



World Council of Credit Unions, Inc.

Credit Union Development Best Practices
World Council of Credit Unions

Management Information System standards for credit unions

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INTRODUCTION

This intent of this document was to provide the help to credit unions and other microfinance organizations that are looking for new management information system, as well as provide information to microfinance software developers and vendors. This document summarizes the practical experience we have acquired while evaluating many international microfinance software packages, as well as various microfinance software developed in Bulgaria, Macedonia and Romania.

The document states minimum requirements for an accounting software package before it can be considered for use in a credit union. These requirements may vary from country to country, so only the features we consider absolutely necessary for microfinance software package will be listed in this category.

Also listed are recommendations for software design or software quality standards. The features listed in this category should be carefully weighted by credit union before choosing the software since many of these may not apply to their situation, or may be not crucial for their operations. It should be understood that the higher are the requirements to the software, the more you should be ready to pay for it. The following may serve as general rules of thumb when looking for the software for your credit union:

- It should be able to fit your needs at least for 5-10 next years,
- Do not overestimate your requirements and find the software that fits your needs as closely as possible. The more complex software may result in higher support and maintenance costs, as well as lesser efficiency
- While locally developed software can be less expensive and provide better support than international package, the vendor's competence should be carefully assessed before making a decision. Many smaller companies lack necessary experience and resources to develop and support flexible, functional and stable product.

This document utilizes in great deal MBP publication "[MIS for Microfinance: An Evaluation Framework,](#)" by [Andrew Mainhart, November 1999](#) and WOCCU Management Information System's Evaluation Framework as developed by WOCCU in 2001.

There are 2 sections in this document. The intent of the first part is to provide a quick overview of features absolutely necessary and the ones recommended. Recommended features list only the additional ones that were not included in minimum section.

The other section has a more in depth review of recommended features, and contains also advanced features that might be needed only rarely, but still we list them here for completeness sake. Each aspect of the evaluation is reviewed separately. Minimum requirements and recommended standards are broken down in separate sections.



OVERVIEW OF MINIMUM AND RECOMMENDED STANDARDS

Minimum	Recommended
<p>A. <u>Functionality</u></p> <p>This section measures the extent to which a software product meets the requirements of different types of microfinance programs. Evaluate the features the system needs to meet the institutions business needs in appropriate fashion. Package should be able to cater for basic accounting needs of a credit union, and provide appropriate loan and deposit monitoring functions.</p>	
<p><u>Accounting package</u></p>	
<ul style="list-style-type: none"> • Savings and loans data can be consolidated in general ledger (preferably integrated, but could be standalone). • Chart of accounts is flexible enough to allow breakdown by product, various assets and liabilities. • Allows to use cash- or accrual- style accounting • Tracking of cash-flow, revenues and expenses • Permits entry of non-loan or deposit related income or expenses • Full range of standard financial reports: balance sheet, income statement, cash flow • Trial balances <p>Strict minimum requirements cannot be really applied due to variations in accounting requirements in different countries.</p>	<ul style="list-style-type: none"> • Savings and loans integrated with accounting package. • User-defineable chart of accounts. Should allow at least 4 nesting levels. • In case of accrual- based accounting accrues interest to General Ledger accounts on daily basis. Allows to accrue interest expense for savings/deposits but not to post accrued interest income for loans • Tracking of cash-flow, revenues and expenses by profit/cost centers, donor funds, branches • Cost and profitability analysis by product, branch, region, client • Calculation and posting of necessary loan provisions • Permits backvalued transactions and transaction reversal with according interest recalculations • Asset and Liability Management facilities • Payroll, Fixed Assets, Treasury functions
<p><u>Loan Portfolio</u></p>	
<ul style="list-style-type: none"> • Integrated with accounting system, deposit monitoring and customer information • Permits the addition and modification of loan products • Correct loan portfolio aging and delinquency 	<ul style="list-style-type: none"> • Keeps historic data on loan products • Forced savings/deposits linked to loans. Pledges • Collateral and guarantors tracking, group guarantees



<p>calculation mechanisms. Pro-active delinquency management.</p> <ul style="list-style-type: none"> • Correct handling of early, late and partial payments 	<ul style="list-style-type: none"> • Information tracking by Loan officers • Correct handling of extra payments • Automatic and configurable handling of Loan insurance functionality • Credit scoring capabilities from internal and/or external sources • Advanced functionality, such as credit cards
<p><u>Savings, Deposits and Shares</u></p>	
<ul style="list-style-type: none"> • Integrated with accounting system, deposit monitoring and customer information • Permits the addition and modification of savings products • Permits different product types: fixed deposits, savings, shares, checking accounts 	<ul style="list-style-type: none"> • Keeps historic data on savings products • Permits overdrafts with separate interest calculation for debit or credit balance • Tax withholding functionality • Dormancy concept for inactive account with separate interest rates • Identification of beneficiaries • Option of jointly held accounts and/or group savings • Transactions between accounts of one or different members • Advanced functionality, such as debit cards
<p><u>Client Information</u></p>	
<ul style="list-style-type: none"> • Maintains all basic customer information, such as name, family information, age, gender, business, impact etc. • Strong search capabilities • Facilities to check customer behavior – credit and deposit status and history from internal sources • Permits the addition and modification of savings products • Permits different product types: fixed deposits, savings, shares, checking accounts 	<ul style="list-style-type: none"> • User-definable client information fields • Able to maintain group and/or village bank information • Facilities to check customer behavior – credit and deposit status and history from external sources • Aggregation of customer data by region, area, activity, loan officer etc. • Able to track clients and non-clients at different stages of the process. Guarantor tracking. • Identifies potential double entry of clients • Other extra features, such as pictures or signatures



