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Business Intelligence

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Synonyms
None

Definition
Business intelligence is a business management term that indicates the capability of adding more intelligence to the way business is done by companies. More precisely, it refers to a set of tools and techniques that enable a company to transform its business data into timely and accurate information for the decisional process, to be made available to the right persons in the most suitable form. Business intelligence systems are used by decision makers to get a comprehensive knowledge of the business and of the factors that affect it, as well as to define and support their business strategies. The goal is to enable data-based decisions aimed at gaining competitive advantage, improving operative performance, responding more quickly to changes, increasing profitability and, in general, creating added value for the company.

Main Text
Though business intelligence has its roots in reporting systems, it was born as a term within the industrial world in the early 90's, to indicate a set of technologies aimed at satisfying the managers' request for efficiently and effectively analyzing the enterprise data in order to better understand the situation of their business and improving the decision process. In the mid-90's business intelligence became an object of interest for the academic world, and ten years of research managed to transform a bundle of naive techniques into a well-founded approach to information extraction and processing that led to defining the modern architectures of data warehousing systems. Currently, business intelligence includes not only the tools to gather, provide access to, and analyze data and information about company operations, but also a wide array of technologies used to support a closed decisional loop (known as *Business Performance Management*) where the company performance is measured by a set of indicators (commonly called *Key Performance Indicators, KPI*s) whose target values are determined by the company strategy, and where the actions taken are aimed at matching current and target values for these indicators.

From an architectural point of view, the core of a business intelligence system is usually a data warehouse that stores the corporate historical data in a consistent and integrated form. A number of applications may be built around the data warehouse, for instance aimed at supporting OLAP analysis, data mining, what-if analysis, forecasting, balanced scorecards preparation, geospatial analysis, click-stream analysis. The architecture may be completed by a reactive data flow, more suited for monitoring the time-critical operational processes by supporting real-time applications.

Cross-references
► Data Warehousing Systems: Foundations and Architectures, ► Data Warehouse Applications, ► What-if Analysis, ► Data Mining, ► On-Line Analytical Processing

References
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2. Golfarelli M., Rizzi S., Cella I. Beyond data warehousing: What's next in business intelligence? *Proc. DOLAP*, 1–6, 2004.
3. Moss L.T. and Atre S. *Business Intelligence Roadmap: The complete project lifecycle for decision-support applications.* Addison-Wesley Information Technology Series, 2003.