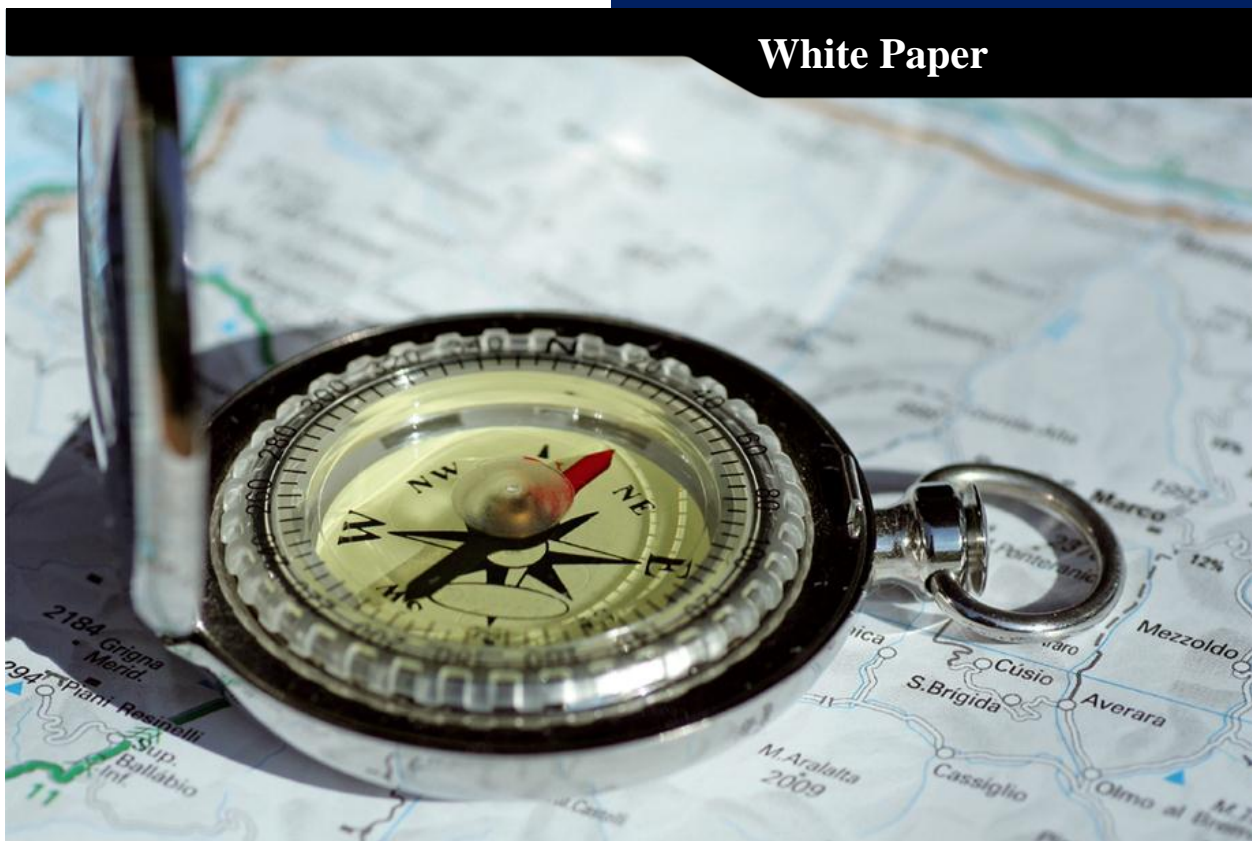


WASSERMANN AG

SUPPLY CHAIN EXCELLENCE

Business Intelligence

White Paper



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Business Intelligence

The 10 most important success factors for implementing BI projects

- Early involvement of the users,
- Defining user groups,
- Definition of the technical requirements,
- Coordination of the required coefficients,
- Knowledge of DWH solutions already existing in the enterprise,
- Support from the management,
- Ensuring the data integration and data quality,
- Decision for the correct BI software by means of Proof of Concept,
- Limitation of the project time to max. 6 months,
- Ensuring the further development of the BI applications.

More than **30 percent of the BI projects fail** because of the coefficients not being clearly defined. The coefficients must be agreed with those responsible in the organisation in order to counteract in advance a recurring fundamental discussion about the composition of the coefficients. Confidence in the agreed coefficients is a primary precondition for the subsequent acceptance of the results in the corresponding reports. Sometimes, it is advisable to start with the so-called Best-Practice coefficients and iteratively develop your own coefficient from them. The standard coefficients in the financial field would be, for example, the profit margin, equity ratio, cash-flow yield or capital reflux quota.

To exploit the synergies across the different business processes (purchasing, production, sales), apart from the coefficients for the individual business processes, **pan-process coefficients** must also be defined without fail. In this manner, the commercial and technical perspective of the individual company results, for example, can be made transparent by simple means. The findings thus obtained can then be implemented in the correct decisions.

