

Using ProClarity to follow stock movements at the SWX Swiss Exchange



Industry
Financial Services

Key Benefits:

- **Ease of use:** The customized user interface not only facilitates the access to information, it also allows users to make mistakes when browsing through the complex data. The system e.g. detects 'impossible' queries and a back button always brings up the previous screen
- **Performance:** OLAP analysis makes ad hoc queries and reporting possible and thus analysis and control more effective
- **Flexibility:** Existing data models and rules may be applied to the different SWX Swiss Exchange business units. For each unit multiple cubes may easily be built based on the same meta data

The SWX Swiss Exchange is one of the most technologically advanced securities exchanges in the world. Underpinned by the strength of the Swiss financial marketplace, it pursues a solidly international strategy. In cross-border cooperation with its partners, the SWX Swiss Exchange provides first-class exchange services in the interests of all involved. It boasts not only an extensive product range, but also a fully integrated electronic trading, clearing and settlement system which is still the only one of its kind in the world.

The SWX Swiss Exchange brings together participants, issuers and investors in an efficient and transparent market. It is the home Exchange and key market for leading international companies. The prominence of both participants and listed companies ensures excellent liquidity. Thanks to its technological leadership, the SWX Swiss Exchange has distinguished itself as a customer-oriented Exchange services provider – a strong basis for the trust of a growing number of participants. Some 8000 securities are admitted for trading on SWX Swiss Exchange. Over 100 participants trade on the SWX Swiss Exchange, including some of the most important global players in the financial markets.

The Surveillance Office keeps an eye on price movements and trading volumes. In suspected cases of insider dealing, price manipulation and other breaches of the law and regulations, it passes on the findings of its investigations to the Federal Banking Commission and, where applicable, to the criminal prosecution authorities. The Surveillance Office and the Product Managers of SWX Swiss Exchange need to follow all bids and transactions on a daily basis to trace the performance and movements of all securities. Each day approximately 1 Gigabyte of transaction data is stored on the SWX systems.

Solution

All trades of SWX Swiss Exchange are stored one by one in a large data warehouse on a daily basis for analysis. Traditionally information was retrieved from the data warehouse with relational queries. To speed up the process an analytic OLAP environment has been set up which allows interactive ad hoc queries. The response time for queries has come down to well under one second. Depending on the analysis to be performed, specific cubes have been built with a size of up to 700 Megabytes each. Data is accessed through a standard interface which has been adapted to specific user requirements.

The SWX Swiss Exchange Analytic Application has been developed based on technology from Microsoft and ProClarity Corporation using Microsoft® SQL Server™ 2000, Analysis Services, Visual Basic™ for Applications, Visual Studio® 6.0, the ProClarity® Professional Client and the ProClarity® Analytic Platform. The underlying Data Warehouse runs on Oracle.



The Bottom Line:

- Product managers and surveillance staff can make ad hoc selections of securities and pull of calculations immediately with ProClarity
- Approximately 1 Gigabyte of transaction data is collected each day
- Query response time is well below one second

The Highlights

The SWX Swiss Exchange application features a number of specialties which have been crucial for the successful implementation.

Security selection:

Product managers and surveillance staff need to make ad-hoc selections of securities and pull off calculations immediately. The product dimension consists of well over 15,000 members. To access the required members, the properties function of Analysis Services is used extensively. By selecting various attributes, the user narrows his selection until he finds the sought after set of securities. To allow that selection, intersection rules have been defined and implemented with a dynamic setting of selection criteria such as 'current month' or 'current securities'.

Handling of changing dimensions:

The product dimension is changing almost on a daily basis. Even though companies are renamed, shares split and new issues introduced, all securities need to remain comparable over time. These challenges could be handled by sophisticated use of standard Analysis Services and ProClarity functionality.

Drill to detail:

Frequently aggregated data that pop up with an important variance compared to standard performance need to be analyzed in detail. Once the "drill down" functionality shows the lowest level of detail in the cube, the "drill through" functionality looks up the details of specific cell values directly in the underlying relational data warehouse. SWX Swiss Exchange has created a functionality that downloads the detail records directly into an Excel sheet for reporting.

Data transformation:

The daily incremental update of cubes had to be optimized and fully automated to secure fast access to all data from the previous trading day.

Web infrastructure for management reporting:

Management reports and briefing books are fully integrated in the intranet environment.

User access:

The access to the different cubes has been organized logically, allocating specific access rights to each user and user-group.

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