

---

# *Three Cores in One*

CORE CONSOLIDATION AT MKB BANK

---

**CELENT**

[www.celent.com](http://www.celent.com)

---

JULY 2007

**Bart Narter**  
bnarter@celent.com

**Celent**  
745 Boylston Street, Suite 502  
Boston, Massachusetts 02116  
USA

Tel.: +1.617.262.3120  
Fax: +1.617.262.3121  
Email: info@celent.com

www.celent.com

**TABLE OF CONTENTS**

EXECUTIVE SUMMARY ..... 3  
ABOUT MKB ..... 4  
THE DRIVE TO CHANGE SYSTEMS ..... 6  
PRODUCT FUNCTIONALITY ..... 10  
SOLUTION IMPLEMENTATION ..... 12  
BUSINESS BENEFITS ..... 16  
COSTS ..... 19  
CONCLUSION ..... 20  
OBJECTIVITY AND METHODOLOGY ..... 21  
ABOUT CELENT ..... 22

**CELENT**

---

## EXECUTIVE SUMMARY

MKB Bank is the third largest bank in Hungary and had three separate core systems: two homegrown and one licensed. The bank decided that it needed to migrate to a single modern system in order to move into the retail market, become more efficient, and become more responsive to the market. The bank selected Temenos GLOBUS™, now known as T24™, running on HP Superdome Itanium.

The bank was able to double productivity in some departments, roll out sweeping changes spurred by government regulations in two months, and reduce training time for front line staff.

This report is the seventh in a series on core banking. The first six published reports are:

- *Overcoming the Fear Factor: Migrating Core Banking Systems*, April 2006 (also available in French as *Peur sur la Banque: Migrer les Systèmes Centraux*)
- *Global Core Banking Solutions for Large Banks*, May 2006
- *Global Core Banking Solutions for Midsized Banks*, July 2006
- *Core Banking Solutions for Small Banks: A US Perspective*, August 2006
- *Commercial Lending: Global Trends and the Systems that Enable Them*, December 2006
- *Core Banking Solutions: The Best of the Rest*, February 2007

Subsequent reports will include:

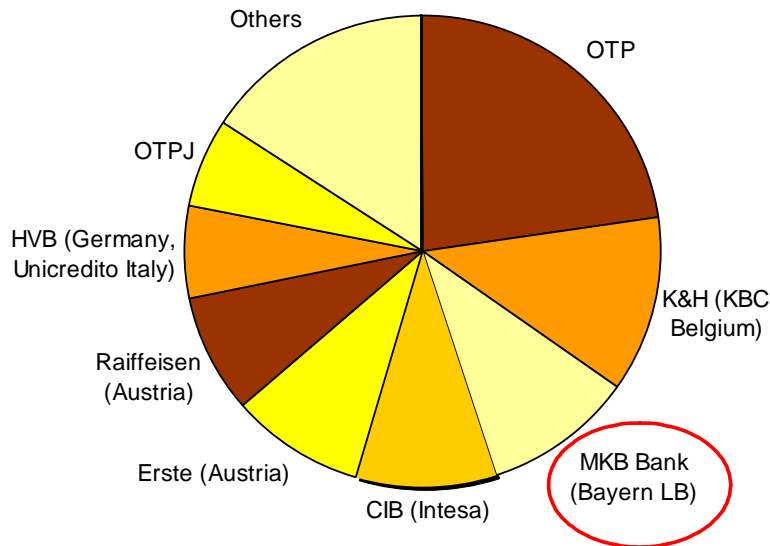
- *A Tale of One City: National City Bank Uses SOA for Core Renewal*
- *Case Study: Egyptian American Bank*

## ABOUT MKB

MKB Bank is based in Budapest and is Hungary's third largest bank, as shown in Figure 1. It is a subsidiary of BayernLB in Munich, Germany. The bank has 31 branches in Budapest and 19 in other parts of Hungary. It has assets of approximately 1,644 billion Hungarian Florints (HUF) or about US\$8 billion. There are about 4,000 corporate and institutional customers, 35,000 small and medium enterprise (SME) customers and 180,000 retail customers.