<p>B. <u>Expandability and Institutional Growth</u></p> <p>Support of the horizontal and vertical institutional growth. The scalability of the system.</p>	
<ul style="list-style-type: none"> • Number of terminals it can support efficiently • Number of clients, accounts and transactions it can handle with reasonable response times <p>Generally the expandability should permit the growth of organization and introduction of new services planning at least 5 years ahead. This section is also closely linked with Technical Specification and Correctness section.</p>	<ul style="list-style-type: none"> • Modular structure that would support products or services planned in future
<p>C. <u>Flexibility</u></p> <p>Ability of the software to support different lending and savings products, payment methods and interest calculation methods. How configurable is the system to adapt to the current situation, as well as future requirements of the credit union. Ability to handle multiple offices, either on a branch or regional level. In addition, how quickly the system can be updated to handle multiple branches or regions or new locations.</p>	
<p><u>Lending</u></p>	
<ul style="list-style-type: none"> • Should support individual clients • Support of declining principal payments (equal total payments or annuity method) • Support of equal basic payments, declining interest method • Should be able to handle commissions and fees • Should support regular and single payment loans • Repayments schedule is recalculated if member actually pays in advance <p>All of the minimum standards in this category should be closely reviewed due to different lending practices used</p>	<ul style="list-style-type: none"> • Support of solidarity groups or village banks with individual and/or group loans • Support of discounted, flat, stepped or capitalized interest rates • Support of variable rate, where interest rate can be changed for one account, whole product or all accounts in one product. Can be linked to certain settings (inflation, exchange rate etc.) • Commissions and fees should be defined as settings linked to products and/or customer groups • Support of free schedule and balloon payments. • Different repayment schedules can be previewed before adopting one of them • Repayments schedule is recalculated automatically if member actually pays in advance • Selection of initial and subsequent payment



	<p>dates</p> <ul style="list-style-type: none">• Support of full loan processing cycle (application, review, approval, disbursement)• Support of different payment methods: cash, check, card, money order• Permits suspension of penalty fees and deferment of loan payment• Permits grace periods• Permits refinancing of the loan• Permits interest capitalization
<p><u>Savings</u></p>	
<ul style="list-style-type: none">• Supports basic savings account types: term deposits, savings, shares, current, checking• Checking operations support• Interest can be calculated based on each day's ending balances• Support different interest payment frequencies (monthly, quarterly, annual)• Interest rates can be changed simultaneously for a group of accounts (in one product)• Interest can be calculated as per actual calendar days 30 days/month and based on 365 or 360 days in year.	<ul style="list-style-type: none">• Supports all account types: passbook (with or without passbook), term deposits, CDs, savings, demand deposits, shares, current, checking, overdraft• Maintains group savings accounts (on- and off-book)• Can calculate group insurance fees• Full support for checking operations (tracking of issued check numbers, stop check list etc)• Can set withdrawal limits (amounts, number of operations) and either block or impose fees on withdrawals. Can apply penalties or reduced interest rates for premature withdrawals (on term deposits).• Post-matured term deposits and CDs can be (automatically) rolled over for next term and possibly updated interest rate• Share dividends can be calculated either based on interest rate, or profit figure for the year (distributed equally between members, based on interest points etc)• Interest rate(s) can be linked to "group" rate or base rate to allow changing rate on many accounts simultaneously• Can define stepped rates or bonus interest to allow changing interest earned depending on amount saved• Minimum balance for account can be set.• Interest can also be calculated based on 30 days/month. Optionally also 332 days/year or



	<p>50 weeks/year are supported</p> <ul style="list-style-type: none">• Interest can be calculated also based on minimum daily/monthly/quarterly balance, average daily/monthly balance, as well as average/ending/minimum balance during user-defined period• Supports additional payment frequencies so that interest can be paid out on daily, weekly, bi-weekly, every four weeks, semi-monthly etc. User-defined periods can be set.• Can calculate withholding tax, products can be excluded from the calculation. Member can be marked as “exempt from withholding tax”• Interest rate changes can be backdated, and accrued interest is corrected accordingly
<p><u>Other flexibility</u></p>	
<ul style="list-style-type: none">• System is customer-centric and allows customer have many different accounts and account types	<ul style="list-style-type: none">• Full support for branches and remote workstations is in place to allow branches to operate in real-time mode, or store-and-forward mode. Frequency of updates to/from head office is user-definable. Remote real-time workstations are supported (with minimal requirements for data transfer speed).• Data transfer between branches and head office (and between branches themselves, if applicable) can be accomplished using inexpensive (and relatively slow) telecommunications lines, preferably dialup connections.• Supports funds transfers between branches and within branches. Full information about sender, receiver and supplemental information is passed together with funds transfer instruction. Can retrieve information about members in other branches to allow member to come in at any branch and access his account.• Cashier’s (teller’s) module can be used separately (by a dedicated cashier), or can be bypassed and all cash postings done by any operator



