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Challenges And Opportunities Of Business Intelligence-A Study

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ABSTRACT
"Business intelligence" comprises the strategies and technologies used by enterprises for the dataanalysis and management of business information. Business Intelligence tools can handle large amounts of structured and sometimes unstructured data to help identify, develop, and otherwise create new strategic business opportunities. Business Intelligence has embarked on decision- making setting. It has given the path towards the challenges and opportunities of BI implementation Today Businesses around the world are changing rapidly and the organizations have realize that it not just about customer sales records or it not just about structured data whichwould otherwise processed, used, analyzed and achieved. The goal of BI platform is to explore why, where, what, and how of a sales, customers, products, employees and companies. This article looks at the challenges and opportunities of BI.

Keywords: Business Intelligence, Data Analysis, BI Challenges, BI Opportunities,

INTRODUCTION

Business intelligence (BI) refers to the procedural and technical infrastructure that collects, stores, and analyzes the data produced by a company's activities. BI tools and software come in a wide variety of forms such as spreadsheets, reporting/query software, data visualization software, data mining tools, and online analytical processing. Self-service BI is an approach to analytics that allows individuals without a technical background to access and explore data. Business intelligence can be used by enterprises to support a wide range ofbusiness decisions ranging from operational to strategic. BI is most effective when it combines data derived from the market in which a company operates (external data) with data from company sources internal to the business such as financial and operations data (internal data). The term Business Intelligence (BI) is defined in many ways but its purpose is to extract actionable information from datasets for better decision making and organization growth.

BI has defined as "a systematic collection of techniques, methods, structures and processes that shapes big data into asset and actionable information for effective decision-

making". BI involves the delivery and integration of business information in an organization. Data mining or warehousing is not new, but in the last few years, companies have come torealize that BI is much more than corporate reporting from an information house in the IT section. With the advancements in visualizing information, data can be accessed and used across the organization to cut costs, streamline organizational efficiencies, refine products and services, and launch new ones. BI continues to be one of the fastest moving areas in the enterprises.

STATEMENT OF THE PROBLEM

In today's fast-paced and data-driven business environment, revolves around the effectiveutilization of data to drive business decisions and achieve organizational objectives. Organizations must prioritize data governance, invest in user-friendly BI solutions, cultivate dataliteracy among employees, and foster a culture that values data-driven decision-making. Additionally, continuous monitoring, evaluation, and adaptation are essential to ensure that BI initiatives remain aligned with evolving business needs and opportunities. In this article a

detailed a study has been made to find challenges and opportunities of BI.

OBJECTIVES OF THE STUDY

To sort out the challenges of Business Intelligence.

The opportunities used to develop the companies through Business Intelligence.

To offer some suggestions based on the study.

REVIEW OF LITERATURE

Wixom & Watson, (2010) stated that, Business Intelligence BI as an umbrella term that is commonly used to describe the technologies, applications, and processes for gathering, storing,accessing, and analysing data to help users make better decisions.

Negash, Solomon, (2008) stated that, BI is a technology-driven process of gathering , storage and knowledge management with analytical tools to present complex and competitive information as actionable information to help business managers in making informed business decisions .

Sahay & Ranjan, (2008) says that, BI Systems combine gathering and storage of data, and knowledge management with analytical tools to present complex and competitive

information to planners and decision makers. BI can help the decision makers to transform data into meaningful, actionable information and provide business insights.

Williams, S., & Williams, (2010) stated that, BI combines products, technology and methods to organize key information which company managers can leverage BI to ensure organizational integration and, in turn, generate maximum value from their BI program that management needs to improve profit and performance.

Popovič et al., (2012) said that, BI Systems are the information technology **and processes** that have emerged as solutions for data integration and analytical capabilities.

