Business Intelligence Service Providing (BISP)

Industry
Cross Industry

Business Challenge
Gather, evaluate, select, prepare and make data available to a defined circle of users as efficiently as possible for planning, reporting and analysis purposes.

Technology Solution
BISP by Triaton

Enterprise Hardware Platform
Scaleable Intel® architecture servers

SOLUTION ARCHITECTS

Triaton
The BusinessProcessor

ThyssenKrupp

Mummert + Partner

intel

Solution Blueprint:
Business Intelligence Service Providing (BISP)

Solution Provider:
Triaton GmbH

BUSINESS AND SOLUTION SUMMARY

Triaton provides its customers with a horizontal Business Intelligence (BI) solution that allows decision makers in an organization to access and analyze corporate information. This enables faster adaptation to changing business needs, increased customer satisfaction, reduced support costs, and a higher level of competitive differentiation. Triaton offers the complete range of services required for an enterprise to implement a successful BI solution:

- Management consulting
- Business process analysis
- Data integration from back-office systems such as ERP, SCM, CRM, Legacy etc.
- Platform sizing and selection, from industry standard hardware and software components
- Implementation, integration and operation of the complete solution
- Customer Skills Development

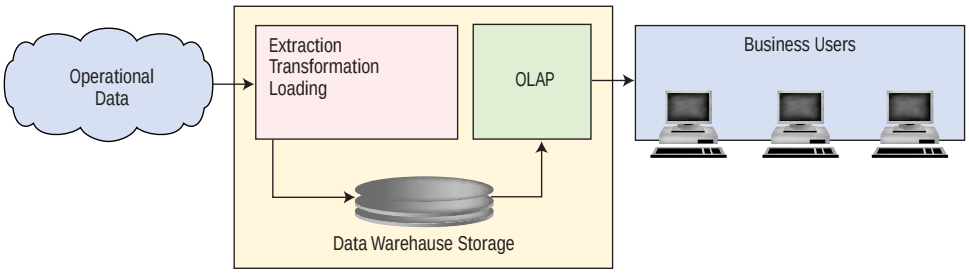
CHALLENGE

Successful businesses and organizations are those that are capable of answering important business questions in a timely fashion. They can measure progress against their strategic goals at any point in time, effortlessly. They are capable of winning important customers and gaining customer loyalty. They increase their profits by reducing costs, constantly optimizing their business processes and adopting new ones in order to achieve maximum efficiency. They recognize that the constant analysis, distribution and usage of knowledge creates a critical competitive advantage. Success depends on having the right information at the right time to make the right decisions. Business Intelligence systems are the basis for rising above these challenges.

INTRODUCTION TO DATA WAREHOUSING

To make the most of the huge amount of data contained in legacy systems, companies need a way of asking questions about that data. In the past, they had to rely on report programs that were written to ask specific questions. Even when the report writing process was successful, companies found that much of their corporate data was in the wrong format or inaccessible on a mainframe. A data warehouse is a database containing data representing the history of an organization's business. This historical data is used for analysis and decision making at several levels, such as strategy planning or the evaluation of performance of a particular organizational unit. Data in a data warehouse is organized to support analytic studies rather than on-line transaction processing (OLTP).

Workflow of data in a typical data warehouse



Data warehousing technology aims to solve many of these corporate data problems, bringing a variety of data formats into one location, rather than several, and providing different techniques to view and analyze it. A data warehouse evolves over time and typically traverses the following three phases:

1. Reporting

Using reports the data warehouse allows decision makers to get answers to questions about what happened in the past. Since the data warehouse contains data from all business relevant sources these reports provide a foundation for decisions that span the whole enterprise.