	<ul style="list-style-type: none"> • All reporting can be done on branch basis as well as consolidated • System supports multiple languages, all screens, messages and screen elements are shown in language chosen. Can support different language for each logged-on user. Translation of the system can be done by end-user, language details are stored in database (are not hard coded) to allow for easy translation of the system. • Supports multiple currencies. All operations (payments, disbursements, withdrawals, lodgments etc) can be done in any currency. All member transactions (i.e., ones pertaining to member account) can be done in currency different from account currency. • All accounts (except loans and term deposits) can be multi-currency: use the same account number regardless of currency deposited in account, and store balances in all currencies simultaneously. • Provides foreign exchange risk calculation and monitoring facilities: currency positions, foreign exchange profit and loss calculations. • Can consolidate reports in different currencies
<p>D. <u>Usability</u></p> <p>Ability of the user to perform needed tasks easily and efficiently without errors. Friendliness of the user interface.</p>	
<p><u>Ease of use</u></p>	
<ul style="list-style-type: none"> • Comprehensive training to end-users is provided • User documentation or on-line help is supplied • Straight-forward and easy to understand operations • Errors in already entered data can be fixed (such as incorrect loan parameters etc) • System does not crash on invalid data entry 	<ul style="list-style-type: none"> • Training of end-users is comprehensive yet does not take too much time, can be done either on-site or at vendor's premises depending on user's wishes • User documentation is supplied, is comprehensive and up to date • On-line context-sensitive help is provided • Operations of the system are straight-forward and easy to understand, allows for easy error



<ul style="list-style-type: none"> • Easy to install and maintain, end of period processing is simple and straightforward 	<p>correction</p> <ul style="list-style-type: none"> • Installation is automated for small institutions where the package can be installed and launched off the shelf without the need for any complex installation and setup procedures
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User Friendliness

<ul style="list-style-type: none"> • Layout and logic of screens and menus is good and consistent • Different users can be restricted to certain menu operations • Screen language and messages use consistent verbiage • Consistent and logical use of color, where appropriate. Colors are chosen so as to make screen information easy to read • All major function can be accessed with mouse, as well as keyboard. Fast data entry is possible by using only keyboard 	<ul style="list-style-type: none"> • System has a graphical interface • Provides mechanism for mass data entry (multiple transactions or accounts) • Follows general platform standards in terms of screen interface and keyboard commands (i.e., no user-defined buttons/comboboxes etc)
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E. Reporting

Adequacy and accuracy of the standard reports produced by the system. Includes how easy and useable the different reports are. Evaluates the mechanism through which reports are created and possibility to create user-definable reports.

<ul style="list-style-type: none"> • Contains major reports recommended by CGAP, employs Micro-banking bulletin standard reports and formats • Report formats are clear and readable • For management purposes provides key statistical summaries, cash-flow projections • Can provide daily listings, daily delinquency reports, portfolio quality reports • Error-catching reports in place (interest rate less than X, loan outstanding amount greater than granted, interest rate changes that exceed reasonable limits for the product, manual postings to system accounts such as accrued interest, etc) • Trial balances report in place, daily 	<ul style="list-style-type: none"> • Reports can be consolidated (by branch, currency, product etc) as well as separate • Report formats are user-modifiable (subtotaling, layout etc) • Reports can be printed out to suit various audiences (management, operational, supervisory etc) • Can report on budget versus actual expense & income • For management purposes provides also branch office and loan officer performance, ALM and trend analysis reports • Provides ratios and trend analysis reports, calculations of ratios are clear and understandable
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<p>transactions reports, sub-ledger reports, periodical financial statements (monthly, quarterly, annual)</p> <ul style="list-style-type: none">• Audit trail (actions taken by each user) can be printed• Provides printouts for members: transaction slips, periodical statements, balance printouts.• Provides a way to store report's output (i.e., in PDF/XLS/DOC file) for later viewing.• By default system generates reports frequently (i.e., at close of each business day), and reports are useful for intended audience	<ul style="list-style-type: none">• Reports can be printed that show inflationary and subsidy adjustments• Reports can be generated in batches (either on request or at preset time of the day), or separately by request• Reports can be "canned" – printed out for any previous date, or even a specific transaction• Supports user-defined reports, either via built-in functionality or as add-on module• Can print reports on wide variety of printing devices, can utilize various paper formats
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F. **Standards and Compliance**

The topic area asks whether the accounting portion of the software product meets generally held standards and process accounts in a sound and consistent way. Does the software meet local regulations and how easy can it be adjusted to meet these.

<ul style="list-style-type: none">• Software can be modified to meet local requirements without major updates• Adheres to CGAP and IAS provisions• Supports accruals as well as cash accounting method• Partial and late loan payments are posted correctly	<ul style="list-style-type: none">• Can comply with French accounting principles (where appropriate)• General ledger can be updated online or in batch mode• Loans can be categorized according to their delinquency level (range), and full outstanding amount on delinquent loans can be shown in balance sheet as delinquent• Interest accruals account can be separate from interest received/paid accounts• Software can cease to accrue interest on late loans• Savings and loans interest can be accrued on user-defined period basis and posted to interest income/expense accounts• System can be integrated into national payment system
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G. **Administration and Support**

This section evaluates the security of the system, its backup and recovery features, as well as its robustness. Also the vendor's support and upgrade strategy, as well as maintenance necessary are evaluated.

