

DECLARATION

I hereby declare that the Article entitled “*A Study on Business Intelligence and its Impacts in organizations: an overview*” has been prepared by me. I further declare that it is my Original work, unpublished or not submitted to any other Institution/ University/Organization for Publishing.

Date:

[P. Naresh kumar]

Place: Hyderabad, Telanagana state

“A Study on Business Intelligence and its Impacts in organizations: an overview”

P. Naresh kumar

Asst. Professor, Department of MBA,

Sarojini Naidu Vanita Maha Vidyalaya,

Exhibition grounds, Nampally, Hyderabad – 01, Telanagana State.

Email: naresh.pothakamuri@gmail.com

Ph. No: 9550424504

Abstract

Business Intelligence disseminates the combinations of Tools, Techniques and approaches towards to perform analytical process which includes collection and integration and analysis of huge un-structured business data to produce value chain for decision making. Business intelligence is a Data-driven systematic process which supports for quality decision making in Modern business environment. Modern business environment each organization Activities always depending on their own ERP Software but These ERP software’s are supporting up to 45-50% for the organization for their operational efficiency in decision making process. Organizations ERP software’s are failed to dig huge volume of data and perform optimal Data Analysis using visualized approaches. This paper mainly concentrating to describe the importance, challenges of Business Intelligence, also describes how to increase performance using business intelligence approach in organizational ERP which supports to reach top place in the competitive business environment .

Key Words: *Business Intelligence, Data-driven, Value Chain. Key Components.*

1. Introduction:

Business Intelligence is a technology enabled data driven approach for analyzing and investigating and identifying actionable information which helps to organization executive and end users for information based decision making. Business Intelligence also be considering as technology driven value chain approach in present business Environment. Value chain approach is the process of discovering actionable data or optimal data from huge quantity of raw data which collected and analyzed using Business intelligence with Most likely organizations have plenty of data like Customer Information, Accounting Records, Performance data, Inventory logs, Transactional schedules and Training Schedules etc total data will be stored in warehousing location. Organizations always makes decisions every day based on the data from ware house and using intelligence and it is important to know how Business doing now and how it perform in future.



Figure 1: Business Intelligence use in Organizations

Example: Krishna working as Divisional Manager in a nationalized bank credit card section. Every day he is performing thousands of transactions every transaction details clearly recorded

or stored in database. There is a very important thing Krishna looks on database and he is having questions like

1. How many Transactions processed successful in a day?
2. How many Transactions Disputed?
3. How much Profit earned to bank in a day?

To know this how successfully operations are doing in bank but to know about the future performance he has some additional questions like

- a. What type of transactions likely to be fraudulent?
- b. Which area of the India is mostly like process fraudulent transactions?

There are two options

- I. Business Intelligence to know here and present performance of business
- II. Business Analytics to analyze future performances and impacts.

2. Objectives of Study:

Study has been taken up for following specific objectives

- To Know about Business Intelligence use and its Importance.
- To Know about Evolution of Business Intelligence.
- To Know about Business Intelligence Architecture.
- To Know about Business Intelligence Challenges.

3. Research Methodology:

- As the study is conceptualized one, as such no research study has been made.

4. Evolution of Business Intelligence:

In Modern Business Environment Organizations processes are moving with data only. It is a huge opportunity for the business to transform their process to be more data driven. Business Intelligence will play vital role over last decades onwards to manage and elevating organizations process efficiently for quality decision making.

First Generation of Business Intelligence: In the First Generation of BI (1990's) organizations embedding their own proprietary Business Intelligence tools which support to analyze and produce a series of highly formatted reports such as Cristal reports in to their computer systems along with proprietary programming interface. In this generation lot of technology support work like programming for little modification in formatted reports and more impact on final outputs will always reflect decision quality and also more financial investment needed. Data driven process analysis took huge amount of time for value chain process.

