



QUALITY TRADING SOLUTIONS

IMPLEMENTATION OF A SOFTWARE SOLUTION FOR AUTOMATIC SECURITIES TRADING

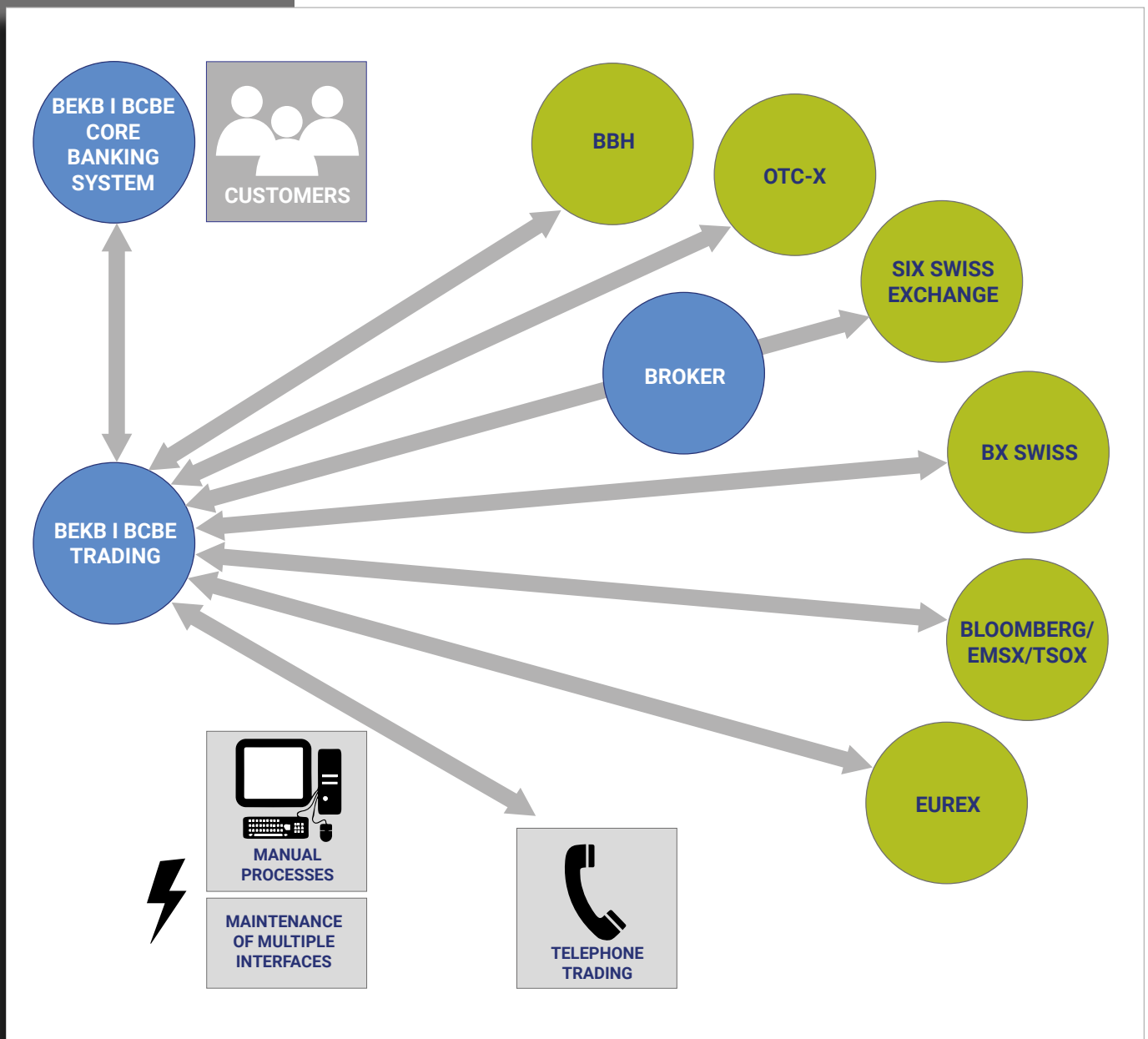
CASE STUDY BEKB | BCBE



THE SITUATION

The Berner Kantonalbank BEKB | BCBE is a mid-sized bank not connected directly to SIX Swiss Exchange in 2006. Like many other banks of her size, she does not have an independent electronic trading connection. The securities trading is executed via another bank which is an exchange member. The reason for this is the high connectivity costs to the exchange as well as the required hardware and software.