Another possibility of the meaningful deployment of coefficients can be seen in the area of *early indicators*. The earlier that trends and developments can be estimated from the data, the more flexibly and accurately can the enterprise strategy and the resultant decisions be shaped.

General

The term **Business Intelligence** became popular during the mid-90s and stands for methods and processes for the systematic analysis (collection, evaluation and depiction) of data in electronic form. The goal is to obtain knowledge that, in regard to the company's objectives, makes better operative or strategic decisions possible. This takes place with the help of analytical concepts and IT systems that evaluate the data from the own company, the competitor or the market development with regard to obtaining the desired findings.

The word "Intelligence" in this context does not mean "Intelligence", but the knowledge obtained from **collecting and preparing information that has been procured**. This corresponds to the meaning of "Intelligence" in the name of the American secret service, the CIA (Central Intelligence Agency).

In these economically difficult times, many companies are under tremendous financial pressure in relation to customer service and product costs. The **drastic reduction in the plannability** requires the highest flexibility in the decisions. Driving "in the assured clear distance ahead" requires the correct data at the correct time.

In practice, this means the standardisation and optimisation of the reporting. The data occurring in the IT system (e.g. ERP, Legacy, Excel) are used to analyse and if required, evaluate the current situation from different perspectives.

Anyone who does not just rely on his or her spreadsheet calculations when doing so, but also combines **an integrated reporting across all the business processes** in a comprehensive analysis system for Business Intelligence can keep his company better on course even in stormy times.

Transparency with respect to all the business processes means: latest, reliable data and control quantities which are comprehensible at all times, must be available promptly. This transparency is required not only in the management of large and medium-scale enterprises, but in every department: from purchasing, development and production right up to sales.

The **analysis** does not take place in the ERP systems, but in a database separate from them, the **Data-Warehouse (DWH)**. The reasons for this can be:

- Unsuitable structuring of the data in the ERP systems
- No evaluation option across several IT systems
- No possibility to incorporate external data, e.g. from competitors or research institutions
- Excessive loading of the ERP system with evaluations

- Ongoing changes in the data in the ERP systems
- No repeatability of the evaluations (history)
- Wrong, incomplete or missing data in the IT systems

The 3 phases of a BI project

The technological basis of the enterprise data analysis can be divided into three phases. The **basic information is acquired** (of quantitative and qualitative type, structured or unstructured) in the first phase. In the second phase, the **data** is correlated, so that **patterns** become **visible**. In the third phase, the **findings** are **communicated** within the company and integrated in the knowledge management. The dissemination of the findings obtained is expected to serve the purpose of providing a **decision basis** for measures and actions.