Electronic banking (thick client) customers number 13,700. Internet banking customers have grown to around 30,000 customers conducting 500,000 transactions per year. There are 43,000 mobile banking customers.

**Figure 1: MKB Is Number Three in Hungary by Assets**



Source: MKB Bank, Hungarian Accounting Standards (HAS), Celent analysis

Historically, MKB was the only bank for international trade and foreign exchange in Hungary under the prior political system. It therefore has a tradition of serving internationally oriented corporate customers. With the liberalization of the Hungarian banking system, MKB decided to enter the retail market, starting with private banking, where MKB's international experience can be leveraged, then moving to the mass affluent.

In summary, the principal customers the bank pursues are:

- Commercial customers for both foreign exchange and lending
- Small business, moving into SME
- Private banking (more than US\$150,000 in assets per customer) moving into mass affluent.

The three major lines of business at the bank are retail, wholesale, and treasury/investment. Additional areas include: back office, IT, finance, bank development (product development, procedures), project management, human resources, legal, marketing, risk management, and security. In pursuing retail customers, MKB realized that its system was limited in terms of both scalability and flexibility. Something needed to be done.

---

## THE DRIVE TO CHANGE SYSTEMS

MKB was working with two homegrown core systems and one licensed system:

- RBS: Multicurrency Retail Banking System
- CBS: Corporate Banking System
- IBS 90: Wholesale and Investment Banking System

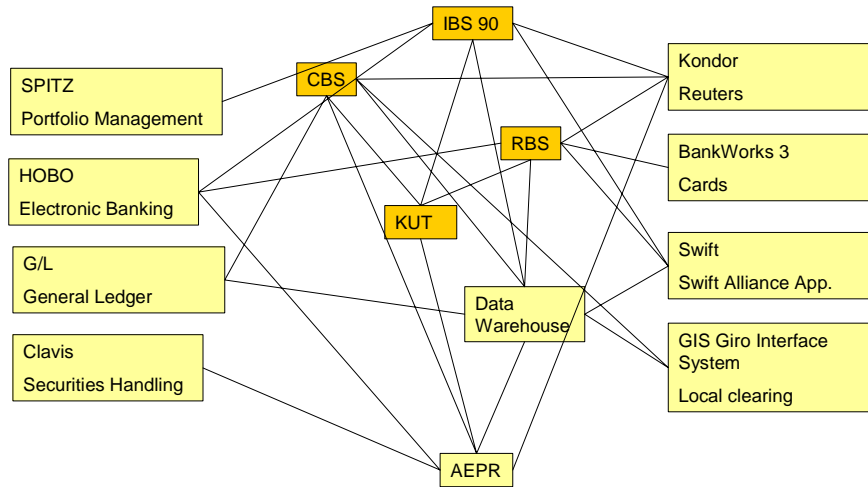
The RBS ran current accounts for individual customers and foreign exchange (FX) accounts for corporate customers. The corporate banking system ran current accounts, loans, and savings in local currency. IBS 90 ran money market, overseas trades, and other foreign currency transactions and is a licensed system.

Migrating core systems is a Herculean task. What drove MKB to undertake such a task? The bank wanted to move off its existing core systems to:

- Integrate multiple core systems into a single system to reduce expenses
- Increase flexibility
- Move off an old VMS platform to a modern open platform
- Increase scalability to enable a move to retail banking (the existing system couldn't support expected volumes)
- Move off homegrown systems to encourage standardized processes
- Prepare for moving to the euro

The bank wanted to integrate the three disparate systems into a single system in order to reduce back office expense, reduce IT expense, and gain product flexibility. With three core systems, making any change in product offerings was an enormously complex task. Changes had to be made to multiple systems along with a complexity of integration code, as shown in Figure 2 on page 7.