The Swiss Exchange has continued to simplify membership. Thus BEKB decides, after careful analysis, to become the first mid-sized Kantonalbank to have a direct connection to SIX Swiss Exchange. She gives MACD the task of implementing the connection in 2006.



Graphic 1: BEKB Securities Trading without GLOX 2006

THE CHALLENGE

BEKB exists since 1834, has more than 500,000 customers and, with 79 branches (as of 2006), places a lot of value on customer contact. As a classic universal bank, she offers comprehensive solutions and focuses on the core business of private and business customers (in particular small and mid-sized businesses) as well as asset management. The bank has made service quality her trademark and places emphasis on continuity and openness in the decision process. This is also expected from MACD.

An own connection to SIX Swiss Exchange should add autonomy, efficiency, cost savings and customer service. For her customers, BEKB wants an efficient solution with a flexible software, that can seamlessly integrate with the existing system architecture.

In order to achieve BEKB's expectations, the trading system GLOX from MACD has to achieve the following requirements:

- ✓ Security of sensitive data
- ✓ Stability of the electronic system
- ✓ Compliance with the legal requirements
- ✓ High STP rate (straight-through processing)
- ✓ Simple and user friendly interface
- ✓ Fast execution
- ✓ Flexible and quick implementation times

THE SOLUTION

MACD is a team of experts for customer order execution and exchange systems for all asset classes. They have worked on many projects with banks and exchanges and understand the whole trading chain. This know-how and a wide network of partners is the ideal basis for the start of the BEKB project.

A key factor of the successful implementation and continued development of the software is the partnership between MACD and BEKB. As a software as a service provider, MACD offers tailor made complete solutions and takes on responsibility for the whole project including analysis, conception, software development, testing, implementation, hosting, support and training.

ANALYSIS & CONCEPT

In a first step, MACD analyses the current structure of the BEKB trading desk. Graphic 1 shows, that the BEKB has a large overhead in order to keep track of the large number of connections and counterparties, as well as implementing changes and software updates in a timely manner.



**GEORGE MACDONALD,
CEO MACD**

,The requirements on the software for an electronic trading system are very stringent. Working with real-time systems means that an order must be placed instantaneously at the exchange. Of course no message can get lost and all transactions must be verifiable.

It is our goal that the user can, in spite of the complexity of the system, easy and quickly enter all order types in GLOX - following the motto 'Trading made simple'.

After completion of the analysis of the technical and legal requirements, as well as the integration of the multi-asset trading system GLOX in the BEKB system architecture, MACD prepares a flexible, modular concept. The goal is, with only one connection to GLOX, to be able to flexibly connect all BEKB counterparties.

DATA CENTRE MOVE

One of the biggest milestones in the project is the datacentre move: in order to meet all the quality requirements, MACD decides to relocate the datacentre from Germany to Switzerland at DXC Technology. This requires organisation and perfect planning because a parallel operation of the old and the new datacentre for approximately 6 weeks is required. During this time the performance and functionality of the software for all MACD customers must not be impacted.

Additionally, another requirement: at the same time as the move, the new SIX release EM 8.2 for all other GLOX customers must be implemented. Thanks to the close collaboration with BEKB and DXC, it is completed in October 2007. The previous datacentre in Germany can be decommissioned. The transfer was frictionless and almost transparent for all MACD customers.

With the new high availability MACD datacentre, we can ensure the security of the data, and transfer orders in real-time. Disruptions are almost non-existent, because the new datacentre is configured with a dual-site setup.

