MONITORING HEALTH CARE RESOURCES IN GOVERNMENT HOSPITALS

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ABSTRACT
Government hospitals provide medicines for the treatment to the patients based on the diagnosis. Generally government hospitals stores all the patients historical data and current data in cloud .In our system user can register with their details, which is stored to the admin database. This system allows the user to view the hospital location using predictive algorithm and details about the hospital such as doctors, medicines ,specialists,beds availability and also helps the patient to get details about the government hospitals. Financial and administrative performance are improved by high utilization of resources and reduced fraud and abuses and optimized by supply chain and human capital management.

1. INTRODUCTION

This paper aims to develop a comprehensive system for monitoring and managing health resources in government hospital. In emergency situations, patients may be exposed to potential harm or risks. So if the government hospital doesn't have enough things during an emergency, it may be necessary for us to redirect to another hospital where the required resources are available. Here in this paper user first sign up and login into the system providing their information. After users register and log in, the system reviews the provided details. If the users preferences and requirements match the offerings of any specific hospitals, the user proceeds to go to that designated hospital. However, in cases where the user's preferences do not match with the available options or if the preferred hospital is unavailable then user will go with the alternate one [1]. This ensures that users have the flexibility to choose an appropriate healthcare facility based on their preferences and the availability of resources.

Here we are developing an application for government hospitals such that it is monitoring the health resources in the hospital.Our system ensures that information about medicines, beds, doctor availability, location of hospital, and the specialization of doctor is always up-to-date. The system prevents shortages and reduces waste by managing hospital supplies more efficiently, ensuring that essential items are always available when needed [2]. By doing this, hospitals use their resources wisely, serve patients better, and overall , make health care more effective.

2. LITERATURE SURVEY

1. To date, the health care industry has paid little attention to the potential benefits to be gained from big data. While most pioneering big data studies have adopted technological perspectives, a better understanding of the strategic implications of big data is urgently needed. To address this lack, this study examines the development, architecture and component functionalities of big data, and identifies its capabilities, including traceability, the analysis of unstructured data and patterns of care, and its predictive capacity to support healthcare managers seeking to formulate more effective big-data- based strategies [3]. Our findings will help healthcare organizations respond strategically to the challenges they face in today's highly competitive healthcare market.

2. Since the 1960s, methods for extracting useful information from large data sets, termed analytics or data mining, have played a key role in fields such as physics and biology. In the last few years, the same trend has emerged in educational research and practice, an area termed learning analytics (LA; Ferguson, 2012) or educational data mining (EDM; Baker & Yacef, 2009). In brief, these two research areas seek to find ways to make beneficial use of the increasing amounts of data available about learners in order to better understand the processes of learning and the social and motivational factors surrounding learning. The goal of these efforts is to produce more efficient, more effective, and deeper learning in the context of increasingly positive learning experiences. The emergence of EDM/LA is a recent phenomenon. The first meetings of scientists in this area were the Educational Data Mining workshops, which started in 2005 and became an annual conference series in 2008. This conference series was joined by the Learning Analytics and Knowledge conference series in 2011. The two research areas of EDM and LA, emerging from different communities of scientists and practitioners, have somewhat different goals; discussing these differences is outside the scope of this report (see Siemens & Baker, 2012). In brief, the validity of models of learners and learning is perhaps the key focus of the EDM community, whereas the use of the results of analysis to drive changes in practice by instructors is perhaps the key focus of the LA community. The conferences in EDM and LA were followed by the establishment of journals devoted to the topics, with the Journal of Educational Data Mining commencing publication in 2009 and the International Journal of the Society for Learning Analytics Research expected to commence publication in 2013. As of this writing, the International
Educational Data Mining Society has approximately 150 members and over 600 subscribers on its mailing lists. A range of methods has been developed by these two communities, drawing from areas such as data mining, computational science, statistics, psychometrics, and social network analysis. (A selection of these methods will be discussed below; a fuller review can be found in Baker & Siemens, in press).

3. Most businesses today run on structured data – numbers and categories. According to IBM, 80 percent of the data currently produced is unstructured – text, image, video and audio. While some businesses may choose to run the same way in the future as they do today, doing so could render them unproductive and noncompetitive. These businesses may not survive as their customers, suppliers and competitors move beyond them by taking full advantage of hybrid data, a combination of unstructured and structured data [4]. Hybrid data empowers businesses to use all the available data to make the best decisions possible.For a prescriptive analytics technology to be transformative, it must be able to process hybrid data. Without incorporating hybrid data, decision-makers are making their decisions based on just 20 percent of the available data. Figure 1 is a chart from Gartner Research that showcases the evolution of analytics, culminating in prescriptive analytics with hybrid data.