Second Generation of business Intelligence: In the Second Generation of BI (2000's) Organizations was upgraded with new innovations like Modern data warehousing, Search Engines and advance web technologies which supports to process large volume normalized data using intuitive advance interactive reports and dashboards tools. Organization people can access multi format dynamic reports to analyze and find key performance indicating objects more accurately using advanced technologies. The problem with the second generation of BI people ultimately had to go for the data analysis, verification process and multi dimensional verification may not accurate it affects multi demine decisions quality.

Third Generation of business Intelligence: In Third Generation BI (2010's) organization are more upgraded with Enterprise Resource Planning packages and advance approaches they are using internet of things and modern warehousing and mining technologies and Artificial Intelligence enabled data analysis process which automatically produce multi dimensional data reports like dash boards without people interaction. Advanced Business Intelligence software's are half-the-shelf and also perfectly support with Organizational ERP's to measure the

performances of processes, optimal decision making and also identify key performance indicators accurately using visual reporting approaches.

5. Importance of Business Intelligence:

- Business Intelligence converts raw data into actionable information. Raw data does not support us what to do in Business Intelligence mechanism allows us for complete analysis of raw data and to investigate key trends that can be direct to make change or Invent better strategic plans. Business Intelligence used to know about interconnections between diverse functions and facts of business.
- Visibility of core business components improves with Business Intelligence and ropes to quick and accurate observation of each and every functional area of business. Business Intelligence supports to trace which business components that need to upgrade and to make change for better performance.
- Business Intelligence analysis mechanism allows us to know about best resource allocation to reach organizational strategic goals. Business Intelligence analysis improves better understanding nature of consumer behavior and recent trends towards globally and local consumption patterns.
- Business Intelligence increase Production of products or services. It supports to analyze and interpreting of data quickly and accurately, provide power to understand real time generated data from business operation using visual reporting approach.

6. Business Intelligence Architecture:

Implementation of business intelligence system in organization needs more and more no of strategies and efforts for efficient solutions. To start with implementation needs an optimal framework which is the combination of effective and efficient practices, organization policies and standards in Business Intelligence architecture. Organizations, ready to implement Business intelligence architecture they have to observe some key factors like

- Technical department in the organizations always in lot of critical or bottleneck situations to produce efficient reports according to the requirement for various business operations.
- Employees are always depending on technical department people for little quantity of data processing reports it increase decision making time disturb business smooth conduction of business operations.
- Different formats and huge sources of data verification process creates more and more complicated process to technical department so fastest, strongest and efficient Business Intelligence Infrastructure has to build system for sustaining. Infrastructure building and resources management is not easy also includes huge financial investment. A perfect Business Intelligence strategy always supports cost effective nature for organizations.

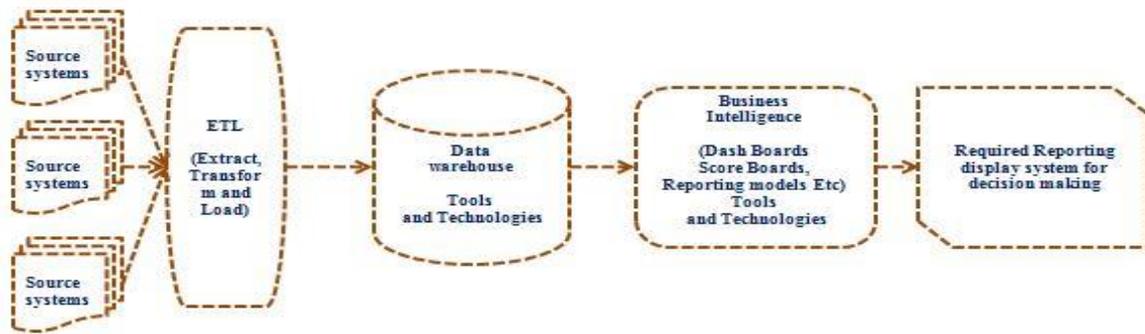


Figure 2: Business Intelligence Architecture

The components of BI architecture will always play a vital role gathering raw transactional data from different sources like internal and external and discover actionable information from raw transactional data.

