



AUTOMATION OF SACCOS
ASSESSMENT OF POTENTIAL SOLUTIONS

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The Kenya Financial Sector Deepening (FSD) programme was established in early 2005 to support the development of financial markets in Kenya as a means to stimulate wealth creation and reduce poverty. Working in partnership with the financial services industry, the programme's goal is to expand access to financial services among lower income households and smaller enterprises. It operates as an independent trust under the supervision of professional trustees, KPMG Kenya, with policy guidance from a Programme Investment Committee (PIC). In addition to the Government of Kenya, funders include the UK's Department for International Development (DFID), the World Bank, the Swedish International Development Agency (SIDA), Agence Française de Développement (AFD) and the Bill and Melinda Gates Foundation.

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List of Abbreviations

| | | | |
|--------------|---|---------------|--|
| ASP | Application Service Provider | IT | Information Technology |
| ATM | Automated Teller Machine | KPI | Key Performance Indicator |
| BOSA | Back Office Savings Activities | Kshs | Kenyan Shilling |
| CGAP | Consultative Group to Assist the Poor | KUSCCO | Kenya Union of Savings and Credit Co-operatives |
| CMIS | Co-operative Management Information System | KWFT | Kenya Women's Finance Trust |
| CoA | Chart of Accounts | MCB | Microfinance and Community Banking |
| CODIC | Co-operative Development Information Centre | MFI | Microfinance Institution |
| DSL | Digital Subscriber Line | MoCDM | Ministry of Co-operative Development and Marketing |
| e.g. | exempli gratia (for example) | POS | Point of Sale |
| etc. | et cetera | RFI | Request for Information |
| EOD | End-of-day | SAAS | Software as a Service |
| ERP | Enterprise Resource Planning | SACCO | Savings and Credit Co-operative |
| FOSA | Front Office Savings Activities | SMS | Short Message Service |
| FSD | Financial Sector Deepening | SASRA | SACCO Societies Regulatory Authority |
| GL | General Ledger | USD | United States dollar |
| GPRS | General Packet Radio Service | UTS | Universal Traders SACCO |
| GUI | Graphical User Interface | VSAT | Very Small Aperture Terminal |
| i.e. | id est (that is) | WOCCU | World Council of Credit Unions |
| IFRS | International Financial Reporting Standards | | |

EXECUTIVE SUMMARY

Financial Sector Deepening (FSD) Kenya recognises the critical role of Savings and Credit Cooperatives (SACCOs) in providing access to financial services to low income households in Kenya. SACCOs are one of the leading sources of rural finance and in many rural areas the local SACCO is the only provider of financial services. While the exact number of SACCOs operating in Kenya is not known, estimates range from almost 4,000 up to 5,000. About 200 of these are considered deposit-taking SACCOs, offering front office savings activities (FOSA).

Efforts have been undertaken by the Kenyan Ministry of Cooperative Development and Marketing (MoCDM) to reform the enabling environment for SACCOs. The SACCO Societies Act 2008, which passed into law at the end of last year, will require deposit-taking SACCOs to meet strong regulatory standards. The new regulations are expected to be gazetted in early 2010, hence there is an urgent need to significantly reform the 200 SACCOs offering FOSA.

As technology is deemed a main enabler of compliance, FSD Kenya commissioned the SACCO Automation project with the objective to identify viable automation solutions for SACCOs. More robust management information systems will enable SACCOs to manage their operations more efficiently, manage growth, and generate reliable reports for both management and the forthcoming regulatory authority. The focus was on SACCOs offering FOSA as they will be the first to be targeted by the upcoming regulation under the SACCO Societies Act 2008. The solutions needed to meet the SACCOs business as well as technical requirements, consider the constraints SACCOs are facing with regard to e.g. staff capacity and budget, and improve the quality and timeliness of their management information.

To be in a position to recommend viable automation solutions, the project team needed to understand the SACCOs' business processes and circumstances and translate them into system requirements. The project team thus visited five SACCOs and captured requirements across the complete SACCO operating model, including FOSA, BOSA (back office savings activities), accounting and finance, human resources, internal audit, and marketing departments. In addition to gathering requirements from analysing SACCOs' business processes, the project team analysed the anticipated regulatory requirements to assess their impact on the selection of potential systems.

