An Introduction to Abacus

EXPERIENCE COUNTS IN A CHANGING WORLD

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The need to stay relevant and competitive in a rapidly-changing market requires you to be able to evaluate and respond to market needs, to innovate and rapidly launch compelling products and services, whilst minimising unnecessary overheads.

Fern solutions have been designed for more than three decades to support financial services providers - from credit unions to microfinance institutions to commercial banks - in launching customer-centric products and effectively managing relationships; monitoring portfolio performance and social impacts; and gaining access to meaningful information on which to base strategic decisions.

Established in 1979 in Belfast, Northern Ireland, Fern Software is an independently-recognized leader in the provision of banking MIS for microfinance, credit union, and rural and development banks. With clients in over 25 countries throughout the world, and the highest reviews from CGAP, Accenture and USAID for its microfinance systems, Fern Software has a proven track record in delivering solutions that combine a high level of functionality with the flexibility and ease-of-use that today's financial institutions need in order to run an agile business.
Fern’s core banking system, Abacus, provides community-based financial institutions with a solution that is both comprehensive and easy-to-use. Abacus offers a cost effective, modern, fully integrated and scalable solution that will not only meet current operational requirements, but also the challenges of advancing technology, market development and product offerings.
As a community-based financial institution, a large percentage of your new (and existing) clients use informal products – including group savings, ad-hoc daily rate loans and more. In order to grow and retain your client base, your products need to offer a compelling value proposition over and above what your clients use right now: however, informal products often have a wide range of different features that have evolved over time, and many of these features can't be replicated in a typical banking system, so financial institutions tend to ignore them.

Field research, however, shows that replicating the features that people like in their informal products (and removing the features they don’t like!) gives a formal product a greater chance of being used, and therefore gives your institution a greater chance of growth. At Fern, we have therefore built in a wide range of product definition parameters to Abacus that can be combined in many different ways to enable you to tailor a product that responds to your customer’s needs – and made it simple and straightforward so that you can minimise your time to market.

- Loan product parameterization for interest, fees and grace periods
- Support for mortgages, collateral and insurance products
- Seasonal lending requirements and individual repayment plans
- Lines of credit and overdrafts
- Remittances and card payments
- Commitment savings
- Branch or field transactions
- Group and individual lending
- Linked loan and savings accounts
Farmers often struggle with financial management – the need to invest up front in order to yield lump sum infrequent income often means that typical loan and savings products don’t fit their lifestyle.

Abacus enables customer-centric products to be developed that meet their needs, for example:

- A loan that requires all principal and interest to be repaid at harvest time. The interval between loan and harvest varies depending on the crop, and so the loan term and conditions can be adjusted on a client-by-client basis.

- An "annuity account": a high interest savings account into which the farmer can deposit the earnings from his crop, and which will automatically transfer a set amount per week into a regular savings or current account. Effective management and budgeting of comparatively large but infrequent income can be a challenge, and the annuity account maximises the interest it can earn; encourages budgeting; and acts as an incentive to save towards the next planting season.

Female microentrepreneurs often have many things to juggle at the same time: bringing in a small income, taking care of the family, and running the household.

Abacus enables customer-centric products to be developed that meet their needs, for example:

- Multiple linked savings accounts that can be identified by purpose, enabling “school fees” to be separated from “emergencies”

- A line of credit/flexible repayment loan with daily interest calculation that enables dates and amounts to be on an ad-hoc basis, enabling her to repay more during periods when she has more business

- Savings plans specifically for special events, such as religious festivals or family weddings, which pay bonuses at the time of the event
**Village Savings and Loan Associations (VSLAs)** can often face challenges keeping accounting records, and security of cash can be an issue.

Abacus enables customer-centric products that meet their needs, including:

- Group savings accounts that also keep track of individual contributions, and will pay them daily interest on the consolidated balance
- Individual loans that can be granted from the group balance, with interest earned going back to the group savings account.

**Small enterprises** often find obtaining credit difficult without a strong balance sheet, and often have challenges in getting the level of service they need from a high street bank.

Abacus enables customer-centric products that meet their needs, including:

- A full suite of "high street" products – loans, overdrafts, lines of credit, current and savings accounts – from a community financial institution
- Cheque books and ATM cards
- Syndicated loans to accommodate larger capital sums
- Repayment protection insurance
Abacus has been designed from the very beginning to be fully multi-lingual, and support double-byte characters and right-to-left scripts.