7. Components of business Intelligence architecture:

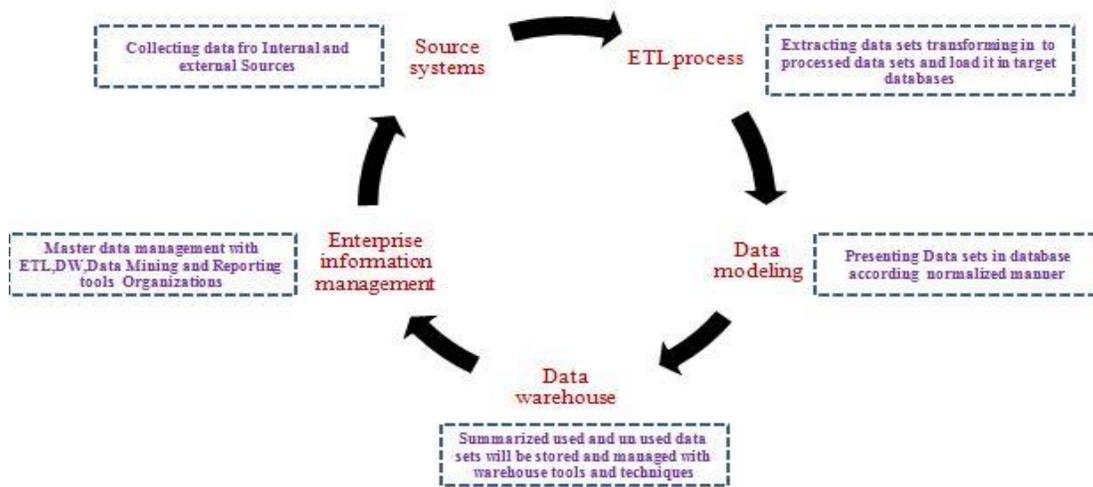


Figure 3: Key components in business Intelligence architecture

a) Source Systems:

Source system is the first key components of Business intelligence Architecture. It’s a combination of two sources of data one Internal source and second external source which collects data from raw transactions done within the organizations or data generated for transactional processing systems through the employees and all peoples called internal source data it always stores organizational repository only. Data collected from external source like marketing, sales, other mode of transactions done, collect from global sources using Technology (OLTP-online transaction process) like Internet. In this stage all the data is in unstructured or in raw format which does not support for decision making.

b) ETL Process (Extract, Transform, Load):

ETL is the second key component of Business intelligence Architecture. It’s a combination of three different functions named as Extraction, Transformation and Load. Extract function

collects raw data from source system database and extract according to the criteria data subsets will be created then transform function will use the data subsets apply database and business rules generate new data subsets combining with other data subsets, finally load function will store resulting data sets in targeted database. After this process raw data or unstructured data will be converted with minimal level of structured format I's around 30-35% actionable format.

Example: In a bank one day around thousands of customer transactions are done. They are all stored in source systems I's banking database. If we observe ETL process Extract function will collect all thousands of transactions from database and divide in the form of different data sets like Public sector (Government office's), Private Sector(Corporate MNC's) and Personal (common people individual) Transactions. Transform function will take data sets apply rules like which transactions are taxable and non taxable and Load function will store data sets in target data base. Here in Public, Private and Personal transactions will come under either Taxable or under Non-Taxable. Clear detailed suppuration of each and every transaction may not possible using ETL process only 30- 35% of information discovery will be possible.

