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New-generation, comprehensive, business analysis tool

By Klaus Mueller, Founder & CEO, Kdm Semi Consulting

Today's market and economic conditions change more rapidly than ever before, a trend that's likely to become even faster in the future. This means that, to remain competitive, companies should be able to adapt quickly.

In general, today's management has access to financial analyses such as balance sheets, profit and loss statements, as well as customer revenue reports, which are usually compiled by an enterprise resource planning (ERP) system. In many cases, however, these reports do not provide the necessary information for more in-depth analysis. When it comes to new business opportunities, entering new markets or developing new products, the right information must be made available for each of these criteria using a customer relationship management (CRM) system or the right Opportunity Tracking Tool. Although it makes good business sense, in reality the existing software solutions often fail to meet this requirement.

The efficiency of CRM tools

In most cases, the existing CRM tool is not efficiently linked to the ERP system, i.e. master data from ERP and CRM systems must be compiled manually in a labour-intensive manner to generate a comprehensive analysis report.

Despite these obvious disadvantages, ERP and CRM have remained separate solutions as many companies believe that company-wide integration of master data is very difficult and costly. In addition, there is reluctance on the management level to change or upgrade existing ERP and CRM solutions with a front-end platform because the benefits of such a software suite are not yet fully understood.

But, there's a suitable solution available now: German firm Kdm Semi Consulting (k•d•m) designed and developed a new generation front-end platform (Figure 1), called Shibui-IT. The solution offers a cheap and efficient alternative to the current solutions, and is particularly suitable for small and medium-sized enterprises. It is a software as a service (SaaS) solution that consists of three key elements: Business Intelligence (BI), Advanced Connector (SAC) and Opportunity Tracking Tool (SOT²); see Figure 2.

The Business Intelligence part transforms large and complex customer ERP and CRM datasets into user-friendly charts or other forms of visual representation, whilst offering a great degree of detail for deeper analysis. The BI's software library contains many applications that allow users to perform various tasks regardless of technical background or skills. The ShibuiWeb allows publishing reports, diagrams or fact sheets created in
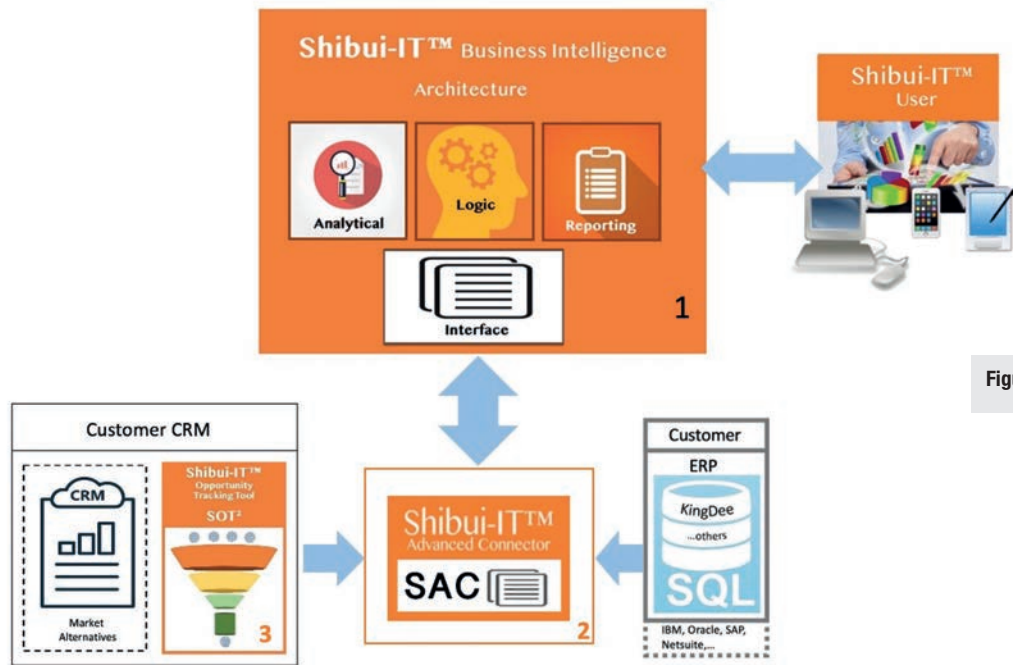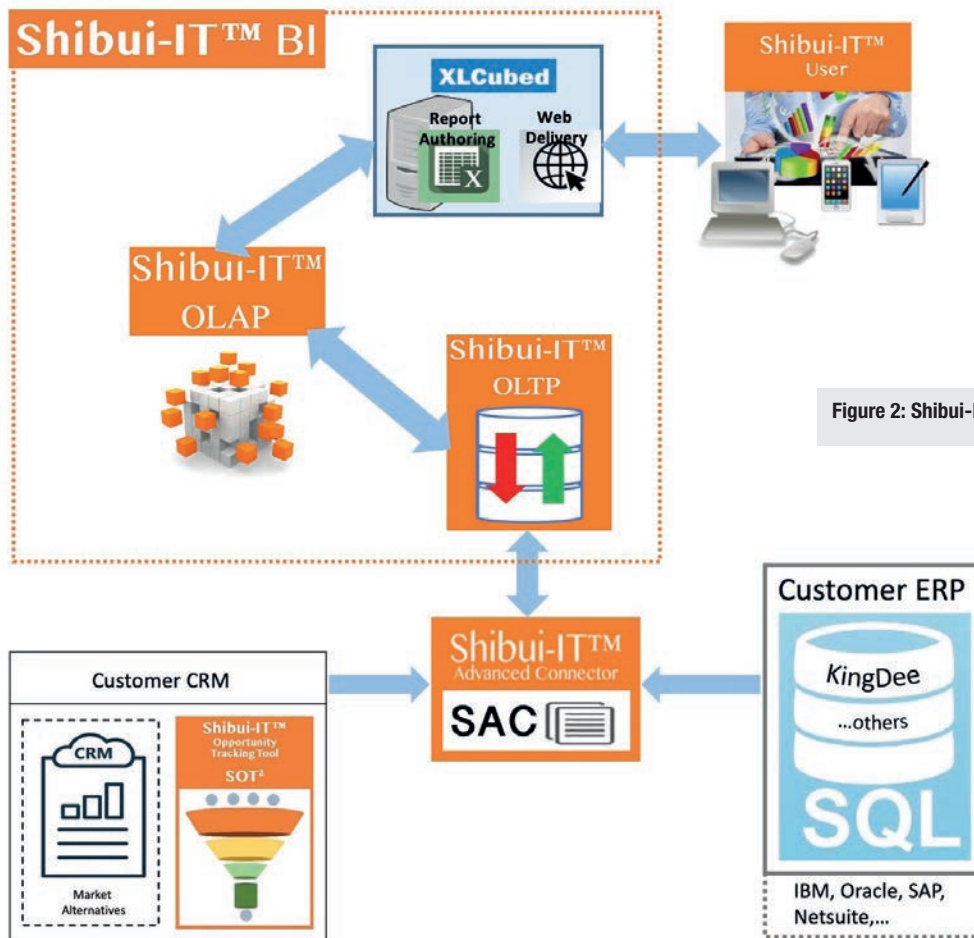
Figure 1: Shibui-IT solution

