Analysis of Intelligent Tools for Business Analysis

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ABSTRACT

This the demand for relevant, accurate business data never diminishes. Business intelligence (BI) vendors and practitioners are constantly striving to develop new technologies and improve old processes to help companies get the information they need for data analysis purposes. The good news is that the surge in BI development is providing business users with better analysis tools than ever before. Several significant BI trends are helping shrewd businesses address the ever-increasing information demands pushing up the size of data volumes and clogging the throughput of BI systems. These trends include in-database and in-memory analytics, BI appliances, data virtualization and operational BI. This paper discusses these trends in more detail explaining how they can provide significant advantages to businesses.

Keywords: Business Intelligence; tools; data analytics; BI Appliance

INTRODUCTION

This Business Intelligence tools provide companies reliable information and true insights in order to improve decision making & social collaboration. With business intelligence you'll be able to produce much better company results. The tools provide the means for efficient reporting, thorough analysis of (big) data, statistics & analytics and dashboards displaying key indicators. Business Intelligence tools come in many different flavors. All the tools run on the Windows platform for example, but only a few support the different flavors of Unix and Linux. Some have excellent functionality for pixel perfect reporting and others do better in dash-boarding and predictive analytics. The most suitable product for one organization need not be the most suitable for another, depending on number of users, hardware, where the data comes from, volumes of data, the requirements and type of organization.

Companies who are not successful often have an issue with their information infrastructure. They may have selected the wrong tool or perhaps they don't use business intelligence-tools at all. They have not been able to implement BI and are still in the dark. Traditionally, Business Intelligence has found extensive application in innovative presentation of data captured and built up over long periods of time in an organization. Later, such historical reporting led to the need for arriving at a useful prediction of the future. BI in the sense of "intelligence about your business" should absolutely include predictive analytics. The power of predictive analytics to turn uncertainty about the future into a usable probability makes it invaluable in decision making.

Between the extremes of rearview-mirror reporting and advanced predictive analytics lies real-time monitoring. Front-line managers and executives increasingly want to know what's happening right now--as in this second, not yesterday or even 10 minutes ago. All these increasingly demanding requirements of the output from BI led to the vendors also evolving the technologies involved in churning the data effectively and in good time. Some of these technologies are discussed in the following sections:

Database Analytics

In - Database Analytics is a model of analysis where data processing is performed within a database to eliminate the overhead of moving large data sets to analytic applications. In-database analytics include parallel processing, scalability, analytic optimization and partitioning.

Advantages of In - Database Analytics

Streamlines the identification of future business opportunities and risks, operational analytics, area trends and issues related to the exchange of data and information

- Improves an organization's predictive analytics capability
- Provides ad hoc analysis reporting, allowing key users to create new reports and drill into data details, such as records and transactions

In – Memory Analytics

In-memory analytics is enterprise architecture (EA) framework solution used to enhance business intelligence (BI) reporting by querying data from system memory (RAM), versus the traditional hard disk drive medium. This approach significantly reduces querying time in an effort to facilitate efficient business decisions.

As the cost of RAM declines, in-memory analytics is becoming feasible for many businesses. BI and analytic applications have long supported caching data in RAM, but older 32-bit operating systems provided only 4 GB of addressable memory. Newer 64-bit operating systems, with up to 1 terabyte (TB) addressable memory (and more) have made it possible to cache large volumes of data -- potentially an entire data warehouse or data mart -- in a computer's RAM.

In addition to providing incredibly fast query response times, in-memory analytics can reduce or eliminate the need for data indexing and storing pre-aggregated data in OLAP cubes or aggregate tables. This reduces IT costs and allows faster implementation of BI and analytic applications. It is anticipated that as BI and analytic applications embrace in-memory analytics, traditional data warehouses may eventually be used only for data that is not queried frequently.

Data Virtualization

Data virtualization is any approach to data management that allows an application to retrieve and Data Virtualization software is an enabling technology which provides some or all of the following capabilities:

- **Abstraction** – Abstract the technical aspects of stored data, such as location, storage structure, API, access language, and storage technology.
- **Virtualized Data Access** – Connect to different data sources and make them accessible from a common logical data access point.
- **Transformation** – Transform, improve quality, reformat, etc. source data for consumer use.
- **Data Federation** – Combine results sets from across multiple source systems.
- **Data Delivery** – Publish result sets as views and/or data services executed by client application or users when requested.

