Infosys®
POWERED BY INTELLECT
DRIVEN BY VALUES

ViewPoint

Win in the flat world

BI for Agility and Profit with SAP BI Accelerator

– Meena Iyer, Sriram Kakaraparti

Executive Summary

With Business Intelligence (BI) emerging as an all-pervading success factor for strategic, tactical and operational information users, access to information alone is no longer enough to separate the winners from the losers. The focus of strategic technology leaders is now on creating seamlessly integrated solutions across the IT landscape global visibility and analytics on lagging as well as leading indicators of business for near real time decision making. In the flattening world, it is critical for companies to maximize application usage, better assimilate market and operational data, leverage real time data analytics for enhanced operational efficiency, and extract value from information for competitive advantage.

SAP's Netweaver BI suite enables organizations to create and operate a data warehouse in an enterprise-wide environment. Facilitating the integration of heterogeneous systems, it supports various system topologies and enables both strategic analysis and operational reporting.

Past SAP BI implementations have often taken a module-centric approach with underlying challenges due to project-driven solutions, heterogeneous architectures, unmanaged business rule redundancies, uncontrolled data flow, and bottom up/ top down approaches. The result was high development and maintenance costs. This created a compelling need for an integrated enterprise-wide data warehouse (EDW) to ensure a 'single version of the truth' with assured scalability and efficient query response.

The new BI Accelerator is an appliance developed by SAP in collaboration with Intel to address these challenges for high performance and scalability of SAP BW implementations. Fitting easily and seamlessly in the Netweaver environment, the appliance responds to business queries anytime from Netweaver data. Consequently, the BI Accelarator lowers the costs associated with performance-tuning, design, build, and maintaining of queries that read huge volumes of data.

April 2007

Current BI Challenges for Organizations That Run On SAP

SAP BW offers enormous speed and flexibility in implementing a business intelligence application, particularly when the source system is SAP. Several enterprises that run on SAP's ERP engine are able to derive higher business value from SAP BW that provides ready-to-implement business content for faster turnaround and cost advantage.

However, there are challenges involved in deploying SAP BW as an enterprise-wide BI tool:

- *SAP BW becomes "silo-centric" at higher volumes of data*
    - As an organization grows and users increasingly demand more information from their BI system, silos of "shadow BI" are created that are invisible at the cross-application level. Shadow BI can take the form of "spread marts" (spreadsheets improperly used to house large amounts of important data) built to meet a specific analytical needs, or by small deployments of analytical applications purchased to serve one department.
    - It becomes difficult to model complex business scenarios and this forces a more module-centric approach as opposed to a heuristic approach
- *High cost of maintaining aggregates and resource intensive production environment*
    - To get better performance of the BW reports, it is important to create aggregates involving significant costs
    - Dedicated maintenance personnel are needed to maintain such production environments
- *Multiple tools for different needs and high costs involved*
    - Large organizations with heterogeneous landscapes have a multitude of BI tools for reporting
    - Maintenance costs, high dependence on IT skills and different slicing and dicing of data sometimes lead to different versions of base data

To eliminate shadow BI organizations need:

- An enterprise-wide data warehouse that presents a single version of the truth to leverage the benefits provided by SAP BW
- Access to data anywhere, anytime with consistency and reliability
- Scalability of the data warehouse in pace with growing business demands without compromising performance and reliability

