serverlogic

Nike Mines SAP Data using Microsoft BI Tools

Overview

Industry: Athletic Footwear & Apparel
**Customer:** Nike, Inc.

Business Situation

Client needed to provide regional sales offices and sales personal with up-to-date sales statistics so that they could easily create reports and spot sales trends. The challenge was to get the data that was stored in the corporate SAP data repository into a form that was easily transportable to many of their remote sales offices worldwide.

Solution

Nike engaged ServerLogic, a Microsoft Gold Partner, to help implement Microsoft SQL Server 2005 Business Intelligence software. Microsoft BI tools provided the cost-effective foundation to build a robust business intelligence solution that enabled them to meet or exceed their global sales reporting commitments.

Benefits

- Visibility of trends previously unrecognized
- Higher performance
- Cost-effective
- Enhanced team communication
- Increased utilization
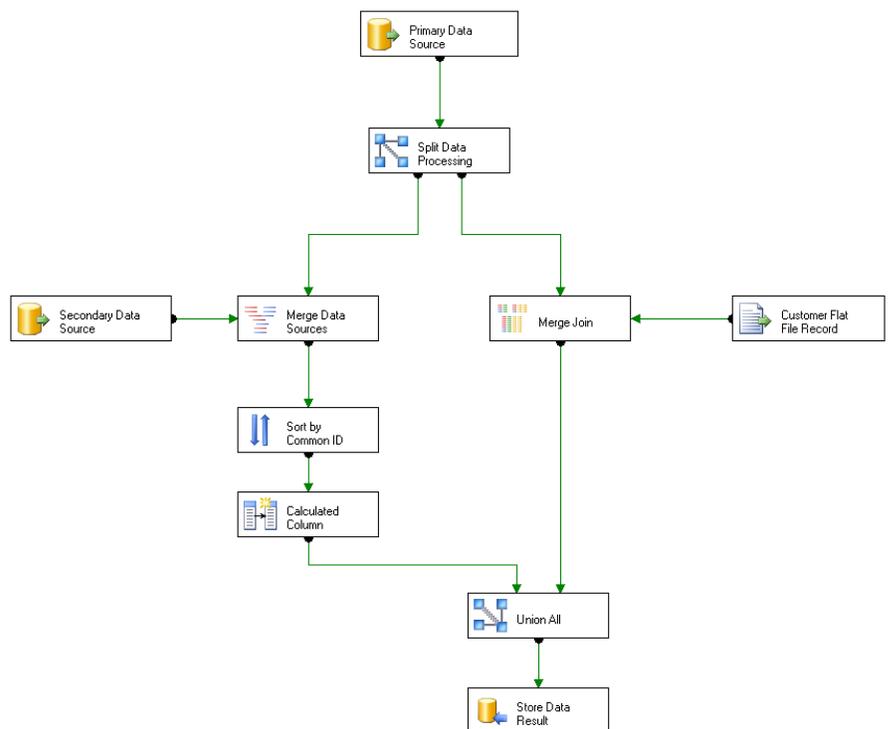
ServerLogic's custom software development team was engaged to create an easy-to-use, reliable, and accurate mechanism that would allow individual sales reps to download only data that was relevant to their territory, and then give them the BI tools to allow them to manipulate that data to create custom reports that were up-to-date and meaningful.

The Solution - Microsoft BI Tools

Given that the SAP data repository contained hundreds of millions of rows of data stored in complex multi-dimensional cubes, the first task was to create a way to extract the correct data and store it in a staging database where it could be more easily manipulated. Working with Microsoft and the client's development team, ServerLogic created a multi-threaded .NET application, called MetaDriver, to move data from the SAP Business Intelligence warehouse into a Microsoft SQL Server staging database. Some data could be moved in its entirety – full replacement, while other data had to be moved more intelligently by appending new rows or updating deltas only.

Once the fact and dimension data was available in the SQL Server Repository, this data could then be processed by Microsoft SQL Analysis Services. Cubes were created which represent the data's hundreds of dimensions and cube processing was initiated.

