

A STUDY ON BUSINESS INTELLIGENCE AND MOBILE BUSINESS INTELLIGENCE

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ABSTRACT

Business Intelligence (BI) is much more than software and describes a set of processes and technologies for simplifying and enhancing the use of information within a Company. In BI data is gathered from the IT systems in a company, whether they be ERP or CRM systems, or from Excel spread sheets and other personal productivity tools. Data is cleaned, standardized and then presented to business users in a friendly way. There are many mobile devices and platforms available today. The list is constantly growing and so is the platform support. There are hundreds of models available today, with multiple hardware and software combinations. The mobile BI program must account for lack of device standardization from the providers by constantly testing devices for the mobile BI apps. The present paper has been covered Business Intelligence Architecture and Dashboard, Operational & Collaborative Business Intelligence, Functions of Business Intelligence, Success factors for BI and its Implementation, advantages and disadvantages of Business Intelligence, Evolution of MBI & Relation between MBI & BI.

Keywords: Business Intelligence, Mobile Business

1. INTRODUCTION

Business intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting and data mining.

Business intelligence applications can be:

- Mission-critical and integral to an enterprise's operations or occasional to meet a special requirement
- Enterprise-wide or local to one division, department
- Centrally initiated or driven by user demand

This term was used as early as September, 1996, when a Gartner Group report said:

By 2000, Information Democracy will emerge in forward-thinking enterprises, with Business Intelligence information and applications available broadly to employees, consultants, customers, suppliers, and the public. The key to thriving in a competitive marketplace is staying ahead of the competition. Making sound business decisions based on accurate and current information takes more than intuition. Data analysis, reporting, and query tools can help business users wade through a sea of data to synthesize valuable information from it - today these tools collectively fall into a category called "Business Intelligence."

Mobile business intelligence (MBI) is the ability to access BI-related data such as KPIs, business metrics, and dashboards on mobile devices. The concept of **mobile BI** dates back to the early 1990s when mobile phone use first began to become widespread. Early advocates of mobile BI immediately grasped the potential of mobile phones to simplify the distribution of business-critical data to mobile or remote workers. However, it wasn't until the advent of the smartphone that mobile BI began to generate widespread attention. Mobile business intelligence is software that extends desktop business intelligence (BI) applications so they can be used on a mobile device. MBI applications optimize traditional BI reports so they can be viewed easily on a small screen and is ideal for displaying key performance indicators (KPIs) and alerts on small screens with simple charts, graphs and spark lines. An additional benefit of MBI is that it allows data that's captured by the mobile device to be integrated on-the-fly so that reports are current and mobile workers can make informed decisions in real time. Currently, there is not a unified mobile device standard for MBI, making it challenging for vendors to accommodate the way different end user devices. Some BI vendors have integrated mobile capabilities into their existing architecture, while other solutions require an additional server for mobile publishing. Deployment methods vary depending on the business needs and types of mobile devices used. Some vendors use push technology to make sure the device has the most current data, while other vendors require the user to open an application on the mobile

device and pull the most current data. Regardless of delivery method, data security is an important consideration for any deployment and most vendors include encryption and strict authorization components in the applications.

2. OBJECTIVES OF THE STUDY

1. To know the Business Intelligence Architecture and Dashboard.
2. To know the Operational & Collaborative Business Intelligence.
3. To highlight the Functions of Business Intelligence.
4. To analyze Success factors for BI and its Implementation.
5. To know the advantages and disadvantages of Business Intelligence.
6. To state the Evolution of MBI & Relation between MBI & BI.

3. BUSINESS INTELLIGENCE ARCHITECTURE

Business intelligence architecture is a framework for organizing the data, information management and technology components that are used to build business intelligence (BI) systems for reporting and data analytics. The underlying BI architecture plays an important role in business intelligence projects because it affects development and implementation decisions. The data components of a BI architecture include the data sources that corporate executives and other end users need to access and analyze to meet their business requirements. Important criteria in the source selection process include data currency, data quality and the level of detail in the data. Both structured and unstructured data may be required as part of a BI architecture, as well as information from both internal and external sources. Information management architectural components are used to transform raw transaction data into a consistent and coherent set of information that is suitable for BI uses. For example, this part of a BI architecture typically includes data integration, data cleansing and the creation of data dimensions and business rules that conform to the architectural guidelines. It may also define structures for data warehousing or for a data federation approach that aggregates information in virtual databases instead of physical data warehouses or data marts. The technology components are used to present information to business users and enable them to analyze the data. This includes the BI software suite or BI tools to be used within an organization as well as the supporting IT infrastructure – i.e., hardware, database software and networking devices. There are various types of BI applications that can be built into an architecture: reporting, ad hoc query, data mining and data visualization tools, plus online analytical processing (OLAP) software, business intelligence dashboards and performance scorecards.

