A STUDY : DATA MINING MODELS USING BUSINESS INTELLIGENCE AND PROPOSED FIRSTHAND TECHNIQUES

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ABSTRACT

In progress circumstances of business growing principles, technology and computerization encompass shaped a enormous quantity of data and data streams so the complicatedness has ensue in the business decision making process as we see traditional databases system has no more efficient progression to diminish this complexities so analyzing all of these circumstances technology and database arises a concept of business intelligence in which we can analyze the future patterns of any product in any organization from its past data. but further more if its integrate with data warehouses ETL(extraction, transform, load) tools , OLAP(online analytical processing), data mining it can be additional valuable from past few years there is lots of integrated technologies have defined with business intelligence such as supply chain management, customer relationship management, decision support system(in both artificial intelligence and artificial neural network) ,quality management system. So these paper have discussed about which integrated approach has become the most popular with the genuine reasons basically in this paper 2009-2015 research has been surveyed so that best outcome can be taken out

Keyword : - *Business Intelligence, data mining, data warehouse, decision support system(DSS), online analytical processing(OLAP), extraction, transform load(ETL), supply chain management, artificial intelligence, quality management system, customer relationship management(CRM), Artificial Intelligence(AI).*

1. INTRODUCTION

Business Intelligence (BI) is the progression through which we can extract ,tansform,manage and analyze the big data and data streams ,basically it's an automated mathematical model which can also be beneficial in better decision taking in confusive and alternate scenario. And through this research I tried to gather and analyze the points to find the better approach. [2][4].

2. SINGLE APPROACHES

BI refers to the capability to collect and revise huge quantity of data related to the customers who requires to analyze their future patterns (future profit) from the past data which stores in data warehouses. *Data warehouse* is the storage of historical data which gives an enterprise-wide business intelligence solution, various analytical OLAP data. *OLAP(Online Analytical Processing)* which is stored in multidimensional databases OLAP is computer processing that enables a user to easily and selectively extract and data from different points of view. Allows users to analyze database information from multiple database systems at one time. *Data mining* tools are used to turn data stored in the data warehouse into actionable information [5]. *CRM (Customer Relationship Management)* forms the focal point from where the vital insights gained about the customers using BI tools are absorbed in the entire

organization.*DSS* (*Decision support system*) deals with the best decision taken by the bi process to reduce complexities by means of : *Artificial Intelligence* Technology by which we can create computer software which is capable of intelligence behaviour.BI also plays a critical role in all the other retail functions like: *SCM Supply Chain Management*, storefront operations, and channel management. *Quality Management System,* which is able to find out the quality patterns of product of past data. This paper is an introduction to the various BI applications in the different functions in the retail organization, including support functions like finance and human resources[1][3].

3. HISTORY

As per the model of existence BI is concerned it has so many disadvantages As we move to past the single approach of BI exists which requires the integration because many such terms and conditions/Requirements/Demands are generated by the IT organizations as data is increasing day by day so its was getting difficult to find the better solutions because as we move to single approach of BI than its lacking with these following points: 1) Data may be uncertain 2) Accomplishing data may be exclusive/expansive. 3) Might not be accurate and precise.4) Approximation may be often subjective.5) Information overloads. 6) Data are not available model is made with relies on potential inaccurate estimates. 7) Outcome may happen at prolonged period as a result revenue expenses and profits will be recorded at different points to overcome this difficulty present value approach can be used if the result is quantifiable. 8) It is projected that future data will be related to past data if this is not the case the nature of the changes has to be forecast and contains in analysis. These all disadvantages affects the performance of BI from 2011-2015.
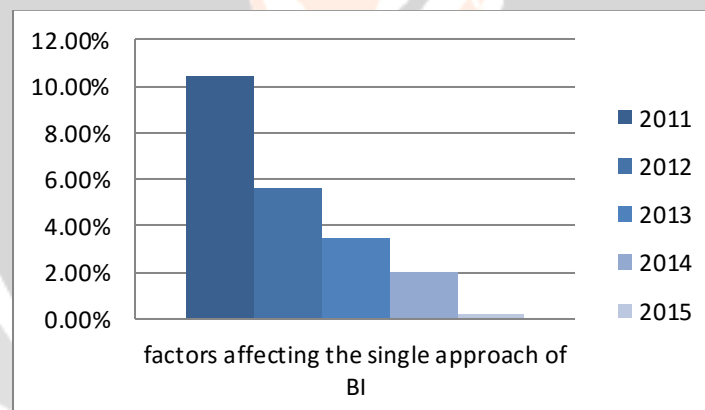

Chart -1 Breakdown of single approach of BI

4. REQUIREMENT OF INTEGRATED APPROACHES

1) Necessity to reject statistics from plentiful business claims or data sources like from data warehouses. Excel sheets, cubes etc. 2) Perceptibility into the company's operations, finances, and other areas .3) the necessity to contact applicable business data rapidly and competently. 4) Cumulative capacity of operators demanding and opening material and more end-users without logical abilities .5) Fast company development or a new or incomplete union/acquisition. 6) Overview of novel products 7) Advancements within the IT environment. need of integration is needed because as we have seen in the problems in existence in individual approach of business intelligence so for improvements in those problems we need integrated approaches as discussed above Integrated approaches[2].

5. INTEGRATED APPROACHES

5.1 BI and Data mining

5.00% researches have supported this approach. A data mining procedure called Business Intelligence driven Data Mining (BIdDM) association's knowledge-driven data mining and method-driven data mining, and plugs/realize the break among business intelligence knowledge and existing many data mining systems in e-Business. BIdDM contains two processes: a creation process of a four-layer framework and a data mining process. [1][3].