4. Institutions of higher education are operating in an increasingly complex and competitive environment. This paper identifies contemporary challenges facing institutions of higher education worldwide and explores the potential of Big Data in addressing these challenges[5]. The paper then outlines a number of opportunities and challenges associated with the implementation of Big Data in the context of higher education. The paper concludes by outlining future directions relating to the development and implementation of an institutional paper on Big Data.

5. To describe the promise and potential of big data analytics in healthcare. The paper describes the nascent field of big data analytics in healthcare, discusses the benefits, outlines an architectural framework and methodology, describes examples reported in the literature, briefly discusses the challenges, and offers conclusions. The paper provides a broad overview of big data analytics for healthcare researchers and practitioners. Big data analytics in healthcare is evolving into a promising field for providing insight from very large data sets and improving outcomes while reducing costs. Its potential is great; however there remain challenges to overcome.

6. Over the last three decades, the prevailing view of information technology strategy has been that it is a functional-level strategy that must be aligned with the firm's chosen business strategy. Even within this socalled alignment view, business strategy directed IT strategy. During the last decade, the business infrastructure has become digital with increased interconnections among products, processes, and services. Across many firms spanning different industries and sectors, digital technologies (viewed as combinations of information, computing, communication, and connectivity technologies) are fundamentally transforming business strategies, business processes, firm capabilities, products and services, and key interfirm relationships in extended business networks. Accordingly, we argue that the time is right to rethink the role of IT strategy, from that of a functional-level strategy— aligned but essentially always subordinate to business strategy—to one that reflects a fusion between IT strategy and business strategy. This fusion is herein termed digital business strategy. We identify four key themes to guide our thinking on digital business strategy and help provide a framework to define the next generation of insights. The four themes are (1) the scope of digital business strategy, (2) the scale of digital business strategy, (3) the speed of digital business strategy, and (4) the sources of business value creation and capture in digital business strategy. After elaborating on each of these four themes, we discuss the success metrics and potential performance implications from pursuing a digital business strategy. We also show how the papers in the special issue shed light on digital strategies and offer directions to advance insights and shape future research

7. Big Data governance requires a data governance that can satisfy the needs for corporate governance, IT governance, and ITA/EA. While the existing data governance focuses on the processing of structured data, Big Data governance needs to be established in consideration of a broad sense of Big Data services including unstructured data. To achieve the goals of Big Data, strategies need to be established together with goals that are aligned with the vision and objective of an organization. In addition to the preparation of the IT infrastructure, a proper preparation of the components is required to effectively implement the strategy for Big Data services. We propose the Big Data Governance Framework in this paper. The Big Data governance framework presents criteria different from existing criteria at the data quality level. It focuses on timely, reliable, meaningful, and sufficient data services, focusing on what data attributes should be achieved based on the data attributes of Big Data services. In addition to the quality level of Big Data, the personal information protection strategy and the data disclosure/accountability strategy are also needed to achieve goals and to prevent problems. This paper performed case analysis based on the Big Data Governance Framework with the National Pension Service of South Korea. Big Data services in the public sector are an inevitable choice to improve the quality of people's life. Big Data governance and its framework are the essential components for the realization of Big Data service.

8. Nowadays the increase of data variety considered very dispute problem for analysis. So innovative methods are mandatory for analytics especially in big data where the data in characteristic very complex and unstructured. The analytics is the process of analysis to predict concealed pattern and association among data. The main objective of this survey paper is to provide the exhaustive view of different predictive analytics applications and approaches. Analytics methods focused with dissimilar perspectives based on applications and data variety. Some of the application discussed is big data in hotel governance, higher education, health care, data e-governance, consumer orientations. This paper present different predictive approaches adapted for different application with challenges and suggestions.

9. Consumer analytics is at the epicenter of a Big Data revolution. Technology helps capture rich and plentiful data on consumer phenomena in real time. Thus, unprecedented volume, velocity, and variety of primary data, Big Data, are available from individual consumers. To better understand the impact of Big Data on various marketing activities, enabling firms to better exploit its benefits, a conceptual framework that builds on resource-based theory is proposed. Three resources— physical,

human, and organizational capital—moderate the following: (1) the process of collecting and storing evidence of consumer activity as Big Data, (2) the process of extracting consumer insight from Big Data, and (3) the process of utilizing consumer insight to enhance dynamic/adaptive capabilities. Furthermore, unique resource requirements for firms to benefit from Big Data are discussed.