Security

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| <ul style="list-style-type: none">• Provides for different levels of access to menu items based on user level• Enforces use of user passwords• Database is secure, unauthorized tampering with data is prevented. System provides notifications when tampering is detected. | <ul style="list-style-type: none">• User levels (or groups) are user-definable, can be added/changed/deleted. Each level is assigned access right to each menu item• Access rights to database can be defined both by fields and subset of records• System includes automated tools to check for database consistency• Can define rights to post, reverse and cancel transactions• Limits can be defined for transactions• Requires to change passwords on regular basis• All security violation attempts are recorded• System includes automated tools to check for database consistency• Provides means for off-site storage of records by allowing backups of all data to external removable media.• Time-of-day or terminal access restrictions available. |
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Backup and Recovery

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| <ul style="list-style-type: none">• Backups are required on periodic basis and can be done in reasonable amount of time.• Full recovery process is reasonably simple and quick, and can be done by internal staff.• After abnormal termination will correctly complete or restart transactions not completed | <ul style="list-style-type: none">• End of day processing checks database for any corruption, and provides notifications about errors• Both full and incremental backups are supported.• Status of each user is maintained• Provides means for off-loading old unused transactions/accounts data to prevent database from growing exponentially. Offloaded data is |
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	from growing exponentially. Offloaded data is still accessible if needed
<u>Fault tolerance and robustness</u>	
<ul style="list-style-type: none"> • Workstations are notified of transactions not completed due to network/hardware failure • In case of any hardware failures system can exit “gracefully” by providing meaningful error message 	<ul style="list-style-type: none"> • For a networked system, remote processing centers can function off-line in case of sudden communications failure
<u>End of period processing</u>	
<ul style="list-style-type: none"> • Interest is processed, accrued and posted at proper intervals • Late fees, penalties are calculated and posted 	<ul style="list-style-type: none"> • Period duration is user-definable
<u>Support Infrastructure, Maintenance and Upgrade Strategy</u>	
<ul style="list-style-type: none"> • Financially the company is stable • Support offices are present in close vicinity to proposed installations • Support staff is knowledgeable and numerous enough to handle the demand • Upgrades are planned well in advance, there is clear upgrade strategy in place. Upgrades are not too frequent • There is a reasonable number of versions currently in use, and all of them are supported. • Source-code version control system is in place • New versions are implemented in parallel mode • Vendor can provide full range of consultancies to customers • Vendor provides manuals for end-users, administrators, and training purposes 	<ul style="list-style-type: none"> • Company producing the software has a well-established track record dating back at least several years, multiple installations in home country and others as well • Support hotline is provided, 24/7 where appropriate • A bug tracking system exists to ensure all complaints are resolved. • No customer-specific versions are in use • There is a documented change request procedure in place customers can use to place their requests. • A bug tracking system exists to ensure all complaints are resolved.



H. **Technical Specification**

Analyzes the programs and programming language of the software, the type of network and hardware it is designed to work on, and the implications of these for future performance. In addition, the overall performance of the system in terms of speed and storage requirements should be assessed.

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| <ul style="list-style-type: none">• Database platform used is not proprietary but rather a mainstream package• Uses standard (mainstream) operating systems• Able to run on modest hardware• Company uses appropriate mainstream programming language for development• Appropriate infrastructure to support trouble-free development and support is in place• System performs adequately on stated minimal hardware platform, user interface speed is good, reports can be run quickly• System is capable of processing wide range of dates both in past and future (year 2000 issues solved), and handle large numbers (20-26 positions)• There are clearly stated performance limits depending on number of accounts, transactions or concurrent users• Disk space requirements are clearly stated | <ul style="list-style-type: none">• System uses client-server architecture• Runs on widespread hardware platforms (PC, Mac), and uses standard operating systems (MS Windows, MacOS, Unix etc.).• No obscure restrictions on operating system/database versions• Company can use high-level (4GL or similar) mainstream programming language for development• Source code control is employed |
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I. **Pricing and Costs**

Considers all costs associated with purchasing, installing, and operating the system. Cost information should include the base price of the software (as well as an assessment of the pricing structure), maintenance agreements, installation and training, conversion, upgrades, and maintenance releases. The cost ratio basically measures the adequacy of pricing and all associated costs to the general functionality to the software

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| <ul style="list-style-type: none">• License price is flexible to allow both small and large CUs to use the software• Annual support fee charged should not exceed 30% of basic license fee• All prices, including consulting, training, data conversion, upgrade and annual support fees, are easily available and publicly stated | <ul style="list-style-type: none">• A very inexpensive single-workstation package is available that could be used off-the shelf.• In case of non-payment of the license fee only support and/or upgrades are terminated, not the license itself. |
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REQUIREMENTS AND STANDARDS

This section contains more extensive explanation of all features desired. It also includes some features not mentioned in Minimum or Recommended Standards, and these should be viewed as “wish list” instead of strict requirement.

A. Functionality

Accounting package

Savings and loan processing is integrated with accounting system. Chart of accounts is flexible and allows account to be transparently transferred to a different control account (for example, when changing chart of account definitions some accounts may need to be moved, but it is inconvenient to change account numbers). Chart of accounts allows for variable length control accounts, maybe even incorporation of letters in codes. Products can be placed in different control accounts, and optionally broken down by various characteristics such as term (of a loan/term deposit), amount disbursed/outstanding/owed, member characteristics (demographics, legal status, etc.). Ideally control account’s definition would be comprised of various characteristics and their values pairs, and all accounts that satisfy these would be placed under this control account.

Numbering of accounts (numbers assigned by the system) is flexible and user-configurable, and can include number of control account, member number, account/product type code, as well as other characteristics of the account or member.

Structure of accounts in the system is not hardwired to suit various products needs (such as fixedly creating interest, arrears, interest penalties income and fee income sub-accounts for loan products), but a flexible account structure caters for all possible needs. An example would be creating a bunch of accounts for loans, and tying them together at product definition level. Another option is to allow unlimited (or limited) number of sub-accounts for each account, and use these for different products needs.