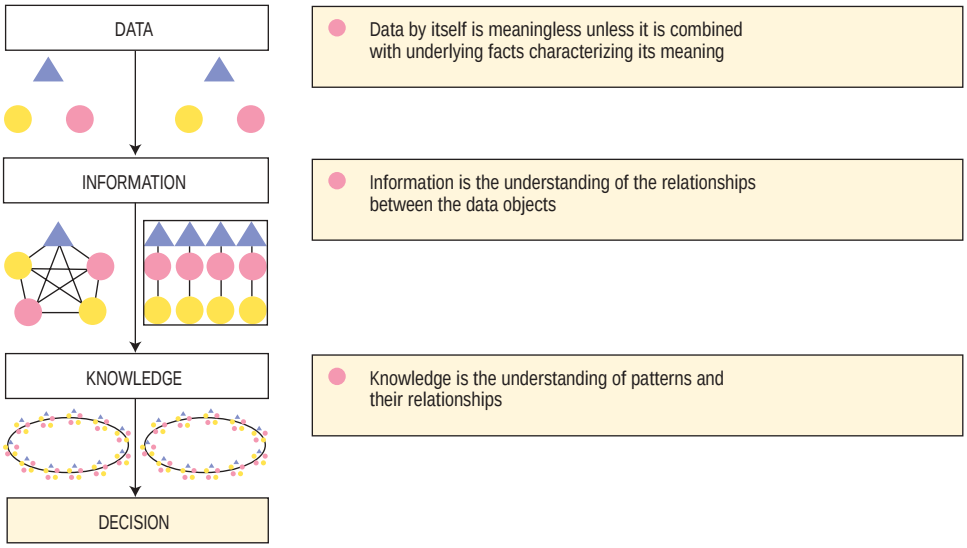
2. Analysis

After looking at what happened decision makers are then able to analyze the data to find out why things happened. Real-time data analysis plays a major part in this stage.

3. Prediction

Organizations are not only interested to understand the "whats?" and "whys"? of the past but also in "what's next?" In this phase companies start using data mining tools to find groups of data with similar characteristics and relationships between data groups. This allows organizations to find connections between their different products and services and as a result discover new marketing opportunities.

Business Intelligence supports the process of gaining Knowledge



According to Gartner*, in 2003 Business Intelligence functionality will be one of the most heavily weighted criteria enterprises consider when evaluating potential IT solutions and enterprises. BI expenditure will be considered as a competitive necessity and an indispensable cost of doing business[1]. Giga sees BI as one of the big IT trends next year[2] because companies aim to extract more value from their investment in operational applications such as Customer Relationship Management (CRM), Enterprise Resource Planning (ERP) and Supply-Chain Management (SCM). Demand is typically driven out of management, marketing, sales, controlling and production organizations. It is therefore not surprising that many big enterprises either have already implemented or are in the process of implementing appropriate solutions. But many of these companies face multiple challenges preventing them from introducing BI solutions into their organizations:

- Experience level in the BI area such as gaining knowledge from unstructured information
- Resource requirements such as manpower for implementation and operation of BI solutions
- High entry cost for the hardware, software, maintenance and operation (in most cases more than 50% of current IT costs)
- Skill set requirements such as business process engineering, Data warehouse building, managing big databases etc.

[1]Business Intelligence Worldwide IT Services Market Size and Forecast, 2000-2005
[2]IT Trends 2002 – Business Intelligence

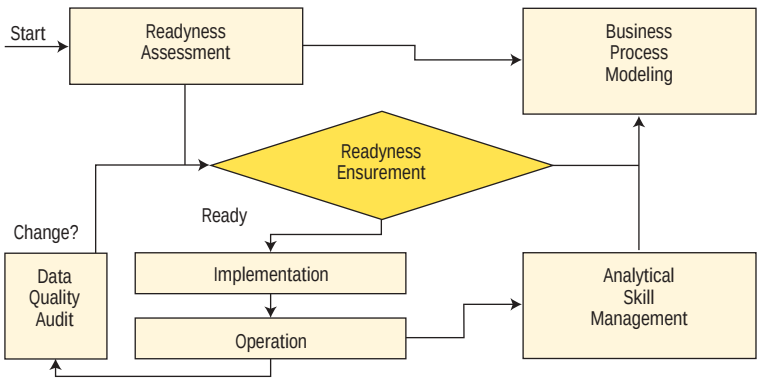
To address these prohibitive factors Triaton developed Business Intelligence Service Providing (BISP). BISP is about providing strategic information at transparent costs and even more importantly about offering the customer's complete value chain – represented by the data in the data warehouse – from a single, reliable source. BISP is a complete solution that includes the following services:

