected against outside interference. Such websites only push information lacking direct interaction with patients. An out-of-date site with poor maintenance is worse than having no site at all. Efficient human resources must found to manage these interactions. (Rice B, 2001).

2.4 Benefit of Digital Pharmacy

- i. **Access to healthcare services:** The primary advantage of digital pharmacy is the easy access to healthcare services in remote and rural locations. Routine access to prescription medication and access to pharmacists are recognized as fundamental aspects to the delivery of patient-centered healthcare in remote and rural communities. Pharmacist can provide high-level pharmaceutical care services in remote areas that have lost or are losing access to healthcare services.
- ii. **Economic benefits**
 Digital pharmacy has several economic benefits. It is reported that starting a new pharmacy store is less expensive than the cost involved in the equipment and starting up a hospital, meaning having more skilled pharmacist can provide service to multiple sites. Hence, considering the rising pay scale for pharmacist and further building pharmacy for rural sites, costs are minimized. A pharmaceutical research targeted at a low-income population showed that >60% of patients would have faced difficulties in affording their medications if the pharmacy did not exist.
 Digital pharmacy on the other hand saves travel time and expense, which are major barriers for rural elderly and disabled veterans. Travel time and other costs associated with the travel are avoided when patients are not referred to other sites.
- iii. **Patient satisfaction:** Medication access and information in rural areas via digital pharmacy has an advantage of patient satisfaction. One of the prominent barriers in the clinic used to be with the elderly patients missing their appointments because they did not want to go out of their homes. This remote technology has allowed pharmacists to review patient’s medications without them having to travel. This has increased patient trust and satisfaction with the service.

2.5 Disadvantages of Digital Pharmacy

- i. Pharmacy regulation laws: Despite the widespread potential of digital pharmacy, the laws and policies that govern pharmacy operations do not adequately address the growing industry. A number of policy issues, such as the physical location of pharmacists that provide pharmacy services, minimum amount of time that pharmacist must be on site, the types of technology used, and the roles of pharmacists, pharmacy technicians, nurses, or other healthcare providers in medication distribution systems, need to be addressed. The regulations govern not only the system that ensures safe medication handling but also the operation of comprehensive medication use system, defining what role digital pharmacy plays in this broader scope of pharmacy services in acute-care settings.
- ii. **Reluctance to use technology**
 Other disadvantage of digital pharmacy involves reluctance or inability to use the technology. This is predominant in elderly people who are suspicious about technology. When face-to-face interaction is not present, the pharmacist's ability to fully access patient's condition might be hindered.

2.6 Strategies that can be implemented in pharmaceutical stores

Pharmaceutical stores have a huge opportunity to use their expertise healthcare reforms by altering their business model. Pharmaceutical sector is an information-intensive industry. Healthcare's business model has remained unaffected by the digital revolution until recently. Health is delivered traditionally till present as the industry lacks the usage of digital technologies. The strict regulations, lack of proper digital strategies, etc. have been major barriers for adoption of digital marketing. The stores require to have a well-defined strategy for implementation of digital marketing which most of them lack. Technology is not the only solution but it must be also used in the regular work process flow. Following are the few strategies that the pharmaceutical stores can adopt in order to increase the opportunities in digital era. (J. Pharm. and Tech, 2018)

- i. **Collaborative business model:** The pharmaceutical industry is quickly innovating despite its traditional barrier through collaboration with partners, stakeholders and beyond. The availability of digital technologies provides great potential for almost limitless collaboration. The collaborators can efficiently and effectively research and develop new therapies. For example, Pfizer has adopted an innovative cloud-based clinical data platform, which enables participants to aggregate, analyses and visualize clinical trial patient data across studies and drug programs, supporting intelligent trial design, precision medicine, pharmacovigilance and regulatory enquiries. (J. Pharm. and Tech, 2018)
- ii. **Business partners:** Digital strategies include partnering with stores which address complimentary aspects of a given disease. For example, stores marketing anticoagulants for atrial fibrillation should partner with medical device stores identifying these patients with remote cardiac monitoring. Introducing a digital marketing tool is not difficult. The stores must not only introduce but they must also adopt them. (J. Pharm. and Tech, 2018)
- iii. **Sharing data for population studies:** Large data collected tends to be useless unless good analysis is performed on it. The results associated with data should be brought out. The combination of point of care content, mobile and analytics will be what truly changes healthcare in digital. (J. Pharm. and Tech, 2018)
- iv. **Create a new organizational structure for digital marketing:** Appoint an e-marketing strategy manager, e-marketing product manager, digital marketing committee, etc. which can help to drive innovation on the digital marketing of the stores and build digital strategies.

- i. **Ensure IT support:** Adequate IT support is needed in order to provide solution to any digital marketing issues.
- ii. **Patient and Health Care Provider (HCP) services:** As patients and HCPs are using more technologies day by day, they also expect pharmaceutical stores to provide technology-based services that can help patients monitor and manage their health. These services can also significantly contribute to the research and development into new treatments. It also connects stakeholders across the broader healthcare ecosystem to support the delivery of treatment and provide evidence of results. Digitally- enabled patient services, such as apps or online platforms or educational resources that link to a broader set of services which aids patients and HCPs deal with health issues should be used.
- iii. **Introduce mobile apps:** The long wait of the pharmaceutical stores ended when the FDA (Food and Drugs Administration) released the guidance of mobile medical apps. The application helps better understanding of patients regarding their diagnoses and medications prior to discharge. Complete details of any medication can be mentioned in the apps which allows better direct to consumer marketing. Pharmaceutical stores would gain more profit if they partner with stores which can deliver the apps in a context of patient management including symptoms and medications, not specifically disease management.

3. PROPOSED METHODOLOGY

The Design of the proposed system will follow the use of Unified Markup Language such as DFD (Data Flow Diagram), Case diagram and Class Activity Diagram. The implementation of this work will be done using the Android Studio. Android Studio is an integrated development environment (IDE) for developing primarily with Java, but also with other languages. It is also an application platform framework for Java Mobile applications and others. The Android Studio IDE will be written in Java and can run on Windows, OS X, Linux, Solaris and other platforms supporting a compatible JVM.

The accomplishment of the application, will make room for creating a high level of communication between patients and pharmacist, through the use of effective information like the use of visual and location description. The successful implementation of this project will results in a digital pharmaceutical marketing android application that allows for a new source of income for pharmacist and a way for them to market both their goods and service, it will also help to build a relationship between the consumer/patients.

4. EXPECTED RESULT

The main focus of the proposed system is to implement a mobile, android based pharmaceutical digital marketing application. It would involve the creation of an environment for real-time convenient interaction between the Patient and the Pharmacist without the need to do any background checks on the qualification of the Pharmacist, worry about getting counterfeit drugs, worry about queuing up before they can be attended to by a professional, worry about the distance, and commute to the Pharmacist's physical location. The aforementioned features would be enjoyed by the user at the comfort of their homes.

5. CONCLUSION

This review investigated different techniques used in addressing the challenges faced by the pharmacists and their clients in ensuring smooth communication relation and service delivery. The study would be basically conducted to design a mobile android based system framework that will ensure effective and efficient securely connection and communication of patients with a Pharmacist at the comfort of their own home.

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