



WARNING

The following review was conducted in 2002. CGAP is currently performing a new set of software reviews. Please check the CGAP web site www.microfinancegateway.org/resource_centers/technology for the new review.

eMerge G103.1.06

TEMENOS eMerge

SUMMARY

eMerge is a reliable banking application with a high degree of flexibility that users can mold to support institutional needs. eMerge includes modules on loans, savings, client information, general ledger, and share management. Unlimited products can be defined using a comprehensive set of parameters. It supports multiple languages and currencies and has rich security features with a full audit trail. The user interface is consistent and easy to use, with context-sensitive online help. A range of standard reports is available for each of the modules, including CGAP-recommended formats. Although designed primarily to support individual lending, it also supports group-based and village banking models. It allows several branches to be linked and share one central database which can be updated periodically. eMerge has a solid technical architecture, and clients will benefit from the resilience specifically built in to handle stringent banking requirements. The software design assumes real-time or near real-time data exchange, and is dependent on a reliable telecommunications infrastructure for optimum performance. Substantial licensing and consulting costs for implementation and training require a significant client base or rapid growth to recoup investment.



Functionality



Management Reporting and Data Analysis



Scalability



Services—Implementation, Training, and Support



Ease of Use



Technical Capabilities

INSTITUTIONAL FIT

eMerge would best suit network organizations with centralized IT support; MFIs transforming into banks, which intend to provide sophisticated banking style products and services; or large institutions, which require strong internal control and independence from vendors. It is ideal for institutions that primarily lend to individuals as its interface was not designed to handle rapid bulk entry of group-based transactions.

INTERNAL IT EXPERTISE REQUIRED

The complexity of software implementation and maintenance requires strong in-house IT support capabilities. A full-time IT staff of at least two people is recommended (but this depends on the complexity of the organization—number of branches, number of concurrent users), who also have complementary skills in networking/operating systems and business processes. With good training, such staff can learn how to modify user screens, queries, and reports as required.

USER FEEDBACK

Users are pleased with the features in the loan and savings modules and particularly praise the product's reliability. Some institutions use a separate accounting application; others use the eMerge accounting module.

COUNTRIES WHERE IMPLEMENTED

There are 29 clients in Albania, Armenia, Bosnia, Botswana, Brazil, Bulgaria, Ecuador, Ghana, Haiti, Ireland, Kenya, Malawi, Malta, Montenegro, Mozambique, Papua New Guinea, Philippines, Romania, Uganda, Yugoslavia, and Zambia.

COST SUMMARY

Minimum licensing cost: \$44,360 (maximum 5 users, 10,000 customers, 5 products)

Annual maintenance costs: 20 percent of licensing costs (minimum: \$8,872)

Consulting services: \$250–\$1,000 per day

Deposit/Savings Management



- Unlimited deposit accounts types can accommodate passbooks, term deposits, certificates of deposit, group savings, demand deposits, and overdraft protection. It also handles an unlimited number of joint account owners.
- Interest can be calculated on maturation or based on minimum/average/maximum period balances, and accrued at different frequencies. Interest rate bands can be defined. Premiums or discounts can be applied if specific account conditions are met, e.g., based on sector or domicile. There is also a tax withholding facility.
- Accounts are marked as dormant after a user-defined period of inactivity; reactivation of dormant accounts requires intervention by a supervisor.
- Standard reports include savings account activity, teller savings reports, dormant accounts, and time deposits nearing maturity.
- The teller facility allows deposits/withdrawals to be made, and the head teller facility supervises teller operations, such as opening/closing tills, checking teller balances, etc.

Client Information/Relationship Management



- Customer-centric design links unlimited accounts to a single customer number. It can handle up to 10 billion individual clients whose customer numbers can be system- or user-assigned. Mnemonics can also be created for easier user reference. It is possible to review all a client's accounts on a single screen.
- Comprehensive data recorded on clients (tracked as individuals or non-individuals) include employment, sector, contact information, company registration details, loan cycle, responsible loan officer.
- One thousand additional user-defined data fields are available, which can support linked tables for coding. This is an attractive bonus for institutions wishing to record impact data. Multi-value fields enable repeated values to be stored for one variable (e.g., multiple phone numbers).
- Creating or modifying client data is an area of risk within banking environments and requires authorization from a second user. This feature will be tiresome in MFI environments that have frequent client additions or changes.
- Standard reports include list of accounts by customer, total value of products by customer, and customer positions.

