

# Review on Business Intelligence

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**Abstract:** *Due to the rapid growth of new technologies, the Business Intelligence (BI) market is growing as well that forces the corporations to adopt their offerings to the needs of the customer. The implementation of the business intelligence program has become one of the most important technical and operational advances in corporate organizations encouraging the diffusion of knowledge, the foundation of decision-making processes in industry. Since the integrated the implemented way of BI is quite different among organizations, it is important to approach BI literature through the adaptation and implementation of BI application, BI architects, and enabling factors in BI projects. In addition, this paper will also discuss how technological capabilities such as user access, data quality and BI integration with other systems within the company, as well as organizational capabilities such as support for flexibility and risk management, are essential to BI success, regardless of the decision environment. Last but not least, this paper will also examine how the concept of BI on the school of thought was built up. This paper expects results to build the interest and feedback for organizations looking to incorporate a BI program in their organization.*

**Keywords:** *Business Intelligence, BI Capabilities, BI Architecture, Enabling Factor*

## I. INTRODUCTION

Present day settings of associations are very convoluted and evolving continuously. Organizations, both in the public and private sectors, are under extraordinary pressure to give the top management an explanation on the condition of change and innovation. To do so, the possession of strategic, organizational, and tactical decisions by an entity is required; however, they are complicated and quickly taken. The basic leadership[1] requires a lot of expertise, information and data. One should process these data as needed basic leadership and it is expected that they will ultimately modernize rapidly, on time and ongoing planning. In fact, business life cycle nowadays has proved to be shorter. Henceforth, the organization must have swift and proper decision making to gain the competitive advantage. In reality, decision-makers need good data, to make the right decision at the right time and place.

During the 1950's the idea of BI[2] existed and it grew out of a system called decision support. Most businesses still use decision support to come up with decisions that would help them gain competitive edge over their rivals.

Over the past few years, BI has grown large primarily due to increased data collection and enhanced storage capacity technology. Because of technological advancement, the organization can use BI to store large amounts of

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data at cheaper rates. Organizations have access to a lot of data in the form of mobile, internet logs, and posts on social media, etc. BI is able to sift patterns and trends through these data.

Knowledge and game theory[3] that applied mainly to decision-making. This paper will also rationalize how Business Intelligence is connected or based on the School of Thought. Advertising, customers, suppliers, economic assets, and so on, traditionally accrued, on the organization's time of operation, form the cause for some complex and highly helpful economic and monetary issues in the organization's decision-making process.

## **II. METHODOLOGY**

In this paper, they will use secondary data from the Business Intelligence's previous literature review with dozens of articles and secondary data gathering sources. The paper closes with Business Intelligence's literature review. Business Intelligence focuses above all on how to acquire, Organize and interpret the data to the department concerned in order to take an appropriate decision under the difficulty of achieving the organizational objective. In the discussion session, under the theme of confusion, this paper will try to draw a connection between the business intelligence dimension and the thematic school of thought, Knowledge and game theory that applied mainly to decision-making. This paper will also rationalize how Business Intelligence is connected or based on the School of Thought.

## **III. LITERATURE REVIEW**

### ***III.1. Business Intelligence:***

There's another issue with a lot of definitions; they tend to change after a while, considering that the way they think changes. That's the case with BI, for starters. Software business initially engaged with BI, BI, used to be known as private information, rather than state or transparent knowledge. Even after many years, engineers and programmers still use BI.

BI is defined as mechanisms that collect, modify and present structured information from different sources, reducing the time required to acquire significant business data and making it possible to use it effectively in the decision-making process of management, Allowing diverse organizational knowledge[4] to search, find, evaluate, and explain the needs of administrative choices. BI focuses on collecting, storing, and presenting customer, contender, company, technology, and product information. BI as a process involving a set of operations, guided by decision-makers ' particular data needs and the goal of gaining competitive advantage.