Currently, Abacus data entry screens are available in English, Spanish, French, Indonesian and Arabic – each user can see the screens in a different language, if required – and adding new languages is straightforward thanks to our “language layer”, which means no additional programming is required.

In addition to user screens, forms and documents such as loan agreements, passbooks, or repayment schedules can also be printed in multiple languages – both the form itself and the data, so your customer can clearly understand what you give them. The full range of character sets for all languages are already supported for data entry – so if your customers speak Amharic, Khmer, Pashto, Urdu or regional dialects you’ll be able to communicate with them in a way that builds confidence.

Abacus’s CRM features include the ability to issue personalised letters which are linked to your customers’ individual circumstances – for example, to let them know that their existing loan is nearly paid off and they are can apply for another one, or to invite them to an event. You can plan for phone calls, customer visits or meetings and tag the outcomes directly to their account, and even record details of complaints to ensure they are acted upon.

The rapid rise of mobile phone networks, and the fall in cost of mobile technology, has made alternative delivery channels (ADC) a cost-effective way for financial institutions to increase their outreach and improve their efficiency while working in the field.

Abacus supports easy ADC integration: our open database design and inbuilt APIs let you connect to established mobile money services; plug into ATM networks; and equip your field staff or agents with tablet devices that can be used even when there is no mobile network or internet connection. When combined with our ability to work in a hosted, centralised or decentralised environment, increasing outreach doesn't mean complex infrastructure requirements.
Fern is used to dealing with challenging environments such as remote locations with poor infrastructure, low or intermittent connectivity and competition for IT skills. For this reason, our solutions are designed to work in a wide range of different environments:

**On a laptop.** For small offices or rural locations, you don’t need or want a huge, complicated IT network - but you do want functionality and flexibility from your software. Our solutions are heavy on functionality, but light on hardware needs.

**Centralised processing.** With reliable connectivity, branches can be fully online to a central server – our web interface has been designed to enable branches to connect even in low bandwidth areas.

**Cloud hosting.** If you’d prefer not to have to manage any hardware yourself, our software can be hosted at a national provider in your country – combining convenience with regulatory compliance.

**Local branch processing with periodic data consolidation to Head Office.** In areas of poor connectivity, a fully centralised solution may not always be viable. Our decentralised/consolidation feature enables daily local processing with end-of-day (or end-of month) incremental data transfer and consolidation at head office, for institution-wide reporting.
Data isn’t enough by itself. Using data in the right way can facilitate phenomenal experiences for the customer and healthy profits for your business. And yet finding meaningful information within large volumes of data is often a huge challenge – the technologists know how to extract data but don’t necessarily know what kind of behavioural analytics they’re looking for, and the business people know what they’re looking for but not now to access it.

Different types of business need to undertake different forms of analysis, and may need to use specialist tools. No problem – Abacus has inbuilt links to a number of financial management and business intelligence tools, and our open database architecture and extensive APIs make integration with other applications streamlined and straightforward.

With the increased focus on Corporate Social Responsibility (CSR) and impact investing, the need to understand and monitor the social results your services are having has never been greater. Grameen Foundation’s Progress out of Poverty indicators, plus other transactional metrics such as the GAFIS categories, can not only enable you to monitor your social impact but also provide insights on the value your products are bringing to your clients (and therefore guide strategic planning).

The extensive user-defined fields in Abacus can be used to store and give scores to demographic indicators, and can also be updated on a periodic basis by conducting client field interviews using a smartphone survey tool or recording information on each new loan application. Scores can be aggregated into an index, and dated surveys can store a time series to show trends.
Your financial institution may have a social mission, but its overriding need is to be self-sustaining. Visibility is everything, and timely access to information, plus the ability to accurately forecast your cashflow, can mean the difference between success and failure.

Abacus has a fully-featured General Ledger that supports multi-level chart of accounts and branch structures; multi-currency including gain and loss calculation; multiple versions of budgets and variance tracking; and of course transactions are passed on a real-time basis from the portfolio management modules to remove the risk of errors.

Abacus is also fully integrated with Financial Management Reporting: a 100% Excel-based tool which allows you to leverage existing spreadsheet expertise and workbooks to create dynamic reports. Using this tool, you can automatically generate and distribute multiple formats and include drilldown features that enable recipients to see the detailed data underlying key summary figures.

Keeping on top of overdue loan repayments can be a daunting task, especially if customers are spread over a wide area with poor infrastructure.