Accounting



- The integrated accounting module uses cash or accrual posting, with multi-currency functionality. It directly updates data posted in other modules. This module includes general ledger and standard reports (balance sheet, income statement, profit and loss, cash flow), which can be consolidated by branch/region.
- A user-definable chart of accounts can accommodate up to 70,000 accounts. (A sample is provided.) Alphanumeric account codes already in use within an organization can be mapped to the underlying internal eMerge list. It supports IAS or French accounting standards.
- Budget capabilities are limited, but data can be exported and manipulated outside eMerge. No calculation and automatic posting of asset depreciation is available.

- There is no integrated payroll processing, but it is possible to set up reusable bulk payment entries or import spreadsheet entries.
- A sample Excel analysis tool demonstrates real-time linkage to the eMerge database. There are convenient, well-designed drop-down menus, good use of color to flag important differences, and embedded charts.
- Several users reported that they added separate accounting software for additional functionality.

Share Management

- eMerge provides basic requirements, such as separating members from non-members, tracking share ownership, calculating account balances, and calculating dividends based on balances. This will not suit credit unions which require sophisticated parameters to match product intricacies.
- Some complex but common requirements, such as calculating dividends based on annual net income or manually-entered income figures), will require additional customization either by Temenos or by a trained internal IT team.
- Standard reports include member statements, account settlement enquiry, account balances, and uncommitted shares analysis. It has the capability to securely print shareholder certificates on special paper.

SCALABILITY

Flexibility

- This software can support institutions with different philosophies, from NGO group-based lending to village banking (though not optimal), as well as formal institutions such as banks, credit societies, and co-operatives. It offers great flexibility as an institution matures, transforms, or expands.
- Handling exception posting (of non-standard payments) for group methodologies could reduce data-entry requirements, and thus transaction costs, considerably. Currently, however, a single group payment will require an individual transaction for each group member, that is entered separately.
- It has the ability to add new products and offer new banking-style services (money transfers, lines of credit, demand deposits). New branches can be configured and added on to the wide area network as required.
- It supports multiple currencies for payments and disbursements. It supports up to 12 concurrent languages (four are standardly included). Many user prompts that display on the screens can be changed to correspond to phrases in other languages. It can also handle double-byte characters such as Arabic.

Expandability

- The Globus product that eMerge is based on has been extensively tested to the standards required in busy banking environments. Temenos is confident that this product can link 200 branches in a single installation, and handle 2 million clients with 1,500 concurrent users with a reasonable response time, provided the necessary hardware and communications infrastructure is in place and functional.
- eMerge offers different connectivity configuration options: the eMerge branch utility (eMbu) is a light option for a remote branch; the eMerge branch server is for branches which are off-line about 80 percent of the time; and the full-scale eMerge installation is for branches which are on-line most of the time.

Additional Functionality

- It includes support for ATMs, credit cards, and Internet banking. XML standards are implemented.



EASE OF USE

User Interface

- User interface is consistent, well-designed, and configurable. Context-sensitive HTML helps guide end users through common procedures. The information displayed on the screen depends on the user's security level, so users only see the functionality that they are authorized to use.
- It offers drill-down capacity so users can easily move from a line in a report to account details.
- The program rarely crashes, and system prompts inform the user when incorrect data is entered. However, these prompts do not always indicate how to correct the error.
- It provides some mechanisms for bulk entry of data, e.g., importing from spreadsheets.
- At three out of four installations, users surveyed reported that their staff was competent in using the software.

End-of-Period (EOP) Processing

- End-of-period processing is required to process balances. There are automatic backups before and after processing in case of system crash or error.
- One user site reported problems with this functionality when branch data is incomplete or late. In areas with poor telecommunication, this may be an issue because software design assumes that all the data is available in real time (or at least daily), and is current when generating reports.

User Support Resources

- Ten out of 14 users found the on-line help and user documentation somewhat difficult to use.
- There are embedded tutorials for end users. Support is available on the internet, by email, or by fax. It is assumed that strong in-house support exists to support first-level users.
- The system administration manuals are only available in English, but user manuals and online help have been translated into other languages.
- All users reported that installing the product helped their organization. (Five of 14 said it helped to some extent; for six of 14, it helped a lot; and three of 14 reported that it totally transformed their operations)

User Satisfaction with Product

- All 14 users were extremely pleased with the software's reliability. Users liked its ability to configure menus, its security administration, its handling of large transaction volumes, and its delinquency reports.
- A few problems were reported with the software implementation process. All users were highly satisfied with after-sales service.
- Some concern was expressed about the difficulties of integrating data from remote branches, which can often be received late.