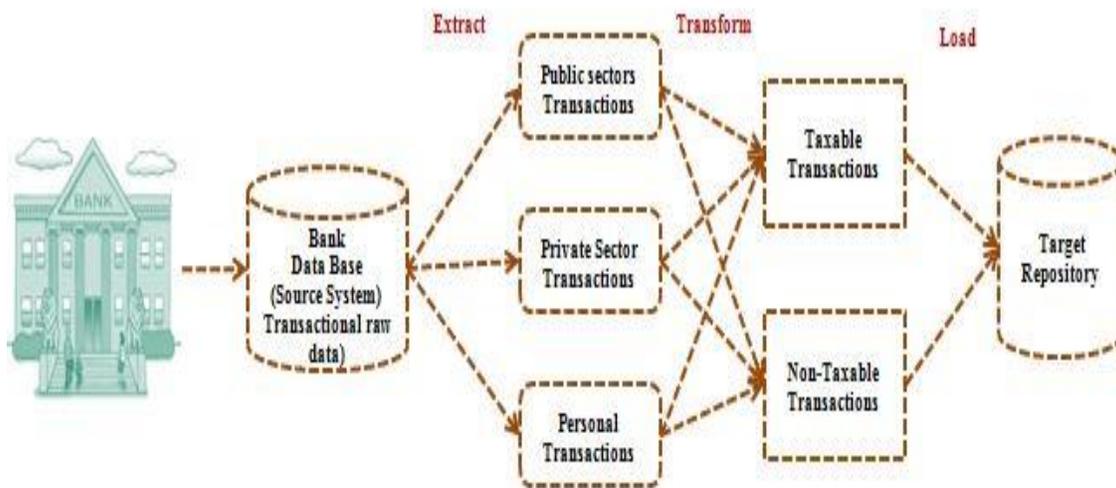


Figure 4: ETL Process in BI architecture

c) Data Modeling:

Data modeling is the third key component it's lies in between ETL process and Data Warehousing stage it always support to discover which data sources optimally needed, the structure of data and how it is related or connected other data. Data modeling always support to convert data in the normalize manner and reduce the cost of multi storage and also support to build perfect data warehouse.

d) Data Warehouse:

Data Warehouse is the fourth key component of Business intelligence Architecture. Data warehouse is a combination of three blocks first raw data phase which consist of unstructured used and unused data extracted from varies operational systems or source systems. Second also known as summarized phase consist of summarized or consolidated data in structured manner which can be discovered and produced from raw data phase by applying cross functional analysis. Here data always in consistent manner with single version, Third metadata phase consists of metadata used to provide Knowledge about what are the consolidated data is available in summarized phase. Warehousing tools and technologies play vital role to manage these three phases accurately.

e) Enterprise Information Management (EIM)

Enterprise Information Management (EIM) is fifth key component of Business intelligence Architecture it's an ongoing process in organizations which usually disseminates optimal usage of ETL to discover data sets, Data modeling tools to present data in normalized and multi location storage with cost efficiency, Data Quality management to produce actionable data and finally metadata, master data management.

f) Business Intelligence Hardware:

Business Intelligence Hardware is sixth key component of Business intelligence Architecture. In the process of implementation of Business Intelligence Architecture BI hardware selection play vital role towards its performance, maintenance and produce tangible results. Bi Hardware

always required High performance storage capacity servers which supports for data warehouse management and best hardware tools and technologies like SharePoint servers, Data allegro are some known appliance in the market. Business Intelligences technology operations always perform on the base of hardware to produce different analyzed reports like Dash Boards, Score boards etc.

g) Tools and Technologies

Tools and Technologies are the final key components of business intelligence architecture it disseminates what are the tools and technologies are to implement or required, define tools used to EIM and data warehousing and Business intelligence analysis, reporting process and measure their performance. Example cloud solutions, SaaS Models Business Intelligence architecture will support to make decision in selection process of tools and technologies according their requirement.