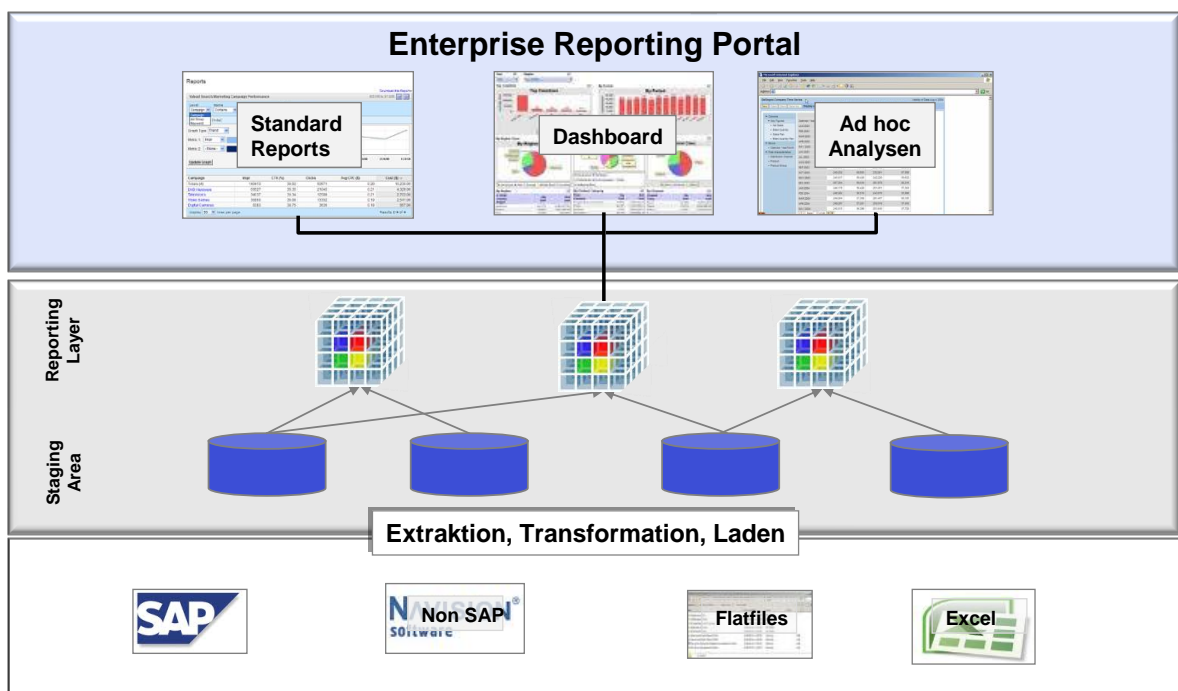


Fig. 1: Wassermann Business Intelligence Phase model

1. ETL Processes (Extraction, Transformation and Loading processes)

One of the main tasks of a BI project is to transfer the data of the ERP system and the other IT systems or external data sources for the analysis into an internal database (Data Warehouse). This is done by extraction of the data from the different source systems, their transformation and loading in the data warehouse by means of the standardised ETL processes. These ETL processes offer the possibility of extracting, at defined times (weekly, daily, online), the desired source data from the productive systems. Here, a full or delta unloading can be repeated at any time.

At the time of extraction of the data from the source systems into the Data Warehouse, the data can be logically linked according to the requirements of the demand. In this manner, many individual data elements become the first cohesive data modules, which represent the basis of the later evaluations.

2. Data model

The second main task of a BI project is the correct data modelling. Apart from relational data models, in Business Intelligence solutions, above all, multi-dimensional data models (OLAP, MOLAP, ROLAP), so-called cubes, are realized. Here, the performance has an important role to play for the subsequent queries (reports). Above all, star and snowflake schemes allow a performance-oriented modelling of multi-dimensional data models.

After the data modelling, the *Data Management* is the second important factor for the speed of the queries. In the course of time, plenty of faulty or incomplete data get stored in the operative systems. They can consist of incorrect (wrong or old), redundant, inconsistent or incorrectly formatted data. In a data warehouse, these data can be cleaned (automatically) and hence, in terms of content, completely readied for the analysis. Thus, only correct and complete data are loaded in the corresponding data cube.

3. Visualisation

The third and, for the later user, most important task of a BI project is the depiction of the agreed coefficients on the basis of standard reports, ad hoc reports or dashboards. With the help of the front-end tools, the data from the data warehouse is visualised and made available to the user through portal technology, e-mail or as business applications on smart phones.

The important aspect of a Business Intelligence solution here is the user-friendliness and the high querying speeds of the individual evaluations. Owing to the enormous data quantities in a data warehouse, efficient tools are required, which firstly satisfy the requirements of the different end-user groups (e.g. CEO, controller, production head) and secondly, are incorporated in the IT strategy. A great deal of attention must be paid here to the consolidation (minimization) of the front-end tools used.

Business-Intelligence Strategy and Governance

To be able to carry out BI projects efficiently and effectively in an enterprise, a precisely defined **BI strategy** is an important precondition. The BI strategy must include the following points without fail:

- Determination of the BI goals on the basis of the enterprise goals
- Definition of a BI roadmap (short-term, medium-term and long-term objectives)
- Standardisation and use across all technical areas
- Determination of the relevant coefficients and reports from the overall company perspective (less is more!)
- Harmonisation of different coefficient domains to a single-point-of-truth.
- Definition of the suitable tool and the necessary infrastructure
- Clarification of the desired types of BI (OLAP, Dashboarding, Reporting, Ad-Hoc queries)
- Central or de-centralized data storage

The complexity of BI architectures increases with the requirements of different user groups in a company. The introduction of a **BI-Governance** both creates BI processes as well as organisation structures, which support the BI strategy efficiently.

In the BI-Governance, all the participating roles (Superuser, User, process-in-charge, IT-Consultant) and their responsibilities are defined clearly. The shaping of the roles depends on the size of the respective company. In a small enterprise, no formal BI organisation will be necessary to achieve the goal; there, the corresponding roles will be distributed to existing employees in the technical department and the IT. In a Group or a larger medium-scale company, on the other hand, a central BI Competence Centre (internal or external) will be indispensable to ensure enterprise-wide reporting.



Fig. 2: The Wassermann Business Intelligence Portfolio

A fixed and lived **BI strategy** and **BI governance** are necessary to limit the constant responsibility discussions to an absolute minimum.

An important finding from many years of BI project management is involved there: Business-Intelligence projects can only be successful if the decision-makers are fully behind it, and the technical departments work hand-in-hand with the IT department to arrive at the common goal.