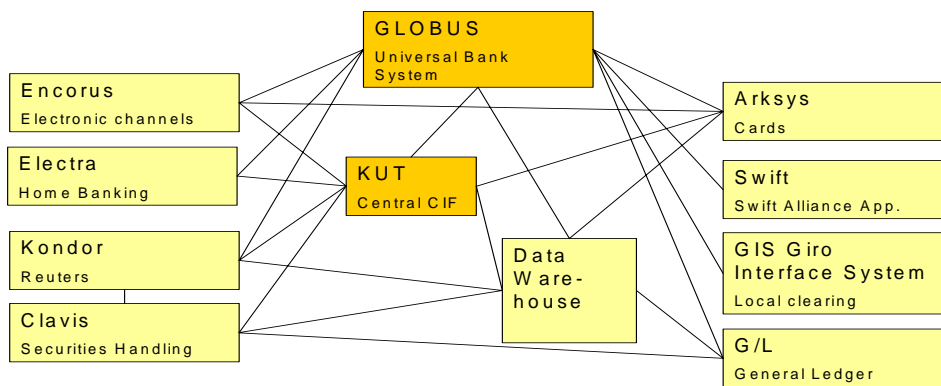
**Figure 2: Core Architecture Before Migration: A Web of Six Central Systems**



Source: MKB Bank

Migrating to a single core system with a single CIF greatly simplified the architecture and the task of rolling out products, as shown in Figure 3. Encorus was the gateway to NetBankár

**Figure 3: Core Architecture after Migration: Three Central Systems**



Source: MKB Bank

Internet banking, the call center, IVR and SMS messaging to mobile phones. Electra supported the PCBankár application as well as MultiCash for corporations. The KUT is a homegrown system running on Oracle, Java, and Unix that keeps master customer information including signatures. This application, like GLOBUS, runs on the HP Itanium.

The data warehouse is used for management reporting and risk management and uses SAS for data extraction and analysis.

The bank also wanted to migrate from Digital Equipment Corporation (DEC) VMS and RMS database. DEC was purchased by Compaq, which was purchased by HP, and the bank did not feel that this was a platform that was destined for many enhancements in the future. The end-of-day batch on the RBS was beginning to hit some time constraints and the bank did not feel that it should invest any more in this platform to try to complete the batch in the allotted time window. With three systems, there were three places that customer data could reside. The bank wanted a single standardized location for customer information, which it created in a system called KUT.

The bank wanted to change the corporate culture and use standardized processes across the middle and back offices of the bank. Having homegrown systems encouraged the businesses to design their own processes every time. Installing off-the-shelf software was seen as a way to move the bank down this standardization path much more quickly.

Finally, Hungary is a member of the European Union and will inevitably move to the Euro. MKB wanted to be well-positioned to do so when this event occurs. A single globally deployed system such as GLOBUS is clearly able to handle this currency change.

---

## SELECTION PROCESS

The selection process consisted of:

1. Market analysis
2. Formal RFP Process
3. Short list evaluation
4. System demonstrations and reference site visits
5. Final package selection

The bank was looking for a proven package with live sites that was able to cover the vast majority of its existing product line without decreases in service levels or functionality. The bank also wanted a flexible solution that could adapt to unforeseen changes in the operating environment with minimal custom programming.

Based on the market analysis, the long list of vendors included i-flex solutions FLEXCUBE, Sanchez (now FIS) Profile, Misys Equation, System Access Symbols, and Temenos GLOBUS (now T24). After submitting an RFP, the i-flex estimation for the migration was six months. This was so short a time frame that the bank did not believe that i-flex understood the complexity of the bank's requirements. Profile was thought to be missing too much functionality on the commercial side.

Remaining on the short list were Temenos GLOBUS, Misys Equation, System Access Symbols. Equation was being used at domestic competitor K&H Bank and System Access was being used at Erste Bank Hungary. After seeing the product demonstrations and visiting reference sites, MKB concluded that Temenos had the best feature set and would involve the least customization. GLOBUS offered superior flexibility, broader functionality, and was growing customers more quickly.