In choosing the sample SACCOs the project team paid attention to obtaining a well balanced mix between different SACCO characteristics. The selection needed to include urban and rural SACCOs, employer-based and farmer-based SACCOs, as well as small and large SACCOs as it was assumed that, while all SACCOs have many common core requirements, each also has unique requirements corresponding to its segment and specific product offering. This approach ensured that the project team captured a comprehensive set of requirements that was likely to cover the needs of the approximate 200 FOSA SACCOs and present a robust basis for the automation decision. The outcome

was a list of 190 functional and technical requirements. While the different SACCO characteristics provided a range of requirements, they were not found to be as relevant as initially assumed when selecting an application. Trends such as more inclusive criteria for membership as well as more sophisticated and comprehensive customer requests amplify the convergence towards a common set of requirements. For system selection, every SACCO will need to consider each requirement and decide on its relevance as well as its priority in their specific context.

The next step was to identify automation solutions available in the market and assess their suitability. Several sources were reviewed to compile a list of vendors. After having screened the solutions for minimum requirements, 26 of initially 46 vendors were invited to provide more details about the specific properties of their offering through a request for information (RFI). Based on the responses, the project team finally short-listed six vendors for the final round of in-depth screening which took place in the form of system demonstrations. The final selection of vendors was a mix of domestic Kenyan vendors with a deep knowledge of Kenyan SACCOs and a strong presence in Kenya (Craft Silicon, Fintech), foreign vendors that have developed microfinance or credit union applications and could draw on significant international experience from their commercial banking applications (Fern, Neptune, Temenos), as well as local vendors who were expected to provide more cost efficient solutions (Amtech).

Consolidation of information gathered during the demonstrations proved that some functionality was provided by all solutions, hence it could not be considered as strength of a particular solution. This functionality was considered as "viable solution minimum" and represented requirements every viable solution needed to fulfil. Following the definition of this minimum, individual strengths and weaknesses could be noted. Every feature above and beyond the minimum requirements was recorded as a strength for the particular solution. A weakness was noted if a solution could not meet the "viable solution minimum" or if some severe shortcoming had been observed. In addition to individual shortcomings, some common weaknesses were noted, i.e. some functionality was not offered by any of the solutions.

Apart from the solutions' functionality and the vendors' support structure, it was important to understand the price level of the individual solutions. The project team therefore asked the vendors to provide cost estimates for two standard SACCOs, broken down into licence, implementation, training, and annual maintenance cost. While the vendors would obviously need to study business requirements case by case to quote an exact price, the cost estimates could serve as rough indication and help to understand in which price category a solution falls.

Based on the findings, the project team provided recommendations for how SACCOs preparing for regulation, can automate appropriately. Strategic options

that SACCOs could choose from once the automation decision has been made were identified. Analysis and evaluation of the options proved that some are not particularly suitable in the SACCO context, e.g. in-house development of a system or the acquisition of open-source software. The project team concluded that the most viable option is the acquisition of SACCO-dedicated packaged software. Engaging an application service provider (ASP) is deemed a good alternative definitely worth monitoring but is currently not considered attractive as the typical benefits cannot be realised in the SACCO context due to the underdeveloped market and prevalent infrastructure deficiencies.

The six solutions were evaluated with regard to fulfilment of requirements, cost, and application maintenance. The project team came to the conclusion that Bankers Realm (Craft Silicon) and FinSacco (Fintech) seem to offer the best price-performance ratio. Both solutions provide strong, SACCO-dedicated functionality at an acceptable price. The vendors' strong local presence further supports recommending both as viable automation solutions for Kenyan SACCOs. With the information at hand, the project team is not in a position to favour either FinSacco or Bankers Realm, but regards them as comparable.

Amtech's solution EasySacco was found capable of supporting a SACCO's core operations in general. However, the system needs improvement to be worth recommending with no reservations. It cannot offer the same value as the leading domestic solutions Bankers Realm and FinSacco. It could still be worth monitoring Amtech's offering in the future for the benefit of the smaller SACCOs who cannot afford the high-end solutions.