- Management Consulting
- Development of a customer's BI positioning and strategy
- Extraction of raw data from the customer's back-office systems (e.g. ERP, SCM, CRM)
- Secure (encrypted) transmission of data to the Triaton's data centre
- ETL of data into data warehouses
- Central cost optimized data management in the data centre through a highly scalable and cost effective platform based on Intel® Architecture and industry standard software building blocks
- Definition, provision, and distribution of Information Objects (business content such as scorecards, knowledge data and market data)
- Operation of optimized and customized BI tools
- Provision of secure global network infrastructures (Internet/Intranet/Extranet/WAN/LAN/VPN etc.)
- Customer training
- Customer support services through Triaton's call centre

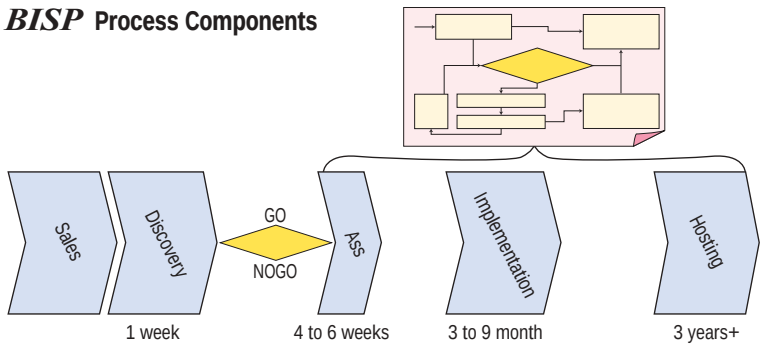
SOLUTION OVERVIEW

Since every customer has different requirements Triaton first works with the customer to develop a feasibility concept and then a so-called Readiness Assessment. The Readiness Assessment includes the customer's information requirements, solution architecture, project plan, business plan, and other important requirements. In the Implementation Phase Triaton develops the technical details of the solution and then implements, optimizes (performance as well as cost optimization) and operates it. The customer does not need to provide any hardware or software resources in this process.

BISP Framework



BISP Process Components



For the operational phase, Triaton integrates Intel® Architecture based servers and Storage Area Network equipment from IBM*, a highly scalable and cluster optimized database (DB2 UDB EEE) from IBM, Business Intelligence applications such as Business Objects WebIntelligence*, Cognos Query*, Hyperion Analyzer* or other analysis tools (depending on customer preferences) and Informatica* PowerCenter* software for the ETL (Extraction Transformation Load) process, into a cost-effective, highly scalable and flexible platform.

BISP is able to address a broad range of customer requirements in terms of number of concurrent users, data volume and user response time. The specific configuration introduced in this paper was designed for corporations requiring a data store in the range of 1-2 TB and 1,000-1,500 users. The benefits for Triaton's customers are fast implementation cycles, low entry cost and minimal resource requirements. For example, one of Triaton's customers, Thyssen Krupp Stahl was able to introduce BISP in only four months and is now able to benefit from Triaton's data centre scalability capabilities, solution availability, guarantee and support service through Triaton's call centre.

TECHNOLOGY

Triaton's BISP platform is built upon Intel® Architecture based servers providing the required performance and reliability for a cost-effective and scalable BI solution. The specific configuration discussed in this paper (see the Physical Systems Network diagram at the end of this document) consists of multiple Intel® Pentium® III Xeon™ based servers from IBM* (xSeries 350) running Microsoft* Windows* 2000 Advanced Server or Suse* Linux* 7.2 in a multi-tier architecture:

- a four-node database cluster running IBM DB2* UDB EEE 7.2 on Suse* Linux 7.2. This cluster utilizes SteelEye* LifeKeeper* 4.1 for Linux to provide high availability through fail-over capability.
- a SAN (Storage Area Network) consisting of two IBM FAStT* storage servers each with two RAID controllers, twelve expansion units (EXP 500), 120 hot-swappable fibre channel hard disk drives providing a total storage of 2.2 TB.
- an application server cluster consisting of three nodes running Business Objects' WebIntelligence* on Microsoft Windows 2000 Advanced Server.
- an ETL (Extraction, Transformation, Load) server running Windows 2000 Advanced Server and Informatica PowerCenter* 5.1 and PowerChannel*.