4. BUSINESS INTELLIGENCE DASHBOARD

A business intelligence dashboard is a data visualization tool that displays the current status of metrics and key performance indicators (KPIs) for an enterprise. Dashboards consolidate and arrange numbers, metrics and sometimes performance scorecards on a single screen. They may be tailored for a specific role and display metrics targeted for a single point of view or department. The essential features of a BI dashboard product include a customizable interface and the ability to pull real-time data from multiple sources. Oracle and Microsoft are among the vendors of business intelligence dashboards. BI dashboards can also be created through other business applications, such as Excel. Business intelligence dashboards are sometimes referred to as enterprise dashboards. The business intelligence dashboard is often confused with the performance scorecard. The main difference between the two, traditionally, is that a business intelligence dashboard, like the dashboard of a car, indicates the status at a specific point in time. A scorecard, on the other hand, displays progress over time towards specific goals. Dashboard and scorecard designs are increasingly converging. For example, some commercial dashboard products also include the ability to track progress towards a goal. A product combining elements of both dashboards and scorecards is sometimes referred to as a scoreboard.

5. OPERATIONAL BUSINESS INTELLIGENCE

Operational business intelligence, sometimes called real-time business intelligence, is an approach to data analysis that enables decisions based on the real-time data companies generate and use on a day-to-day basis. Typically, the data is queried from within an organization's enterprise

applications. Operational business intelligence technology is primarily targeted at front-line workers, such as call center operators, who need timely data to do their jobs. With operational BI, analysis can take place in tandem with business processing, so that problems can be spotted and dealt with sooner than with conventional after-the-fact business intelligence (BI) approaches. It enables the creation of a performance and feedback loop in which decision makers can analyze what's happening in the business, act upon their findings and immediately see the results of those actions. Data must be extremely current, which isn't always possible with the traditional bounds of both enterprise reporting and data warehousing. However, most business processes at a typical company don't require real-time data. With that in mind, a key part of every operational BI project is determining which business users need up-to-the-minute data for BI purposes and how they will handle getting data delivered to them in that fashion.

6. COLLABORATIVE BUSINESS INTELLIGENCE

Collaborative BI (collaborative business intelligence) is the merging of business intelligence software with collaboration tools, including social and Web 2.0 technologies, to support improved data-driven decision making. Collaborative BI can be applied to enterprise-wide reporting and analytics, making the sharing process easier and enabling more efficient decision making among team members who may have been working to reach conclusions on an individual basis. Compared to more solitary, conclusion-based traditional BI tools, collaborative BI emphasizes the problem-solving process. Tools allow peers to analyze data and exchange information and ideas through Web 2.0 tools like blogs and wikis. Modern tools also support brainstorming through social networking-like features, which continue to gain popularity for both business and personal use. Collaborative BI vendors include SAP and Microsoft. Microsoft SharePoint, which focuses on content management, is a popular collaborative product. Other collaborative software includes Lotus Notes.

7. FUNCTIONS OF BUSINESS INTELLIGENCE

BI technologies provide historical, current, and predictive views of business operations. Common functions of business intelligence technologies are:

- Reporting
- Online analytical processing
- Analytics
- Data mining
- Business performance management
- Benchmarking
- Text mining
- Predictive analytics.

8. BUSINESS INTELLIGENCE FOR SUCCESS

Business intelligence equips enterprises to gain business advantage from data. Once an organization is powered with BI it can anticipate enhanced turnaround time on data collection, come up with fresh ideas for novel business initiatives, foresee accurate picture of customer needs and demands, and perform more targeted marketing campaigns. In addition, it will gain enhanced knowledge that will help it advance its brand into the top slot in terms of market share, reduce its overheads and also diminish delays in supply chain, among other advantages. Decisions purely based on the gut feeling cannot assure success; but in BI's fact-based decision-making framework, confident decisions can be made for assured business success. Further, BI makes an organization agile thereby giving it a competitive edge in today's evolving market condition.