BUSINESS INTELLIGENCE CHALLENGES

Challenges requires a comprehensive approach that encompasses people, processes, and technology. Organizations must prioritize data governance, invest in user training and support, implement robust security measures, and foster a culture that values data-driven decision- making. Additionally, continuous monitoring, evaluation, and adaptation are essential to ensure that business intelligence initiatives remain aligned with evolving business needs and challenges.Here are some of the key challenges encountered in the realm of business intelligence:

Data Quality and Integration: One of the primary challenges in business intelligence is ensuring the quality and consistency of data. Data may originate from various sources, including internal databases, external sources, and third-party vendors, each with its own structure and quality standards. Integrating disparate data sources while maintaining data accuracy and consistency is a significant challenge.

Data Security and Privacy: With the increasing volume and complexity of data, ensuring data security and privacy has become a critical challenge. Organizations must implement robust security measures to protect sensitive business information from unauthorized access, breaches, and cyber threats. Compliance with data protection regulations such as GDPR, CCPA, and HIPAA further complicates the issue.

Scalability and Performance: As data volumes continue to grow exponentially, scalability and performance become significant challenges for business intelligence systems. BI platforms must be able to efficiently process and analyze large datasets in real-time or near-real-time to provide

timely insights to decision-makers. Ensuring optimal performance under varying workloads and usage patterns is essential.

Complexity of Tools and Technologies: The landscape of business intelligence tools andtechnologies is vast and continually evolving. Selecting the right tools that align with theorganization's needs and objectives can be daunting. Additionally, the complexity ofimplementing and integrating these tools into existing infrastructure poses a challenge for many organizations.

Data Governance and Compliance: Establishing effective data governance frameworks is crucial for ensuring data quality, integrity, and compliance with regulatory requirements. However, implementing comprehensive data governance practices across the organization requires careful planning, coordination, and enforcement.

User Adoption and Training: Despite the availability of sophisticated BI tools, ensuring user adoption remains a significant challenge. Many users may lack the necessary skills and trainingto effectively utilize BI tools and interpret data insights. Providing adequate training and support to users is essential for maximizing the value of business intelligence investments.

Cost and ROI: Implementing and maintaining business intelligence infrastructure can be costly,requiring investments in software licenses, hardware, personnel, and ongoing maintenance. Calculating the return on investment (ROI) of BI initiatives can be challenging, especially when measuring intangible benefits such as improved decision-making and operational efficiency.

Cultural Resistance to Change: Adopting a data-driven culture requires organizational change and may encounter resistance from stakeholders accustomed to traditional decision-making methods. Overcoming cultural barriers and fostering a mindset receptive to data-driven insights is a formidable challenge for many organizations.

Summarizes some of the key challenges of big data and analytics in view of BI as follows:

Lack of understanding of big data

Complex big data technologies

Analyzing data from different data sources

Difficult process to manage data quality

Vulnerable information security holes

Measuring the right indicators

Complex process of big data to insights

Problems of scaling and performance

Unclear BI strategy

Reducing the cost of producing reports

Lack of company-wide adoption

Creating self-service analytics

Companies can take faster and more accurate decisions as Big data has the potential to take more accurate decisions. The trend of BI, Big data and Analytics can support the rapid and more accurate decision-making approach, which is basically the purpose of "BI."

The have also listed few of the challenges that the organizations or companies are facing inorder to data analytics implementation despite the spectacular growth that has been witnessed with its adoption over the years in BI. They are as follows:

- **Required Skill Set for Data Analyst**
- **Finding the Right Data**
- **Consolidation of Information**
- **Creation of Data Science Models**
- **Identifying Appropriate Analytics Use Cases**
- **Agility**

BUSINESS INTELLIGENCE OPPORTUNITIES

Business intelligence presents numerous opportunities for organizations to leverage data effectively and drive business success across various functions and industries. By harnessing the power of BI, organizations can gain valuable insights, make informed decisions, and stay ahead of the competition in

today's rapidly evolving business landscape. Here are some key opportunities:

Informed Decision Making: BI empowers organizations to make informed decisions based on data-driven insights rather than relying solely on intuition or past experiences. By analyzing

historical and real-time data, organizations can identify trends, patterns, and correlations that inform strategic and operational decision-making processes.