## PRODUCT FUNCTIONALITY

Temenos GLOBUS was the universal banking solution for MKB Bank as shown in Table 1 and Table 2.

**Table 1: Front End Solutions**

Functionality	Solution
Teller	GLOBUS
Sales Platform	GLOBUS
Internet Banking	Net Bankár, Encorus
Bill Pay	Net Bankár
ATM	Arksys
Contact Center	Encorus
IVR	Encorus
Mobile	Encorus, passive SMS services
<i>Source: MKB Bank</i>	

It provided the bank with teller, sales platform functionality on the front end. It interfaced to Encorus, another local solution for IVR and the contact center, SMS messaging. Encorus also supported Net Bankár, a Hungarian solution for internet banking and bill pay.

**Table 2: Back End Solutions**

Product	Solution
DDA / Current Account	GLOBUS
Savings	GLOBUS
Retail Lending	GLOBUS
Commercial Lending	GLOBUS
Payments	GLOBUS
Cards	Arksys
<i>Source: MKB Bank</i>	

On the back end, GLOBUS became the system of record for the current account, savings account, retail lending, commercial lending, foreign currency accounts, and payments. Acting as a single universal solution plays to GLOBUS' strengths of deep and broad functionality. Arksys was the solution for cards and the ATM.

As shown in Table 3, MKB moved from three core systems to one; from a proprietary operating system to an open one; and from a flat file database to a relational one.

**Table 3: New Solution Characteristics**

	Old Solution	New Solution
Software	Two homegrown COBOL-based systems One licensed system: IBS 90	GLOBUS Retail Banking System (RBS) 13.2.07 (nearly all modules) and Corporate Banking System
OS	Digital Equipment Corporation (DEC) VMS now HP	HP UX
Database	RMS (flat file database on VMS)	jBASE 4.0
Storage	Compaq HSC	HP XP 12000
CPUs	Alpha	32 HP Itanium processors
Messaging	IBM MQ Series	IBM MQ Series
<i>Source: MKB Bank</i>		

---

## SOLUTION IMPLEMENTATION

This implementation of Temenos GLOBUS was a very difficult one, for a number of reasons:

- Lack of scalability in original GLOBUS code
- New GLOBUS deployment of HP Itanium processors
- Bank acquisition in the middle of deployment
- Lack of experienced GLOBUS consultants in the domestic market

This deployment of GLOBUS on jBASE (a Temenos database) was one of the largest deployments to date in that the bank was using the system not just for an international branch and low-volume commercial transactions but also for higher-volume domestic retail operations. The software had never been exercised to this extent with this database in a live environment, and MKB needed to work closely with Temenos in order to optimize the code so that the system could support the high number of transactions associated with a domestic retail branch operation.

In order to support these transaction volumes, MKB elected to move to the HP Superdome Itanium platform. This was the first implementation of Temenos GLOBUS on an Itanium platform. HP and Temenos needed to work closely together to optimize performance on the new platform.

Temenos brought in a troubleshooter, Malou Ducombe, who had jBase resources, special HP knowledge, and dedicated resources in the Pre Release Delivery Center (PRDC) on site. HP also brought in resources to help optimize the environment for the HP Itanium Superdome servers and storage, updating the system three times throughout the deployment process. During the rollout, MKB moved from the HP XP1024 to HP XP12000 storage solution to reduce end of day processing. The bank was able to cut two hours off this processing time with the faster storage system.

Together HP and Temenos formed an effective team to resolve the scalability issues. Expectations had dropped dramatically from the beginning of the project. Expectations have since ratcheted back up, and today MKB is testing the environment at double today's workload, pushing scalability limits still further.

**Real Time vs. Batch.** Most transactions post in real time, but there is still an end of day batch for such functions as interest and fee calculation, card processing, payments via the Hungarian giro system, and calculating the maturity of loans and deposits.

