**Description of the challenge**

**Background**

Proper collection, aggregation, storage and dissemination of health care data are some of the most challenging factors in the healthcare industry. Prior to the advent of electronic health records, the healthcare industry was burdened by paperwork that complicated operations and made adequate service delivery an almost unachievable goal. Early implemented healthcare systems that supported the retention of patients’ personal information and health progress documentation were often faulty and inefficient, resulting in less reliable and ineffective data. As a result, this area has raised concerns from government agencies, non-government organizations, trade groups, and other stakeholders. To address these concerns an assessment must be made regarding the deficiencies in data capture and retrieval in order to support data retention and use in patient treatments. In most economically deprived nations the traditional poor methods of information handling of healthcare data is a recurring event leading to lower quality of care for patients. Even in more developed countries, there exist various gaps between customers/patients information and healthcare providers (Swan, 2013). This has consequently prompted the need to design reliable, efficient, and advanced healthcare information systems in order to ensure safe and proper custody of vital health records.

The need to implement an advanced healthcare information system is subject to various challenges including; lack of interoperability between health systems, security, HIPPA compliance, access to data, adoption of electronic records and the impact on physician practice patterns. This challenge was triggered with the conditions imposed by the government through meaningful use requirements. A significant component of meaningful use is the transition for healthcare providers to utilize Electronic Health Records (EHR), eliminating paper records. A wide variety of data is stored in EHR systems, often collected from diversified sources. For instance, the data is not only collected from hospitals and other health facilities, but also from reliable external sources such as healthcare providers, laboratories, and imaging centers. This creates the need for creating an advanced platform where records can easily interact via technology regardless of the geographical location of the user (Pickard, 2014). An advanced health care system also allows for ease of data collection from multiple stakeholders in the healthcare industry, health practitioners and patients who can collect data remotely and share it via smartphones and sensors.

While the integrated healthcare data systems might play a key role in transforming the data handling approaches in the healthcare industry it comes at the cost of potential risks. For example, privacy of patients’ personal information could be compromised as this data is accessible to multiple users. Without appropriate safeguards information could be used in a malicious manner.

**Scope statement**

This paper is based on a global healthcare challenge following a critical analysis of the scenario. The primary objective of the study is to analyze the current information handling procedures in the healthcare industry and the possible technological advancements that can be made in order to support the aggregation of consumer health data. The results of this study is fundamental to the healthcare industry as it will provide an in-depth analysis of the major challenges faced with the mass aggregation of data in the healthcare sector. Other motivations that necessitated this study include the reduction in reimbursement to the providers, the movement to pay for quality by payers, the need to improve efficiency in operations, and delays in information handling. Additionally, the increased need for patients to be partially responsible for their health as they track and record their health status via sensors and other health condition recorders has also prompted the need for additional data aggregation. Most of the information utilized in this study was obtained as per supervisor’s advice. Some of the data collection techniques that we used included holding interviews with different stakeholders such as patients and health professionals and questionnaires consisting of simple and straightforward questions. Additionally, we obtained information from secondary sources that include relevant journals, articles and books, reliable websites, and health information from other reliable sources such as health institutions. Accuracy, comprehensiveness, consistency and timeliness of the data was ensured to ascertain that only reliable information was used.

The role of technology, more importantly the internet, and its use in disseminating information is significant in all industries including the healthcare industry through its extension to HIT, as a more specific vehicle with which healthcare information can be handled (Raghupathi, 2014). It can go as far as enhancing the achievement of population health goals through activities like clinical research, quality measurement, and public awareness and safety. The origins of the aggregated health data can be traced to personal data extractions from information tables that are compiled together; this compilation facilitates efficiency. One challenge arises when the custodians of the information have sole responsibility of choosing what to do with the available data. Intelligence is only boosted when such data in the table columns are availed and analyzed (Kuo, 2014). With the power of today’s technology and data repositories, the size of the data elements, the number of sources for the data, or the ranking of importance of the place of origin of the data, all have little significance; what is important is the ability to gain pathways to the data and make meaningful use of it via analysis.