Fern's solution Abacus was generally considered very strong and offered several key credit cooperative features. Would customisation by the UK vendor be required to meet SACCOs' specific requirements the associated cost could

be difficult to recover compared with local solutions. In case SACCOs are ready to coordinate their system acquisition, Fern is deemed a reliable partner, bringing with them deep credit union expertise and a strong solution. In this case and the economies of scale and ABACUS advanced features make it an appealing option. For the individual SACCO ABACUS does offer good value but is not our primary option.

Neptune and Temenos both offer simplified and down-scaled versions of their core banking solutions. While both solutions, Orbit from Neptune and T24 for MCB (microfinance and community banking) from Temenos, are deemed able to automate SACCO operations, they are not specific to SACCOs. There is room for improvement with regard to fully meeting SACCO requirements. Given the observed price difference between Neptune's and Temenos' estimates and those of other vendors, the project team only recommends Orbit or T24 as secondary choices, as there seem to be more suitable and affordable solutions in the market. Neptune's ASP offering could be worth monitoring. However, they currently cannot offer the typical cost advantage associated with ASP.

To build a satisfactory basis for automation, a number of considerations need to be addressed by the SACCOs. They need to assess their ability to acquire, customise, and implement the application, available connectivity, their ability to manage the application, and their ability to realise organisational change to utilise the system. Even if these considerations do not completely prevent an implementation, they would prevent the SACCO from fully benefiting from the capacity of the system. The SACCO needs to be aware of these topics and adapt the approach to automation or develop the organisation before launching the automation project.

Chapter 1

INTRODUCTION

1.1 CONTEXT

FSD Kenya is an independent trust established to support the development of inclusive financial markets in Kenya as a means to stimulate wealth creation and reduce poverty. Working in partnership with a diverse range of financial institutions, business service providers, and support institutions, the goal of FSD Kenya is to significantly expand access to financial services among lower income households and smaller scale enterprises by developing the capacity of the financial services industry.

FSD recognises the critical role of SACCOs in providing access to financial services to low income households in Kenya. The FinAccess 2009 study undertaken by FSD indicates that SACCOs are one of the leading sources of rural finance and in many rural areas the local SACCO is the only provider of financial services. While the exact number of SACCOs operating in Kenya is not known, estimates range from almost 4,000 up to 5,000. About 200 of these are considered deposit-taking SACCOs, offering front office savings activities.

Efforts have been undertaken by the Kenyan Ministry of Cooperative Development and Marketing to reform the enabling environment for SACCOs. The SACCO Societies Act 2008 passed into law at the end of last year. It will require deposit-taking SACCOs to meet strong new regulatory standards. A task force of industry stake holders has been constituted by MoCDM to draft the new regulatory framework, focusing on the establishment of the new SACCO Societies Regulatory Authority (SASRA). As the new regulations are expected to be gazetted early 2010, there is now an urgent need for significantly reforming the estimated 200 SACCOs offering FOSA.

Technology is considered a main enabler of compliance. More robust management information systems will enable SACCOs to manage their operations more efficiently, manage growth, and generate reliable reports for both management and the forthcoming regulatory authority. While studies have taken place to identify potential information technology (IT) solutions that could meet the needs of SACCOs, there has not yet been a thorough analysis of the strengths and weaknesses of these solutions, nor an opportunity to test the solutions in a live setting or to assess potential implementation challenges. As such, FSD has contracted Accenture Development Partnerships (ADP) to undertake an analysis of automation options available to SACCOs with the aim of identifying ways to improve automation and increase transparency across the sector.

1.2 PROJECT OBJECTIVES

The overall objective for this project is to identify viable automation solutions for SACCOs. Within the heterogeneous group of SACCOs, the focus is on mid-sized to large SACCOs with FOSAs as they will be the first to be targeted by regulation.

The automation solutions shall:

- meet business as well as technical system requirements of the SACCOs,
- consider the constraints SACCOs are facing (i.e. staff capacity, information technology literacy, budget, connectivity),
- improve the quality and timeliness of their management information and thus help SACCOs prepare for forthcoming regulatory requirements.