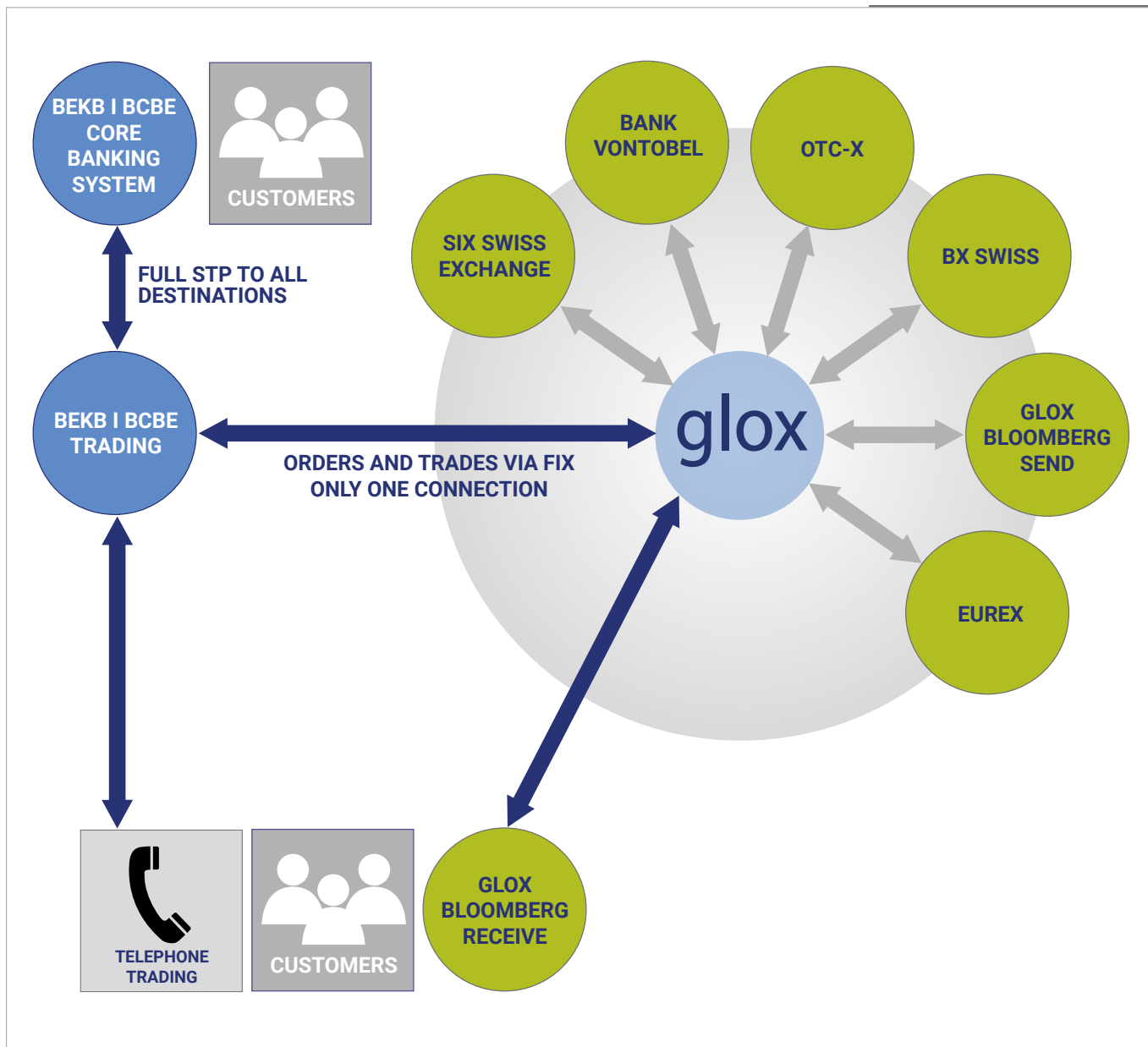
IMPLEMENTATION

Following the successful implementation of GLOX, BEKB starts trading on the SIX Swiss Exchange on July, 27th 2007. The close relationship between MACD and the Swiss Stock Exchange contributes towards defining a solution specially tailored to BEKB, and the implementation of the project within just nine months.

The multitude of interfaces are replaced in 2007 by the trading system GLOX, thus enabling efficient trading via just one user interface. More and more connections to different destinations have since been added. Graphic 2 shows the result in 2018.

TRAINING

The MACD account management team in Maur and Urdorf (Zurich) supports the BEKB employees personally during the implementation phase. MACD conducts training, then receives regular feedback and clarifies questions promptly on-site. Thus, requirements and new features can be implemented quickly.