9. SUCCESS FACTORS OF BI IMPLEMENTATION

Although there could be many factors that could affect the implementation process of a BI system, research by Naveen K. Vodapalli shows that the following are the critical success factors for business intelligence implementation:

1. Business - driven methodology and project management.
2. Clear vision and planning.
3. Committed management support & sponsorship.

4. Data management and quality.
5. Mapping solutions to user requirements.
6. Performance considerations of the BI system.
7. Robust and expandable framework.

10. ADVANTAGES OF BUSINESS INTELLIGENCE

Business Intelligence, when properly implemented and used, delivers many benefits. Some of the key advantages include:

- Alignment of an organization around a consistent set of Key Performance Indicators (KPIs) and Metrics
- Quicker, fact-based decision making
- Simplified graphical presentation of KPIs and metrics
- Reliable presentation of information
- Combination of multiple data sources (ERP, CRM, Spread sheets, Budgets, etc.)
- Faster collection and dissemination of information.

11. DISADVANTAGES OF BUSINESS INTELLIGENCE

Some of the major Business Intelligence disadvantages are:

- Piling of Historical Data
- Cost
- Complexity
- Muddling of commercial settings
- Limited use
- Time Consuming Implementation.

12. EVOLUTION OF MOBILE BUSINESS INTELLIGENCE

In the early days Development teams and analysts were quick to realize the potential of making business intelligence systems available on mobile devices. It wasn't until the mid 2000s, however, that smartphone technology started to catch up to the ambitions of development teams. Early iterations of mobile BI systems were constricted by the small screen size of devices like early BlackBerry or Symbian devices. Data was typically shown using tables of information which, unfortunately, made reading and using the data quite difficult. The story of Mobile Revolution is When Apple introduced the first generation of its iPhone in 2007, it heralded the beginning of the mobile revolution. Screen size increased, usability and performance rapidly improved, and more people than ever before owned a smartphone. Virtually overnight, the smartphone market had changed giving developers a capable platform as well as sufficient user demand to start developing mobile BI applications. To this day, many vendors report that iPhone (along with the iPad) access accounts for the majority of smartphone access to mobile BI applications. At Present day mobile access to BI applications is typically accomplished in one of two ways:

- Using a mobile-browser to access the application on the web
- Using a native application that is designed for a specific mobile OS (such as iOS or Android)

Each approach has its benefits and disadvantages and, in the end, it depends on the use-case and scenario to determine which is best for any given business. In either case, mobile BI is one of the hottest and quickly evolving spaces in the software industry. Its promise attracts users and is fast gaining buy-in from leading organizations and executives from around the world. The reason behind this is simple: in the rapid-fire business world of the 21st century businesses and teams rely on real-time, on-demand access to business critical information. And at the end-game for mobile BI there is no doubt that mobile BI applications are rapidly evolving and are a hot commodity at the moment, but what's the end-game for these systems? Howard Dresner's independent research reveals high expectations for the growth of mobile BI. This trend is powered by not only the increasing capability of mobile technology like smartphones and tablets, but also by development teams hitting their stride and delivering solid BI platforms to mobile devices. Mobile BI is one piece of the BI puzzle. If BI is

about making better decisions using the right data, then mobile BI is about making sure that everyone – especially remote workers – has access to that data anytime, anywhere.

13. RELATION BETWEEN MOBILE BUSINESS INTELLIGENCE AND BUSINESS INTELLIGENCE

The term business intelligence dates back to the late 1950s, but started getting traction when Howard Dresner offered up this definition of BI: "concepts and methods to improve business decision making by using fact-based support systems". As is commonly said, BI is about having the right data at the right time to make the right call. Mobile BI addresses the use-case of remote or mobile workers that need on-demand access to business-critical data.

14. CONCLUSION

Business intelligence (BI) encompasses a wide range of applications and technologies useful for gathering, storing, analyzing and providing access to data. The overarching goal of strategic business intelligence planning is to help enterprise CIOs make faster, more informed business decisions. And now that this data can be taken "on the road" via mobile devices, CIOs are looking to put mobile BI in the palms of their users' hands -- literally. Mobile business intelligence relies upon software that extends desktop business intelligence applications for use on smartphone and tablets. Mobile BI allows enterprise users to access reports on the fly and makes decisions in real time, which is a boon to the business in today's real competitive world.

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