
Business intelligence software	This is a fairly new term which refers to any tool used to analysis data. <i>DSS</i> , <i>EIS</i> and <i>Data mining</i> tools could all be described as Business intelligence software
Business metadata	Business metadata is the <i>Metadata</i> that users such as business analysts use to find and manipulate the <i>Informational data</i> in the <i>Data warehouse</i> . It is presented in business terminology as opposed to the terminology used by database architects, administrators and programmers, and does not require any knowledge of the underlying database implementation.
Data cleansing	The process of validating <i>Operational data</i> which may be coming from disparate systems as it is transformed into <i>Informational data</i> held in the <i>Data warehouse</i> . Cleansing data would include ensuring that data from disparate systems conforms to the warehouse definition
Data marts	Data marts are workgroup or departmental warehouses, which are small in size, typically 1-10 Gb. The data mart contains <i>Informational data</i> that is departmentalised, and tailored to the needs of the specific departmental work group. A Data mart can be either a small stand alone <i>Data warehouse</i> or a subset of a larger <i>Data warehouse</i>
Data mining	The process of analysing data to find patterns or rules that can be used to tailor business operations. Data mining tools provide varying degrees of automation. True Data mining tools are very powerful software products that require significant machine resources. The approach used in Data mining is fundamentally different to that used by <i>DSS</i> and <i>EIS</i> systems. With the latter the user forms a hypothesis and uses the query tools to verify or reject the hypothesis. With data mining, the system researches the data and determines patterns, classifications, and associations while the analyst determines what to do with the results. In retailing Data mining is used to analyse consumer buying patterns. In the finance industry its uses could include risk assessment and portfolio management. It could be applied to policy assessment and fraud in health and insurance. Optimisation, scheduling and visual inspection systems are appropriate applications in manufacturing and process control.

Data transformation/ propagation	The process of transforming/propagating data from <i>Operational data</i> to <i>Informational data</i> by manipulating it into a more appropriate format. This could include: Creating new fields that are derived from the existing operational data Summarizing data to the most appropriate level for analysis <i>Denormalizing data</i> to improve performance <i>Data cleansing</i> to ensure that integrity is preserved.
Data warehouse	A system that contains <i>Informational data</i> .
Data warehousing	Data warehousing is a concept not a product. It is a set of hardware and software components that can be used to better analyse the massive amounts of data that companies are accumulating to make better business decisions. A data warehouse is made up of <i>Informational data</i> as opposed to <i>Operational data</i> .
DSS	<i>Decision support systems</i>
Decision support systems	Tools that provide the ability to build ad hoc queries and reports.
Denormalized data	Data that does not conform to the key rules of a relational model. Data is denormalized to simplify and speed its retrieval. The process of denormalizing usually involves for example: the use of summary files duplication data.
EIS	<i>Executive information systems</i>
Executive information systems	Decision support systems with extended analysis capabilities, allowing more sophisticated manipulation of data than simple queries and reports.
Informational data	The data that makes up a Data Warehouse. It is data stored in a format that is optimised for analysis by <i>DSS</i> queries, report generation, <i>EIS</i> and more in-depth statistical analysis. It is created from <i>Operational data</i> . Informational data is typically: Summarised operational data De-normalised and replicated data Infrequently updated from the operational systems Optimised for decision support applications Provided in “read only” format Stored separately from <i>Operational data</i> to minimise impact on <i>OLTP</i> systems.

Metadata

Metadata is data about data. In a *Data warehousing* context there is the *Technical metadata* that describes both the *Operational data* and the *Informational data*, and the *Business metadata* that is used by business analysts to find and manipulate the *Informational data*.

Multi-dimensional data structures

Relational databases store data in a two dimensional format: tables of data represented by rows and columns.

Multi-dimensional data structures have one or more additional dimensions. For example in a multi-dimensional data structure, data entities such as product sales revenue, profit margins, cost/profit centres, projects and time periods may be represented in different dimensions. Once the multi-dimensional structure is defined, an analyst has the capability to view, for instance, sales by product by region over a certain time period and to compare these figures against budgets, forecasts and previous year comparatives. Multi-dimensional data structures can be implemented in different manners. In a relational database system, multi-dimensional analysis can be achieved through specific database design such as a series of indexed summary tables. Another method is through 'Hyper cubes' or 'multi cubes'. A good example of these would be a multi-dimensional spreadsheet storing aggregated values in cells.

Multi-dimensional structures provide a powerful way to analyse data stored in the *Data warehouse*. A chief benefit is fast response times when dealing with the different levels of data common in a decision support environment. That is, the ability to quickly determine answers to business questions by slicing and dicing through the data, and drilling down or rolling up to different hierarchical levels of data. An additional benefit is the ability to change the structures of the data as your business changes, and to have multiple structures providing an infinite number of views of your business without having to re-write all the programs that access the data.

OLAP

On-line analytical processing. OLAP products are those that provide analysis over *Multi-dimensional data structures* and intuitive data manipulation such as drill down to new levels of data.

OLTP

On-line transaction processing

Operational data

Data used in the day to day running of a business. This data is typically stored, retrieved and updated by *OLTP* systems in a relational database, but may be stored in legacy hierarchical or flat file formats. Its characteristics include: Updated frequently, Not held for extended periods of time (typically not more than a year), Optimised for transactional processing, Highly normalised (when stored in a relational database). Operational data is the source from which *Informational data* is created.

Technical metadata

Technical metadata is the *Metadata* that contains the description of the operational database, the informational database and functionality used to populate and manipulate the data in the Data warehouse. It is defined in terms typically used by database architects, administrators and programmers.