Predictive Analytics: BI enables organizations to leverage advanced analytics techniques such as predictive modeling and forecasting to anticipate future trends, market opportunities, and potential risks. By analyzing historical data and extrapolating patterns, organizations can make proactive decisions and gain a competitive edge.

Enhanced Customer Understanding: BI allows organizations to gain deeper insights into customer behavior, preferences, and needs. By analyzing customer data from various touch points, organizations can personalize marketing campaigns, improve customer engagement, and drive customer loyalty and retention.

Operational Efficiency: BI enables organizations to streamline business processes, optimize resource allocation, and identify areas for improvement. By analyzing operational data, organizations can identify bottlenecks, inefficiencies, and cost-saving opportunities, leading to improved operational efficiency and productivity.

Market Intelligence: BI enables organizations to monitor market trends, competitivelandscapes, and industry developments in real-time. By analyzing external data sources such as market research reports, social media, and news feeds, organizations can identify emerging opportunities and threats, and adjust their strategies accordingly.

Product and Service Innovation: BI facilitates innovation by providing insights into customer needs, preferences, and feedback. By analyzing product usage data, organizations can identify opportunities for product and service enhancements, new feature development, and innovation.

Risk Management: BI enables organizations to identify and mitigate risks more effectively by analyzing historical data and identifying potential risk factors. By monitoring key risk indicators and conducting scenario analysis, organizations can proactively manage risks and minimize theirimpact on business operations.

Revenue Growth: BI enables organizations to identify new revenue streams, cross-selling and upselling opportunities, and pricing optimizations. By analyzing sales data, customer demographics, and market trends, organizations can develop targeted strategies to drive revenue growth and profitability.

Compliance and Governance: BI helps organizations ensure compliance with regulatory requirements and internal policies by providing visibility into data usage, access controls, and

audit trails. By implementing robust data governance frameworks and controls, organizations can mitigate compliance risks and ensure data integrity and security.

Continuous Improvement: BI facilitates a culture of continuous improvement by providing timely feedback and performance metrics. By monitoring key performance indicators (KPIs) andconducting root cause analysis, organizations can identify opportunities for process optimization,performance improvement, and innovation.

We have also documented some of the opportunities of big data and BI as follows:

- Help to understand customer behavior: The use of big data streamlines business functionsin many ways. According to Datameer research report, 48% of companies use it to conduct customer analytics, 21% use it for operational analytics, 12% use it to prevent fraud and ensure privacy compliance, and 10% use it to create new product and service innovation

- Improve product: Through product data analysis, companies can identify and address qualityor inconsistency issues in their product and increase efficiency of product development.

- Improve company efficiency: Big data helps shed light on where efficiencies can be improved. This can include one or more areas like overstock, slowed production, and low employee satisfaction.

- Gain competitive advantage: By analyzing performance data against competitors, companiescan determine where they are outperforming and underperforming in the market.

- Improve sales: By leveraging sales-related data, companies can enhance their sales strategy, yielding bigger returns and anticipating future issues. Comparative analysis can identify gaps in sales, capitalizing on areas that are propelling revenue and troubleshooting in low-performing areas.

- Improve marketing: Companies are utilizing BI for years to achieve a variety of gains. Someof these include: analyzing social media to determine where to focus efforts, assessing ROI to discover what motivates consumer behavior, and segmenting the market to build brand. Recent advances in audience targeting enable markets to align their strategies with customer sentiment and trends.
- Gain user visibility: By having a comprehensive BI strategy in place, companies can gain visibility into every facet of the business. This is especially important within complex supply chains that involve a plethora of users and factors. This leads to enhanced reporting and informeddecision making across all levels.
- Turn big data into actionable information: Through analysis, big data is interpreted and enriched. When the analytics reports are generated, insights and recommendations become visible and bring the big data into the business context and helps high and low level decision takers to see what is best suitable for them. BI bridges the gap between the data analysts and thebusiness users.