The Hungarian payments system supports both real time transactions for large amounts and a giro system for large volume, low-value transactions. The former is analogous to FedWire in the United States or SWIFT in Europe. The latter is analogous to ACH and is processed nightly. Bank card transactions are online; settlement would come in batch to the bank.

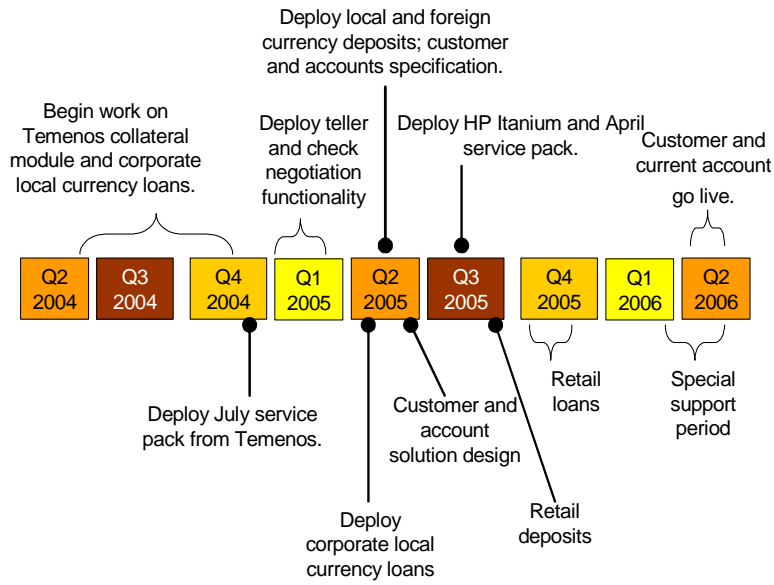
The MKB deployment of Temenos GLOBUS was a momentous one for all the parties involved: MKB Bank, Temenos, and HP. For Temenos, this was the first deployment of GLOBUS in a mass retail environment. For HP this was the first deployment of GLOBUS on the Itanium processors. For MKB Bank it was a core migration of three core systems to one, as well as migration from in-house to licensed systems.

**Two Streams of migration.** The bank chose to migrate in two batches of functionality, internally called Stream One and Stream Two.

Stream One took 14 months and replaced the international payments, trade finance, treasury, and foreign currency loan systems. These migrated from the old IBS 90 system to GLOBUS and enable straight-through processing (STP). Stream Two entered a special support period at the go live date in May 2006. The trainers on the new system become the central business help desk in order to handle the increased volume of support calls as users learned the new system. Also part of this centralized help desk was a centralized user request system that logged and prioritized enhancement requests.

Between Stream One and Stream Two, in 2004, MKB acquired KonzumBank with 30,000 new customers. Most of their systems were migrated into existing (and newly deployed) MKB systems, including GLOBUS.

**Figure 4: Stream Two Ran from Mid-2004 Until Mid-2006**



Source: MKB Bank

A part of the Stream Two project is redesigning business processes as the new functionality rolls out with Temenos.

There was a lack of consultants in Hungary with experience on the GLOBUS system. FMC,

**Table 4: Key Vendors and Solutions Provided to MKB Bank**

Vendor name	Vendor type	Solutions Provided
Temenos	Core banking software	Core system including bug analysis, fixing, and testing
Front Office Technologies (FOT)	Temenos partner	Project management support, local development, live operations, testing, and data migration
Hewlett Packard (HP)	Hardware	Core processors, storage
Financial Markets Consulting (FMC)	Business consultants	Rollout management, functional support
AAM Management Information Consulting	Technical consultants	Migration plan development and coordination, error tracking management
Alvicom	Testing	Test management for online, batch, performance, and functional testing
Mendorit	IT management	Quality assurance

*Source: MKB Bank*

AAM, Alvicom, and Mendorit (see Table 4) were local firms and needed to be brought up to speed on this system. The nonlocal firms needed to be brought up to speed on the Hungarian banking market.

