

Original Article

# Business Intelligence Challenges and How to Handle Them

Kshitiz Nayyar

University of Wales, Cardiff, United Kingdom and Current Country – Canada

Received: 16 March 2023

Revised: 26 April 2023

Accepted: 09 May 2023

Published: 23 May 2023

**Abstract** - Business Intelligence (BI) is a set of methodologies, processes, architectures, and technologies that transform raw data into meaningful and useful information for business purposes. It involves using tools and techniques such as data mining, data warehousing, and reporting to make informed decisions and support better strategic planning, performance optimization, and operational effectiveness. BI aims to provide a complete picture of the organization's performance and enable data-driven decision-making. There are a number of business intelligence difficulties that hamper attempts to make BI processes efficient, effective, and relevant as organizations of all kinds scramble to make sense of the vast amounts of data they are gathering. "Diverse data infrastructures, data management concerns", new forms of BI capabilities, and various degrees of data literacy across the workforce all contribute to the difficulties. The business intelligence (BI) team has a double responsibility: first, they must guarantee that adequate "data governance and security safeguards" are in place; second, they must show how BI can help employees, including those with less documentation.

**Keywords** - Business intelligence, Challenges and Problems.

## 1. Introduction: Problems Faced by Business Intelligence

### 1.1. Combining Information from Many Sources

Data from many sources must be combined and analyzed before BI can be considered useful to the end user. With so many databases, business apps, and big data systems to integrate, business intelligence (BI) software runs the danger of misrepresenting data.

At first glance, this may not seem like a problem, given that pre-built BI systems often have their own ETL procedures for connecting to and transforming data from several sources. Although the built-in ETL seems speedy and enticing, it cannot process all data types. In spite of the fact that specialized connectors are being completed for new source systems all the time, a medium to big business that uses Power BI Data Flows as its only "Extract, Transform and Load (ETL) tool and Data Warehousing (DWH) storage" will eventually run into scale, performance, and maintenance concerns (Suša Vugec *et al.*, 2020).

### 1.2. Poor Data Quality

Data quality is one of the primary issues of "Business Intelligence and stumbling blocks to attaining BI goals", specifically, making the right strategic choices (Lepenioti *et al.*, 2020). Because of the presence of human error, duplicated and inaccurate data, and inconsistent data formats, it is impossible to get useful insights and may even lead to erroneous decisions. The quality of data may be improved with the aid of a well-thought-out data management plan.

### 1.3. Lack of Data Talent

One of the most typical issues with Business Intelligence is a lack of qualified personnel, which has a direct impact on any data analytics initiatives being undertaken. Around 250,000 data science jobs went unfilled in the United States in 2020 due to a lack of qualified candidates. Data science is one of the in-demand specialities identified by "the 2022 Tech Hiring Survey" (Božič and Dimovski, 2019).

An impending talent crisis in the labor market as a whole, shifting demographics, the "Great Resignation", and the possibility of a further economic downturn all contribute to this predicament (Aydiner *et al.*, 2019). Organizations can't make good use of BI analytics, "create data warehouses for baseline data", or have a sufficient data literacy base without the proper personnel.

### 1.4. Poor Presentation of Data

The success of an organization is often overshadowed by questions about the accuracy of its data and the thoroughness of the analysis procedures. Designing BI dashboards that effectively convey complicated data to decision-makers and facilitate the translation of insights into action is equally crucial.

### 1.5. Lack of Business Intelligence Strategy

Investing in technology without assessing Organization performance to find areas where you want to improve can lead to time-consuming and costly implementation.



### 1.6. Enterprise-Level Adoption

Some Teams in any enterprise may be indecisive about incorporating business intelligence into their day-to-day operations. Low adoption rates can be due to a lack of understanding of how to use BI technology.

### 1.7. Managing the use of Self-Service BI Tools

Self-service BI Tools in different units within the organization can lead to conflicting results that create confusion in the minds of Top-tier executives in the organization.

## 2. Solutions to Overcome Business Intelligence Challenges

### 2.1. Clarify the Issue that Needs Fixing

Business intelligence has a wide range of potential uses that include almost every facet of running a company. Therefore, businesses should begin with a small scale by "defining the scope of analysis" and then connecting it to related metrics and reports. In turn, the reports should center on a predetermined set of key performance indicators (KPIs), either "internal or external, to monitor, evaluate, and enhance" the organization's data (Mikalef *et al.*, 2019). A BI advising partner can confirm the analysis's boundaries and assist businesses with the appropriate KPIs.

### 2.2. Using Effective Methods of Change Management, Someone May Alter the Culture of the Firm

Have the right transformational approaches in place to get rid of inertia and boost system acceptability when users make the switch from disparate tools to a unified BI solution. Interactive data inflows and smooth knowledge sharing are essential for accurate and advanced analytics; therefore, it's important to establish reliable, transparent communication channels, bring together executives from diverse lines and provide seminars and training.