MANAGEMENT REPORTING AND DATA ANALYSIS

Standard Reports/Queries

- Well over 100 standard reports are available within different modules, including formats recommended by CGAP. Report data is generated by queries, which can be filtered through a number of parameters. Some reports are available in summary form, suitable for managers.
- Ten of 13 users in the survey said that some, if not many, of the reports provide them with the information they need. Three of 13 users noted that they still had to assemble data from various sources to get the reports needed.

Custom Reports/Queries

- A built-in report writer allows users to modify existing queries and reports, and construct or design new ones. (These new reports can be saved and added to the list of available reports.) However, the database schema is currently not documented, so a high level of skill is required to design new reports.
- Crystal Reports, a popular third-party report-writer tool, can also be used to design or format reports if required. The software supports a variety of printer formats, as well as specialty printers, such as wide carriage dot matrix or pass books.

Exporting

- It can export data to spreadsheets or to report contents that can be viewed in or handled by word processing programs. The formats supported are Excel, text, or html. Most users surveyed confirmed that exporting data was easy to do.

Data Analysis

- Rather than trying to incorporate data analysis within eMerge, Temenos provides an indepth sample to demonstrate to users how they can do it themselves using Excel, which can be configured to use a real-time link to the eMerge database.



SERVICES—IMPLEMENTATION, TRAINING, AND SUPPORT

Installation and Data Conversion

- The installation process for the software could be improved by offering a standard configuration option which may be further modified. The existing configuration process is rather lengthy and requires thorough knowledge of the product to be successful.
- There is a data-conversion tool available to import customer, savings, loan, and transaction information. For large institutions, this is an intensive exercise which requires clear direction, dedication, and attention to detail to ensure the data is transferred accurately and by a consistent cut-off date.
- Data preparation is a key process that should take place prior to software installation. The conversion process itself takes about five days on average.
- Institutions must be aware that data conversion may be an issue especially when moving from a typical MFI week-based calculation methodology, that is often not based on a full 52 weeks in a year. Institutions should be open to considering other ways of handling this transition.

Training

- The standard training is a two week course for up to 10 students and covers all aspects of the software functions (excluding detailed system administration tasks). The training course is an additional charge. Training can be conducted in different languages, and a practice database is available.
- Additional training can be provided for super users (IT staff), and other courses can be tailored for management. IT staff is also trained on the system architecture, configuration, administration, data archiving, problem solving, and how to report technical problems to Temenos.
- It is unclear whether additional training provided to systems administrators is formal classroom-based training or on-the-job training. In the user survey, the four IT staff who responded found the technical materials comprehensive and easy to use, enabling them to resolve many problems by themselves.
- Opinions in the user survey about the training course were evenly split: four of 13 rated the training as not very good or worse, four of 13 thought it adequate, and five of 13 rated it quite good or very good.

Technical Support Services

- Support response from Temenos for eMerge has steadily improved over the last year, although it tended to be rather slow in the past.
- Many current eMerge sites receive technical support from the Opportunity International network based in the US, which has several independent contractors worldwide. Not all MFIs will be able to afford such an extensive support base.
- Support is primarily web based. The vendor has offices worldwide—Europe (10), US (2), Africa/Middle East (4), and Asia (4), plus there are distributors in 11 additional countries. However, this international support structure is primarily intended for Globus, the full-banking software, and may not necessarily be geared toward supporting eMerge in all locations.
- Half of the respondents in the user survey thought support during implementation was quite good or very good. Eleven of 12 users were satisfied with after-sales service.
- From comments gathered by users, it seems that an optimum support structure requires a strong and skilled internal IT team who can then liaise directly with Temenos.
- There is a documented process for tracking issues. The vendor aims to respond to critical requests within one hour (e.g., errors that render the system inoperable), and expects to respond to all queries with a medium or higher priority rating within eight hours. Users found the Temenos team to be responsive and keen to help them resolve their problems, although in practice it may take a while to do so.

**TECHNICAL CAPABILITIES**Architecture and Connectivity

- Thoughtful architectural design neatly separates software functionality into layers, such as security, database operations, and user interface, which makes the software easy to maintain and easy to develop further.
- The architecture is designed to work across a wide area network, with individual branches linked in real-time to a central server which maintains all information for the institution. Other configurations are possible, but they could be sub-optimal in countries with poor telecommunications infrastructure.