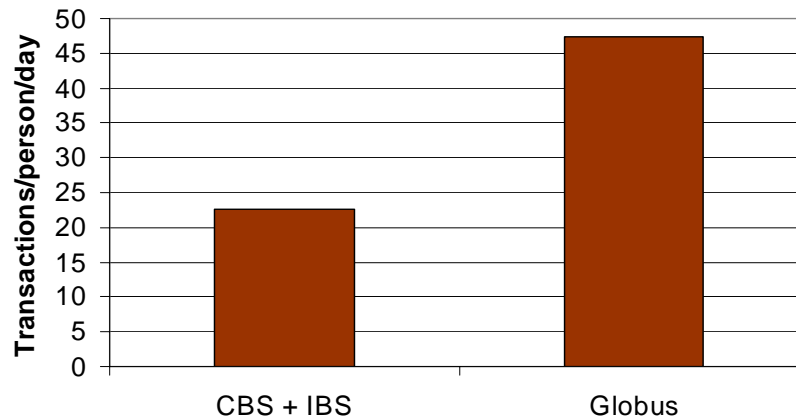
“The first experience was very bad,” stated Ms. Csilla Bolla, Deputy Chief Executive for Operations. “Settling on functional and business specifications was very difficult.” Additionally, there were continuous problems with scalability that made senior management doubt the entire project. These scalability problems were finally resolved.

---

## BUSINESS BENEFITS

There have been many operational benefits to the migration from three systems to one. In the international payment department, for example, the staff was cut from 70 to 58 people while transactions increased from 2500 to 4000 per day. In the past the transaction needed to be entered in two systems: CBS in order to fund the transaction and IBS 90 in order to execute the transaction. This led to slower processing, additional errors, and higher costs. With the new GLOBUS system, transactions increased while headcount decreased leading to a doubling of efficiency of this transformed department as shown below in Figure 5.

**Figure 5: Transactions per Person per Day Doubled with the Temenos System**



Source: MKB Bank

MKB's first test of the flexibility of the new system was complying with a new Hungarian law that requires people to pay taxes on interest income. Furthermore, 20% of interest earned needed to be withheld from the recipient and submitted to the government in the form of advance tax payment. This law was passed at the beginning of July 2006 and became effective on September 1, 2006. Within two months the team was able to design, test, and deploy this new functionality across the entire bank.

How was this possible? Temenos already had tax withholding built into the core system, so that to obtain the basic functionality required, the bank did not need to write new code, but simply turn on existing code. The only challenges came in determining which accounts should withhold interest and when this should start. MKB designed, tested, and implemented

these modifications and began withholding the interest on September 1, with the first payment to the government at the end of September.

Zsolt Rasztoivits, Executive Director for IT, could not begin to contemplate completing this activity in two months on the set of three existing systems. Having the prebuilt logic on a single system enabled this to take place in an incredibly short time on the new system.

MKB needed to win customers away from OTP, the monopoly retail bank under the previous political system. The bank created a “hook” product to attract the mass affluent customers it was targeting. The flexibility of the new system allowed MKB Bank to easily create a new “hook” product that required the customer to make a direct deposit of at least 90,000 HUF per month into the account. They were permitted two direct debits a month and would receive an aggressive 5% yield on balances in this account. This product was easily created in the new GLOBUS system.

Training costs in the back office have dropped dramatically since everyone is using a single system rather than three systems. While there are still a myriad of functions, because they all happen on the same system there is a consistency to the process. The same screens layouts, function keys, verbiage, etc. all made for a much easier learning curve. Teller training, for example, has dropped from five days to three days because there is only one system to learn.

IT costs are dropping and are positioned to go lower. Migrating from three core systems to one will generate lower IT operating costs. Reducing the amount of integration the bank must maintain among the three cores is reducing requirements on the IT staff, freeing them up for new projects rather than forcing them to maintain the integration code. Using licensed software also frees up staff time. Back office operations costs are also decreasing or, more accurately, remaining constant in spite of bank growth.