Account definition also includes interest parameters, and optionally these parameters could be fixed at product and/or control account’s level. Ideally any account in the system could be interest bearing, even internal bookkeeping accounts. Each interest-bearing account is assigned a set of accounts to cater for interest accrual and cash needs. Separate rules can be defined for credit and debit balances on the account (this can be used to calculate interest on overdrafts, or for specific book-keeping purposes). All of these can also be defined at product (or account group, or control account) level, and either group override or individual account override can be implemented.

System caters for calculation and posting of interest accruals so that accrued interest is posted to appropriate income and expense accounts. Accruals income and expense accounts can be separated from cash income/expense, and can be broken down by products or other characteristics of accounts. Accruals posting frequency is customizable, and can be daily, weekly, monthly, on request or user-defined interval.



System allows to track expenses or income by costs centers. This means that each transaction can be associated with cost center, or also income/expense account can be associated with a cost center, and system is able to report income/expense by cost centers. Such feature can also be used for budget reporting.

Can produce cost/profitability analysis by product, branch/region, client etc. Produces trial balances report, this report can be produced for any user-defined period. Permits entry of non-portfolio or deposits related income and expenses. Full range of standard financial reports like balance sheet, income/expense statement, debit/credit by control accounts etc.

Accounting supports concept of “value-date” – transactions can be either backdated or future-dated, balances on accounts can reflect the value date of postings (such as not allowing to debit future value-dated amounts). Accrued interest is adjusted depending on value date, and appropriate postings are made to accruals income/expense accounts. Transactions can be reversed or cancelled, and again accrued interest is adjusted accordingly.

Asset-liability management reports are provided to show cashflow forecast, loan and deposit maturity schedules and interest rate risk.

Payroll module caters for calculation of payroll for employees/members, and also allows set up either fixed monthly figures for payroll deduction for each member, or import such figures from external file and post them.

Fixed Assets module can keep track of fixed assets, their initial value, method of depreciation used, accumulated depreciation.

Facility is provided to import transactions data and post them. Appropriate verification is taking place to ensure that credit/debit is balanced, and total sum of all postings is correct.

Limited treasury functions are supported like money market functions (interbank loans, deposits), and foreign exchange operations.

Loan Portfolio Management

Permits addition and modification of loan products and extensive information about each product: APR, interest calculation method, payment frequency, max/min term and amount, required collateral and minimum share/savings balance, allowed customer types, membership requirements. Depending on product settings can also block amounts on savings/shares accounts. Can mark products as “inactive” to prohibit new accounts for the product while maintaining historical data. Can track guarantors, also “external” guarantors (non-members), as well as group guarantees (group as a guarantor). Tracking of collaterals in place, can record information about collateral type, name, value and unique ID number if applicable (real estate registration number, for example). Can cross-reference guarantors with members to calculate member’s and guarantor’s total exposure (this usually means that personal ID number has to be tracked for each guarantor). Can cross-reference collaterals to prohibit using the same collateral twice. Loan officer is tracked for each loan granted. Can provide loan-officer specific reports: portfolio delinquency, number of clients, etc.



Provides adequate reporting to proactively inform user about potential problems: delinquency risk, cash flow problems, etc. Loan portfolio is aged correctly (starting 1st day after missed payment), delinquency ranges are user-definable, and full outstanding balance is shown as delinquent (instead of arrears amount).

All aberrations from loan payment schedule (late, early, extra, partial) must be handled consistently, and user should be able to select repayment priorities (whether extra amount goes toward covering interest, penalties, fees, principal, etc). Repayment should be considered as missed if only partially repaid.

System provides a module for credit scoring enabling to rate (score) loan applications based on member's financial status, credit history, current obligations and savings etc. Also can score granted loans based on their delinquency and member's financial status, and provide adequate reporting/data link to credit bureau (if applicable).

Credit/smart cards module is available and supports direct integration with card payment processing center(s) and/or ATM networks, various limits such as daily limit, cash advance limit etc, as well as real-time monitoring of these limits.

Deposit Monitoring

Deposits module is fully integrated with general ledger and customer information subsystem, and all changes are reflected immediately in GL.

Permits addition and modification of deposits, savings, shares and checking products. Product information is extensive and contains various parameters such as minimum/maximum balance, number of permitted withdrawals per period (configurable, could be week/month etc), min/max interest rate, min/max term (for term deposits), membership requirements, dormancy parameters, fees charged, allowed customer types, tax withholding parameters, any bonuses awarded (like increased interest rate for large amounts or extended periods). Product definition can be marked as "inactive" so product history can be maintained.

Checking operations are supported: tracking of cheque number, support for cheque clearing, also direct links to clearing center where applicable.

Accounts can be jointly held (e.g., for husband and wife). Tracks information about beneficiaries in case of death or incapacitation.

Supports transfers between accounts of the same member or different members, as well as incoming/outgoing wire transfers.

Client Information

Maintains extensive customer information such as name, family information, age, gender, address, as well as extensive financial data (income, dependants etc), employment data, industry, business type etc. Members can be searched by name, any part of the name, or personal ID number. Tracks members at different levels like group member, group leader etc, also stores information about relationships



between members as well as relation to the credit union and other legal entities. Maintains group and village bank information.

Facilities exist to check member's past behaviour, both from internal and external sources – credit history and savings history (see credit scoring in loan portfolio management section).

Members' data can be aggregated for reporting purposes by region, branch, economic activity or any other member characteristic.

Can track clients at different stages of the process – potential members, membership applications. Can track non-client information (potential members, guarantors). Can identify potentially duplicate entries (by matching names and/or personal ID numbers)

Additional fields can be defined by end-user to contain country-specific information. Access to these fields is convenient in data entry screen. Fields can be either choice (dropdown), check (yes or no), or free-text.

