

Kognitio

Enabling Virtual OLAP Cube Environments within Kognitio Pablo for Train-of-Thought Analytics on Big Data

Product

Custom, Big Data ROLAP / MDX Provider for Kognitio

Customer



Key Customer Requirements

- Microsoft Excel PivotTable connectivity / OLAP-based BI connectivity
- Virtual cubes to build terabyte-sized data cubes in seconds, not hours
- Direct data connectivity leveraging the full power of Kognitio's in-memory, MPP database for analytics on big data

About Simba MDX Solutions

Simba is the leading independent expert in MDX query language technology, including MOLAP and ROLAP data connectivity. Simba's MDX solutions leverage Simba's pioneering SimbaProvider SDK technology to allow database vendors to offer standards-based, multi-dimensional Business Intelligence and Enterprise Performance Management data connectivity to their customers. Simba's MDX solutions build upon an ISV's proprietary technology and database optimizations to deliver easy-to-use, maintainable, highly scalable and performance-oriented data connectivity from any standards-based, multi-dimensional BI application.

About Simba

Simba Technologies Inc. is the recognized world leader in standards-based data access products and solutions. Simba works with leading companies globally to deliver first class data connectivity solutions. Simba is an industry pioneer in relational and multi-dimensional data connectivity, and MDX query language technology. For more information, visit www.simba.com.

“*Simba's standards-based MDX query language technology and its incredibly deep data connectivity expertise were the catalysts for Kognitio's ability to provide multi-dimensional query and analysis functionality within our Pablo product. Simba's solution enables our customers to use the OLAP-based BI tool of their choice – including IBM Cognos, Microsoft Excel PivotTables and SAP BusinessObjects – to perform extreme analytics on big data and fully leverage the power within their Kognitio database solution. By engaging Simba to work with us on Pablo, we've been able to leapfrog our competitors by combining the in-memory, analytical prowess of our WX₂ database with Simba's leading OLAP expertise for enabling connectivity to large-scale virtual cube environments.*”

- CEO, Kognitio

Kognitio (www.kognitio.com) is a long-standing innovator in the data warehousing, Business Intelligence (BI) and analytics markets. The company has pioneered many of the technologies now employed by state-of-the-art data warehouse/BI systems, including the industry's first in-memory, Massively Parallel Processing (MPP) database and Data warehousing as Service (DaaS) in the Cloud.

Kognitio offers one of the most powerful in-memory, MPP analytics databases in the world, used by leading companies in industries such as financial services, consumer packaged goods, retail, telecommunications, insurance, gaming, media, market research and utilities.

The Kognitio WX₂ analytics database is renowned by users for its performance and scalability, and for its ability to help turn massive amounts of raw, complex data into actionable BI to solve the most urgent business problems. As a high-performance Relational Database Management System

(RDBMS), WX₂ provides native data access via the ODBC and JDBC Application Programming Interfaces (APIs).

Kognitio wished to extend WX₂ to offer its customers multi-dimensional reporting capabilities. By adding multi-dimensionality to WX₂, Kognitio would be able to offer its customers OLAP-based data access – fully utilizing the power of its highly scalable, in-memory, MPP database architecture for "virtual cubes" on big data. The new connectivity option would provide the means for Kognitio's customers to use the OLAP-based BI tool of their choice for train-of-thought data analysis, as well as provide the ability for ordinary business users to quickly query terabytes of information and gain succinct answers to important business questions – all on the fly.

The OLAP solution that Kognitio sought had to offer its customers wide, standards-based multi-dimensional connectivity with

Excel BI Connectivity Options for Data Warehouse Vendors:

Option 1

One option entails using a third-party, mid-tier server. However, using a mid-tier server requires loading data into another product, adding to the complexity and cost of the solution, while often degrading its overall performance. Using a mid-tier server could adversely affect scalability, and work against a database vendor's proprietary technologies and optimizations. This would greatly reduce the purpose and performance a database vendor's customers gain from using an optimized database solution. It also would not provide direct Excel PivotTable and PivotChart connectivity.

Option 2

Another option entails using open source data components. However, open source data connectivity components provide limited or no support for some key BI applications, as well as some critical Excel BI functions. Furthermore, investment in and support for open source products typically is not at the same level as commercially available solutions.