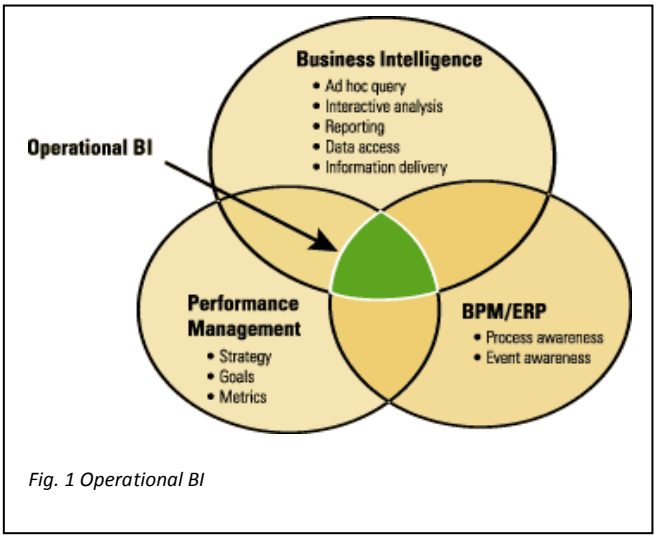
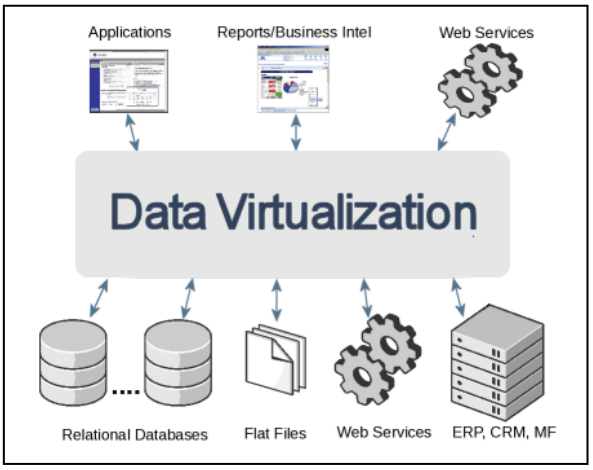


Fig. 1 Operational BI



Data virtualization software may include functions for development, operation, and/or management. manipulate data without requiring technical details about the data.

Data Virtualization makes it possible to:

- Empower your people with instant access to all the data they want, the way they want it
- Respond faster to your changing analytics and business intelligence needs
- Reduce complexity and save money
- Data virtualization provides you with the information you need to quickly adapt to fast-changing business conditions. It can help you overcome the difficult challenges associated with distributed, on-premises big data and cloud environments.

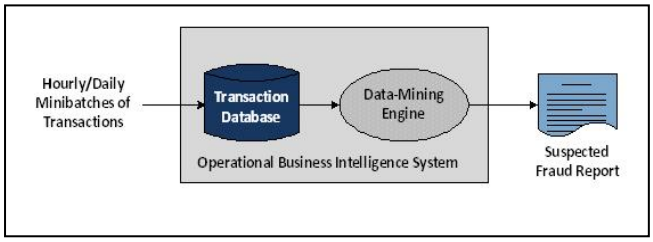
Operational Business Intelligence

Business intelligence (BI) that helps drive and optimize business operations on a daily basis and sometimes used for intra-day decision-making, is called *operational business intelligence*. Since the objective of operational BI is to make more timely business decisions, it has a close relationship to *real-time* or *right-time* BI processing (RTBI).

Operational business intelligence (OBI) systems provide an intermediate step toward satisfying the strategic needs that data warehouses address as well as the tactical decision-making that enterprise application integration (EAI) addresses. An OBI system provides an event database that is frequently updated. As an historical database, the event log summarizes and satisfies strategic requirements. With frequent updates, strategic decision-making extends to daily or intra-day information that is used to immediately take operational action to address an immediate problem.

Business Intelligence Appliances

Business intelligence is the use of an organization's disparate data to provide meaningful information and analyses to employees, customers, suppliers, and partners for more efficient and effective decision-making. It transforms information into actionable strategies and tactics to improve the efficiency of the enterprise, to reduce costs, to attract and retain customers, to improve sales, and to provide many other significant benefits. A combination of specialized software and hardware designed to take-on a specific application or need, in this case BI. The offerings available on the market today



vary greatly. SAP and IBM have combined forces to offer a BI appliance solution for very large, very complex enterprise BI requirements. Meanwhile, BI giant Cognos has acquired Celequest and quickly produced the Cognos*Now!* BI appliance that is positioned for SMB BI environments and is deployed either on-site or via a hosted/On-Demand approach. Same "BI Appliance" category… very different purposes. Ingres and Jaspersoft have taken an open source approach to "BI Appliances" with an

offering that consists of a software/software "appliance" that is designed as a virtual machine… it can be loaded onto several generic hardware platforms. This is a reasonable approach for an open source play as it does not assume that the end user's IT organization will be happy with a specific piece of hardware, but leaves the selection of machine platform (or the pre-existence of a machine) up to the customer. It will be interesting to see what other BI appliance solutions emerge.

Concluding remarks

The inability to get the right information to the right person at the right time has plagued companies for years. As a result, they miscalculate inventory levels, fail to nurture repeat customers and miss the signs of preventable business problems. But by adopting some of the newer BI technologies and approaches, enterprises can arm themselves with tools that may be able to help them avoid those pitfalls and maximize the ROI of their corporate data.

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