On the client side, a typical configuration for an appropriate business desktop consists of a PC based on the Intel® Pentium® 4 processor, Windows XP Professional or Windows 2000 Professional, and a Java* enabled Web browser.

This system landscape scales up to 2.2 TB of data and 1,500 users with a concurrency ratio of 6%. Triaton, IBM and Intel are currently working together to evaluate high-end BISP configurations based on the 64 bit Intel® Itanium™ architecture. With the availability of the software components on the Intel® Itanium™ architecture it is expected that the solution will scale far beyond the limits currently imposed by the 32-bit based system landscape. Results from an advanced research centre jointly operated by SAS* Institute Inc. and Intel have shown that the performance of data mining solutions can improve by 30% to 400% depending on the application.

TARGET MARKET AND CUSTOMER

There is a big demand for complete, full service BI solutions, especially from medium-sized enterprises but for many companies some or all of the challenges mentioned previously are prohibitive to introducing Knowledge Management solutions into their organizations. This is why Triaton developed BISP. BISP can scale from a few tens of users to thousands of users and is fully managed by skilled professionals with years of experience in Knowledge Management. Traditionally, Triaton customers are from the manufacturing industry with a focus on automotive, chemical, pharmaceutical and metal processing industrial sectors.

CASE STUDIES/PROOF POINTS

Thyssen Krupp Stahl (TKS) Germany, one of Triaton's first BISP customers wanted a customized BI solution that could scale from an initial 1,200 users to 1,500 users with further unlimited growth potential, an availability of 24 hours a day, a high degree of flexibility, and of course all of this for a reasonable cost. Triaton realized that the best approach was to prove to its customer that BISP is able to fulfill all these requirements. To do that Triaton utilized its Business Intelligence Solution Lab (BISL) in Krefeld, Germany. The BISL includes the latest hardware and software from market and technology leaders and is used for prototyping, evaluation, POC (Proof Of Concept) activities and the development and operation of data marts, data warehouses and CRM solutions. The BISL hardware for example includes multiple four-way servers based on the latest Intel® Pentium® III Xeon™ and Itanium processors. Triaton also worked closely in a team with Intel engineers in Intel's Solution Centre in Munich, Germany to ensure that the BISP solution was optimized and tuned to the Intel architecture. The platform that was evaluated and optimized was then delivered to Triaton's data centre in Krefeld where it has been integrated with the remaining infrastructure.

CUSTOMER VALUE PROPOSITION

Triaton is primarily addressing medium-sized enterprises with its BISP solution. These customers are typically hesitant to introduce Knowledge Management solutions into their organizations because they find it difficult to estimate the associated costs and often also do not have the required in-house expertise. They are therefore looking for adequate partners able to provide them with an end-to-end, customized solution they can fully outsource. This is exactly what BISP is about: a complete end-to-end, customized, integrated and fully serviced solution from a single source. PAC analysts believe that BISP's chances of success are high: "The exact knowledge of an enterprise's key data, up-to-date and at the click of a button, is gaining more and more importance at the management level. As of today there is no other company providing such a complete integrated solution on the market. Triaton's BISP therefore is a unique solution."

LOGICAL/FUNCTIONAL DIAGRAM

BISP is an integrated solution providing access to product, customer, sales and marketing information from a number of different sources. At the lower layer BISP provides integration of business and enterprise data sources such as ERP, CRM and eProcurement systems, XML sources, relational databases as well as mainframe and other legacy systems. This information is extracted, transformed and finally loaded into the staging and data warehouse layers providing the foundation for the data analysis layer. Data analysis utilizes various Knowledge Management tools from leading vendors such as Business Objects and Hyperion. LOB and management consulting services complement the BISP platform. These services are provided by Triaton and its management consulting partner Mummert + Partner.