Infosys Solution

Single Version of Truth with BI Accelerator -

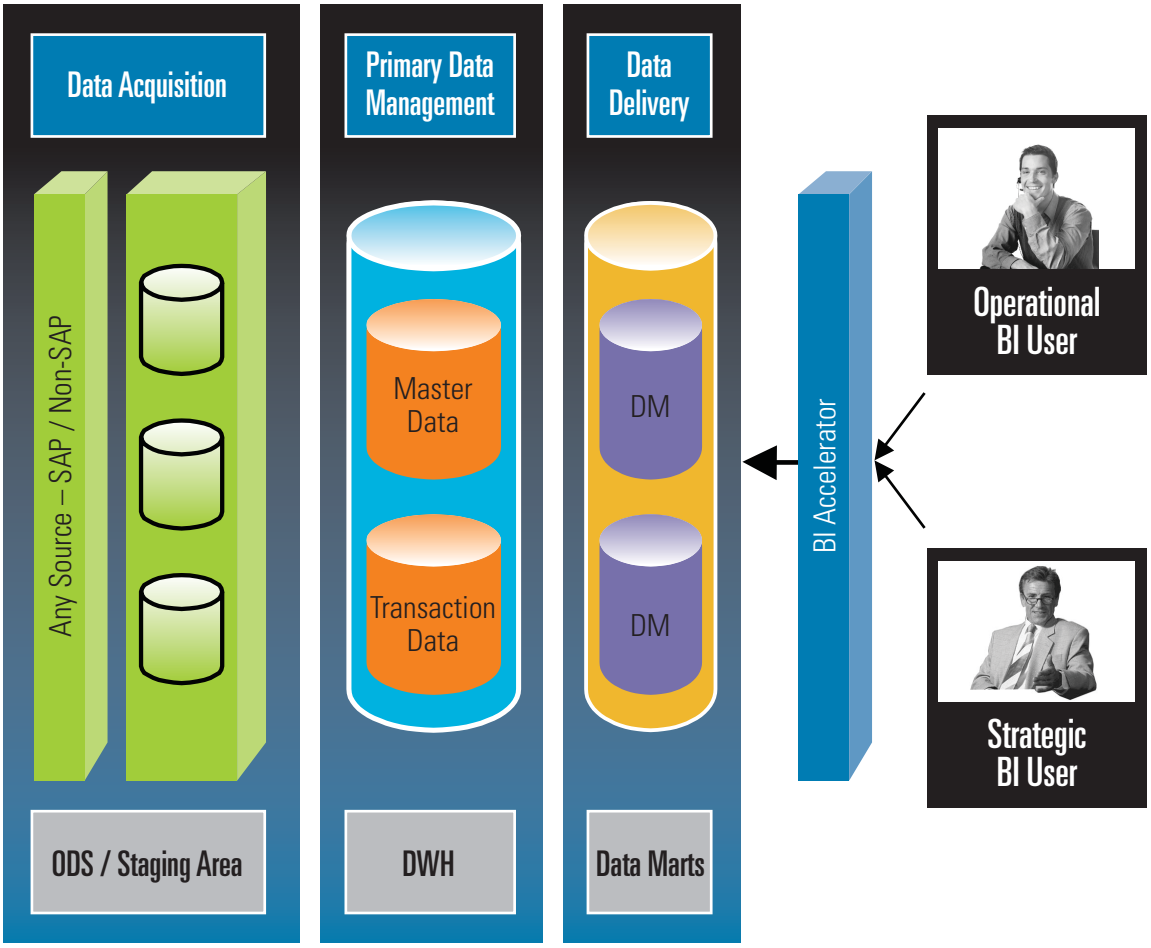
The Infosys approach involves:

- Building an all encompassing enterprise data warehouse for a single version of truth
- Using SAP BI 2004s environment for speed and flexibility
- Integrating SAP BI Accelerator with SAP BI 2004s environment for scalability and reliability

Infosys Solution Architecture

The proposed solution architecture is illustrated below.

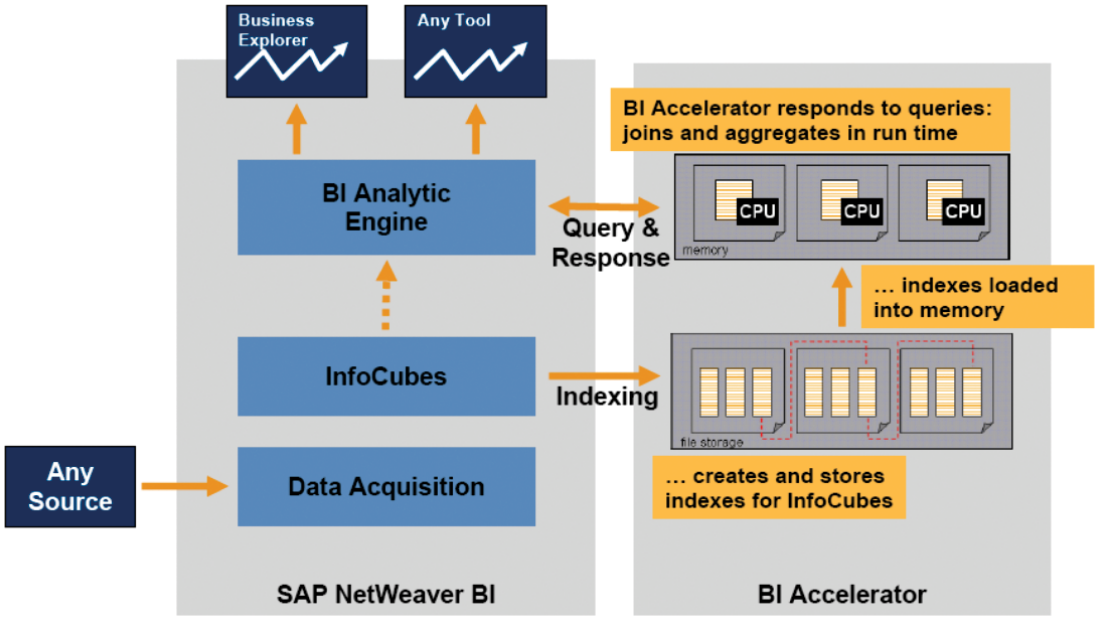
Solution Architecture of the Infosys solution



SAP BI 2004s Environment

Integrating BI Accelerator with SAP BW environment provides scalability and performance gains.

The BI Accelerator, developed by SAP and Intel in partnership with HP and IBM, is a plug-in product for SAP Netweaver and SAP BI. It enhances query performance by many folds and improves the scalability of the SAP BW environment. The BI Accelerator is a high-density blade system from HP or IBM, with pre-installed SAP software. The blades contain Intel processors and run SUSE Linux operating system.