The Advanced Credit Management module in Abacus allows the setup of workflow actions to recover delinquent accounts and to automatically generate a daily or weekly task list. Actions are driven by the daily aging of overdue instalments, and highly visible “traffic light” indicators sort proposed activities by priority. This means that the maximum amount of time is spent dealing with delinquent accounts and not just compiling the list. Abacus is integrated with Skype, and the time and date of calls made are automatically recorded in the individual's Loan Review File. History of actions taken is maintained in case of the need for litigation, and for reference in future loan applications.
Proven Banking Functionality

Abacus provides full banking functionality options, with live commercial and development bank clients - including deposit and current accounts, cheques, overdrafts, commercial lines of credit, foreign currency transactions and connection to ATM/POS and mobile wallets, SMS alerts, plus internet and mobile banking.

High Efficiency

Abacus has many tools for improving efficiency and controlling operational costs. For example high-volume repayments and disbursements can be entered automatically by only recording exceptions. This reduces not only effort, but also errors from rekeying. Where saving/deposit accounts are in use, loan disbursements and repayments can be made to/from deposit accounts automatically. All fees, charges and GL postings are made automatically by scheduled Abacus operations and with transaction posting linked to the Chart of Accounts.

Customization without Coding

All of the features mentioned above are "point and click" settings, made via the standard Abacus user interface (for authorised users only). Moreover, Abacus has an unlimited set of user-defined fields (UDFs) and analysis codes allowing extension of the system to build in new indicators and data fields. These can be financial or non-financial in nature - users can be asked to key in free-form data or to select from drop-down list. No programming or technical skills are required and you can set up as many user-defined fields and analysis codes as needed, and add to them at any time. As modifications to Abacus do not require coding, Fern has been able to maintain a single code base for all clients, dramatically easing support, bug-fixing, training and upgrading to new versions.

Reporting and Analysis

Abacus has over 100 standard reports for network members on a wide range of topics such as financial reports, portfolio quality reports, and GL analysis and investigation reports. In addition, new reports can be written using Microsoft SQL Reporting Services or Crystal Reports, and data can be extracted in Excel format or integrated with business intelligence tools to enable social impact, central bank or other external reporting.

In addition you may set up your most commonly used reports under a separate Main Menu option “My Reports” for easy access. Pre-configured settings mean that you can produce consistent reports very quickly.
We understand that choosing the right software solution for your business can be a challenge. Our approach to working with financial institutions who are looking for a new solution to help support a new stage in their growth is to engage with all areas of the business, ensuring that we:

Understand how we can support the key business drivers behind the planned system replacement

Can enable both the products you have now, and the ones you want to offer in the future

Will be able to improve efficiency through improved workflows and enhanced controls

Can provide your management with the level of insight into their data that drives informed decision making

Can clearly and unambiguously demonstrate that we will meet your identified needs, and explain how we will achieve it

Through 30+ years and 400 implementations we’ve seen just about everything: dozens of interest calculation methodologies, workflows, fee calculations and innovative savings and loan products. Our approach to implementation is therefore a holistic one, focused on supporting you in realizing a positive Return on Investment. During the implementation process, we will work closely with you throughout to recommend parameter settings that best suit your organization; explain functional and technical details of system processes; provide guidance about how other clients have implemented similar features; troubleshoot issues that arise during implementation; and transfer product knowledge.

Once your system is live, our global presence enables you to effectively take advantage of support by phone, Skype, email and our remote desktop service.

We’re not just there when you have a problem: in newsletters, through our client extranet and user group meetings, Fern keeps our clients up to date with new developments that are in the pipeline, including new modules; products; or technology components that will give our customers an added advantage by being first to market with a new service.
Abacus Configuration Options

Option 1: Decentralised
Branches, server at Head office and periodic consolidation of data for reporting purposes.

Option 2: Centralised
Branches, server at Head office.

Middleware that supports:
- Inter branch transactions (including between offline and online)
- Routing for clearing and settlement
- Connection to alternative delivery channels

Option 3: Hosted Solution
Hosted solutions at a data centre, remote access for all branches and Head office.

Option 4: Combination
A combination of hosted access (for good connectivity areas) and decentralised branches with periodic consolidation.

Links to Middleware (separate optional module) can be on-demand: connection can be directly from decentralised branches on a dial-up basis.
About Us

Fern Software has specialized in the provision of banking software since 1979, with customers in more than 25 countries. Based on 35 years’ experience, Fern understands clearly the importance of delivering an effective and efficient solution that has sufficient flexibility and functionality to adapt to the organization as it changes over time and ensure its long-term success.