To recommend viable automation solutions, the requirements for potential systems needed to be gathered in the first place. SACCOs' business processes and circumstances had to be clearly understood and then translated into requirements. Also, the likely regulatory requirements were reviewed to understand their impact on the selection of potential systems. Once a clear set of functional as well as technical requirements had been developed, the next step was to identify automation solutions available in the market and assess their viability. Based on analysis of the results, recommendations were provided on appropriate ways to tackle automation by SACCOs preparing for regulation.

1.3 PRELIMINARY PROJECTS

Apart from the SACCO Automation project commissioned by FSD, two main evaluations of available SACCO software have taken place in recent years. In 2007, the World Council of Credit Unions (WOCCU) Kenya went through a software evaluation exercise within their SACCO Growth project. WOCCU had raised funds to support the implementation of new systems in selected SACCOs to help them grow their membership. To solicit for SACCO software proposals from local vendors, WOCCU placed a paid advertisement in the Daily Nation. Out of 19 initial responses three vendors were finally short-listed, namely Fintech, Craft Silicon, and CoreTec. They were requested to familiarise themselves with the five SACCOs taking part in the project and provide financial proposals accordingly. It was Fintech and Craft Silicon who were finally chosen to partner with WOCCU and the selected SACCOs for implementation.

Another software evaluation project was initiated by Co-operative Bank, which has been providing capacity building services to the SACCO sector. Co-operative Bank, in close collaboration with MoCDM, invited proposals from system vendors in late 2008. A total of 25 proposals were received and 14 of these short-listed. The selected vendors are expected to hold demonstrations of their solutions and based on these recommendations will be made to the SACCOs.

The conclusions from the WOCCU project have been taken into consideration. At the time of undertaking the analysis the Co-op Bank study was still in progress and consequently not available to the project team. The information above has been used to understand which vendors were available on the Kenyan market at that time and to take part of practical experience from system selection and implementation in the SACCO sector.

The objective of this study differs from the assessments that are currently available:

- by focusing on the impact that forthcoming regulations have on selection of a viable solution;
- by providing advice on how to automate a SACCO that is applicable across the industry;
- by providing an current list of viable solution vendors;
- by analysing the strengths and weaknesses of the solutions in detail as well as examining some of the solutions in a live setting; and
- by assessing potential challenges to implementation.

1.4 ORGANISATION OF REPORT

The present report is organised as follows. Chapter 2 gives an overview of the methodology applied during this project. It provides information on the approach chosen by the project team with regard to requirements gathering and solution assessment. While section 2.1 explains how the project team went about requirements gathering, the selection of the sample SACCOS, and the procedure followed during the site visits, section 2.2 provides details on the project team's approach to soliciting information about available solutions, short-listing selected vendors, and finally attending demonstrations of their products.

Chapter 3 explains the project team's understanding of the anticipated regulations. It analyses the regulations' impact on SACCOS and details how they need to change their operations in order to comply with upcoming regulations and the role that information technology plays in that process, i.e. which requirements on a system arise due to the regulatory framework.

Chapter 4 presents the field visits' findings, divided into three sections. Section 4.1 describes experiences the project team gained with regards to specific conditions of the SACCOS that are very important to understand as they have a direct bearing on the probability of a successful system acquisition, implementation, and operation. Section 4.2 describes the actual outcome of the requirements gathering phase: approximately 190 functional and technical requirements stretching across the SACCO operating model. Finally, section 4.3 lists several opportunities for business process improvement that the project team identified in addition to the observations and specific system requirements.

Chapter 5 presents the outcome of assessing available automation solutions. Sections 5.1 and 5.2 present how the project team short-listed the six vendors to be invited for the final round of screening while section 5.3 describes the findings made during the software demonstrations held by the vendors. In detail, the latter section lists minimum requirements on viable solutions, observed common weaknesses of the screened systems, and noticed strengths as well as weaknesses of the individual solutions.

Chapter 6 presents the project team's recommendations, based on the findings and their analysis. Section 6.1 describes a number of issues every SACCO needs to consider when implementing a new system in order to be able to fully benefit from the implementation. Section 6.2 lists the potential strategic options a SACCO has and analyses their particular strengths and weaknesses in the given context. It also evaluates the six screened solutions with regard to fulfilment of requirements, cost, and application maintenance and makes a corresponding recommendation. Finally, section 6.3 provides SACCOS with an overview of the necessary steps towards automation. Section 7 concludes.