Module is available to store extended data about members, such as photos and signatures, and also directly acquire this data from supported input devices (such as webcams and scanners).

System is customer-centric instead of account-centric – member's information is primary, and accounts are attached to member, not vice-versa.

B. Flexibility and expandability

Measures whether the software has the capacity to grow and expand with a microfinance institution as the organization evolves and adds functions and clients. Ability of the system to support vertical and horizontal growth of the institution. Scalability.

Expandability

System is modular, and supports most microfinance needs in basic configuration. Scalability allows to use up to 50-100 terminals simultaneously (using appropriate hardware, of course), and maintain up to 1-2 million accounts while still maintaining reasonable response time. Advanced modules are available for upscale institutions, and system is capable of supporting MFIs, NGOs etc.

Flexibility - loans module

System supports group lending and village bank lending methodologies: village banks with individual or group loans, solidarity groups with individual or group loans.

Supports various loan interest calculation methods: flat (interest figure stays flat for each repayment), declining balance equal payments (annuity method, each repayment's principal is calculated so that total figure stays the same each time), equal principal repayments with actual interest each period, discounted from the loan (there is no interest per se, but loan amount is discounted during disbursement and full amount has to be paid back), capitalized (period's interest is capitalized in loan account and now starts accruing loan interest), variable rate (interest rate can change during lifetime of the loan, and can also be



linked to system-wide base rate so that rates can be changed simultaneously for a group of loans), stepped rates (rate changes depending on the outstanding amount).

Commissions and fees can be associated with various lending activities: application, granting, disbursement, each repayment etc. Fees can be defined as percentage or fixed amount, or both together. Aberrations (early, late, extra, missed) from payment schedule can be associated with fees as well, also as percentage or fixed amount (or both combined). Additional penalty interest can be charged for late and/or early payments, could be based on whole outstanding balance, arrears amount, or early/late portion of the repayment.

Calculations for loan insurance are in place, and allow calculate insurance premiums for each member as well as report the total figure for CUs management purposes. Insurance can be denied for members not in good standing, overage members, or based on other considerations. Maximum insured amount for each loan can be set (system-wide and/or on product level). Insurance premium can be either charged upfront when disbursing loan, or added to outstanding balance.

System allows for flexible repayment schedules: based on fixed principal amount, fixed repayment amount, single payment, balloon (interest charged on every repayment, principal in a single payment), free (user-entered) schedule, or entering first and subsequent payment dates. Also user-defined schedules can be stored and re-used. Different repayment schedules can be previewed before adopting one of them – examples include fixing principal repayment amount and calculating schedule based on that, or limiting term of the loan and coming up with repayment amounts etc. Once entered the repayment schedule can be modified only with proper authorization. Also allows to disburse granted amount in several installments, and adjusts repayment schedule accordingly.

Supports lines of credit (revolving loans) with free repayment schedule, and periodic interest application based on actual outstanding balance of the loan. Interest can be compounded and included in outstanding balance, or posted to separate account. Minimum repayment amounts can be specified in repayment schedule – either as fixed amounts, or percentage of outstanding balance. Delinquency calculations should support these schedules and consider the loan as delinquent whenever minimum repayment amount requirement is not met.

Supports various payment frequencies so that interest and/or principal can be repaid daily, weekly, bi-weekly, monthly, every four weeks, semi-monthly, quarterly, annually. User-defined periods can be set.

Supports disbursements and repayments by cash, check, money orders, wire-transfers or credit/debit cards.

Permits suspension of penalty fees/penalty interest, allows operator to defer repayment date. Grace periods are supported, both as initial period during which no principal (only interest) repayments take place, or as number of days each repayment is allowed to be late.

Permits refinancing (recalculation of payment amounts) of the loan after changing term, number of repayments or other characteristics of the loan.

Interest rate changes can be backdated, and accrued interest is corrected accordingly.

Flexibility - savings module

Supports various savings types: passbook (with or without passbook printing), term deposits and certificates of deposits (can also track CDs by number), ordinary savings accounts, shares accounts. Can



also maintain group savings accounts, including information about amount saved by each group member. Can calculate group insurance fees. Also maintains off-book group savings accounts.

Demand deposits, current, checking and overdraft accounts are supported. Full information about checking operations is recorded, such as numbers of checks issued, checks clearing info, stop check information.

For savings accounts can set withdrawal limits (amounts, number of operations) and either block or impose fees on withdrawals. Can apply penalties for premature withdrawals (on term deposits).

Post-matured term deposits and CDs can be (automatically) rolled over for next term and possibly updated interest rate. Share dividends can be calculated either based on interest rate, or profit figure for the year (distributed between members). Supports distribution of dividends based on “interest points” (each member’s interest points = share balance X no of days balance is maintained).

Interest can be calculated based on each day’s ending balances, minimum daily/monthly/quarterly balance, average daily/monthly balance, as well as average/ending/minimum balance during user-defined period.

Interest rate(s) can be linked to “group” rate or base rate to allow changing rate on many accounts simultaneously. Can define stepped rates or bonus interest to allow changing interest earned depending on amount and/or time saved. Minimum balance for account can be set.

Interest can be calculated as per actual calendar days or 30 days/month, and based on 365 or 360 days in year. Optionally also 332 days/year or 50 weeks/year are supported.

Supports various payment frequencies so that interest can be paid out on daily, weekly, bi-weekly, monthly, every four weeks, semi-monthly, quarterly, annually. User-defined periods can be set.