BI is referred to as a set of numerical and analytical analysis models[5] used in the preparation of confused simple leadership to extract data and valuable information from raw information. Similarly, Business Intelligence (BI) is a broad category of technologies, applications, and processes to gather, store, access, and analyze data to assist its users in making better decisions. They can upgrade the bits of knowledge given by BI applications- especially by using information mining procedures, by simulating and modeling real world under a "system

thinking" approach, enhancing forecasts, and adding to a higher understanding of any organization's business progress.

### ***III.II. Data, Information, and Knowledge:***

In the sense of BI, this paper always see the word data, details, and knowledge that might cause us to become confused about its use and implications.

- ***Data:***

This refers to a formal codification of single primary entities and of two or more primary entities involved in transactions. BI is common among businesses mainly due to data analysis that is of any type and formulates a strategy accordingly. Data is generally classified into three data types, semi-structured data, and unstructured data.

Structured data[6] are information that is fixed in form, data can be a collection of website forms and a detailed address that the computers can read easily since the data is already standardized.

Unstructured data is information that cannot be read easily by computers, which can include text, documents, video tapes, websites, and photographs, or any other type of information that cannot be clearly categorized or organized into rows and columns. Information is often used in the form of Customer Relation Management (CRM)[7] programs, marketing automation systems, and social media platforms to find company data across different locations and locations.

- ***Information:***

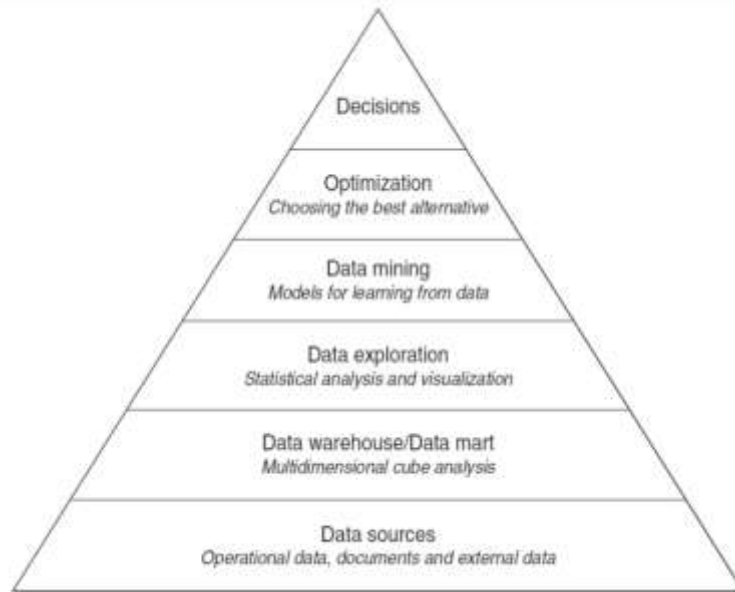
This refers to the result of the data extraction and processing operations, and it seems important to those who obtain it in a particular domain.

- ***Knowledge:***

It is formed from information that is used to make decisions and to develop appropriate actions. This paper could therefore say that knowledge is information that works in a particular domain, and it is reinforced by decision-makers' expertise and knowledge in addressing and solving complex issues.

### ***III.III. Business Intelligence Architectures:***

The following pyramid to describe how business intelligence system is constructed.



**Fig.1: The Main Components of a Business Intelligence System**

- ***Data sources:***

The sources are mostly data from operationalizing systems, but may also include unstructured data, such as emails, and data from external providers.

- ***Data warehouse/Data mart:***

Information warehouses use a process known as extract transform and load (ETL)[8] to aggregate various types of data into a central location and standardize these results across applications that can be queried. In general, data marts are small warehouses that focus on information about a single department, rather than collecting data across a company. They restrict database complexity, and are cheaper to implement than full warehouses.

- ***Data exploration:***

Data exploration is a passive BI analysis and statistical methods for query and reporting systems.

- ***Data mining:***

Data mining is active BI methodologies with the purpose of extracting information and knowledge from data.