Fern is used to dealing with challenging environments such as remote locations with poor infrastructure, low or intermittent connectivity and competition for IT skills. Fern, and its regional partners, have the skills, experience and flexibility to create successful results in such circumstances. It is Fern’s role to supplement the skills and experience of the clients’ IT departments with particular reference to lending processes, plus control and integration within a centralized banking platform.

## History of Fern Software

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>1979</td>
<td>Credit Union and Banking Information System (CUBIS) launches Fern</td>
</tr>
<tr>
<td>1986</td>
<td>CUBIS 2 launched, written in PRO-IV, a 4GL language for Unix and MS-DOS</td>
</tr>
<tr>
<td>1992</td>
<td>CUBIS 3 to CUBIS 8 for MS Windows</td>
</tr>
<tr>
<td>2000</td>
<td>Focus SQL (originally M2) launched</td>
</tr>
<tr>
<td>2004</td>
<td>Abacus Version 1.0 launched, and first client installed, written in C#, using .NET platform and SQL database</td>
</tr>
<tr>
<td>2006</td>
<td>Fern’s first national Development Bank and Housing Finance institution clients</td>
</tr>
<tr>
<td>2007</td>
<td>Fern’s first trans-national implementation for a single customer, covering Kenya, Rwanda, Uganda and South Sudan.</td>
</tr>
<tr>
<td>2009</td>
<td>Fern’s largest microfinance client with 250,000 clients and nearly 100 branches, all with low bandwidth.</td>
</tr>
<tr>
<td>2010</td>
<td>Fern’s first commercial bank, with over 10,000,000 transactions migrating from Oracle Flexcube system. Savings/current accounts plus ATM/POS, SMS alerts and mobile wallets.</td>
</tr>
<tr>
<td>2011</td>
<td>Fern’s first hosted solution, with five clients in Indonesia hosted from partner in Jakarta. Third language introduced – Indonesian.</td>
</tr>
<tr>
<td>2013</td>
<td>Network of 50+ CDFIs supported by Ontario, Canada government implements Fern’s new SaaS SME Financial and Technical Support system - FaaSBank</td>
</tr>
<tr>
<td>2014</td>
<td>Fifth language introduced – French. First client in Francophone Africa. First client who is entirely branchless and cashless, leveraging mobile channels.</td>
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CGAP Software Reviews

Fern software has been regularly reviewed by CGAP since it was first invited in 1998 to subject its software to their independent assessment. In the most recent CGAP review of 80 software systems from around the world, Abacus received the highest score covering the five areas examined (4 is the highest score):

<table>
<thead>
<tr>
<th>Item</th>
<th>Abacus Feature Assessed</th>
<th>Fern Score</th>
<th>Fern Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Functionality</td>
<td>4</td>
<td>Best</td>
</tr>
<tr>
<td>2</td>
<td>Ease of Use</td>
<td>4</td>
<td>Best</td>
</tr>
<tr>
<td>3</td>
<td>Management Reporting</td>
<td>3</td>
<td>Excellent</td>
</tr>
<tr>
<td>4</td>
<td>Services</td>
<td>3</td>
<td>Excellent</td>
</tr>
<tr>
<td>5</td>
<td>Technical Capabilities</td>
<td>4</td>
<td>Best</td>
</tr>
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Accenture Savings and Credit Cooperative System Review

In a 2010 100-page review for the Kenya Government (Financial Services Directive) by Accenture, Abacus was rated No. 1 out of 23 vendors – covering Front Office, Back Office, Accounting & Finance, Reporting, Usability and System Maintenance.

Excerpt from the Accenture report and the associated scoring table.

“...Due to the comprehensive quantitative and qualitative assessment which had been made, the project team was confident that the final ranking provided a strong indication of the relative strength of a particular vendor’s solution. The following table illustrates the outcome of the scoring process, including the survey score, the score for the answers to the open-ended questions (OEQs), as well as the total score per vendor.”

