

# Business Analytics and its Use in Medical Area

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**Abstract:** Business Analytics is referred to as the utilization of the skills and technologies which integrate to generate high level performance in business operation of a particular field and helps in generating efficient results from the business operations. Business Analytics involves the usage of the applications which are deployed in the business operations. These applications have the ability to cater the analytical reports from the data of the business operations and the reports can then be used for the decision making of the enterprise.

## Introduction

Business Analytics is referred to as the utilization of the skills and technologies which integrate to generate high level performance in business operation of a particular field and helps in generating efficient results from the business operations. Business Analytics has a major role in today's world and it has its significance in various fields of profession. Business Analytics helps in understanding new approach towards running the business process and also helps in developing new innovative ideas which are supportive of the data collected and innovative methodologies. Along with the identifying of the new ideas and methodologies that help in executing new business processes for producing efficacy in the results of business performance, business intelligence is incorporated in the methods for generating the best from the collected data.

The business data that is collected and saved is not overlooked and is considered for analysis and performing intelligent techniques on the data. The results that are generated from the data are considered to be of high importance for decision making in the business, thus ensuring that the business operations are running with successful results. Business Analytics involves the usage of the applications which are deployed in the business operations. These applications have the ability to cater the analytical reports from the data of the business operations and the reports can then be used for the decision making of the enterprise. There are various IT professionals around the globe and they pay a lot of importance to the business analytics with respect to their business enterprise. It has been believed that the data that business analytics collect from the daily ongoing business operations was of wastage prior to utilizing the business analytics techniques. However the data is used for analysis purpose and this analysis helps me in performing decisions when they apply artificial intelligence techniques on the data. They can analyse the customer behavior from the generated reports and then impose considerable decisions on the business. This process not only helps in deciding the appropriate steps for my business but also makes the customer believe that they are an important element for our business. The individual business needs to know that how much

customers that are reached make them more loyal to the business and helps by business to generate considerable revenue.

## Ways of Applying

There are various ways through which the business analytics are applied to the domain of healthcare. The very first implication of the business analytics is in the form of "Pay-for-performance" model which has replaced "fee-for-service" method and this has been done in order to cater the issue that despite of the rapid advancements in the American health care insurance, there are still large numbers of citizens who have not received the coverage yet. And the report estimates this number to be around 48.6 million Americans. In case of the traditional model of the health care, the physicians and the doctors have been paid by the number of patients being treated and how much procedures they conduct. This however makes two large consequences; first is the receiver of more impersonal treatment and this is resulting in more medical costs which are being done in order to raise and drive the revenues of the hospitals.

On the other hand, because of the use of pay for performance model, the stress has been made on the value prevention and also reducing the rates of readmissions. This has been done in order to improve the health care coverage for the population and also to make sure that the expenses of the health care are reduced to a much greater extent. There is however a need of for the implementation of business analytics in the health care domain because in order to have the effective provision of preventive health care services to the patients, there is a need of more physicians and also other medical personnel. The doctors would however need to have the access to large amount of information about the various risk factors associated with the patients and their lifestyles in order to have the accurate results and to offer suitable solutions to the patients. According to the survey and report of HER intelligence, "...this need for greater insight into patients' behavior and history has driven the demand for business analytics tools..." Now because of

the provision of electronic healthcare services and records, the physicians would be able to have the updated information about the history of patients and also to have the medical information in easy and fast access which will also provide access to more sophisticated information and can then deeply facilitate the deep data streams information.

There are many Sophisticated Hadoop-based analytics programs, which have the capability of having undertaking this process with the use of digging deep into the provided data streams which can also result in extracting the connections and insight that may have also eluded into the medical personnel. There has also been a recent study conducted by the e-health initiative and the College of health information management executives which states that around 80 percent of the stated advanced analytical resources which include big data and predictive modeling also became an important, central and integral component to the organizations' future planning. Another research by Information Management, "...As more healthcare facilities deploy business analytics and personnel become better acquainted with the software available to them, these resources can help physicians provide more personalized and effective treatment..."