- The option for remote branches is the eMerge branch utility (eMbu), developed in Access, which is used to capture transactions independently and send electronic copies to the head office when possible. It is currently a single-user product intended for a small branch.
- It is possible to configure branch server options in locations that remain off-line for much of the day, and only connect to the head office for periodic data updates.
- The communications infrastructure may impose certain operational requirements on an institution. These are issues that need to be thoroughly investigated in countries where third party networks providers with reasonable prices and quality service may not be available.

Databases and Programming Tools

- The software is bundled with jBase or Universe (installed in all client sites), but the database is delinked from source code and alternative enterprise level options, such as Oracle or SQL Server. These options have built-in security, transaction processing, and the ability to handle high data volumes, although they may require additional licensing costs.
- The core software product was written in C and C++, a widely-used programming platform for many packaged software solutions. Visual Basic was used to develop the separate eMbu utility.

Interoperability

- The software design enables application interfaces to provide additional functionality. Interfaces that share information with many banking infrastructure networks, such as ATMs and credit cards, have been integrated into the product.
- XML, an emerging standard for sharing web-based information, has been implemented. It is possible to exchange information with other software, e.g., accounting applications.
- Direct real-time links into the database can be maintained and used to read information that is displayed either in Excel or other web-based data mining and analysis tools.

Fault Tolerance and Robustness

- It has a robust built-in functionality that can handle transaction interruptions, report the problem to the user, and initiate a process to restore backups and transaction journal entries without incurring significant downtime.
- All 15 users commented on the exceptional reliability of the product.
- Problems may be more frequent in areas where the telecommunications infrastructure is poor.

Ongoing Product Development

- The Temenos group as a whole spends 15 percent of its revenues on research and development. It is unclear how much is actually spent annually on further improvements specifically for the microfinance market.
- Prior to launching eMerge as a separate product, Temenos spent considerable effort in attempting to understand the requirements of MFIs and map these to the functionality of the software, without compromising its integrity as a banking product.
- Currently there is no user group specifically for eMerge clients. The current Globus user group meets once a year and has a separate session for eMerge clients.

System Security and Administration

- Access to all parts of the system is controlled by individual user passwords, which are encrypted, and can be used to limit access to specific functions (input, authorization), to certain times of day, or to particular screens. At a user level, the administrator can specify the frequency with which passwords must be changed and the number of unsuccessful logins allowed before the account is disabled.
- User access can be restricted by data categories, for example, to prevent access to details of staff accounts or to restrict a user to local currency transactions.
- Access privileges can be defined for groups of users, making it easier to administer consistent security rights for all. When a user's role changes within an organization, that user can simply be moved to a different group.
- The system maintains an audit trail. All input and changes to an individual record are user, date, and timestamped, and kept with the record itself. Any override messages accepted or error messages are also stored with the transaction.

Data Backup and Recovery

- A backup tool that comes with the software allows full backups to be made daily. It has built-in mechanisms for handling transaction-posting interruptions—unposted data is stored in a separate queue and is checked to prevent transactions from being duplicately posted.
- How long backups take depends on the sizing of the database, transaction activity, and storage media, and may take anywhere from 15 minutes to 2 hours. Restores typically take 1–2 hours.
- The software also includes an archive function to offload old, unused data, therefore ensuring a means to purge and curb database size.

Version Control and Update

- There is a central repository and control of source codes, with an internal quality-control department. New releases of the software with documentation on release dates and incremental changes made in the software are included.
- It can project a release date for future updates. Users should plan for one major upgrade and two minor releases each year. Release highlights are distributed to clients prior to release dates to enable them to plan an upgrade strategy.

PRODUCT PROFILE

Product Details

Product Version	TEMENOS GLOBUS eMerge G13.1.06
Product History	Based on the banking software Globus
User Interface Languages	English, Spanish, Portuguese, and French. It is delivered with four languages, but it can support up to 12 concurrent languages. Online help for end-users is also available in all these languages. System administrator materials are available in English.
Work Station Operating System	Microsoft Windows 9x or Microsoft Windows NT Workstation 4.0 (or later)
Server Operating System	Windows 2000 / Windows NT (Service Pack 4 or later) Also tested on Unix, Linux
Networks Supported	Ethernet and other Windows NT and 2000 server-supported protocols
Software Language(s)	C, C++, VB6
Database	JBASE V4 (recommended). Tested on Universe, Oracle, DB2. Should also work with SQL Server. No eMerge clients currently using either SQL Server or Oracle.
Connectivity Configuration Options	Decentralized—It works best if all branches are online in real time; other options possible for periodic updates are the eMerge branch utility (used in a few sites) and an off-line mode which will update the central database once connected.