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Survey Score</th>
<th>Survey Rank</th>
<th>QEQ Score</th>
<th>QEQ Rank</th>
<th>Total Score</th>
<th>Total Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fern Software</td>
<td>98%</td>
<td>6</td>
<td>64%</td>
<td>1</td>
<td>86.0%</td>
<td>No. 1</td>
</tr>
</tbody>
</table>
In 2012 an analysis was conducted for USAID of 37 MFIs to assess their readiness to join credit bureaus. The state of readiness of each MFI was assessed in terms of data quality, and averages calculated for each MIS system used by the MFIs. This graph above shows the average score of an assessment of whether MFIs had the required data, and whether the data quality was good. Fern clients achieved the highest scores of all MFIs studied.
Abacus Design Concepts

Ease of Use
Fern Software has drawn on its 35 years of experience and customer feedback to ensure the operation and use of Abacus is extremely intuitive and very easy to use. Uniquely, Fern offers a worldwide standard system that allows configuration for each individual user including menu options, icons, language, screen settings and background, in addition to configurable parameters for optional and mandatory product settings.

The system is designed to be used by business users, with little technical expertise. Simple installation routines and upgrade functions are part of the overall Fern experience.

Flexibility
Abacus has comprehensive loan processing capabilities that includes practically unlimited loan product design, feature combinations and customizable loan approval workflows.

Interest rates and fees are attached to the individual loan product but have their own configuration menu option for designing different loan interest parameters, including penalty, compound and tiered methodologies.

Scalability
One of the major themes of Fern's design principles has been that of scalability, taking the long term view that existing clients will grow into larger organizations in the future. Abacus therefore runs on a laptop; in a multi-branch decentralised or centralised environment; or as a hosted multi-entity solution. The same version of Abacus has been successfully implemented at SACCOs, Credit Unions, Microfinance Institutions and Development Banks.

Security
Abacus has a very secure and flexible system for granting access rights to user functions: simplifying the user interface for lower level staff, while allowing managers to access the full range of functionality.

The built-in audit trail records changes to customer details, user permissions and product setup, helping to identify attempted fraud at an earlier stage and to build up an environment of compliance and good governance across all users. This allows for a strong level of accountability on any changes made to the data and provides the ability to trace events back to their original source.

Optional "maker/checker" authorisation can ensure that all transactions are pre-approved before posting. A fully integrated cash manager, which includes vault-to-cashier transaction management and end-of-day reconciliations, ensures full visibility of cash movements.

Tools for Business
Abacus is an extremely powerful management information system which includes over 100 reports as standard. The system also allows the production of ah-hoc reports, using selectable parameters through an integrated business reporting and analytics platform that provides real-time access to Abacus from Microsoft Office Excel. Integration with leading graphical Business Intelligence tools are made possible through the Abacus Data Dictionary.
Making Your Fern Solution Work for You

Implementation

Abacus implementation is conducted by a Fern Project Manager with support onsite and offsite from staff in India, the UK, Singapore and Australia. The timeline for typical implementation varies considerably, based on needs for customisation; data migration; and integration with external systems. Typically the implementation timeline would be around 3-6 months overall. A fixed workplan for implementation can be determined prior to any contract signing – transparency prior to commitment is our preferred approach.

Training

Fern perceives training and consultancy as inextricably linked. For this reason we do not provide classroom-style fixed-format training courses - every client’s requirements are different and it is our aim to ensure that all training reflects this. In addition, training an entire module at the beginning of an implementation often results in a large proportion being forgotten before it is actually used.
Instead, we divide training into functions – setup, static data creation, opening balances, transaction processing, reporting, and month end routines. This ensures that training is provided as close as possible to when it is to be used – either in loading actual data or as part of a pilot program.

In general, we tend to operate on a “train the trainer” basis - Fern provides training and consultancy on the entire system and the client’s personnel then provide user training on a “need to know” basis.

This ensures that all decisions on module configuration, analysis fields and workflow are made at the high level and users are not confused with unnecessary information – in addition, it works out more cost-effective for the client. If required, we can provide user training based upon decisions made at the key personnel sessions.

Training is generally undertaken via a combination of on-site exercises and virtual remote sessions - using internal systems and data is usually preferred. Fern has in-house training facilities at its offices in Belfast and Singapore, and training can be undertaken there instead of on-site if required. All training sessions are generally restricted to three personnel to ensure individual attention. As part of the set up in each organisation we provide a tutorial database which is a copy of the live data. This allows the internal trainer to practice on non-sensitive data and to eventually provide ongoing training to new, promoted or relocated staff.

Support

Quality ongoing support is a key ingredient to the successful implementation of any CBS. Fern has dedicated support staff located around the globe, thereby offering a rolling support structure: as one office goes offline for the day, another office is beginning. This provides virtually around the clock support.