The bank also appreciated the new real time balances GLOBUS provided. With increased use of Internet banking, electronic banking, and mobile banking, customers expected real time answers to their real time questions.

**Table 5: MKB Bank Has Been Growing Quickly**

	2003	2006
Retail branches	35	63
Retail customers	80,000	200,000
High net worth		35% growth
<i>Source: MKB Bank</i>		

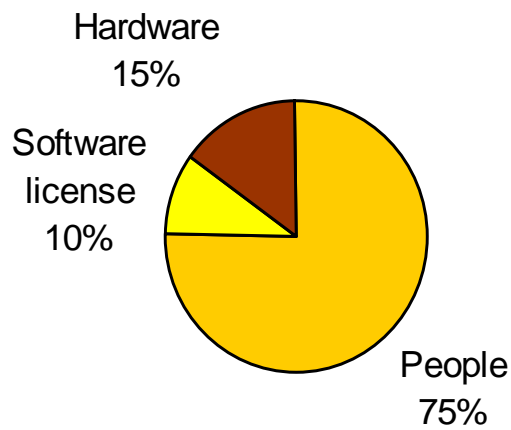
The new GLOBUS centered application architecture has supported dramatic growth in the number of branches, users, and customers at the bank, as shown in Table 5 on page 17. Although the old system was hitting constraints, the new system continues to support MKB's growth in the transaction-intensive realm of retail banking.

---

## COSTS

There were 40 to 80 FTEs on the project, including 20 to 40 consultants depending on the phase. The project lasted over four years including Stream One, Stream Two, and a bank acquisition. Although software and hardware costs were significant, the cost of consultant and bank staff time to specify the new system and migrate to it were far greater, as shown in Figure 6.

**Figure 6: People Costs Were the Vast Majority of Costs in the Core Migration**



Source: MKB Bank

---

## CONCLUSION

The core migration at MKB Bank was not an easy one, but few are. It was a successful one, with MKB enjoying the following benefits:

- Faster time to market, as shown by the interest withholding
- Enhanced scalability, with MKB doubling the number of branches and more than doubling the number of retail customers
- Moving to a single modern platform, enabling upgrades
- Less dependence on in-house solutions and the associated costs to maintain and grow this solution

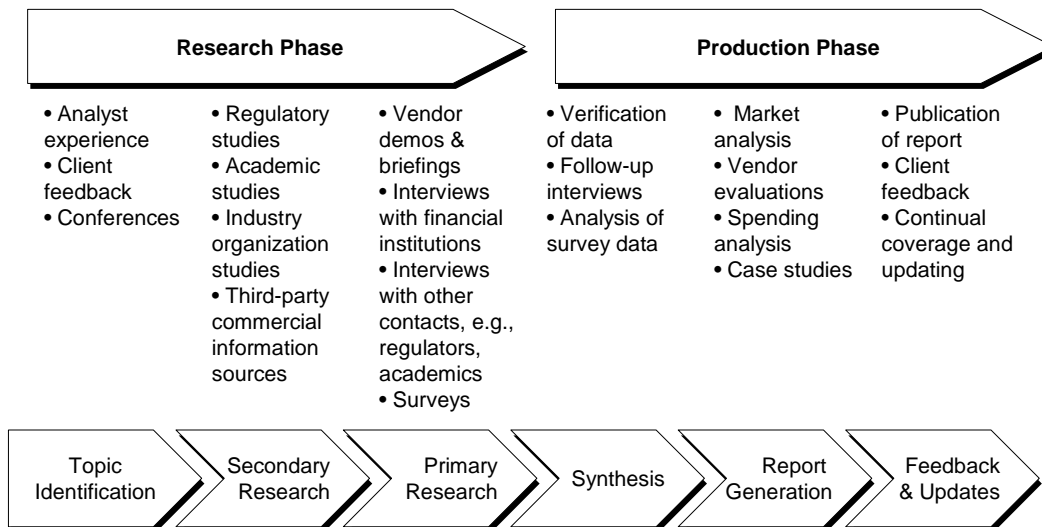
Nevertheless, MKB continues to focus on optimizing the performance of GLOBUS to keep up with the bank's growth. It is upgrading to the GLOBUS R6 release to benefit from the continuing investment Temenos is making in the platform. MKB could have never grown the way it did nor responded to market and regulatory changes so quickly if it had not migrated to a single platform with the speed of the HP Superdome servers and storage and the deep and broad functionality of Temenos GLOBUS.