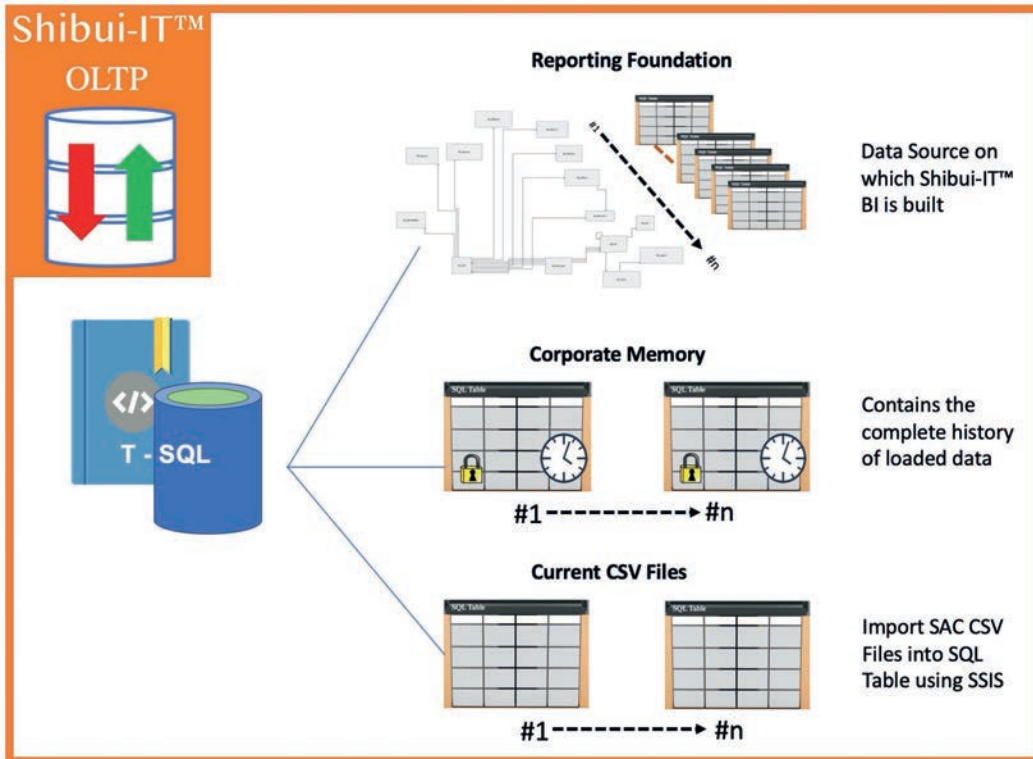**Figure 2: Shibui-IT building blocks**
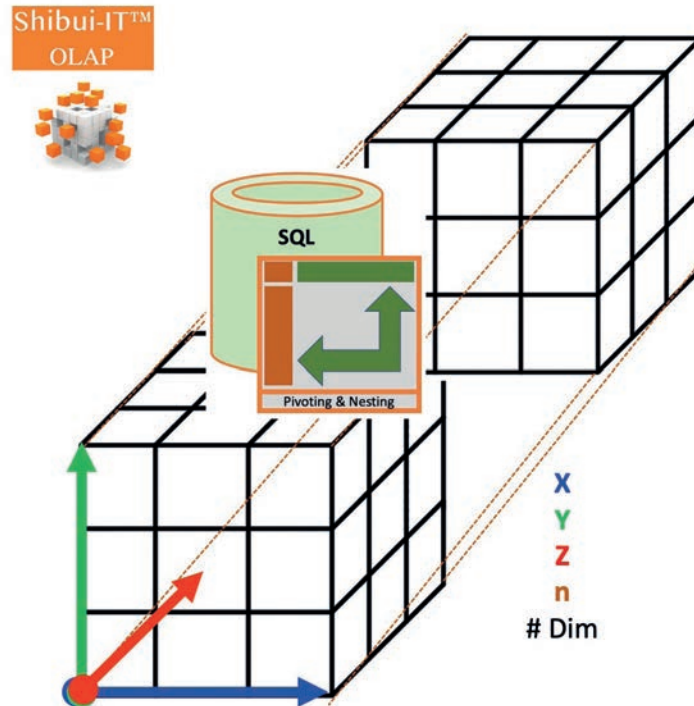
Figure 3: OLTP data model