SUGGESTIONS OF THE STUDY

Here are some practical suggestions for implementing business intelligence (BI) initiativeseffectively:

Defining clear and specific objectives for your BI initiative.

Determine the data sources that are relevant to achieving your objectives. This may include internal sources such as transactional databases, CRM systems, and ERP systems,as well as external sources
Data quality initiatives to ensure that the data used for analysis is accurate, complete, andconsistent.
Select BI tools that are well-suited to your organization's needs, budget, and technical requirements.
Develop interactive dashboards and reports that provide actionable insights to key stakeholders.
Continuously monitor the performance of your BI initiatives and evaluate their impact onbusiness outcomes.

CONCLUSION

Business intelligence (BI) stands as a cornerstone in the modern business landscape, offering organizations invaluable insights into their operations, markets, and customers. Throughthe systematic collection, analysis, and interpretation of data, BI empowers decision-makers to

make informed choices, driving strategic initiatives and operational efficiencies. BI has revolutionized the way businesses operate, enabling them to uncover hidden patterns, trends, andcorrelations within their data. By leveraging advanced analytics techniques, organizations can predict future outcomes, identify opportunities, and mitigate risks, positioning themselves for success in a competitive environment.

However, realizing the full potential of BI comes with its own set of challenges, including data quality issues, integration complexities, and cultural barriers. Overcoming these obstacles requires a concerted effort, involving investments in technology, talent, and processes, as well as a commitment to fostering a data-centric culture.

As we look ahead, the role of BI is poised to become even more critical, driven by advancements in artificial intelligence, machine learning, and big data analytics. Organizations that embrace BI as a strategic imperative and invest in building robust data-driven capabilities will undoubtedly position themselves for sustained growth and success in the digital age.

REFERENCES

https://www.investopedia.com/terms/b/business-intelligence-bi.asp

https://en.wikipedia.org/wiki/Business_intelligence

https://www.tableau.com/learn/articles/business-intelligence

Wixom, B., & Watson, H. (2010). The BI-Based Organization. International Journal ofBusiness Intelligence Research, 1(1), 13–28.
Williams, S., & Williams, N. (2010). The Profit Impact of Business Intelligence. In TheProfit Impact of Business Intelligence. Elsevier.
Popovič, A., Hackney, R., Coelho, P. S., & Jaklič, J. (2012). Towards business intelligence systems success: Effects of maturity and culture on analytical decisionmaking. Decision Support Systems, 54(1), 729–739.
Negash, Solomon, P. G. (2008). Business Intelligence. Handbook on decision supportsystems 2 (pp. 175-

193). Springer, Berlin, Heidelberg.
Sahay, B. S., & Ranjan, J. (2008). Real time business intelligence in supply chain analytics. Information Management and Computer Security.

Muriithi GM, Kotzé JE. "A conceptual framework for delivering cost effective business intelligence solutions as a service". Proceedings of the South African Institute for Computer Scientists and Information Technologists Conference, East London, South Africa: ACM; pp. 96– 100, 2013.

P. Ukhalkar and M. Bhosale, "The role of Big data in enhancing business value through Business Intelligence and Big Data Analytics", oh, vol. 68, no. 27, pp. 83-91, Feb. 2020
T.-P. Liang, Y.-H. Liu, "Research Landscape of Business Intelligence and Big Data analytics: A bibliometrics study", Expert Systems With Applications, 111, pp. 2–10,2018.

Prakash Ukhalkar and Monali Bhosale, "How companies are effectively using Big Data!", oh, vol. 68, no. 15, pp. 352-357, Jan. 2020.

Gökhan Silahtaroğlu and Nihat Alayoglu, "Using or Not Using Business Intelligence andBig Data for Strategic Management: An Empirical Study Based on Interviews", Procedia
Social and Behavioral Sciences, 235, pp. 208-215, 2016.

Prakash Ukhalkar, "The transformative potential benefits of big data in government and public sector domains", International Journal of Advanced Science and Research, vol. 3,Special Issue 1, pp. 30- 33, 2018.