Option 3

A third option entails using commercially available data connectivity technology. Commercially available technology typically follows a predictable product roadmap, provides more features and functionality than open source products, provides access to dedicated support resources, and garners continued investment from the technology vendor to ensure compliance with the latest advancements in the MDX query language. This option can provide high performance, direct Excel BI connectivity.

The Simba MDX Advantage:

- ✓ MDX 2005 query language compliant
- ✓ Provides industry standard BI connectivity
- ✓ Supports sub-queries
- ✓ Supports function-shipping
- ✓ Supports Microsoft Excel 2010
- ✓ Supports Microsoft Excel 2007
- ✓ Supports Microsoft Excel 2003
- ✓ Supports Microsoft Excel XP
- ✓ Support for multiple BI clients
- ✓ Includes OLE DB for OLAP (ODBO) interface
- ✓ Includes XML for Analysis (XMLA) interface
- ✓ Two-tier deployment option
- ✓ Three-tier deployment option
- ✓ No mid-tier needed
- ✓ Highly scalable to handle terabytes of data
- ✓ High-performance
- ✓ In-database analytics
- ✓ Big data ready
- ✓ Easily customized
- ✓ Fully leverages an underlying data store's proprietary technologies and database optimizations

Simba built a custom MDX query language solution for Kognitio that fully leverages Kognitio's proprietary, in-memory, big data, analytics technologies to provide Kognitio customers with OLAP-based reporting using the BI tool of their choice. Simba's MDX query language solution combines MOLAP performance with ROLAP scalability to provide Kognitio with a distinct competitive advantage.

popular consumer applications such as IBM Cognos, Microsoft Excel PivotTables and SAP BusinessObjects. It also had to provide impressive performance and data query response times in-line with the tremendously high-performance capabilities of Kognitio's proprietary, MPP, in-memory database technology.

To provide the big data OLAP-based data connectivity solution that it desired, Kognitio turned to the Multi-Dimensional eXpression (MDX) query language experts – Simba Technologies.

Building a High-Performance and Scalable, Virtual OLAP Environment for Kognitio to Meet Its Stringent Specification and Big Data Needs

Simba delivered a solution to Kognitio that became the foundation of Kognitio's Pablo product, an extension of the WX₂ analytical database providing OLAP capabilities to ordinary users for performing ad hoc, extreme analytics on big data.

Kognitio engaged Simba to build an in-memory, MDX query language solution to power Kognitio Pablo. Building on the heritage of WX₂, Pablo creates virtual OLAP cube environments on the fly. By using Simba's MDX protocol and a metadata layer, Pablo creates an ad hoc virtual cube that can be created in seconds and minutes rather than the usual hours or even days taken by traditional database solutions.

Adding OLAP capabilities onto a RDBMS with the blazingly fast performance and scalability that Kognitio required is no easy feat. Traditionally, gaining OLAP reporting capability on a relational database requires extracting and loading the data into a separate, physical

OLAP data cube for analysis. However, Simba's solution provides OLAP capability *built into* the Kognitio database.

To achieve the big data OLAP connectivity that Kognitio desired, Simba's solution provides the necessary metadata mapping and structure to create a star schema data configuration within the Kognitio database. This structure provides the foundation for building virtual data cubes *within* the database. Combined with Simba's proven MDX protocol and expert optimization knowledge, the result is a fully compliant, standards-based OLAP API tailored perfecting for in-memory database application on big data. The solution provides MOLAP performance with ROLAP scalability.

Simba paid special attention to Kognitio's performance requirements to leverage the power of Kognitio's pioneering, in-memory data processing technologies.

Simba's solution is built upon its industry-leading SimbaProvider OLAP SDK, which provides the foundation for a ROLAP solution tailored to meet Kognitio's specific performance requirements. The ROLAP data connectivity solution provides the multi-dimensionality and OLAP-based BI tool support that Kognitio desired. Simba's MDX protocol fully leverages Kognitio's in-memory data processing technologies to ensure extremely fast, train-of-thought analytics on big data by Kognitio customers.

By choosing Simba's commercially available MDX query language technology to build Pablo, Kognitio knew that its customers would always have the widest choice of multi-dimensional BI tools for feature-rich, fast analysis of their data.