Fern typically trains a number of appropriate “Power Users” to be the internal IT experts. These staff would be the first point of contact for a specific issue raised from a general user.

Our basic methods of support are phone, email and Skype where available. With suitable Internet connectivity, remote online support software allows our support staff to log into a user’s machine and actually see what the problem is at first-hand.

Our aim is to make you as autonomous as possible by providing full technical training to the relevant IT personnel to cover all aspects of support, training and updates of new releases.
All reported problems are assigned a reference number and a severity level and recorded in a customer issue log. This issue log would be progressed and resolved as a matter of regular review. It is also our practice that issues are only resolved and recorded as cleared in the log when the customer declares satisfaction that the issue is resolved.

Ongoing Support and Updates

Fern has a single worldwide standard version of the Abacus code. This allows us to extend value and efficiency to our customers, keeping the costs down and our software has minimum bugs while our development flexibility is at the highest level. User documentation and help files are also standardised.

The Benefits:

You will be joining a large international family of users who cooperate with each other to keep Abacus at the cutting edge;

Bugs will be identified and removed faster – you can concentrate on using the system not fixing it;

You will get more regular updates as Fern’s policy is to keep all users on the same version;

Support calls will be answered faster;

System Upgrades

We are constantly reviewing our solutions and seeking feedback from existing clients to ensure Abacus is kept relevant and up to date in terms of features and functionality.

System upgrades are delivered to customers as part of the Annual Licence and Support fee at NO additional cost, and can be incorporated automatically by the system using the built in upgrade utility. This commitment to you saves significant time and expense in comparison to other provides’ solutions, where upgrades are chargeable and applying those upgrades requires significant external resource.
More About What Abacus Can Do For You

Enhance Customer Management

Abacus is completely client-centric, with all standing data, plus current and historic loan information, plus biometric data available in a single form.

Abacus allows for the definition of different types of customers: commercial organisation, individual, group. For ease of use, creating customers is all undertaken from a single screen, but the type of data that can be captured will change depending on the customer “type” selected.

All loans, savings and other accounts for a client are displayed on a single screen.

Drilldown capabilities enable you to look at scheduled payments; actual payments and how they were allocated; analysis details and survey results; scanned documents and more.
Define Flexible Loan Products

A wide range of lending methodologies are supported – commercial clients, individual clients, solidarity groups with individual loans, solidarity groups with group loans for self-help groups and other communities, village banks with individual loans or with group loans.

Interest calculation is parameter driven.

A range and default rate is set in the product definition. The exact rate may be set within the range at the time of loan application is so permitted in the settings. Similarly there is great flexibility in the range of repayment schedules.

Grace periods may be allowed and the parameters are very flexible. They may include just principal, interest or both. These may be set on a per client basis.

Loan products may be defined with an unlimited number of days, weeks, months or years. Loans may be disbursed in parts and multiple loans may be active simultaneously. Interest rates, fees, loan schedule and many other parameters may be specified by product, and may be amended on a client-by-client basis if permitted in the system settings as defined by your policies.

Both flat and reducing balance interest rates are supported. Variance of interest rates by branch and client is permitted. A range of different options and methodologies for penalty calculations can also be defined.
Abacus allows a range of grace period options and allows complex, non-standard schedules to be adjusted manually. This deferred initial payments with or without grace (no interest is charged during deferred periods) and balloon payments – including “term end” loans - can be defined during loan application.

The repayment schedule is fully configurable therefore repayment and interest holidays can be planned and the loan will not go into arrears. By amending the loan schedule any irregular payments can be specified, for example to suit agricultural cycles. In the example shown, the customer makes no payments for the first two 2-week instalments; then pays interest with a reduced amount of principal for 3 instalments; and finally pays the balance of the principal at the end.

Loan repayments can be made in cash, by cheque, by direct debits or standing orders, or by one-off transfers. For short payments, Abacus allows the specification (globally and at a product level) of the repayment order (e.g. 1-fees, 2-interest, 3-principal).
The loan application procedure (e.g. application, credit check, collateral submission, managerial approval, sign-off, and issuance) can be set by loan product.

In this way larger loans, or those requiring collateral, would have more steps, but basic loans could have a streamlined process for quick approval. Credit ratings can also be allocated to clients.

