
Title: Cloud Computing in Business Intelligence and Analytics with Big Data



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Proposal

Business Intelligence (BI) are the set of strategies, processes, applications, data, technologies and technical architectures which are used to support the collection, data analysis, presentation and dissemination of business information. 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, process mining, complex event processing, business performance management, benchmarking, text mining, predictive analytics and prescriptive analytics and are capable of handling large amounts of structured and sometimes unstructured data to help identify, develop and otherwise create new strategic business opportunities. The goal is to allow for the easy interpretation of these big data. Identifying new opportunities and implementing an effective strategy based on insights can provide businesses with a competitive market advantage and long-term stability.

Business intelligence can be used to support a wide range of business decisions ranging from operational to strategic. Basic operating decisions include product positioning or pricing. Strategic business decisions include priorities, goals and directions at the broadest level. In all cases, 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). When combined, external and internal data can provide a more complete picture which, in effect, creates an "intelligence" that cannot be derived by any singular set of data. Amongst myriad uses, business intelligence tools empower organizations to gain insight into new markets, assess demand and suitability of products and services for different market segments and gauge the impact of marketing efforts.

Often BI applications use data gathered from a data warehouse (DW) or from a data mart, and the concepts of BI and DW sometimes combine as "**BI/DW**" or as "**BIDW**". A data warehouse contains a copy of analytical data that facilitates decision support.

Business intelligence combines a broad set of data analysis applications, including ad hoc analysis and querying, enterprise reporting, online analytical processing (OLAP), mobile BI, real-time BI, operational BI, cloud and software as a service BI, open source BI, collaborative BI and location intelligence. BI technology also includes data visualization software for designing charts and other infographics, as well as tools for building BI dashboards and performance scorecards that display visualized data on business metrics and key performance indicators in an easy-to-grasp way. BI applications can be bought separately from different vendors or as part of a unified BI platform from a single vendor.

BI programs can also incorporate forms of advanced analytics, such as data mining, predictive analytics, text mining, statistical analysis and big data analytics. In many cases though, advanced analytics projects are conducted and managed by separate teams of data scientists, statisticians, predictive modelers and other skilled analytics professionals, while BI teams oversee more straightforward querying and analysis of business data.

Business intelligence data typically is stored in a data warehouse or smaller data marts that hold subsets of a company's information. In addition, Hadoop systems are increasingly being used within BI architectures as repositories or landing pads for BI and analytics data, especially for unstructured data, log files, sensor data and other types of big data. Before it's used in BI applications, raw data from different source systems must be integrated, consolidated and cleansed using data integration and data quality tools to ensure that users are analyzing accurate and consistent information.

Business analytics (BA) refers to the skills, technologies, practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning.[1] Business analytics focuses on developing new insights and understanding of business performance based on data and statistical methods. In contrast, business intelligence traditionally focuses on using a consistent set of metrics to both measure past performance and guide business planning, which is also based on data and statistical methods. (citation needed)

Business analytics makes extensive use of statistical analysis, including explanatory and predictive modeling, and fact-based management to drive decision making. It is therefore closely related to management science. Analytics may be used as input for human decisions or may drive fully automated decisions. Business intelligence is querying, reporting, online analytical processing (OLAP), and "alerts".
