**Automated Web System Application**

The purpose of this paper is to analyze a new automated web system application for online data storage and processing (see appendix). The effectiveness of the application will be achieved through the creation of several new automated systems which are the Supply Chain Management System (SCMS), The Customer Support System (CSS), Strategic information management system (SIMS), and Order Entry System (OES). The purpose of the new application is to ensure that there is an accurate, efficient, and reliable storage and processing in Homeland Medical Center. For this paper, the focus will be on pharmaceutical services as a representative of all services provided in the hospital. The information used in this paper was obtained from an analysis of a real-life health facility.

**About Homeland Medical Center**

Homeland Medical Center was started in 1970 and is located in North Carolina. The hospital provides 33 different services for both inpatient and outpatients. Nuclear Medicine Services, Ophthalmic Surgery Services, and Home Health Services are some of the services offered. The hospital has 39 beds and a total of 60 workers. Among the 60 workers are 12 doctors, 2 Pharmacist, 2 Audiologists, three laboratory technicians, and 20 nurses. The hospital also supplies drugs to other hospitals through the pharmaceutical and drugs management department.

**About the Current Hospital’s Information System**

The hospital uses a manual information system. The desire of most patients is to have a close and friendly relationship with a pharmacist (Guirguis, Johnson, & Emberley, 2014). This relationship can only be created if the pharmacists have detailed information about the patient. For this to be achieved pharmacists must have access to all records of patients (Agomo, Ogunleye, & Portlock, 2016). In this hospital, patient’s data is collected manually and recorded in patient’s files which are then stored in one of the hospital’s rooms.

**The Current System’s Strengths, Weaknesses and The Rationale Behind the Need for A New System**

The main strength of manual information systems is that data cannot be easily lost once entered. Manual information systems are only useful in small organizations (Rohner & Rohner, 2016). Given that data stored manually cannot be easily accessed and manipulated for analysis, it takes a lot of time for pharmacists to accomplish their mission. On the other hand, E-prescriptions enables pharmacists to review for prescriptions for accuracy, label and package medicine, prepare orders, and maintain patient records (Odukoya, Schleiden, & Chui, 2015). By looking at all these issues, it is evident that the services required are very complex.

**The Users of the New Automated Web System Application**

The application will be used by pharmacists to analyze the needs of patients. The patient's drug prescriptions information will be availed to them via the app. Patients will be able to check the status of their prescriptions. The hospital’s finance department will also use the application. The pharmacies that purchase drugs from the pharmacy will also use the app to make orders and also follow the shipment process of their orders.

**Description of The Client Population to Be Served**

The application is meant to serve all the hospital’s clients who include; inpatients, outpatients, and purchasers of drugs from the hospital's pharmacy. The users of the application will be individuals aged 18years and above. The application will be accessible to all adults regardless of race, gender, or country of residence.

**Analysis of The Effectiveness of the New Automated Web System Application**

The application will first be introduced to pharmacists who are the primary users to determine whether it is acceptable and whether it will make their work easier. Once the application is approved for use by pharmacists, it will be introduced to patients. Researchers will conduct a study involving several patients using the application to determine the time they spend when using the application. The research will also try to determine whether patients can obtain all the services they need using the application. The application will be said to be useful if; all the information required by the pharmacist will be available to them; less time is spent accessing data via the application than when using manual data; patients can get all the services they need without straining.

**Description of The Architecture and Benefits of the System**

Supply chain management (SCM):  Create a new system of checks and balances aimed at tracking immediate inventory.

Customer support system (CSS):  Create a refill reminder that coordinates with the SCM system from patient’s contact information. Both SCM and CSS will create a convenient environment for the prescriptions to be refilled within the required time. Patients can be informed about upcoming refill dates by contacting them either through emails or text messages.

Strategic information management system (SIMS): The future purchasing decisions can be predicted through analysis by creating various trend reports using data stored in the central database for a specified period (Kamley, 2014). In addition to this, the sales and marketing departments can determine the possible promotion strategies by customizing their reports.

Order Entry System (OES): Create a web application to replace the office or storage system. The web application will be directly integrated with the new database system. This system will serve the purchasers of drugs from the hospital’s pharmacy. It will be effortless to set up the application at any workstation regardless of location. Specific mobile devices will have the ability to access the web application through read-only on a closed network for verifying orders once they arrive at the health-care facilities.

**Description of The Application’s Technology Plan**

The web-based ordering application will have a high bandwidth that will be supported by creating a new server. The server will also support massive amounts of data that is supposed to be stored for an extended period. The hosting of the web application will be done either through a cloud-type provider or on the server. A customized web-application will be created creating billing statements, case manifests and entering orders. The application will also be used in confirming orders received by the pharmacy. All the work computers will be updated to the current standards. It will be ensured that the computers are consistent with each other since they are not necessarily required to be at the top-of-the-line. At the initial stages of this plan, a web-based application and a centralized database will be created to ensure that the ordering process is streamlined from the beginning to the end. The database base can either be MySQL or SQL.

**Benefits and Strengths of the Application**

All hospitals can use the application when providing different services. All users will have portals where they can log in when using the application. The use of the application will boost the hospital’s productivity. Pharmacists provide their services effectively, and they will be useful in ensuring the safety of patient's records. The other benefit is that there will be a reduction in the number of working hours. Additionally, the time spent when prescribing substances will be significantly reduced. The main strength of the system is that pharmacists will be able to prescribe substances in a single workflow.

**User Training and The Ease of Use of the Application**

The application will have an excellent layout to ease navigation through different pages. Headings and subheadings will be used to guide the user through the contents of the application. The login page will be readily accessible to ensure that users log in to their portals without difficulties. A user manual will be developed and availed in the login page for the new users to see the directions of use. There will be a customer care team, managed through the communications department which will train users on how to use the application. There will be a live chat platform created to ensure that any users with difficulties get assistance as soon as possible. A corporate number will be provided for users to call whenever they face difficulties.

**Implementation Challenges**

Several challenges might be encountered during the implementation process. For instance, the automated systems require new input forms which might be expensive to develop. A processing flow must be designed to intermix the new automated processes and the manual processes. Several ongoing master and transaction files requirements must be met for the automated system to be effective. A lot of analysis needs to be done to determine the extent to which the manual environment can be augmented by automation. The current manual system must be analyzed to determine the best way of substituting it with an automated system.

**The Impacts of Using the Application**

The success of the automated systems of checks and balances will see to it that the losses that arise from inventory loss, reduced customer satisfaction, and time wasted when reviewing the missing orders is prevented. A lot of time spent when manually entering data will be saved once the employees are used to the automated systems of checks and balances.

Customer satisfaction will be improved since customers will be able to check their prescriptions from either a computer all a mobile device. Given that it will be easy to manipulate data; pharmacists will be able to determine patients’ needs by analyzing patients’ data using a variety of reports created using the manipulated data. The usual workflow of the hospital will not be affected since the application will be introduced gradually to different departments. Generally, the automated systems are more accurate and efficient than manual information systems. The following is the structure of the automated systems.

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Appendix