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## Toward Better Understanding of Business Intelligence

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**Abstract** This introductory study provides how companies are using business intelligence to improve the effectiveness of decision-making. Business intelligence is increasingly becoming necessary for business leaders to visualize, analyze, and prepare their strategic planning. In recent years, several organizations have implemented business intelligence and analytics for big data solutions. The organizations are governed by information, knowledge, intelligence, and wisdom.

**Keywords** Business intelligence, business analytics

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### Introduction

The concept of business intelligence (BI) refers to the tools and systems that play a major role in the planning process of an organization. The tools represent BI in customer support, customer profiling, market research, product profitability, and business analysis. They are regarded as technology that enhances efficiency of business operations. The intelligent systems help in decision-making process by gathering, storing, and analyzing data [1]. They help business executives, managers, and others make more informed decisions. BI technologies are used for acquiring and transforming raw data into meaningful information for the purpose of business analysis. Their common functions include real time reporting, processing, data mining, and business performance management.

While BI means different things to different people, it may be seen as an umbrella term that finds its roots in areas such as decision making, information system, and data warehousing. Many large and medium-sized companies now use BI.

### BI Tools

Business intelligence tools enable leaders to manage data, predict the future of technology, and make good decisions. There are plenty of them in the market [2].

*MS Excel*: The most commonly used tool for BI is MS Excel because it commonly available and can easily be used to display data.

*JasperReports*: This is an open source BI tool that was developed by Jaspersoft. It has learning sources including training and webinars.

*Pentaho*: This is a suite of tools for data analysis and data mining. It provides a platform for cloud based visualization of data.

*SpagoBI*: It is part of the SpagoWorld open source initiative. It consists of 15 components which include reporting, OLAP, dashboards, and data mining.

*Palo/Jedox*: It is designed for a business suite for planning and reporting. It was developed by German company Jedox. Add-ons are available for Excel to use data spreadsheets.

*Tableau*: This is good for anyone who wants to generate data stories on the web. Sharing the data is made through web and mobile. It extends support to all browsers across platforms.



For multidimensional analysis involving data warehouse, the most common tools include Microsoft SQL Server Analysis Services, SAP Business Objects, IBM Cognos, WebFOCUS, and Oracle Hyperion. There are many ways of outsourcing services in BI systems—reporting services, OLAP service, and data mining and visualization of data service [3].

### BI Applications

Business intelligence has been widely adopted for over 30 years or so in the business world. A typical deployment of a BI application is over the web (web search engines such as Google and Yahoo). BI data is typically stored in data warehouse. Although BI is designed for the business environment, it can be used by government, universities, healthcare, and security.

1. *Enterprise*: Companies or organizations that use BI are often large and multinational. The business-driven approach to BI implementation is often motivated by competition and the need for gaining competitive advantage over business rivals. Companies apply BI to accelerate and improve decision making, reduce costs, and identify new opportunities.
2. *Restaurant chains*: Because restaurant chains such as Wendy and Hardee are operations-driven, they are heavy users of BI. They use BI to make timely business decisions and for tactical matters.
3. *Healthcare*: Today's healthcare practitioners are facing the demand for information to comply with legal and customer requirements. BI is considered a possible solution to this challenge. Hospitals have their data spread out and residing in several databases in the form of clinical data, administrative data, and external data [4]. BI system is developed to support decision-making domains such as hospital management, clinical decision support, and clinical research.
4. *Mobile devices*: Developing BI application for the new generation of mobile devices (such as smart phones and tablets) is one of the major challenges facing practitioners [5]. The security of mobile BI systems is a major problem.

### Conclusion

Since BI plays a key role in achieving and maintaining competitive advantage, it has attracted much attention from researchers and practitioner. The main objective of business intelligence is to enable business managers to have easy access to data, be able to conduct analysis, allow them to convert data into useful knowledge, and then make faster, better decisions. An effective use of BI will result in time savings, cost rationalization, and management efficiency. Although BI holds great promise, it faces technical and cultural challenges. The gap between deployed BI and BI users indicates that the full potential of BI is not fully tapped by companies and organizations. It has been reported that 70% of BI applications fail due to technology, cultural, and infrastructure issues [6].

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