## OBJECTIVITY AND METHODOLOGY

**Objectivity.** Celent is an independent, privately owned research and consulting firm that provides technology and business strategy advice to the financial services industry. Celent provides unbiased insight into industry trends, competitors in the market, and market sizes. Celent’s research reports are written by in-house analysts with extensive experience at a variety of top global financial services firms, technology vendors, and consultancies.

Celent’s research clients include financial institutions, vendors, and consulting firms. Occasionally, our reports evaluate clients who are solution providers, along with providers with whom Celent does not have a relationship. Celent evaluates all vendors using the same criteria, whether or not they use our research and advisory services. Vendors and financial institutions profiled in our reports are given the opportunity to correct factual errors prior to publication, but cannot influence Celent’s analysis or opinions of the products, solutions, or strategies we are evaluating. Firms may not purchase or influence positive exposure.

**Methodology.** The findings and analyses in Celent’s reports reflect our analysts’ considered opinions and research of market trends, sizes, and participants. Celent analysts use the research methodology detailed below.



When citing third-party data or opinions, Celent provides source information. When citing formal survey results, Celent provides as much information as possible about survey methodology and participants, within the limits of confidentiality. All other material appearing in Celent’s reports is created by the analysts and is derived from the sources listed above and from Celent’s experience. Figures and charts based on this analysis cite Celent as their source.

---

## ABOUT CELENT

Celent is a research and advisory firm dedicated to helping financial institutions formulate comprehensive business and technology strategies. Celent publishes reports identifying trends and best practices in financial services technology, and conducts consulting engagements for financial institutions looking to use technology to enhance existing business processes or launch new business strategies. With a team of internationally experienced analysts, Celent is uniquely positioned to offer strategic advice and market insights on a global basis.

Celent's research services cover the following six sectors of financial services: Retail Banking, Wholesale Banking, Retail Securities and Investments, Institutional Securities and Investments, Life/Health Insurance, and Property/Casualty Insurance.

For inquiries, please visit [www.celent.com](http://www.celent.com), email [info@celent.com](mailto:info@celent.com), or contact:

**Headquarters:**

745 Boylston Street, Suite 502  
Boston, Massachusetts 02116  
USA  
Tel.: +1.617.262.3120  
Fax: +1.617.262.3121

Wall Street Plaza  
88 Pine Street, 31st Floor  
New York, New York 10005  
USA  
Tel.: +1.212.269.7540  
Fax: +1.212.269.7541

50 California Street, Suite 1500  
San Francisco, California 94111  
USA  
Tel.: +1.415.439.5291  
Fax: +1.415.439.5299

16, Place Vendôme  
75001 Paris  
France  
Tel.: +33.1.42.61.06.88  
Fax: +33.1.42.61.03.12

Ginza Shuho Building, 6th Floor  
7-10-18 Ginza  
Chuo-ku, Tokyo 104-0061  
Japan  
Tel.: +81.3.3571.7101  
Fax: +81.3.3571.7108

23 Berkeley Square  
London W1J 6HE  
United Kingdom  
Tel.: +44.20.7665.6931  
Fax: +44.20.7665.6650

Oriental Plaza Tower W2, Unit 601  
1 East Changan Avenue  
Dongcheng, Beijing 100738  
China  
Tel: +86.10.8520.0350  
Fax: +86.10.8520.034