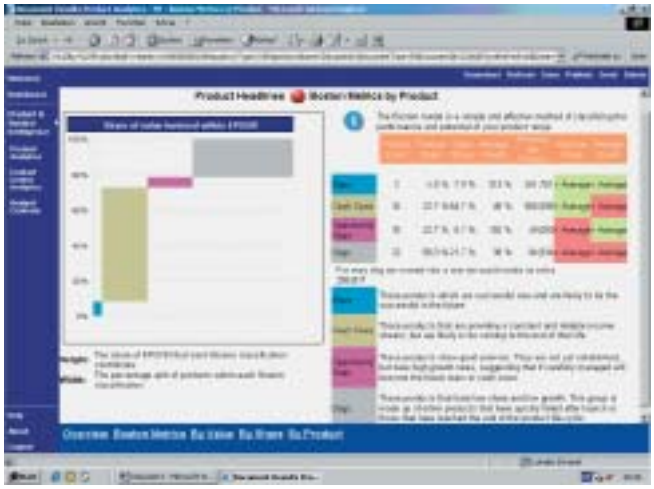
requires a PC with a Java-enabled web browser such as Microsoft Internet Explorer* or Netscape Navigator*. One of the data analysis tools supported by BISP is Business Object WebIntelligence. With WebIntelligence customers can navigate and explore details of their data creating reports by Online Analytical Processing (OLAP). Users can create reports using their own business terms in a simple drag-and-drop interface or use OLAP to “drill” and “slice and dice” through their information.

On top of this BI Platform Business Objects provides Analytic Applications. These applications contain business content for special areas of the enterprise such as sales and marketing, customers, products and services supply chain management or internal operations. The goal of this solution is to provide managers with all the cross-functional information they need for decision making through one single point of access – a management dashboard. Below are a few screenshots showing how Business Objects Analytic Applications present analytics on user screens.

Customizable Startup Page

Product Management using Boston Metrics

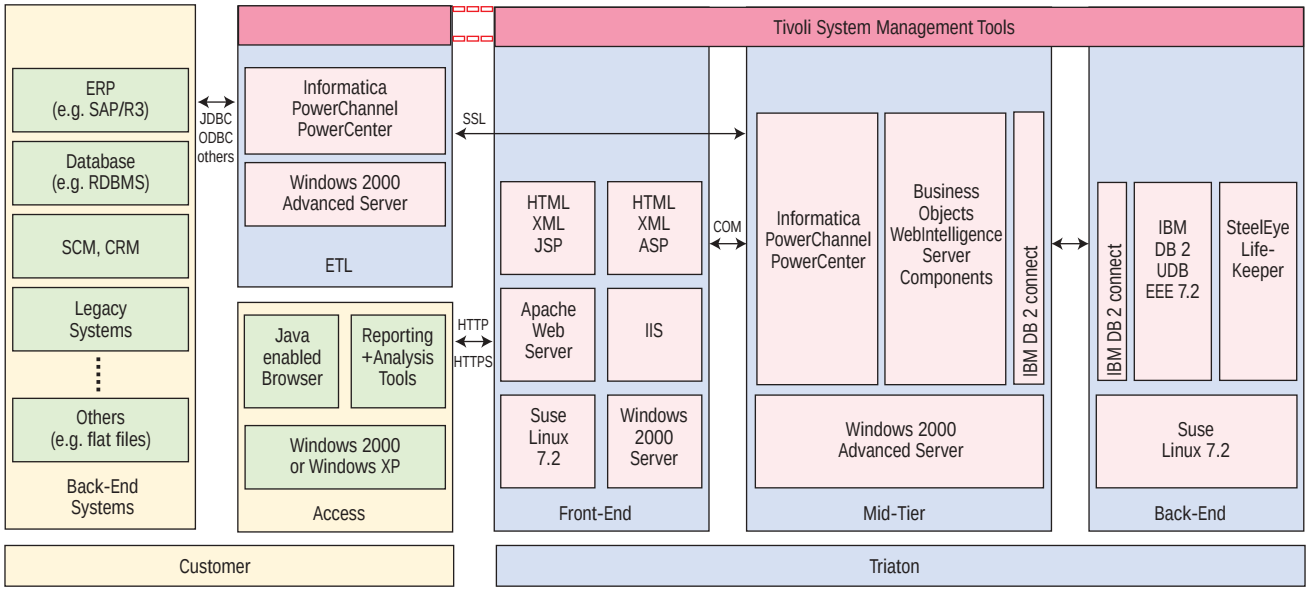
Boston Metrics
Analyzes product portfolio and automatically identifies product segments. Provides basis for strategic portfolio optimization.