Can calculate withholding tax, products can be excluded from the calculation. Member can be marked as “exempt from withholding tax”.

Interest rate changes can be backdated, and accrued interest is corrected accordingly, even if interest has already been applied. This can be done by correcting current accrued interest figure to account for the difference.

Other flexibility

System is customer-centric and allows customer have many different accounts and account types. Full support for branches and remote workstations is in place to allow branches to operate in real-time mode, or store-and-forward mode. Frequency of updates to/from head office is user-definable. Remote real-time workstations are supported (with minimal requirements for data transfer speed). All reporting can be done on branch basis as well as consolidated.

Supports funds transfers between branches and within branches. Full information about sender, receiver and supplemental information is passed together with funds transfer instruction. Can retrieve information about members in other branches to allow member to come in at any branch and access his account.

Data transfer between branches and head office (and between branches themselves, if applicable) can be accomplished using inexpensive (and relatively slow) telecommunications lines, preferably dialup connections.



System supports multiple languages and all screens, messages and screen elements are shown in language chosen. Can support different language for each logged-on user. Translation of the system can be done by end-user. Language details are stored in database (are not hardcoded) to allow for easy translation of the system.

Supports multiple currencies. All operations (payments, disbursements, withdrawals, lodgements etc) can be done in any currency. All member transactions (i.e., ones pertaining to member account) can be done in currency different from account currency. All accounts (except loans and term deposits) can be multi-currency: use the same account number regardless of currency deposited in account, and store balances in all currencies simultaneously.

Provides foreign exchange risk calculation and monitoring facilities: currency positions, foreign exchange profit and loss calculations. Can consolidate reports in different currencies.

C. **Usability**

Ease of use

Training of end-users is comprehensive yet does not take too much time, can be done either on-site or at vendor's premises depending on user's wishes. User documentation is supplied, is comprehensive and up to date.

On-line context-sensitive help is provided. Provides comprehensive explanations about all screens and operations. Topics in help are hyperlinked.

Operations of the system are straight-forward and easy to understand, allows for easy error correction. Errors in already entered data can be fixed (such as incorrect loan parameters etc). System does not crash or freezes on unexpected data entry (such as out-of-range dates or amounts), prompts users to enter correct data.

System is easy to install and maintain, all periodic operations are simple and straight-forward to users. Installation is automated for small institutions where the package can be installed and launched off the shelf without the need for any complex installation and setup procedures.

User Friendliness

System has a graphical interface. Layout and logic of screens and menus is good and consistent, Different users can be restricted to certain menu operations. Provides mechanism for mass data entry (multiple transactions or accounts). Screen language and messages use consistent verbiage. Consistent and logical use of color, where appropriate. Colors are chosen so as to make screen information easy to read (no low-contrast color combinations employed). All major function can be accessed with mouse, as well as keyboard. Fast data entry is possible by using only keyboard.

Follows general platform standards in terms of screen interface and keyboard commands (i.e., no user-defined buttons/comboxoxes etc)



D. **Reporting**

Contains full range of CGAP reports, employs Micro-banking bulletin standard reports and formats. Reports can be consolidated (by branch, currency, product etc) as well as separate. Report formats are user-modifiable (subtotaling, layout etc). Reports can be printed out to suit various audiences (management, operational, supervisory etc). Report formats are clear and readable. Can report on budget versus actual expense & income.

For management purposes provides key statistical summaries, cash-flow projections, branch office and loan officer performance, ALM and trend analysis reports.

Can provide daily listings, daily delinquency reports and portfolio quality reports. Error-catching reports are in place (interest rate less than X, loan outstanding amount greater than granted, etc).

Trial balances report in place (can be produced for any user-defined period), daily transactions reports, sub-ledger reports and periodical financial statements (monthly, quarterly, annual). Provides ratios and trending reports, calculations of ratios are clear and understandable.

Detailed audit trail (actions taken by each user) can be printed, includes information about the old value of data, change effected by the user, new value.

Reports can be printed that show inflationary and subsidy adjustments.

Provides full range of printouts for members: transaction slips, passbook printing, check printing, periodical statements, balance printouts.

Reports can be generated in batches (either on request or at preset time of the day), or separately by request. Reports can be “canned” – printed out for any previous date, or even a specific transaction.

Also provides a way to store report’s output (i.e., in PDF/XLS/DOC file) for later viewing.

Supports user-defined reports, either via built-in functionality or as add-on module. Data model is provided to allow users building their own reports.

Can print reports on wide variety of printing devices, can utilize various paper formats (legal/letter/A4 etc.).

By default system generates reports frequently (i.e., at close of each business day), and reports are useful for intended audience.

E. **Standards and Compliance**

Software can be modified to meet local requirements without major updates. Adheres to CGAP and IAS provisions, and French accounting principles (where appropriate).

General ledger can be updated online or in batch mode (batch of transactions). Partial and late loan payments are posted correctly (interest first, principal later). Loans can be categorized according to their delinquency level (range), and optionally full outstanding amount on delinquent loans can be shown in balance sheet as “delinquent”. Supports accruals as well as cash accounting method. Interest accruals account can be separate from interest received/paid accounts.

Software can cease to accrue interest on late loans. Savings and loans interest can be accrued on user-defined period basis and posted to interest income/expense accounts, savings interest is compounded (capitalized) according to account/product definition.

System can be integrated into national payment system (usually via user-definable import/export files) to process wire-transfers and receive incoming funds.