### 2.3. Find a Trustworthy Consulting Firm

A centralized data warehouse and a uniform data strategy are the foundation for quick and reliable data analysis. Without these antecedents, the insights would be trapped in data silos, never to escape the walls of individual departments. Hiring a "professional BI consulting team" to set up a solid data architecture, oversee data governance, and link the company data warehouse to the appropriate BI solution can help avoid data failures (Carillo *et al.*, 2019).

## 3. Next Steps

### 3.1. Improve Data Quality

Implement data governance processes and standards to ensure the accuracy, completeness, and consistency of data used for BI purposes.

### 3.2. Address Data Integration

Use data integration tools and techniques to simplify data integration from different sources and ensure that data is consistent and reliable.

### 3.3. Improve Data Security

Implement security measures such as data encryption, access controls, and audit trails to protect sensitive and confidential data.

### 3.4. Foster User Adoption

Provide training and support to users to help them adopt and use the BI tools and solutions effectively.

### 3.5. Simplify Technical Complexity

Use BI solutions that are user-friendly and easy to use, and simplify the technical aspects of the BI implementation. By addressing these challenges, organizations can realize the full potential of their BI initiatives and make data-driven decisions that drive business success.

## References

- [1] Dalia Suša Vugec et al., "Business Intelligence and Organizational Performance: The Role of Alignment with Business Process Management," *Business Process Management Journal*, vol. 26, no. 6, pp.1709-1730, 2020. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [2] Katerina Božič, and Vlado Dimovski, "Business Intelligence and Analytics for Value Creation: The Role of Absorptive Capacity," *International Journal of Information Management*, vol. 46, pp. 93-103, 2019. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [3] Patrick Mikalef et al., "Big Data and Business Analytics: A Research Agenda for Realizing Business Value," 2019. [[Google Scholar](#)] [[Publisher Link](#)]
- [4] Kevin Daniel Andre Carillo et al., "How to Turn Managers into Data-driven Decision Makers: Measuring Attitudes towards Business Analytics," *Business Process Management Journal*, vol. 25, no. 3, pp. 553-578, 2019. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [5] Arafat Salih Aydiner et al., "Business Analytics and Firm Performance: The Mediating Role of Business Process Performance," *Journal of Business Research*, vol. 96, pp. 228-237, 2019. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [6] Katerina Lepenioti et al., "Prescriptive Analytics: Literature Review and Research Challenges," *International Journal of Information Management*, vol. 50, pp. 57-70, 2020. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [7] Cindi Howson, *Unlock the Value of BI and Big Data*, 2013.
- [8] Swain Scheps, *Business Intelligence for Dummies*, Dummies, 2008.
- [9] David Sumpter, *The Ten Equations that Rule the World: And How You Can Use Them Too*, Allen Lane, 2020.
- [10] Jeremy M. Kolb. *Business Intelligence in Plain Language: A Practical Guide to Data Mining and Business Analytics*, 2013.

- [11] Gregory P. Steffine, *Hyper: Changing the way you think about, Plan and Execute Business Intelligence for Real Results, Real Fast*, Sanderson Press, 2015. [[Google Scholar](#)]
- [12] Brian Knight et al., *Microsoft Power BI Complete Reference: Bring your data to life with the powerful features of Microsoft Power BI*, Packt Publishing Ltd., 2018. [[Google Scholar](#)]
- [13] Joshua N. Milligan, *Business Intelligence and Data Visualization that Brings your Business into Focus*, 2nd Edition, Packt Publishing, 2016. [[Google Scholar](#)]
- [14] Dona M. Wong, *The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts and Figures*, Dow Jones and Company, 2010. [[Google Scholar](#)]
- [15] Brian Larson, *Delivering Business Intelligence with Microsoft SQL Server 2016*, Fourth Edition, McGraw Hill, 2016.
- [16] Dursun Delen, Ramesh Sharda, and Efraim Turban, *Business Intelligence and Analytics: Systems for Decision Support*, (10th Edition), Pearson Education, 2018.
- [17] Michael Alexander, Jared Decker, and Bernard Wehbe, *Microsoft Business Intelligence Tools for Excel Analysts*, John Wiley & Sons, Inc., 2014. [[Google Scholar](#)]
- [18] Steve Williams, and Nancy Williams, *The Profit Impact of Business Intelligence*, Elsevier, 2007. [[Google Scholar](#)]
- [19] Barry Devlin, *Business Unintelligence: Insight and Innovation beyond Analytics and Big Data*, Technics Publications, LLC New Jersey, 2013. [[Google Scholar](#)]