In many cases, a **BI-Audit** in the form of a workshop is a meaningful step towards determining the current Business Intelligence maturity of an organisation. In just a few days, the own organisation can be examined in detail and also the required goal level (stage 1 to stage 5) can be clearly defined. The most important themes here are:

- Strategy and requirement,
- Customers and market environment,
- Processes and organization,
- Technical possibilities.

Business Intelligence in real time

The area of deployment of Business Intelligence applications is getting shifted more and more from the classical reporting on the basis of historical movement data towards real-time analysis. Companies want to analyse the performance of their business areas in real time at any time, and immediately see how, for example, their customer preferences are changing. Increasingly, managers use the Business Intelligence applications to recognize business risks and take countermeasures as early as possible.

Business Intelligence with the example of SAP

The SAP Business Warehouse represents the central repository for saved data. The Business Objects solutions sit on top of the SAP Business Warehouse and extract data from there.

SAP Business Objects offers companies a broad portfolio of tools and applications for supporting the flexible data analysis across all the business areas for steering the company. Business Objects supports databases and applications from the most varied manufacturers. Thus, apart from the data from the SAP ERP, applications from ORACLE, Microsoft, IBM and other providers can also be processed and thus evaluated. In the case of the In-Memory data processing, information from the SAP Business Warehouse is loaded into a data cube and is then available for evaluation. The queries and evaluations are thus 2 to 3 times faster than in the database.

Thus, every target group gets the correct, accurate data. Which software does what in the background is not important for the user. The decisive factor is that he gets clear information promptly, which simplify his tasks for him.

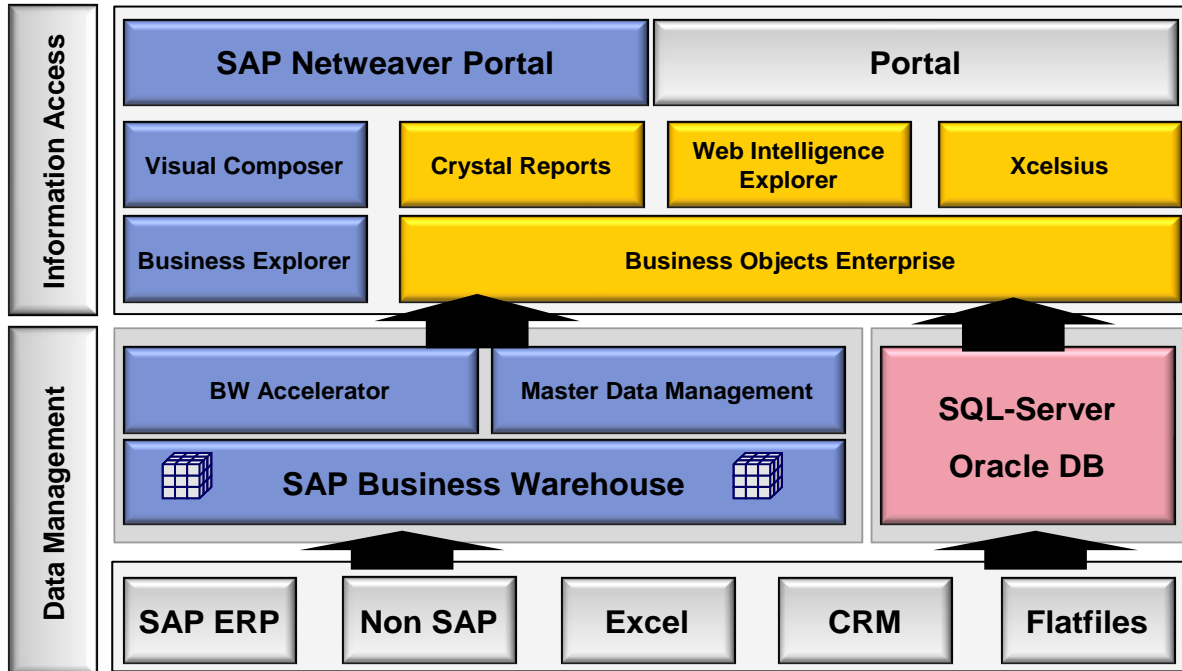


Fig. 3: The Wassermann Business Intelligence Architecture

Business Intelligence as a Service

Thanks to the BI standardisation and the increasing core competence discussions (what must I really do myself) in many companies, the approach of obtaining BI-as-a-service from an external partner is strategically becoming more and more important. The options for selection range from hosting or housing of the BI infrastructure and provision of the integration level and/or the pre-fabricated data cube to the finished report with the agreed coefficients. A dynamic accounting model (you pay for what you use) saves large investments and brings a not insignificant transparency into the use of a BI system.

To summarise, it can be said that Business Intelligence must be made as simple as possible for the user. The most important goal here is to provide Business Intelligence with strict processes, standardised reports and complete data integration.

Only with the correct information are the correct decisions possible.