10. The dynamic capability perspective extends the resource-based view argument by addressing how valuable, rare, difficult to imitate and imperfectly substitutable resources can be created and how the current stock of valuable resources can be refreshed in changing environments. The concept of dynamic capabilities emerged in the 1990s, and the field has advanced considerably since. This paper presents a review as well as a synthesis of the extant literature. This synthesis first highlights, that dynamic capabilities are shaped by enabling and inhibiting variables within and outside the firm, including the perceptions and motivations of managers; secondly, it identifies processes that create dynamic capabilities; and thirdly, it explains that dynamic capabilities do not automatically lead to performance improvements.[6]

3. PROBLEM STATEMENT

Government hospitals play a vital role in ensuring access to affordable healthcare for a large portion of the population. However, effective delivery of care is often hampered by inefficient management of healthcare resources.

Here's a breakdown of the core problem:

Limited Visibility and Inaccurate Data: A lack of centralized and standardized data collection on resources like medications, equipment, and personnel creates blind spots. This makes it difficult to assess real-time availability, predict shortages, and optimize resource allocation.

Inefficient Resource Utilization: Ineffective monitoring can lead to underutilized resources in some hospitals while others face critical shortages. This disparity hinders service delivery and patient care.

Inventory Management Challenges: Outdated inventory management systems can result in expired medications, equipment breakdowns due to lack of maintenance, and overstocking of unnecessary supplies. This leads to wasted resources and potential safety hazards.[7]

Data-Driven Decision Making Gap: Without access to reliable data on resource utilization and needs, planning for procurement, budgeting, and infrastructure development becomes a challenge. This can lead to reactive decision-making instead of proactive strategies.

Impact:

These issues have a cascading effect, impacting:

Patient Care: Resource shortages can lead to delays in treatment, limited access to specialized care, and potentially compromised patient outcomes.

Financial Sustainability: Inefficient resource use translates to wasted funds and increased costs for the healthcare system.

Staff Morale: Working in an environment with limited resources can lead to frustration and burnout among healthcare workers [8]. This problem statement highlights the critical need for a robust system to monitor and manage healthcare resources in government hospitals. By addressing these challenges, we can ensure efficient resource allocation, improved patient care, and a more sustainable healthcare system.

4. PROPOSED SYSTEM

Our application provides the user the convenience where they can register, login and view all the information related to the hospital like Hospital Location, Doctors name with their Speciality, Consulting Time and days [9],Availability of Doctor to know whether doctor is present or on Leave, Number of Available Medicines, Number of Available Beds.This helps the user to make a decision to visit hospital according to their needs.This can be useful to the hospital to keep track on their resources and provide the best resources to maintain their reputation.This can create a positive impact in a user towards the government hospitals who thinks government hospital has less resources and helps in

promoting government hospitals and free services to help the people.

ADVANTAGES OF PROPOSED SYSTEM

- Very useful in emergency cases.
- Can take Decision to visit or not.
- Helps in promoting Government Hospitals.
- Time and Cost saving.
- Gets accurate information.
- No need to visit hospital prior to know information.

5. SYSTEM ARCHITECTURE

This paper aims to develop a comprehensive system for monitoring and managing health resources in government hospital [10]. It has Admin module,Hospital Module and User Module.System architecture is a conceptual model that describes a system's structure, behavior, and other views. It can also refer to the description of an existing system. A system architecture is made up of a diagram that defines the system's structure and its subsystems, along with the behavior of the components.
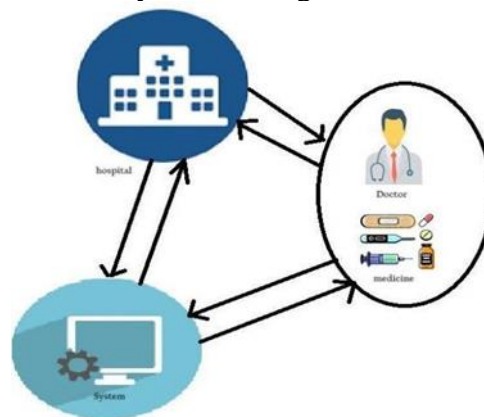
Fig 5.1 System Architecture

6.   IMPLEMENTATION

ADMIN MODULE

In this module, admin can login directly, after successful login admin can perform some operations like authorizing the hospitals after their registration, authorizing the users after their registration. Only admin can view Hospital and User details. Only after successful authorization by admin,Hospital and User can login.