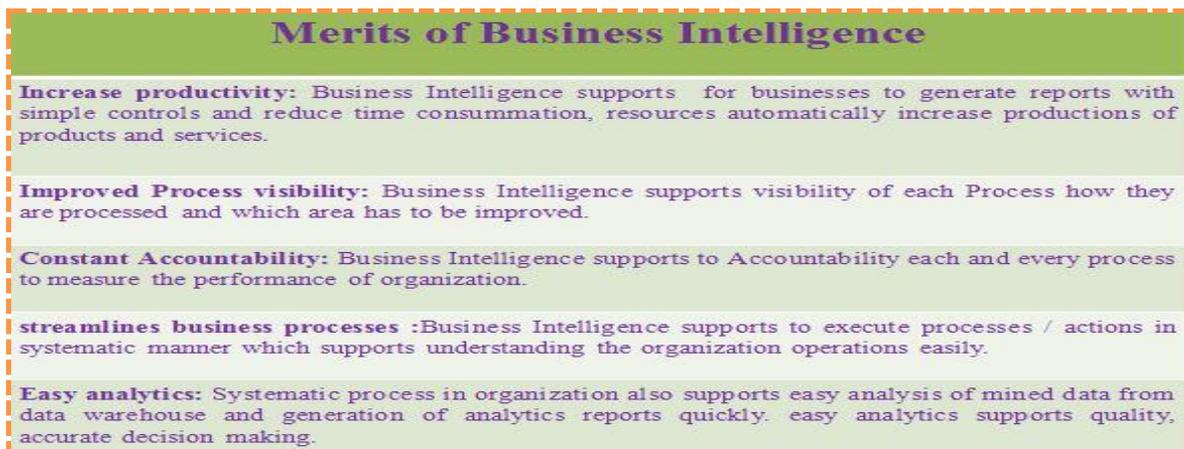


Figure 4: Merits of Business Intelligence

8. Business Intelligence challenges:



Figure 5: Business Intelligence Challenges

- **Delivering self-service reporting/ analysis:**

In organizations providing self service reporting and analysis is a critical issue with traditional Business intelligence tools. The major reasons only few key employees are well known about how to handle traditional BI tools. If any Business event occur total organization strategic planning, decision making process depending on these key employee's data analysis and reporting system this process may take huge time automatically slow down decision making process also. To reduce this problem if self service interactive BI reporting and analysis system develop in given to each employee then quality decision making within target period is possible.

- **Reporting/ analyzing across multiple systems:**

Now a day's organization gathers huge data corresponding to their business operation form variety of different ERP software's systems spread across different. Gathering, analyzing and consolidation of data, convert into unique version or formant finally store it in centralizing data warehousing is not possible, can construct it easier to grow fast and consistent set-up.

- **Unlocking data hidden in systems:**

Organizational data from corresponding operational business process from different locations. These processes are connected and protected with complex ERP

software systems. If employees know the data and its location it is not easy to unlock I's discover actionable data using data warehousing and using ETL Process to clean up data converting in to actionable format and applying business rules using BI tools.

- **Reducing the cost of producing reports:**

In the organizations operational business activities, decision making process may require huge quantity of reports, producing reports is not so easy and it's also depending on cost. Multiple forms of reporting process cost defiantly may increase. Reporting software implementation in organizations and reducing subsequent cost not so easy is always a big challenge to Traditional Business Intelligence.

- **Delivering Mobile BI:**

In modern business organizations providing portable Business intelligence also known as Mobile or portable Business Intelligence services is a big challenge. Mobile devices constantly innovating new approaches to do business automatically more importance is raised to mobile business intelligence and analytics. The people in organization does not like to sit in a single location perform business operations and they need dynamic access of information when they need for doing analytics process so it is more important to Deliver Mobile BI.

9. Conclusion:

In the modern business Environment huge unstructured data collection and verification and validate and converting in to actionable format is not so easy. Business intelligence approach will support to reduce this problem and support for quality decision making within the limited target period of time to face the hyper competition in the market place but many organizations may not ready, accepting and implementing BI approach due to scarcity of resources like finance, technology, knowledge etc if the organization take a step forward if they implement and add BI approaches to their ERPs automatically they survive in the world market place with quality decision making.

10. References:

1. <https://channels.theinnovationenterprise.com/articles/the-evolution-of-business-intelligence>.

2. <http://bi-insider.com/posts/primary-components-of-bi-systems/#top>
3. <https://analyticstraining.com/2016/business-intelligence-architecture/>
4. <https://www.matillion.com/insights/5-biggest-business-intelligence-challenges/>
5. <https://www.villanovau.com/resources/bi/overview-of-business-intelligence-bi-components/#.WzIoqIonbIU>
6. <https://blogs.perficient.com/2013/08/29/business-intelligence-implementation-challenges/>
7. <https://www.cio.com/article/2439504/business-intelligence/business-intelligence-definition-and-solutions.html>
8. <https://www.guru99.com/business-intelligence-definition-example.html>