Summary of Costs

	Description	Cost
Licensing Costs	Maximum 5 concurrent users; 10,000 customers; 5 products	US\$ 44,360
	Maximum 10 concurrent users; 50,000 customers; unlimited products	US\$ 108,570
	Prices are available for other combinations.	
Annual Maintenance Contract	Annual maintenance fee; include free upgrades	20percent of licensing costs
General Consulting Services	Depends on availability of staff. Excludes accommodation and travel costs.	US\$ 250–\$1,000 per day
Training Costs		

Company Profile

Company Name	TEMENOS eMerge
Physical Address	200 South Biscayne Boulevard Suite 1155, Miami, Florida 33131, USA
Phone Number	+1 305 704 5100
Fax Number	+1 305 704 5101
Email Address	eMerge@temenos.com
Web Site	www.temenos.com / (http://www.temenos.com/product/eMerge/language_intro.htm)
Years in Business	10
Key Shareholders	Chairman and Vice-Chairman of Temenos Group AG (51 percent) Global Technology Investment Holdings (15 percent) Global Capital Investors Limited Partnership (6 percent)
Corporate Structure	Publicly traded on the Swiss exchange (TEMN)
Financial Statements Publicly Available	Yes
Funding of R&D	From revenues
Microfinance Focus	Temenos feels this is a growing segment that it is actively seeking to expand, but currently produces less than 5 percent of revenues.
Number of Client Sites	29
Selected Client sites	Opportunity International, World Vision, Fonkoze, Acleda Bank
Employees	Lists entire Temenos group (not just for eMerge). All employees are full-time. Sales and Marketing (138), Implementation (750), Training (32), Technical Support (60), Product Development (457), Management/Administration (77)

Appendix Summary of Major Product Definition Options

Institutional Types	
Full-service banks	X
Limited-service banks or cooperatives	X
Savings and credit societies	X
Credit unions	X
Microfinance institutions	X
Limited liability companies	
Foundations or trusts	X
Other	X

Lending Methodologies	
Individual clients	X
Solidarity groups with individual loans	X
Solidarity groups with group loans	X
Village banks with individual loans	X
Village banks with group loans	X
Other	X

Financial Products	
Microenterprise	X
Commercial	X
Agriculture	X
Construction/Home improvement	
Mortgages	
Vehicle loans	
Financial leasing	
Other (user defined)	

Loan Interest Calculations	
Flat	X
Declining balance	X
Fixed rates	X
Discounted from the loan	X
Capitalized	X
Floating/Variable rate	X
Stepped rate	X
Other (user defined)	X

Savings and Deposit Accounts	
Passbook with passbook	
Passbook without passbook	X
Term deposits (i.e., certificates of deposit)	X
Group savings	X
Off-book group savings	
Demand deposits	X
Overdraft accounts	
Current accounts	-
Other (user defined)	X

Savings and Deposit Interest Calculations	
Day of deposit to day of withdrawal	X
Minimum daily balance	X
Minimum monthly balance	X
Minimum quarterly balance	X
Average daily balance	X
Average monthly balance	X
Other (user defined)	X

Payment Types	
Term loans with constant payments	X
Term loans with constant principal	X
Irregular payments (set by the user)	X
Single payment	X
Balloon payments	X
Other (user defined)	X

Payment Methods	
Cash	X
Cash in different currencies where appropriate	X
Check	X
Smart Card	
Money order	X
Credit card	

Payment Frequencies	
Daily	X
Weekly	X
Biweekly	X
Semi-monthly	X
Once every four weeks	X
Monthly	X
Bimonthly	X
Quarterly (every 3 months)	X
Other (user defined)	X

Payment Year Supported	
365 days	X
360 days (30 days/month)	X
336 days (4 weeks/month)	X
52 weeks	X
Other (user defined)	X

Special Payment Modifications	
Permits suspension of penalty fees	X
Permits deferment of loan payment	X
Permits grace periods	X
Permits refinancing (recalculation of payment amounts) of loan	X
Other (user defined)	X

Additional Types of Payments	
Commissions and fees	X
Penalty fees for late payments	X
Credit insurance	X
Group insurance fees	X
Other (user defined)	X