Abacus includes a complete fee management system. A library of fees may be established using fixed amounts, percentages, variable fee bands by loan size, or user-defined formulas. These fees can then be assigned to loan products. These fees may be applied at loan issuance, at closure, and/or periodically.
Maintain Portfolio Quality

Abacus provides two credit appraisal features integrated within the core solution that have been designed to make it easy for your loan officers and management to make the right lending decisions for the right reasons.

Our credit scoring functionality enables a range of demographic and financial data to be captured through interview of the customer and assessment of their surroundings at the time of loan application – an essential process for potential borrowers who have no credit record - and for a weighted score to be calculated based on this information.

As each country is different, and each type of borrower within a country is different, the questions can be defined through the Abacus user interface – and, if appropriate, different questions can be defined for different loan products.

Each answer to each question can be given a different score – and therefore, once all the questions are answered, a total score will be calculated.
For small personal loans, credit scoring based on income, lifestyle and existing liabilities may suffice. But for larger loans a more in-depth review may be required. The Abacus configurable loan approval workflow enables a loan to go through a range of different stages before it is approved.

Definition of multiple "checklist" sign off stages can be combined with recording and verification of guarantors and collateral, and creation of a repayment protection insurance policy as required.

If a "collateral" and/or "guarantors" step is defined, a user with the necessary authorisation can add this information against the loan.

The minimum amount required (expressed as a percentage of the loan amount) can be predefined in the system settings and will prevent the application from progressing if this is not met.

Once the necessary have been completed, the final review and approval cycle can automatically go through multiple levels of senior review depending on the value of the loan, before it can be disbursed.
Manage your Creditors

Abacus provides a comprehensive suite of reports for the management of non-performing loans, arrears management and provisioning. With the optional Advanced Credit Management module, loan performance can be tracked and automated actions (letters, texts etc.) can be performed.

A library of actions can be defined, e.g. phone call, meeting, legal action etc., that can then be integrated into the workflow. These are colour coded as red, amber, and green to indicate severity.

The rules applied to each account results in a list of scheduled actions for each officer, which can be viewed as an enquiry and as a report.
Keep track of your finances

The structure and numbering system for the chart of accounts can be defined through the Abacus user interface.

In the example shown below, the chart of accounts has been configured to allow for 3 numeric digits, followed by a dash, followed by another three numeric digits. When combined with the BizNet management reporting tool, this allows for almost limitless combinations of segment-driven reporting; so you can report to donors just as easily as to regulators.

In addition to transactions created from loan, share and savings processing, General Ledger journals can also be entered directly or imported from Excel.

Budget and forecast management is a standard feature.

General Ledger journals can automatically number transactions if required and have inbuilt controls to ensure debits=credits. The branch can be selected ("001" in the example below) and the relevant GL accounts selected from a drop down list.

Journal “templates” can also be defined, which enables certain types of payment to be recorded more easily. Abacus also supports the definition of recurring journals, which can be defined for any transactions that happen on a periodic basis. The “period” can be defined, together with a start and end date, and these will automatically be processed during the Abacus End of Day routine.
Monitor your performance

Abacus has numerous enquiry parameters for defining reports with a wide range of filters, for example by branch, user, terminal, date, transaction type, transaction source, etc. Each and every transaction is given a unique receipt number which can be recalled at any point.

In addition, users may build their own customised reports using Microsoft SQL Server Reporting Services, Crystal Reports or the BizNet Management Reporting tool.

There are over 100 reports in Abacus, many of which are management reports for portfolio quality management, arrears management and provision, cash flow forecasting, budgeting, complaints management and auditing.

Abacus has many reports that focus management attention on exceptions, for example reports on delinquent loans by loan officer, individual and total portfolio at risk, plus audit reports.
Measure your impact

Abacus User-Defined Fields can be used to store and give scores to Progress out of Poverty Indicators, and other indicators that may be needed by regulators or other third party agencies. Scores can be aggregated into an index, and dated surveys can store a time series to show trends.

Using Business Intelligence reporting tools, this data can be combined with transactional (performance) information and other analysis to provide holistic, graphical indicators on the outreach of your services by demographic, location and a range of other factors.
Get the information you need

Although Abacus has extensive inbuilt reports, we understand that different formats, or different ways of looking at things, are always needed in order to drive strategic decision making. We also understand that you don't want to have to come back to us every time you need a new report – and also that, for most financial managers, Excel is often the reporting tool of choice.

