

Business Intelligence e Analytics: From Abyss to Collision

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ABSTRACT

This work seeks to present introductory concepts, which many confuse when they do not have the depth of two technologies, Business Intelligence and Analytics. Currently, both stand out among the most sought-after solutions in the corporate world and have different applications for similar objectives. The importance of adopting its principles and tools as a competitive differential will be presented in a didactic way. The entire research was based on scientific articles from entities and researchers that have several internationally recognized articles where the articles are public and available on the internet. At the end of reading this article, it is hoped that it will be possible to clearly distinguish where Business Information and Analytics fit into organizations.

keywords: Business Intelligence; Analytics, BI; changes; information; data; transformation;

1. INTRODUCTION

In the last decade, the amount of information that is being processed and transported through the internet, or private networks, has grown exponentially. In the same trend, markets undergo transformations in which products are simply no longer consumed and are replaced by others that better meet the new demands of consumers.

With sources of data sources growing steadily, traditional BI&A are evolving to provide intelligence at different scales and perspectives: operational BI, situational BI, self-service BI¹.

These changes imply the need for organizations to understand trends and react to them on time, otherwise, they will be doomed to failure. In this sense, decision support tools are increasingly being adopted to minimize the effects of these changes to the business or to allow organizations to redirect.

Using Business Intelligence (BI) and Analytics concepts and tools help organizations to better collect and transform data. It is necessary to emphasize that the transformation of raw data into information is a fundamental process for making correct and agile decision-making possible, as well as for anticipating future situations.

Under the background of big data, traditional data display methods cannot meet the needs of data analysis and visualization. How to deal with these data and excavate its potential value have become more and more important to enterprises' competition and developmentⁱⁱ.

2. BUSINESS INFORMATION AND ANALYTICS PRINCIPLES

Business intelligence and analytics (BIA) is about the development of technologies, systems, practices, and applications to analyze critical business data so as to gain new insights about business and markets. The new insights can be used for improving products and services, achieving better operational efficiency, and fostering customer relationshipsⁱⁱⁱ.

It is important to highlight that the concept presented represents a vision that encompasses the unified use of Business Intelligence (BI) and Analytics (A) which has its representation in the acronym BIA.

Analytics and business intelligence (ABI) is an umbrella term that includes the applications, infrastructure and tools, and best practices that enable access to and analysis of information to improve and optimize decisions and performance^{iv}.

The term umbrella, highlighted by Gartner, directly represents the diversity of solutions on the market that individually together allow the development of the ecosystem necessary to use the full potential of BI and Analytics.

3. DATA TRANSFORMATION AND WHAREHOUSE

Under the background of big data, traditional data display methods cannot meet the needs of data analysis and visualization. How to deal with these data and excavate its potential value have become more and more important to enterprises' competition and development^v.

Traditional systems, which are developed in transactional models, often cannot meet requests for historical information, as they did not design their relational structure to obtain performance in these types of queries. Another factor to be considered is that in the vast majority of transactional systems, the queries are pre-defined, and often with departmental focus, not allowing the correlation of data that permeates the departments at the strategic level is important.

During the last decade, data warehouses (DWs) have become an essential component of modern decision support systems in most companies of the world^{vi}. BI technologies are essential to running today's businesses and this technology is going through sea changes^{vii}.

Large and medium-sized organizations, which deal daily with thousands of data, need to store their customers' information so that they are accessible to meet various purposes, such as inquiries from support channels and requests for information from the diverse departments.

It must be emphasized that the two main factors that must be considered in the BI process are transforming raw data, which without context does not represent reality, and the need to store a large amount of information.

4. CONCLUSION

This article provides the reader with the initial information to make possible the possibilities for using Business Intelligence tools and Analytics tools. Understanding the concept that permeates the two solutions is essential for the deepening of practical studies for any professional or student.

It should be borne in mind that within a time frame, Business Intelligence, based on historical information, allows organizational guidance and/or decision making. Analytics treats the mass of data in such a way that it is possible to predict future situations. We can say that Analytics is a preemptive model, thus allowing organizations to anticipate future situations.

Organizations should consider their entire history of marketing information and use this set of information to their advantage. The existence of a corporate database with all the business information represents a competitive advantage.

The choice by organizations of any technological solution that supports decision making, whether through Business Intelligence or Analytics, must be based on the problems to be solved. In this way, it is possible to minimize the possibility of undersized or oversized investments.

Whether to understand the current situation or expect future situations, hiring qualified teams to adopt tools and apply techniques is essential.

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6. REFERENCES

- i Quoc Duy Vo Department of Computer Science, Quoc Duy Vo, et al. "Next Generation Business Intelligence and Analytics: Proceedings of the 2nd International Conference on Business and Information Management." *ACM Other Conferences*, 1 Sept. 2018, <https://dl.acm.org/doi/10.1145/3278252.3278292>.
- ii Sun Jun School of Business and Management, Sun Jun, et al. "Business Intelligence Visualization Technology and Its Application in Enterprise Management: Proceedings of the 2020 2nd International Conference on Big Data Engineering and Technology." *ACM Other Conferences*, 1 Jan. 2020, <https://dl.acm.org/doi/10.1145/3378904.3378909>.
- iii Lim, Ee-Peng, et al. "Business Intelligence and Analytics: Research Directions: ACM Transactions on Management Information Systems: Vol 3, No 4." *ACM Transactions on Management Information Systems*, 1 Jan. 2013, <https://dl.acm.org/doi/10.1145/2407740.2407741>.
- iv Gartner_Inc. "Definition of Analytics and Business Intelligence (ABI) - Gartner Information Technology Glossary." *Gartner*, <https://www.gartner.com/en/information-technology/glossary/business-intelligence-bi>.
- v Sun Jun School of Business and Management, Sun Jun, et al. "Business Intelligence Visualization Technology and Its Application in Enterprise Management: Proceedings of the 2020 2nd International Conference on Big Data Engineering and Technology." *ACM Other Conferences*, 1 Jan. 2020, <https://dl.acm.org/doi/10.1145/3378904.3378909>.
- vi Grabova, Oksana, et al. "Business Intelligence for Small and Middle-Sized Entreprises." *ArXiv.org*, Feb. 2011, <https://arxiv.org/abs/1102.0115>.
- vii Research, Surajit Chaudhuri Microsoft, et al. "An Overview of Business Intelligence Technology." *Communications of the ACM*, 1 Aug. 2011, <https://dl.acm.org/doi/10.1145/1978542.1978562>.