Graphic 2: BEKB Securities Trading with GLOX 2018

SUPPORT

It is very important for MACD that BEKB can rely on the availability and functionality of GLOX. Should a problem arise, the MACD support team will be on-hand by phone or e-mail.

SUSTAINABILITY

MACD is constantly working on the further development of GLOX to meet new requirements and integrate technological advances. Through the adaptation of standardised open and flexible interfaces, other systems can be easily connected. The long-standing partnership with BEKB helps to identify requirements early and implement them in a timely manner.

BEKB DESTINATIONS

- ✓ SIX Swiss Exchange
- ✓ OTC-X
- ✓ BX Swiss
- ✓ GLOX Bloomberg Send
- ✓ GLOX Bloomberg Receive
- ✓ GLOX Bloomberg Algo
- ✓ Bank Vontobel
- ✓ EUREX

GLOX is a flexible, forward-looking solution:

TECHNOLOGY

- ✓ Regular software version upgrades
- ✓ Free SIX Swiss Exchange release upgrades
- ✓ Integration of the latest technological developments

EFFICIENCY

- ✓ Efficient workflow by connecting different systems
- ✓ Reduction of manual intervention through straight-through processing (STP)

BEKB INTERFACES

- ✓ Communication Language: FIX
- ✓ Banking Systems: OTMS, X-igt

More interfaces are available:

- ✓ Communication Languages: FIX; FAST; ITCH; OUCH; WebSphere MQ (MQ Series); OCI; MS SQL; Oracle; SWIFT
- ✓ Connections to Banking Systems: OTMS, Avaloq, Apsys, BBP, Olympic, TCS Bancs

MACD HOSTING

- ✓ Fully automated alert and alarm system
- ✓ Purchase, management and renewal of hardware
- ✓ Regular software and hardware updates
- ✓ Saving costs by sharing customer resources
- ✓ Customers benefit by connecting to other customers (network effect)
- ✓ Reducing energy consumption through shared resources and modern virtualisation technologies

MACD SUPPORT

The MACD support team is available on weekdays for questions or requests.

MACD Account management team in Maur and Urdorf (Zurich) supports all customers personally on site.

REMO KUNZ, HEAD OF TRADING/SALES, BEKB | BCBE

,Thanks to GLOX, we not only reduced a large part of our costs but also gained a margin of independence. Automation has simplified processes and largely eliminated sources of error. The software is flexible and customizable, which suits us very much.

The collaboration with MACD has been on a partnership and equal footing from the beginning. Particularly noteworthy is the transparency of the costs, since MACD works with fixed prices. In addition to the technical competence, we particularly value the long-term way of thinking and the trustful approach.

With MACD, we have a point of contact for all trading system topics, whether for technical or regulatory issues, hosting or support. Through close cooperation, MACD knows our needs; that simplifies a lot!



GEORGE MACDONALD, CEO MACD

,BEKB is a long-standing customer and we appreciate it very much because of the close cooperation. We are pleased that we can expand BEKB's securities business in various directions due to the flexibility of GLOX.

And we too benefit from the BEKB. Due to the constructive feedback from the traders, we are able to capture trends at an early stage and deepen our know-how in the desired areas in order to include this in one of the following GLOX releases. This is also beneficial for all other customers.

The basis for a good cooperation is the personal contact. That's why we're often on site to train traders or get their feedback.'



SHAPING THE FUTURE WITH MACD!

Take advantage of our many years of knowledge in the securities trading sector and our comprehensive offering:

- ✓ We create process analyses.
- ✓ We carry out feasibility studies.
- ✓ We plan your individual project.
- ✓ We develop the software.
- ✓ We take over the hosting.
- ✓ We advise and train you.
- ✓ We support you personally.

ABOUT MACD

As one of the first application service providers in the financial sector, MACD has been successfully implementing IT projects for financial institutions for more than 20 years. MACD is the market leader in trading connectivity in Switzerland and supports more than 35 banks and stock exchanges across Europe and worldwide. Around 40 IT engineers, computer scientists and economists are working on innovative solutions at locations in England, Germany and Switzerland.

Since 2004, MACD has been a member of the non-profit-organisation FIX Trading Community, where George Macdonald, CEO MACD, is currently engaged as a Director.

WANT TO KNOW MORE ABOUT MACD AND GLOX?

Please feel free to contact us at any time!

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