#### **Advantages**

There are indeed a number of benefits which are associated with the use of business analytics in the healthcare domain. Presently and globally there are various challenges being faced by the health care industry which include rising cost issues, patient outcomes and other issues related to the quality of service improvement. But now the health care sectors are moving towards more holistic model which includes various factors like performance dashboards and coordinated disease management. The health care industry is also seen to be increasing rapidly because of which the need of data scientist is also increasing which is the domain and area of business analytics. There are some major benefits which are associated with the business analytics and are also forming the market trends in the healthcare sector.

The provision of mobility has been resulted because of business analytics, which provide the action of gaining traction. There are wide range of offering in this domain which include simple text based interface, diagnostic applications, nurse helpline services, online consultants and health monitoring domain which can however increase the care coverage as well in the developing countries. There is however also more improvement gained in accountability and transparency as the patients are now able to have the looking of information about their health care because of the increasing regulations of accountability and transparency

which is based on outcome-driven reimbursement in the healthcare domain. The business analytics is also providing growing demand in the cloud adoption were the cost pressures as well as the advancements in the security standards and privacy control are however increasing with great interest in the clinical space. There is however a room for further improvement in the major areas of telemedicine and cloud computing which is eventually resulting in better services for the customers. Indeed the incorporation of business analytics in the health care would definitely help in the saving of cost and improvement of various processes.

The analytics is helpful in making it possible to have the reinforcement of the clinical pathways which are however driven by the use of evidence based medicine for the sake of reducing the issue of abuse and fraud of healthcare systems and this will definitely result in the reduction of cost. This will also result in measuring the performance of the organizations and their management in various units by the identification of top performance clinical units, doctors, hospital and proposing the areas of improvement. There is also a capability of the business analytics that this can proactively make the identification of high risk patterns and could also put them on the chronic disease along with the management plans which eventually result in the reduction of cost. According to the CIO of Manipal Health Enterprises, Nandkishore Dhomn, "...Analytics plays a key role in hospitals today and it enables the healthcare professional to treat the patients much better. With the introduction of business analytics, hospitals can now make speedy decisions and also ensure better services to the customer..."

Analytics also has the greatest advantage of making the standardization in the health care by the provision of probable diagnosis to the patients for example the use of WellPoint which is one of the largest health benefit companies in the United States which has around 34 million members and this company has been trying to use the field of business analytics in order to provide the doctors with the list having possible diagnoses when matched with the provided list of patient symptoms. Another effective example is that of Karolinska Institution in Sweden which has provided the leverage of business analytics in order to predict the most effective patient treatments.

#### **Problems Encountered**

Despite of all the potential benefits which e-health could provide, there are also few barriers, which are posed in the way of e-healthcare implementation. There are various barriers based on various researches and studies. Most commonly there are four major and

most important barriers which could be posed because of the implementation of e-healthcare. First of all is the project or economic barrier which is due to the financial and project management issues. These issues are caused because of the innovation which is changing too rapidly and in order to acquire this innovation, there are major financial barriers. Second barrier is based on the technological barrier (H., 2005). This barrier is based because of the lack of knowledge which is required in order to use as well as deploy the technology. There is indeed a lot of technical knowledge and training needed in order to implement the e-healthcare system and also there will be a lot of time needed to make the workers used to it so that they can make the best use of it, otherwise it will be a useless investment if the workers and intended users do not know how to make the best use out of it. There are also many issues in the interpretational knowledge and existing regional

information which could however pose a lot of issues in the implementation of the system (Mohammed R. Alyemeni, 2010).

There are also issues and barriers related to organizational culture as it is based on the issues and difficulties which could be faced because of the new technology deploying in the already working traditional working process. This not only include the issues of getting used to the new system but also the issues related to privacy and security concerns are included. This would be because of the lack of consistency in the national information standards and codes. Another important barrier is based on the behavior which is regarding the attitude of workers and users reading the big technological change in their working environment. The organizational power would be distributed and physicians' usage would also be affected and they would need to cope with the major change in their work routine. It will act as a significant barrier to the implementation of the e-healthcare system.

## Conclusion

Business analytics helps in improving the working of healthcare. The provision of mobility has been resulted because of business analytics which provide the action of gaining traction. There are wide range of offering in this domain which include simple text based interface, diagnostic applications, nurse helpline services, online consultants and health monitoring domain which can however increase the care coverage as well in the developing countries.

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