**High-level objectives of a solution that addresses the specific factors listed in the description of the scenario**

Involvement in the healthcare industry entails generation, collection, storage and dissemination of enormous healthcare information. Healthcare information systems also involves other areas that include finances and staff, research and human resource data. Furthermore, this data has to be analyzed for various interests of different stakeholders so as to improve its quality and organization. All this information should to be integrated in a common safe place so as to improve access, operations and general operations efficiency in the industry.

First, advancements in aggregating healthcare data can involve designing new source data feeds since most of the healthcare data is not involved in significant transformations since it’s directly fed into the data warehouse. Most of this data remains unchanged until it’s needed. This approach would be viable in getting rid of the traditional method. Additionally, integrating healthcare data requires a flexible architecture. Embracing a flexible architecture in aggregating healthcare data allows sourcing the data from different sources. Merging information over different source systems is also easier and better via a flexible architecture (Raghupathi, 2014). Re-engineering the current data aggregation approaches in the healthcare is a quicker approach to innovation. Unlike the current systems, healthcare data is highly sensitive, and thus healthcare systems must be personalized and preventive. This could be a viable approach to creative a more reliable health care delivery model, and can be done by bucking the tradition. These strategic objectives can play a fundamental role in transforming the healthcare industry from a traditional and paper – oriented industry to a more technologically advanced, reliable, efficient and leveraged model (Grove, 2013).

**Resource needs**

The required improved resources on aggregating consumer data is to perform very essential purposes. The purposes include storing data safely for easy retrieval, personalizing patient data to enhance privacy, and tracking a patient’s health progress while away from the hospital (Baue, 2014).The underlying rationale behind the introduction of electrification in healthcare is advancing safety, the excellence of services delivered, reliability, ease of use and privacy. Ensuring efficiency in the healthcare industry is, therefore, unavoidable. Intensification of the effectiveness of health care and communal health service culture ensures that high efficiency and reduced customer service duration by reducing costs and saving time by using electronic databases.

Development of the public health information frame is also a major step towards the aggregation of data in the healthcare industry. This approach can be enabled since through electrification technology, it will be possible to compile data from various sources making them easy to access. Once data is available, the face of health care providers can easily be changed for the providers to study available trends, behaviors and demand from their several customers to provide quality, and expand at large.

Some health practitioners also offer their services in the community and household. There is a possibility for the relevant healthcare providers to understand the communities and societies they are located in by using the information availed by their patients. This simple sensitivity will identify the health gaps within the community and be able to fill them. Technology has changed a lot today, and most customers do not have to travel to health care providers unnecessarily, they can attain some services at the comfort of their homes, offices and other places of work. Construct health expertise and understanding; once employees have familiarized with modern technologies, it becomes the best way to package one’s mind with ideas. Specialization is enabled through extra consultation and familiarization with responsibilities. This is realized through the positive use of technology, but under the influence of the internet, one can have a lot of information at hand.

**Implementation constraints**

The aggregation of consumer health data is viewed as one of the best things so far, but on the other side, its implementation is met by some challenges that deter the spread. The obstacle is the worst enemies of growth in any sector, organizations or department. Some of the constrictions met are quickly viewed below.

High costs involved in data aggregation is one leading challenge. For instance, it is very expensive to collect, organize and compile data from different sources. The high costs have led companies into serious debts; this has resulted into retardation in growth of most health firms (Kamateri, 2014). Secondly, the program design on how to achieve this aggregation of data is never realistic on some occasions; the allocated time span for the adoption of the new program is never enough yet much is expected. This has brought serious failure in health care systems and if not properly scrutinized most people do run away from it.