*Source: SAP BIA Documentation

The BI Accelerator eliminates the challenges inherent in an SAP BW enterprise data warehouse implementation ensuring stable response time for management dashboards and reports. The cost of this hardware compares favourably with that of other measures of performance improvement such as maintaining aggregates. This leads to an overall lower cost of operation.

A plug-n-play appliance, the BI Accelerator has low maintenance requirements and seamlessly integrates with the Netweaver environment. Further, it is transparent to the end-user obviating the need for user training. Users experience improved performance and a more stable reporting system. To plug in this appliance organizations need to upgrade from earlier versions of BW to SAP BI 2004s (BW 7.0).

The BI Accelerator requires no customization of reporting tools (SAP BEx, etc). The required processing and re-routing of the queries is managed by the Netweaver environment offering users and report developers a smooth interface.The BI Accelerator owes its speed to a series of breakthrough innovations:

- It performs aggregation quickly during query execution by processing the entire query in its memory using an extremely compact index structure
- The innovative algorithms use TREX search engine technology
- Expandable blade hardware infrastructure leveraging the power of Intel processors

Business Scenarios

Here are some business scenarios where the BI Accelerator could be a critical success factor:

- *Demand Change Scenario*:

  Demand planners at any site need to plan for material demand across a period of time. The data mart typically contains data from multiple sources such as planned orders, purchase orders, purchase requisitions, etc. For material in a given plant it is calculated as 'old/new demand' and the corresponding change for a particular item 'sold to party'. Execution time for a typical query to calculate the change in demand for a period of a month would be 5 minutes for a cube with 500 million records

- *Sales Trend Analysis and Drilldown:*

  This analysis shows 'sales quantity' and 'sales value' over a period of time. The requirement is to be able to view this data through various dimensions like geography, product group, POS, etc., and drill down to various levels on these dimensions.

The BI Accelerator is loaded with high-performance software in the SAP NetWeaver platform with advanced hardware from Intel to deliver performance boosts of ten or more times for analytic services and analytic applications.

BI Accelerator – Cost Effectiveness

Let us consider an organization with revenues of around $5 billion and an IT budget of 0.5% to 1% of revenue. With SAP BW as its BI platform for the EDW, data size runs into terabytes requiring a highly efficient and high performance BI environment. Such an environment typically entails a maintenance heavy production system with several aggregates and other performance optimizers and tuning features. A dedicated team of BW consultants is needed to maintain this EDW. Deploying a medium sized BI Accelerator in this scenario can potentially save 30-40% of the maintenance budget with a ***break-even in just 1 year***. On the performance front, it will enhance user experience along with EDW scalability.

The table below summarizes the performance comparison for one of Infosys' BI clients using the BIA.

SAP BW

Total Size	> 2 TB
Largest Cubes	
POS Data	50 million rows
Demand Forecast	40 million rows
Response Time Without Aggregates	
POS Data Query	2000 Sec
Demand Forecast Query	1800 Sec
Response Time With Aggregates	
POS Data Query	800 Sec
Demand Forecast Query	600 Sec
Response Time With BIA	
POS Data Query	20 Sec *
Demand Forecast Query	15 Sec *

* Estimated numbers based on current BIA implementation at Infosys

Summary

As organizations juggle their business intelligence needs – some strategic and others operational – they are hard pressed for options. Many organizations that run on the SAP ERP engine are unable to fully utilize the speed and flexibility of SAP BW owing to their concerns about using it as an enterprise data warehouse. This often leads to the creation of two separate data warehouse environments, one for strategic needs and the other operational.

The SAP BI Accelerator helps eliminate these redundancies and makes SAP BW an excellent choice as an Enterprise Data Warehouse. Its ability to seamlessly integrate with Netweaver environment without any customization requirements of the existing system makes it the right choice. SAP BI Accelerator introduces much needed scalability and performance enhancement to the SAP BW system making it an ideal tool for enterprise data warehouse particularly for organizations with an SAP ERP backbone.

About the Author:

Meena Iyer is a Senior Consultant with Infosys' Business Intelligence division of the Enterprise Services group. With experience in multiple geographies across several areas on SAP BI landscapes, she is a technical expert on SAP BW.

Meena can be reached at meena_iyer@infosys.com

Sriram Kakaraparti is a Project Manager with Infosys' Business Intelligence division of Enterprise Services group. He has worked on multiple projects involving tools like SAP BW and MicroStrategy for Fortune 1000 companies.

Sriram can be reached at sriram_kakaraparti@infosys.com

Infosys Technologies Ltd. (NASDAQ: INFY) defines, designs and delivers IT-enabled business solutions that help Global 2000 companies win in a flat world. These solutions focus on providing strategic differentiation and operational superiority to clients. Infosys creates these solutions for its clients by leveraging its domain and business expertise along with a complete range of services.

With Infosys, clients are assured of a transparent business partner, world-class processes, speed of execution and the power to stretch their IT budget by leveraging the Global Delivery Model that Infosys pioneered.

Infosys®

POWERED BY INTELLECT
DRIVEN BY VALUES

For more information, contact **infosys@infosys.com**

www.infosys.com