Figure 4: The Shibui-IT OLAP Cube

Shibui-IT securely with just a few clicks, and the Shibui-IT Dashboard Tool offers an intuitive user interface, with ad-hoc analysis functions and visualisation options.

The Advanced Connector part of the Shibui-IT solution is an extraction-transformation-loading (ETL) tool designed to extract ERP and CRM data from multiple and different systems into a master database. And, lastly, The Opportunity Tracking Tool (SOT²) is a web-based tracking tool offering tracking and monitoring of each new opportunity or socket from the concept phase to production start, leveraging the BI part for detailed analysis. SOT² replaces complex and expensive CRM solutions as well as manual and labour-intensive Excel solutions.

The connected customer data source is a SQL server that contains the ERP, and the new business opportunity/project data

are loaded in the SOT² or other CRM tools.

Shibui-ITs fits in any on-premise server or cloud platform, and uses virtual machines, state-of-the-art software logic, network infrastructure and storage solutions from leading companies. Its architecture is scaleable, designed to interface with all existing customer systems and data sources.

OLTP data modelling

Compiling the requirements of the Shibui-IT target application and developing a logical data model is the key to a reliable and robust physical Shibui-IT OLTP design; see Figure 3. The transactional PoC OLTP has four layers:

1. Current CSV files: Master data imported from the SAC CSV databank;
2. Corporate memory: Contains the complete history of loaded master data;
3. Reporting foundation: n number of master data tables needed for the BI; and
4. OLTP processing, modification and calculation ETL logic, which prepares the operational data from the 'current CSV files' for the corporate memory and, subsequently, for the 'reporting foundation'.

The OLTP selects the needed data from the SAC, applies ETL processing logic to it and moves the operational data into the Shibui-IT OLAP Cube; see Figure 4. The Cube is the data structure of the Shibui-IT's SQL server analysis services (SSAS), which uses the OLAP databases to analyse the data sources. The source of the OLAP data base is the operational data from the OLTP Reporting Foundation.

In effect, the Cube is created by an OLAP pivot feature which aggregates all the data. The Cube's columns and rows are determined by defined dimension keys, and its cells contain all master data measured values from the company.

In the OLAP multidimensional data model, there is a set of numeric values that are the objects of the OLAP processing, consisting of bookings, billings, revenue performance, design opportunities, design wins or forecasts, and more. Each of these values depends on a set of dimensions, which provide the context for the measurement.

The OLAP design is based on three fact tables – sales orders, plans and opportunities – which are linked to an n number of dimension- and sub-dimension tables, all of which are represented in the n-dimensional OLAP data cube.

Data visualisation and web delivery

The BI front-end design tool has an XLCubed Excel add-in software suite that connects directly to the OLAP database, manages the report definitions and creates a dashboard with a set of pre-defined reporting templates, spanning from basic billing and booking reports to revenue analyses. There are added special Shibui-IT reports, like Vantage Charts and Customer Fact Sheets, part of the BI applications library; see Figure 5. And, with the ShibuiWeb (XLCubedWeb) – a Microsoft Internet Information Services, any report, chart or factsheet created by the BI tool can be safely published with a few clicks and rendered in all common web browsers.

All Shibui-IT applications are standardised yet role-specific, i.e. top-level managers get the information they need to run the company successfully, whilst account managers get access to reports needed to better serve the customers. **EW**

Figure 5: Shibui-IT software suite