Technology is one thing that is currently acting as a global conduit towards any development. The choice of technology is, therefore, very determinant on the development of healthcare facilties. When the technology is not cost effective, labor effective and productive effective then it becomes a poison to development and growth. In most if not in all health settings, traditional technology is used in the aggregation of consumer health data. Most people go for expensive technology, but they end up becoming a slow and fast breakdown, which causes them a lot regarding efficiency and effectiveness. Program design is another constraint since employees and stakeholders at times implement the wrong actions and decisions which are poor, inefficient and wrong. If such design does not match the chosen technology and possible results, then complications might arise.

The constraints that are met include privacy and security issues, interoperability, extensiveness and pace of change needed by stakeholders. These among others are acting as the top challenges faced when implementing health information technologies and handling the given health challenge.

**Stakeholder needs and potential impacts**

Stakeholders are a range of people with varying opinions, interests and want. Their needs are very critical in such a project for its help in the general management. This will make it possible to count for their support and efforts were necessary. The main issue here is for everyone, which is employees, customers, the community, and employers, to feel part of the project.

Employees would want better pay to motivate their efforts in the project and the long run to improve the output of the project. Customers on the other end are a very crucial part of the project; it is through them that improvement comes; they would always want quality in provided services and maybe discount or reduction in costs. The community involved comprises the private and public sector, in addition to the people staying within the locality of the project base. They would want advantages such as job opportunities for instance.

The employers or owners of the project would sincerely have some needs, having in mind their backbone role in the project (Hripcsak, 2014). First of all, they would want to see profit margins increasing after employing the right technology in an aggregation of consumer data; they would also want constant communication and updates on the progress, just to be sure that everything is smooth. Employees and other stakeholders would like to be involved in the decision-making process so that they feel important and recognized.

Understanding of stakeholder needs is fundamental it can help influence the direction of a project in the right direction, but simply after transforming them towards the success of the project. There are both positive and negative impacts of such needs hence moderation is necessary (Traverso, 2016). Major impacts, however, occur on the increase in costs, when employees insist on high pay and the owner’s mismanagement funds on achieving unnecessary objectives that are not a priority. When the community needs are not addressed, it can be difficult to count for their support, for example, in the supply of various critical commodities. If their need for the properly managed environment is not met, it can be sure that a disease outbreak might be experienced. This can paint the project’s image negatively calling for government intervention to close it down.

These impacts among several others can either cause losses or gains and expansion or decline of the project. Through stakeholders needs, harmony should always be ensured after identifying key individuals and positive influence is engaged to help encourage the growth of the project.

**The Summary account of the knowledgeable expert’s role in the project**

Expertise, first of all, goes to someone with a specialization in a particular area; this person then becomes in charge of activities taking place in that line. According to the aggregating consumer health data project where lots of data collection, summary, interpretation, and conclusions are required, the expertise has to be good at data analysis and interpretation.

At all costs, an expert must remain professional, and information has to be treated with a lot of privacy and confidentiality. The first role, therefore, is to maintain privacy and information security by putting policies to employees. This will gain the customer or patient confidence. Expertise should ensure proper management of records in a systematic and easy to understand manner; this wins the stakeholders over for they feel the safety of every single document (Camacho, 2014). Such a person is responsible for giving professional advice to the project management team, for example, on the right technology to invest in, which is budget operative and also very proficient in service provision.

An expert can also check on the quality of services delivered if they are up to the standards. One more thing, apart from testing quality control of products before they reach the customers, the expertise person also ensures the proper workflow on the entire project. Then lastly, an expert performs tests to ensure the viability of the project. They must be in a position to explain if the project on aggregating consumer health data can successfully continue or another shortcoming is yet to occur resulting in the closure of such a project.

**Conclusion**

In conclusion, for the success of such a project, some issues are being considered. This starts from the very humble beginning, the scope and objectives, implementation and project constraints, the stakeholders and finally the expertise. All these sections should not be overlooked for a project to end up being viable.

This project as mentioned earlier at the beginning of this paperwork is a trending issue in the entire globe, and being a new idea, it is receiving some challenges. This is the gap that other researchers or scholars should try filling. The first being deeper understanding of the challenges, followed by causes and possible solutions to such.

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