For that reason we developed real-time integration capabilities with a market-leading Management Reporting tool that enables reports to be designed directly from within Excel, using inbuilt links to Abacus data.

All Abacus loans, savings and GL fields, plus commonly used summary and calculation fields, are available as a drop-down menu within Excel.

Changing (for example) the date parameters for a sheet will automatically refresh and recalculate data.
Right clicking on a balance will enable the user to drill down to the supporting transaction detail.

The full range of Excel features can be used, enabling the production of graphs and cross tabs. All data will be updated in real-time.
Stay Secure

Abacus includes an extensive and powerful combination of user security features: Microsoft Windows and SQL Server security, with encryption of passwords, of database connection information, and of the Abacus system itself. Key system features can be protected by user/role access management. Abacus uses licensing to ensure that it cannot be installed or copied to another computer without requiring an activation code. The number of computers allowed to connect to the database can also be limited.

Abacus allows password policies to be defined including minimum password length and required numbers, upper case, lower case and special characters. The passwords stored in the database are encrypted and linked to the organisation name therefore cannot be copied to another database. User menu access can be defined using User Profiles or individually configured (see User Administration section below).

User profiles are easily set up to allow users to access only those functions to which they are authorised, plus the language of the user interface.

It is also possible for each user on the system to have three limits imposed:
- the amount of cash they can hold at any one time;
- the value of an individual debit transaction; and
- the value of an individual credit transaction.
Every time the user undertakes a transaction that would cause them to exceed these limits, supervisor authorization is requested (by entry of a supervisor ID and password) before the transaction can be saved.

Abacus allows all important data changes to be audited. The audit information can be accessed via a report that clearly shows each change, which made it, where and when.

You can also specify which areas of the system should be audited.
Keep your customers informed

The SMS messaging service is an Abacus module that enables SMS text messages to be sent from the system to customers who agree to share their mobile phone number. There are numerous types of messages that can be sent to the customer, from a simple balance message, to a message every time a transaction takes place on a customer’s account.

There are three standard SMS messages that Abacus can send: a loan approval message, a transaction alert message, and a balance message. The content of each of these, and whether it is required, is configurable within the Abacus settings, and messages are sent to the mobile number recorded on the customer’s record.

If you wish to send a customised message to a customer, it is possible to send this as an ‘SMS Letter’. This will allow you to send whatever text you wish to a specific customer without having to change any of the 3 message templates mentioned above. It is also possible to send an SMS text message using ‘Letter Processing’ (‘CRM’ -> ‘Letter Processing’), in the same way as you would send a physical letter.
Serve your clients online

Fern’s Internet Banking Module uses SSL protocol and 128-bit encryption technology to provide a secure channel for data transmission. It has passed penetration security testing carried out by a specialist independent systems house.

Customers can register online, and once their information is verified against their record in Abacus they will receive two activation codes and can set their PIN.

In addition to being able to check balances, show transaction history and print statements for loan and savings accounts, customers can also access an online Loan Calculator that allows them to enter a loan amount, duration, and select a loan product from the Abacus loan products offered by their financial institution.

They can then see the likely loan repayments, and total repayable for that loan before whether deciding to make an application.
Increase your outreach

The rapid rise of mobile phone networks, and the falling cost of mobile technology, has made mobile delivery channels a cost-effective way for financial institutions to increase their outreach and improve their efficiency.

Fern can support the integrated with both planned and existing mobile banking services through a combination of our Abacus solution, our APIs, and many of the mobile delivery products available on the market today. Abacus offers seamless connectivity to mobile delivery channels to improve efficiency and customer service, and to enable the establishment of branches in more rural areas.

Our clients are linked to a number of different providers – including POS, ATM, mobile on USSD and SMS channels – depending on their individual needs and local infrastructure.
About Fern Software

Fern Software designs and develops software solutions that power delivery of financial services to some of the most underserved markets in the world. Fern operates in 30 countries with more than 300 installations worldwide, providing savings and loans solutions in developed and developing regions. We have been doing this since our formation in Ireland 1979.

At Fern Software, we are creating technology and solutions to enable server, mobile, and cloud solutions in both developing and developed countries. We have offices in Australia, Canada, India, Ireland, Singapore and the UK - plus an emerging network of regional resellers in Ethiopia, Jordan and Tunisia.

We believe clever but uncomplicated technology has the potential to be a key disruptive force in the future of society: poverty alleviation, access to banking services, access to credit, enterprise promotion. It’s about making the world work better.