HOSPITAL MODULE

In this Module, Hospital can register, after registration the admin must authorize the hospital,until the admin authorizes the Hospital,the hospital will be in waiting status and it cant login even after registering.When status is authorized,the hospital can login and can Add Doctors, View Doctors, Add Medicine, View Medicine, Add Beds,View Beds and logout.

USER MODULE

In this Module, User can register, after registration the admin must authorize the user, until the admin authorizes the user, the user will be in waiting status and it cant login even after registering.When status is authorized,the user can login and can View Profile, Search Hospitals, view Doctor Details, ,View Beds,view Medicine Details and logout.

7.   OUTPUT SCREENS

Fig 7.1 Home Page

Fig 7.2 Admin Login

Fig 7.3 Admin Home Page

Fig 7.4 View Users Details

Fig 7.5 View Hospital Details

Fig 7.6 Hospital Login

Fig 7.7 Hospital Registration

Fig 7.8 Hospital Home Page

Fig 7.9 Add Doctors

Fig 7.10 View Doctors

Fig 7.11 Add Medicine

Fig 7.12 View Medicine

Fig 7.13 Add Beds

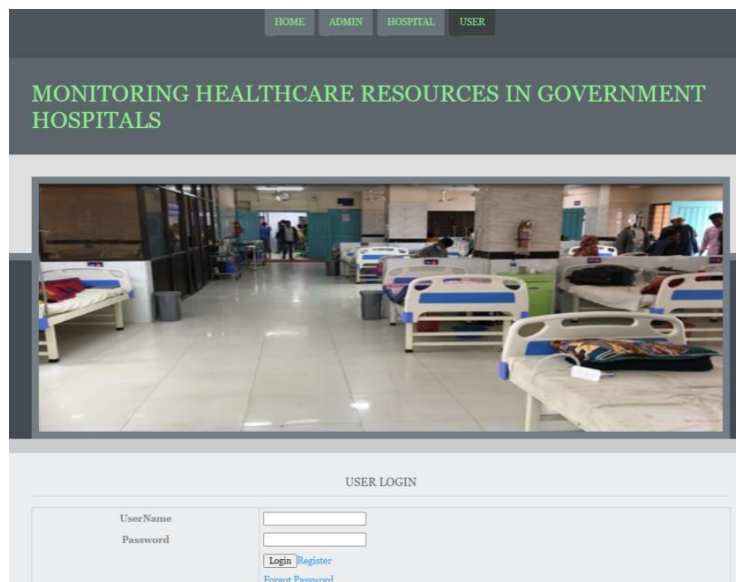Fig 7.14 View Beds

Fig 7.15 User Login

Fig 7.16 User Registration

Fig 7.17 User Home Page

Fig 7.18 User profile

Fig 7.19 Search Hospital

Fig 7.20 Search Medicine

8. CONCLUSION

In this paper, we present a study on monitoring the health care resources in government hospitals, especially useful in emergency cases where we can save the life of the patient by checking the resources like specialized doctors, availability of beds and medicines in the hospital before visiting it.This application is useful for a user who want to visit hospital where he can check resources and book appointment.This application shows doctor specification details so, user can decide by checking it whether he/she needs to visit or not. It also shows whether the doctor is available or on leave by which the user can decide to visit hospital on that day or not. Every doctor Consulting days and Consulting time are also available to user in order to provide then convenience.This application is also useful for the hospital to check their resources and can improve their resources.

9. FUTURE ENHANCEMENT

As technology continues to evolve, future iterations of health resource monitoring in government hospitals will likely integrate advanced technologies such as artificial intelligence (AI), Internet of Things (IoT), and blockchain. AI algorithms can analyze vast amounts of data to predict resource needs and optimize allocation, while IoT devices can provide real-time monitoring of equipment and supplies. Blockchain technology can ensure the security and integrity of data, enhancing trust and transparency in resource management.We can make this web application as mobile application for the convenience.With the increasing demand for remote healthcare services, future health resource monitoring systems will likely incorporate remote monitoring capabilities and telemedicine platforms. Patients will be able to access healthcare services from anywhere, reducing the burden on physical hospital infrastructure and improving access to care, especially in rural areas.

10. REFERENCES/BIBLIOGRAPHY

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