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## Numero Uno Business Solutions for Healthcare Domain

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### ABSTRACT

In order to reduce costs, increase revenue and improve patient safety and outcomes while the data sources been generated in billions and overall difficulty in handling the complexity of data generated within healthcare organisation. The need for advanced analytics to support decision-making capabilities is much required. People require predictive modelling and data visualisation tools from modern business intelligence software applications to gain insights regarding patient care and satisfaction. 'Numero Uno Business Solutions for Healthcare Domain' is about analysing the data to produce quality insights and help understand the health of your business.

**Keywords** : Revenue, Data sources, Complexity, Predictive modeling, Visualization, Standards, Insights, Underutilized services.

### I. INTRODUCTION

Now-a-days, almost every organization is based on Business Intelligence (BI) for its growth and increased profits. This enables the businesses to predict events based on past or recent data and also enables them to work on data from past events and find out about the current/ongoing events.

As millions of data is created everyday there is need to organize it in a certain manner that will be useful not just for businessmen, decision makers but also to some extent general public.

Here we have transformed the raw data into a meaningful data that provides guidance to general public and lucrative opportunities for the Stakeholders.

Here we present an information-based approach to enable organisations improve efficiencies in a fiscally responsible manner. Most of the inefficiencies and

the opportunities for improvement in an organization are hiding in its data about its processes.

Another enabler is to give users a self-service service environment with advanced usability and visualization features to get the answers they need. This thinking shapes our approach to delivering a BI program that aims to bring information to the front line staff to assist them in their work.

### II. METHODS AND MATERIAL

Methods which are used here are purely based on techniques of BI. Here we have used techniques such as Descriptive Analysis, Diagnostic Analysis & Predictive Analysis which will be mostly used by the clients.

Descriptive and Diagnostic analysis are the one which makes the most of BI(90%) and remaining part is of Predictive Analysis(10%). Descriptive Analysis which is the interpretation of historical data to better

understand the changes occurred in business. Descriptive analytics describes the use of a range of historic data to draw comparisons.

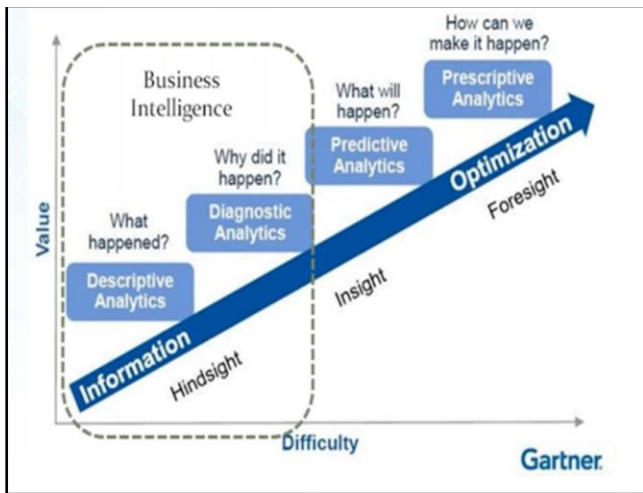


Figure 1: Clarification of Business Intelligence

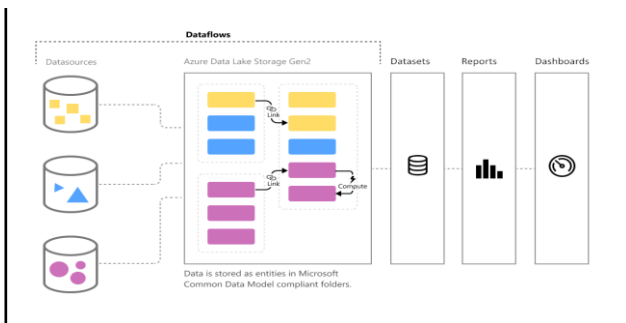


Figure 2: System Architecture

First we have gathered the data from various heterogeneous sources and bring them together to one common platform that is Power BI. Data from various sources such as Spread sheets, Excel files, Azure etc. is pre-processed (such as cleaning, integration & reduction) here by caring out meticulous searches such as finding the errors in names (Capitalisation), date format, repeating values, missing values (by finding out the most common occurring values and filling those missing values with

them.) etc. These data of various sources are converted into datasets

These problem are carefully removed one by one and we have to ensure that the original values are not affected thereby damaging the integrity of the data.

All the data is first converted into datasets as soon as they've been uploaded to Power BI. The first process before we could start any work is finding out relationships. Relationships are based on the concept of Database Keys. Tables are connected to each other by primary and foreign keys. Relationships are of three types one-to-one, one-to-many, many-to-many which play a crucial role on cross filtering direction and thereby giving us the data which can be manipulated on our fingertips .

Once the relationships are established work can be started on the datasets. Datasets are analyzed, integrated, manipulated into different form. Appropriate DAX functions are applied on them to create more meaningful data out of it. Certain "Measures" are also applied when necessary to find aggregate, sum, percentage, TopN, etc.

Once all the work is done it is presented in the form of report which will be given to clients directly or it can be uploaded to Power BI services as personal dashboards or for an organization.

On Power BI server there is an option of Natural Query Language, clients who don't understand how to interact with the dashboards they can simply type for whatever they are looking for and the AI of Power BI will present the output on their screen.

### III. RESULTS AND DISCUSSION

The report which we have created can be used by not only the members of Health Ministry but also by the businessmen/businesswomen such as pharmacist and also by the general public.

This report will give an insight to general public that which is the most commonly occurring disease in

their vicinity and what precautions should they take to avoid that. They and also find out which hospital in their area is top rated, which is the best doctor to consult and which is the best pharmaceutical drug among other drugs in market for one particular problem.

Pharmacist will be able to find out which pharmaceutical drug is mostly used for the most common diseases and they can also supply medicines to hospitals based on the special treatment that particular hospital has its reputation for.

Health Ministry can identify the prone areas where diseases can grow based on the highest number of admission counts and can take necessary steps for bringing cleanliness and hygiene in polluted areas.

#### IV. CONCLUSION

As we are about to conclude our project we can say that we have created a report on healthcare domain in such a way that it provide assistance not just to a patient who is looking for the treatment or guidance from the best doctor to alleviate they're troubles or helping the doctor to find out which of the various pharmaceutical drug is best for one certain diseases to a pharmacist who is trying to find which medicine is high in demand for his/her/they're welfare

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