Swisscom: Creating a Central, Agile Data Warehouse to Speed Up Processes and Better Serve the Business

Swisscom AG, Switzerland's foremost information and communication technology (ICT) company, had three data warehouses based on the SAP® Business Warehouse (SAP BW) application. The company's OneBI project consolidated them into a single source of truth, greatly improving performance and flexibility. Swisscom is now live with SAP BW powered by SAP HANA® and will soon move to the SAP BW/4HANA solution.

Executive overview

Company
Swisscom AG

Headquarters
Ittigen, Switzerland

Industry
Telecommunications

Products and Services
Fixed-line and mobile telephony and Internet services

Employees
21,200

Revenue
SFr 12 billion (US$12 billion)

Web Site
www.swisscom.ch

BUSINESS TRANSFORMATION

Objectives
• Design a data warehouse (DW) with a modern, simpler architecture as a single source of truth for the business
• Standardize business reporting processes to make them faster and more flexible, provide self-service capabilities, and react faster to market developments

Resolution
• Implemented SAP® Business Warehouse powered by SAP HANA® with mixed modeling and real-time data provisioning
• Consolidated the three DWs into one SAP HANA platform while ensuring regulatory compliance for data access and interfaces
• Implemented SAP BusinessObjects™ Analytics solutions
• Consolidated real-time interfaces to SAP and non-SAP systems
• Provided self-service analytics on an integrated data set

Benefits
• Optimized DW interfaces with a standardized setup for easy maintenance
• Created a common, standard data foundation
• Achieved near real-time access to financial figures

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80%
Reduction in the number of reports

1–2 TB
Data warehouse size, down from 8 TB

60 hours
To completely reload the data warehouse, not months

"Our biggest accomplishment is that we have created a single central data warehouse that is adaptable as situations change. It allows us to work nimbly with the business to react to market developments."

Omar Bumann, Head of Business Process Solutions Telco and SAP System Owner, Swisscom AG

OneBI: Revitalizing data warehousing at Swisscom

Swisscom AG is Switzerland's leading telecommuni-cation firm and one of its foremost providers of IT services. The company serves 2.5 million fixed-line network customers, 6.6 million mobile customers, and 1.4 million TV customers.

Swisscom has long relied on SAP® software, including the SAP ERP and SAP Business Warehouse (SAP BW) applications.

Recently, Swisscom merged the systems of two company divisions to harmonize finance, controlling, and procurement processes. Merging the instances of SAP ERP was straightforward, but combining the three instances of SAP BW was another matter. The inherited data warehouses were 15 years old with complicated architectures that involved several third-party applications. Swisscom wanted to make it easier to use these warehouses for financial close operations and less expensive to maintain their data source interfaces.

Swisscom had many other objectives in mind. It wanted to rewrite some of the third-party applications and eliminate others, replace outdated reporting and analytics software with modern SAP BusinessObjects™ Analytics solutions, and consolidate interfaces. It also wanted to enable real-time operations, institute better governance, standardize processes to eliminate dependence on specific individuals, institute a system of authorizations for inbound and outbound data, and support modern features like dashboards and self-service.

To achieve all these goals, Swisscom decided to completely redesign the data warehouse and formed a project to do it called OneBI.

Going live with modernized SAP ERP and SAP BW simultaneously

As the basis for OneBI, Swisscom chose SAP BW powered by SAP HANA® with mixed modeling along with SAP solutions for enterprise information management (EIM).

For merging the inherited instances of SAP ERP with its own, Swisscom formed a companion project called OneERP and chose the SAP ERP powered by SAP HANA application as its basis. The two projects used a greenfield approach and ran concurrently toward a common go-live date.

Swisscom's OneBI implementation team began by gathering requirements for the 250 use cases supported by the previous systems and generating a new specification for the solution. Then it fulfilled the plan step by step, including:

• Changing to the new reporting applications – SAP BusinessObjects™ Lumira software, SAP BusinessObjects Design Studio, SAP BusinessObjects Analysis for Microsoft Office software, and SAP Crystal Reports® offerings
• Adjusting the interfaces to the SAP HANA platform to enable real-time operations
• Creating the necessary governance framework to provide a standard set of processes and support data warehouse maintainability
• Adopting and enlarging the authorization scheme
• Building a collaboration share for operations to minimize the risk of dependencies

Exactly one year after they began, both OneERP and OneBI went live – right on schedule. OneBI is now the central data warehouse for Swisscom's analysis and reporting, covering finance and controlling data as well as all processes based on SAP ERP.

"SAP BW powered by SAP HANA is meeting or exceeding all my expectations. It gives us a lot of flexibility and the performance is excellent. It will only get better with SAP BW/4HANA."