SOFTWARE STACK DIAGRAM

BISP provides an integrated solution to load and store customer data at Triaton's data centre for high performance analysis and reporting using Business Intelligence tools. Customer data can be extracted with Informatica PowerCenter from multiple sources such as ERP systems, relational databases, flat files and others. The extracted data is transferred to Triaton's data centre via Internet or leased lines in compressed and encrypted format using Informatica PowerChannel. The receiving system (also an ETL server) transforms the extracted data according to mapping rules stored in the repository database and loads the data into the data warehouse. To ensure fast access to large amounts of data (>1 TB) Triaton utilizes IBM DB2 UDB EEE database running on Intel® Architecture based servers. The data in the staging area of the data warehouse is prepared for data marts such as Info- or OLAP-cubes. These cubes contain application or topic specific data which is used as a basis for the BI tools. The tools run on special application servers and analyze the data and generate reports. Using these tools, user views and objects are defined on the semantic layer to provide user specific information customized to various end devices such as PCs, PDAs and cellular phones. BISP is managed and monitored using system management solutions from Tivoli*.

BISP Software Stack Example

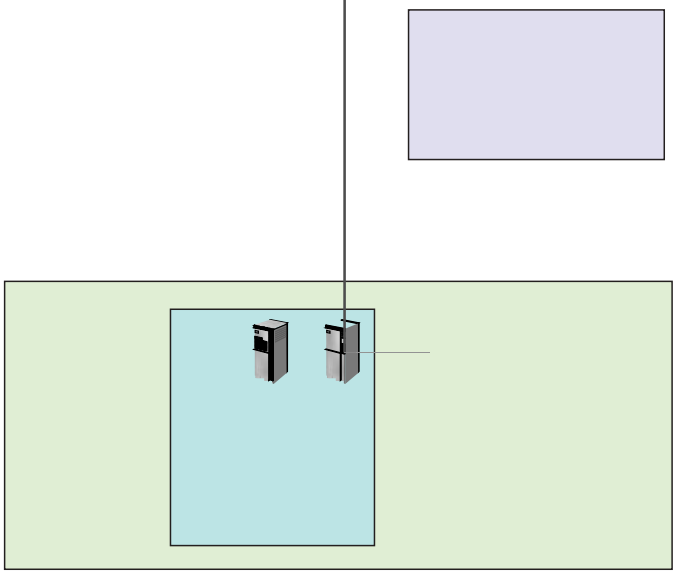


PHYSICAL SYSTEMS NETWORK DIAGRAM

On the physical system level the solution consists of IBM x-Series servers based on Intel® Pentium® III Xeon™ processors and an IBM SAN. The system is divided into three tiers: back-end, mid-tier and front-end.

The back-end includes the IBM FAStT 500 SAN solution that is configured to provide a
9

T
t entium™



LEARN MORE ABOUT THIS INNOVATIVE SOLUTION

For general information about the products described in this data sheet, visit:

www.triaton.com

www.intel.com/ebusiness

If you have a specific question about implementing this solution within your organization, e-mail us at: **solutionblueprints@intel.com**

Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, reference www.intel.com/ebusiness.