F. Administration and Support

Security

The system provides for different levels of access to menu items based on user level. User levels (or groups) are user-definable, can be added/changed/deleted. Each level is assigned access right to each menu item. Each user must be assigned to at least one group, but can be in several as well. Access rights to members database, both by fields and subset of database (for example, access only to first name field, if member number is less than 10), can be defined. Same for transactions database, and rights to post, reverse and cancel transactions. Limits can be defined for transactions.

Enforces use of user passwords, checks if passwords are secure (minimum length enforcement, combination of letters and digits, already used passwords, easily guessable passwords). Requires change of passwords on regular basis.

Database is secure, unauthorized tampering with data is prevented (either by encrypting data, or adding hash key to each record, or using other means). System provides notifications when tampering is detected. Each record, especially transactions record, is stamped with user name and time. All violation attempts are recorded (such as invalid passwords etc). System includes automated tools to check for database consistency, such as ensuring all debit and credit balances match, sum of transactions is equal to account balance etc.

Provides means for off-site storage of records by allowing backups of all data to external removable media.

Backup and Recovery

End of day processing checks database for any corruption, and provides notifications about errors. Both full and incremental backups can be done in reasonable amount of time. After abnormal termination will correctly complete or restart transactions not completed. Status of each user is maintained (logged on, timed out etc).

Full recovery process (fully restoring system from backups) is reasonably simple and quick, and can be done by internal staff.

Provides means for off-loading old unused transactions/accounts data to prevent database from growing exponentially. Offloaded data is still accessible if needed, although could be different application.

Fault tolerance and robustness

For a networked system remote processing centers can function off-line in case of sudden communications failure. Workstations are notified of transactions not completed due to network/hardware failure, and in case of any hardware failures system can exit “gracefully” by providing meaningful error message.



End of period processing

Interest is processed, accrued and posted at proper intervals. Also late fees, penalties are calculated and posted. Period duration is user-definable (day, week, etc.)

Support Infrastructure, Maintenance and Upgrade Strategy

Company producing the software has a well-established track record dating back at least several years, multiple installations in home country and others as well. Financially the company must be stable and well off. Support offices are present in all countries where software is used, support staff is knowledgeable and numerous enough to handle the demand. Support hotline is provided, 24/7 where appropriate.

If appropriate, access to full or partial source code can be granted, and changed source code is still supported by the vendor.

Upgrades are planned well in advance, there is clear upgrade strategy in place – when will new versions be released, what new functionality will they contain, and what effort/procedures will be needed to upgrade from any existing version. Upgrades are not too frequent (shouldn't be more than 4 times/year to allow for proper quality testing cycle). There is a reasonable number of versions currently in use, and all of them are supported. No customer-specific versions are in use.

Source-code version control system is in place (Visual SourceSafe or similar) to ensure adequate support for older versions and safeguard against accidental unwanted changes in source code. New versions are put in place in parallel mode where old version is run in parallel with new version to ensure everything is working as intended.

There is a documented change request procedure in place customers can use to place their requests. A bug tracking system exists to ensure all complaints are resolved.

Vendor can provide full range of consultancies to customers: system installation, data conversion, small changes of functionality, tailoring of reporting requirements etc.

Vendor provides full system manuals, both for end-users and system administrators. Training materials are also provided in case customers decide to train their staff themselves.

G. Technical Specification

System uses client-server architecture (optionally can be scaled down to file-server for single workstations or small networks) to ensure fast response times and low network traffic. Database platform used is not proprietary but rather a mainstream package with well-established track record and support capabilities. Runs on widespread hardware platforms (PC, Mac), and uses standard operating



systems (MS Windows, MacOS, Unix/Linux). There are no obscure restrictions on operating system/database versions (such as runs on Windows 95, but not on Windows NT).

For small institutions the package must be able to run on modest hardware (single workstation or small network).

Company uses appropriate mainstream programming language for development (depends on database and user interface environment), preferably high-level one. Appropriate infrastructure to support trouble-free development and support is in place. Source code control is employed.

System performs adequately on stated minimal hardware platform, user interface speed is good and reports can be run quickly. There must be clearly stated performance limits depending on number of accounts, transactions or concurrent users, so users know when they'll have to upgrade their hardware. Disk space requirements are clearly stated. Provides clear estimation how much disk space will be needed depending on number of members, accounts, products, transactions etc.

System is capable of processing wide range of dates both in past and future (year 2000 issues solved), and handle large numbers (20-26 decimal signs).

H. **Pricing and Costs**

Pricing must be flexible to allow both very small and large CUs to use the software. There must be very inexpensive single-workstation package available that could be used off-the shelf. For larger institutions price can depend on number of named workstations, concurrent workstations, number of transactions per day, number of members or accounts etc.

Annual support fee may be charged, usually not exceeding 30% of license fee. In case of non-payment of the support fee only support should be terminated, not the license itself.

All prices, including consulting, training, data conversion, upgrade and annual support fees, must be easily available and publicly stated.

GLOSSARY

Control account – a code assigned to a group of accounts (group code). This code can then be used to retrieve sum of balances, and be shown in various reports

Chart of accounts – a comprehensive set of control accounts that encompasses all accounts used in bookkeeping, and where no account belongs to two control accounts simultaneously

USEFUL RESOURCES

["CGAP Handbook for MIS for Microfinance Institutions," 1998](#)

MBP publication ["MIS for Microfinance: An Evaluation Framework," by Andrew Mainhart, November 1999](#)



SEEP Nexus publication on ["MIS Between Salvation and Frustration," Fall 2000](#) (PDF file)