- ***Optimization:***

Optimization model allows us to identify the best response from a set of alternative acts, typically very broad and sometimes infinite.

- **Decisions:**

Once methodologies for business intelligence are accessible and widely implemented, decision-makers are responsible for the choice of a decision, which can also use the informal and unstructured information available to adapt and change the guidelines and conclusions drawn using mathematical models.

### ***III.IV. Business Intelligence Capabilities:***

One overarching trend apparent through the research is that the BI used in an enterprise should be ideal for decision making, which in turn leads to the effectiveness of the BI. Nevertheless, several academics have come to learn that many organizations have yet to recognize this achievement. BI capacities are basic capacities that enable organizations to strengthen their change adaptation as well as their execution.

Some researchers note the failure to implement BI in an organization due to a lack of fit between the BI of organizations and their characteristics and goals. A company that has made progress with its BI use has tried to ensure that its BI is aligned with its corporate business objectives[9], and a great deal of work on BI achievement is based on aligning BI and business goals. However, little is known about the part BI abilities play in achieving that goal. Nevertheless, there is a collection of research aimed at BI capabilities, the capacity of BI in achieving the important match between BI and the decision setting in which it is applied remained largely quiet. Nonetheless, numerous BI examples of overcoming adversity show the significance of using BI with the essential capabilities and for the right purposes to advance BI.

### ***III.V. Enabling factors in business intelligence projects:***

Other variables such as technology, analytics and human resources are more critical to the success of a BI project than others.

- **Technologies:**

Hardware and software technologies are the key enabling factors which have enabled the growth of BI systems in the complex organization and enterprise. This trend has allowed the use of advanced processes to use inductive learning strategies and enhancement models, Maintaining the processing times within a reasonable range. It also enables the use of the best in class interactive perception techniques, including animations in real time. Another significant factor is the exponential rise in the mass storage limit, again at low cost, which allows any company to store terabytes of information for the study of business insight. What's more, system network, such as Extranets or Intranets, has played an essential part in spreading data and learning separate from BI within organizations.

Furthermore, the simple convergence of hardware and software obtained by different providers, or that inside by an entity, is another aspect that affects the diffusion of tool data analysis.

- ***Analytics:***

Mathematical model and analytical methodologies play an important role in the development of information and knowledge within most organizations from the accessible data. Mere presentation of the data in keeping with timely and versatile rational views. While playing an important role in facilitating decision-making, it still represents a passive form of support. Therefore, to achieve active forms of support for the decision-making process, it is necessary to implement more advanced models of inductive learning and optimization.

- ***Human Resources:***

An organization's human resources[10] are built up by the skills of those operating within its borders, whether as individuals or collectively. If workers are able to acquire knowledge and then interpret it in a practical way, they will have a significant impact on the quality of the decision-making process. The company will emphasize its technical workers' professional skills to work out creative solutions and to formulate effective action plan if it incorporates advanced BI systems. Each business could have equal access to available analytical tools, but if a company wants to have the competitive advantage over its rivals, it should use human resources with greater mental strength and willingness to accept improvements in the style of decision-making.

#### **IV. CONCLUSION**

To order to survive in a complex and hyper-competitive business setting, businesses are forced to implement gradual and revolutionary developments at the same time. While it is recognized that Business Intelligence and Analytics (BI&A) can promote innovation and provide organizational value, the literature provides a limited understanding of its effect on the balance between different Innovation programs and efficiency gains assured. Although the idea of BI has just arisen many decades ago, it is now becoming a major concern for businesses regardless of their size to consider whether or not they should invest in this program to fulfill the customer's needs and wishes. BI nowadays creates a real data asset business value and offers remarkable improvement in identifying and leveraging business opportunities. Most multinationals have implemented the BI program but some of them have failed to adapt this system. Operational and organizational considerations like a firm's strategy, human capital, leadership, community, quality management, and strategic orientation have a significant impact on the implementation and application of the BI program. Considering both technical and operational skills is a critical achievement in the firm's implementation of the BI program.

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