Tjarko von Lehsten, OneBI Solution Architect, Swisscom AG

4 / 8

Executive overview

Company objectives

Resolution
• **Technical details**

Business transformation

Future plans

OneBI architecture at Swisscom

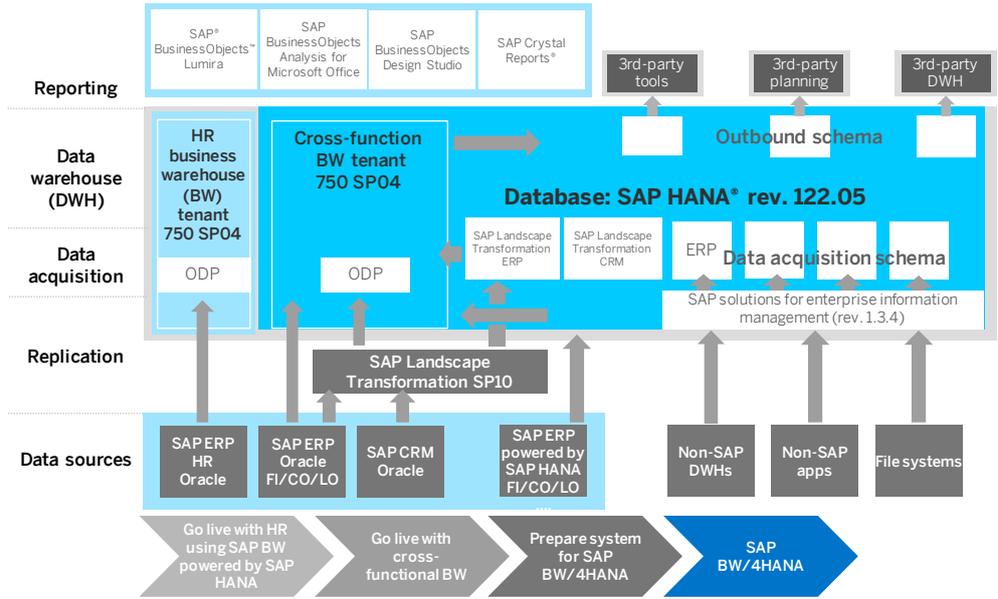The figure below displays the overall architecture of OneBI.

Figure: OneBI data warehouse architecture at Swisscom

Read more ▶

ODP = Operational data provisioning framework
ERP = Enterprise resource planning
CRM = Customer relationship management
FI/CO/LO = Finance/controlling/logistics

Architecture, mixed modeling, and data sources

The primary data flow in Swisscom's architecture is from OneERP to OneBI and on to third-party applications. One of the main non-SAP data sources is a Teradata data warehouse that holds private customer data like connectivity and other customer relationship management information.

Swisscom has a multitenant installation of SAP HANA, with HR data residing in a separate tenant for security reasons. Tenants can implement support packages for SAP BW independently. Layers are defined in the mixed modeling environment for SAP BW. In this mixed environment, some case models are built in SAP BW and data is consumed through calculation views (or so-called external SAP HANA views). In other cases the opposite takes place: Swisscom brings data into SAP HANA, starts modeling on it, and calculates views on top of tables in SAP HANA which are then consumed by SAP BW. This native modeling is used either to speed up performance or to support use cases that are not possible in SAP BW, such as complex multidimensional calculations. Mixed modeling offers some flexibility but is technically different from common data warehousing.

Data is replicated either in schemas for SAP BW or in source system schemas. Outbound interfaces have outbound schemas defined. For persistency in SAP BW, Swisscom uses advanced DataStore objects rather than information cubes. This is important for streamlining the transition path to SAP BW/4HANA because information cubes do not exist in SAP BW/4HANA.

All applications were built in a standardized way. SAP issued two new versions of SAP BW powered by SAP HANA during the course of the OneBI project, and Swisscom upgraded to each of them at the time of release. Both upgrades went smoothly.

Mission accomplished on all fronts

Swisscom achieved every one of its OneBI objectives. The data merged from the three original data warehouses now appears as a homogeneous whole, greatly facilitating overall company reporting. Period-end financial closes are now completed much faster. Swisscom is saving costs because the new data warehouse has fewer interfaces, the remaining interfaces are easier to maintain, and new interfaces are easier to construct.

Interfacing with upstream and downstream processes is now accomplished by direct connections rather than file uploads and downloads. Therefore the OneBI data warehouse can accept and deliver data from and to more types of systems and a greater number of systems than its predecessors.

Operations of many kinds are performed in real time. Analysis finishes faster and reports are delivered earlier. The entire data warehouse can be reloaded over a weekend – a process that used to take weeks or months.

With strong governance and authorization schemes in place, data quality is up and the effort required to keep quality high has been reduced. Standardization has enabled Swisscom to be less dependent on specific individuals. Business self-service for reporting is set up and working well, with power users designing 1,000 flexible queries to replace 5,000 rigid reports.

250
Use cases for which IT has set up master queries

Days
To introduce new data sources, not weeks or months

Upgrading to SAP BW/4HANA to line up with the future of SAP

Swisscom is planning to migrate its remaining solutions running on Oracle to SAP HANA, thus moving toward full SAP HANA technology. Its next step in the evolution of the data warehouse is to be among the first to upgrade to the SAP BW/4HANA solution. With most objects already built and conversion-ready, Swisscom does not anticipate any difficulty making the move. The company foresees substantial benefits including reduced lines of code, fewer objects, a more modern user interface, and smarter integration with data sources. Since SAP BW/4HANA is fully optimized for SAP HANA, there will be no compromises in getting all the performance, openness, and simplicity the platform was built to deliver. In conjunction with SAP solutions for EIM, SAP BW/4HANA will produce top-quality master data in real time. Most important, since SAP is performing all new data warehousing development in SAP BW/4HANA, this move will position Swisscom to stay in lockstep with state-of-the-art advances by its vendor of choice.

8 / 8

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