5.2 .BI and OLAP

3. 33 % papers thoughtful everywhere shared between BI and OLAP. [1].

5.3 .BI and DSS (AI)

About3.33% papers confer about integrated. Dynamic AI delivers computerized Business Intelligence technologies that style it informal towards bring real-time dashboards, querying, reporting and analysis to key decision makers and business users – fast! The outcomes of our data analysis show that the Dynamic AI and predict the consumers within each segment with good accuracy. On the other hand, firms should handle and support their business intelligence (BI) system to make improved business results [1].

6. FURTHER INTEGRATED APPROACHES

6.1 BI, Data mining, AI

5 % papers discuss about integrated between BI (Business Intelligence), AI and Data Mining The progression of BI is separated into 3 phases: The presence of a business information organization that concealments the effective events of the business and functioning data, antique data has been detached from effective data into data warehouse planned to supply and contact data fast, BI systems presently include data mining procedures and artificial intelligence in the citation knowledge for decision making.

6.2 BI, DSS, Performance Scorecard

1.67 % permits deliberate near integrated between BI and Decision Support System, Performance Scorecard. Office of Higher Education Commission uses Microsoft SQL Server 2005 Business Intelligence Enterprise Data Integration Tool to develop OHEC DSS and develop a web application to develop the Executive Decision Support System (DSS). It is developed a Performance Scorecard, interactive and Business Insight Report after making BI[3].

6.3 Integrated between BI, ETL and OLAP

3.33 % credentials confer about integrated between BI, ETL, and OLAP Business intelligence (BI) tools to acquiesce the method offered of the Steps. Gartner's chief BI experts accentuate several main errors: 1). In adding up different IT section form a data warehouse on the hypothesis that when it is assembled, employers will mechanically get the profit. 2). Reliance on spreadsheets. 3). Data quality. The BI world is filled of mechanical relationships, such as extract, transform & load (ETL) and data warehouses. [3][6].

6.4 Integrated between BI, CRM and AI

1.67 % papers discuss about integrated between BI, CRM (Customer Relationship Management) and AI (Artificial Intelligence). Many CRM studies must remain achieved to analyze customer success and progress an inclusive prototypical of it. This tabloid objects at providing a calm, effective and additional applied another method created on the client gratification study for the gainful client's separation [3][7].
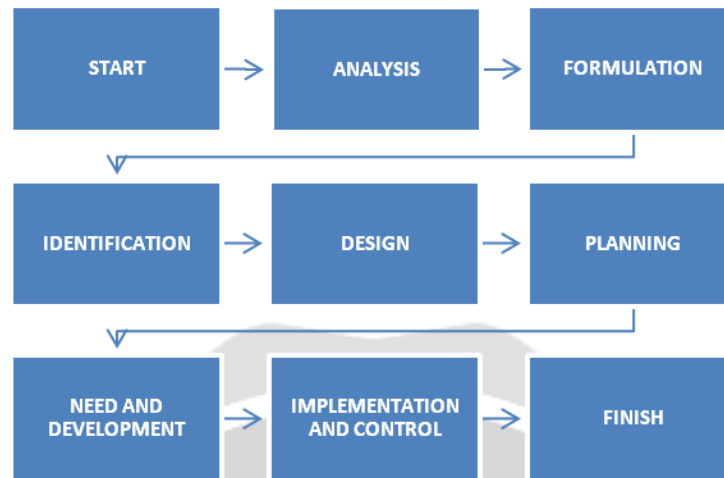
Fig -1:Flow of BI in industries and several projects.

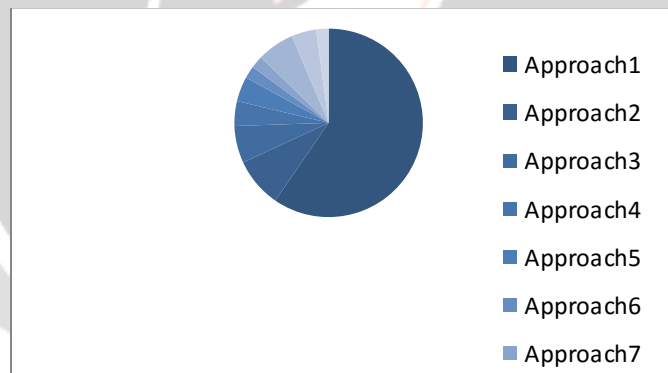## 7. OBSERVATION AND RECOMMENDATION

Chart -2 Chart regarding analysis of approaches

Pie chart above is showing the percentage of researches made on increasing requirement of approaches in fig.3. Most Popular approach is BI as an individual approach in which we can say according to analysis that is 46.67% .as we know BI has two types1.Traditional BI deals with IT supportive environment and self-service BI deals with IT dependent technologies from which we can analyze future patterns from past patterns and this make individual approach more observant and recommended. But as we move on integrated approaches up to 5% with data mining and AI, 3.33% with ETL and OLAP, and 1.67% with DSS as well with CRM and AI.It is fulfilling all the points lacking in the need and improvements.

8. CONCLUSION

By stimulating confront of BI and requirement of integrated approaches to prevail over the need in accessible BI.In these paper I have shown the levels and full process of BI which can be beneficial for other researchers to find the

better solution for their further research in this topic and tried to elaborate the points which makes BI, data mining, ETL, OLAP, DSS, AI Integrated Approach which makes it better than other.

9. ACKNOWLEDGEMENT

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