When a cube had been processed, it was split for transmission to the regional sales field offices. Since sales data is broken down by region, the cubes are also sliced across this dimension. Once sliced, the sub-cubes are transmitted using a parity checking utility to speed up the transfer. Once the regional sales office's cubes are updated, the AMO APIs are utilized to regenerate any linked dimensions.

The sales data has traveled from the company's SAP data repository, to each regional field office. Now it is ready for its final move: to the sales person's workstation. Using MDX queries, Microsoft SQL Server Analysis Services is now employed to split the OLAP cube into CUB files for use by the sales staff. These CUB files are slices of the cube along the sales person dimension.

Once the CUB file has been transmitted to the salesperson's laptop, they are ready to slice and dice their data using Microsoft Excel. If a sales person has a question about any particular data element, they can click on the "research" icon within Excel and get a full description of the data element, its source and meaning. This allows salespeople to create reports, charts and predictions without needing to be connected to the corporate intranet.

Solution Components

Microsoft SQL Server 2005

MS SQL Server 2005 was used as a holding area for data migrated from the SAP data warehouse.

- ServerLogic engineers developed a .NET application called MetaDriver to perform the data migration from SAP into the SQL Server repository database. SQL Server Integration Services (SSIS) package templates were written by other developers to perform generic data migration tasks.

Microsoft Analysis Services 2005

SQL Server Analysis Services OLAP engine makes use of SQL Server as its data source and allowed the large amount of data in the staging repository to be split into smaller CUB files which are then distributed to each sales person for remote processing.

- ServerLogic engineers researched methods for initiating cube processing and for generating CUB files.

Microsoft SQL Server Integration Services 2005

SQL Server Integration Services (SSIS) provided the mechanism to move data from the SAP Business Intelligence repository into the SQL Server database.

- ServerLogic engineers developed a .NET application called the MetaDriver, which generated and executed SSIS packages programmatically, based on database rules.

Microsoft Excel

Microsoft Excel provided an excellent OLAP reporting interface, as virtually all of the client's sales staff were familiar with its use. Users can add dimensions to the X and Y axes and view the aggregated measures quickly. To provide disconnected users access to the OLAP data, a CUB file was generated by Analysis Services and deployed to each user.

- ServerLogic provided research and proof of concept. Other developers were responsible for the final implementation.

Microsoft Office Research Services

MS Office Research Services was employed to provide access to the data dictionary. This allows sales staff to right click any data element from within the Excel report and get information about its use and meaning.

- ServerLogic provided research and proof of concept.

Microsoft .NET 2.0

ServerLogic's primary role in this project was to develop the MetaDriver application, used to manage and monitor the flow of data from SAP Business Intelligence into the Microsoft SQL database and Analysis Server cubes.

- MetaDriver is a highly parallelized system for running job batches. Any part of a job can be marked "Serial" or "Parallel", and MetaDriver is also capable of executing standard executables, .NET methods, SQL scripts and stored procedures, as well as SSAS tasks

  MetaDriver is capable of determining which parts of a job can be run together, and which must run alone. Furthermore, the MetaDriver is capable of doing this recursively: jobs can have sub jobs, and thread control works to the nth degree.

  MetaDriver has a web interface that provides the following features:

  - *Job Management*: Jobs can be created, modified and executed right from the web interface.
  - *Parallelism Management*
  - *Auditing and Logging*: In addition to historical logs, a real-time view into the MetaDriver is provided by a Flash interface. This real-time animated view allows the user to see the interaction of parallel and serial tasks across multiple jobs and threads.
  - *Parameter Management:* MetaDriver settings are stored in the database and can be changed directly in the web interface.

Software and Services

- Microsoft® SQL Server™ 2005
- Microsoft Windows Server R2 x64
- Microsoft IIS®
- Microsoft SQL Server Integration Services 2005
- Microsoft Analysis Services 2005
- Microsoft .NET Framework 2.0
- Microsoft C#.NET
- Microsoft ASP.NET

For More Information

For more information about ServerLogic and our custom software development services, call **866-838-6932** or visit www.serverlogic.com