Chapter 2

PROJECT METHODOLOGY

2.1 REQUIREMENTS GATHERING AND BUSINESS ANALYSIS

2.1.1 Approach

The project has taken a fundamental approach to identifying automation solutions by understanding requirements as captured from visits to a sample of SACCOs. This is logical given the notion that technology is an enabler facilitating a sustainable, competitive and regulatory compliant SACCO operating model. If strategy and operative needs are neglected the risk is that SACCOs will increasingly be required to adapt their business models to the structure and capability of the automation solution and vendor rather than vice versa. Even though no known vendor offers solutions built purposely for a specific type of SACCO the project team is cautious of that there are significantly different operating models across the Kenyan SACCO industry. This emphasised the benefit of a fundamental approach as it allowed team to identify which those models are and what these SACCOs should consider when selecting a system.

2.1.2 Scope and categorisation

The scope of the study has been fully comprehensive. Technology solutions have been regarded as an opportunity across the SACCO operating model, organisational and hierarchical boundaries including all applicable departments and the products and services they offer to the customer, the regulator, suppliers and internally have been included. The study covers how the system is and would be used by senior and junior staff across FOSA, BOSA, accounting and finance, human resources, internal audit and marketing.

One reason for this approach is that even though this project was initiated to support SACCOs to specifically overcome the challenges implied in complying with regulations the solutions will need to support the SACCOs for several years. Additionally the SACCOs are unlikely to benefit from using several systems. Consequently the solutions need to be comprehensive considering current and future requirements.

We have gathered requirements organised in ten categories, five functional and five technical:

1. Functional - FOSA

- 1.1. Teller operations
- 1.2. Deposit Processing
- 1.3. Insurance
- 1.4. Reporting
- 1.5. Customer data management
- 1.6. Customer Service
- 1.7. General

2. Functional - BOSA

- 2.1. Share and dividend processing
- 2.2. Lending

- 2.3. Reporting
- 2.4. Customer data management
- 2.5. Credit
- 2.6. Collections

3. Functional - Accounting

- 3.1. General accounting
- 3.2. Expense Management
- 3.3. Product Costing
- 3.4. Payroll
- 3.5. Reporting

4. Functional - Finance

- 4.1. Planning
- 4.2. Treasury and cash management
- 4.3. Tax
- 4.4. Reporting

5. Functional - Risk management

- 5.1. Financial Risk management
- 5.2. Non-financial Risk management

6. Technical - Application

- 6.1. General
- 6.2. Flexibility and Scalability
- 6.3. Performance
- 6.4. Usability

7. Technical - Data

- 7.1. Interfaces
- 7.2. Data

8. Technical - Security and Control

- 8.1. Access Authorisation
- 8.2. Audit Trail and Logging

9. Technical - Environment

- 9.1. Technology
- 9.2. Operations
- 9.3. Backup and recovery

10. Technical - Documentation and Support

- 10.1. Documentation
- 10.2. Training
- 10.3. Support
- 10.4. Maintenance

The requirements matrix served as the structure supporting the requirements gathering during the project but it also serves a purpose after the project as a tool any SACCO can use to make the final evaluation of a system they are interested in. The requirements matrix, provided as a template in Annex 1, contains the following:

- **ID:** A unique serial number used to identify the requirement.
- **Category:** Categorisation in three levels. The categories are just used to organise the requirements and provide an overview of what is required in each area. The functional categories follow the project team understanding of the SACCO operating model.
- **Description:** Clarifies and provides further information about the requirement or examples. Does not introduce additional requirements or expand the requirement.
- **Purpose:** In order to clarify the requirements the purpose is described. Commonly as a situation in which the requirement is used. Priority: the project has not set a limitation in scope. All requirements of relevance for the system that have been expressed have been included. In order to practically separate them they are prioritised by the project team as follows:
 - High: The SACCO cannot perform daily and basic tasks without this requirement. Example: General ledger (GL) module.
 - Medium: SACCOs need this requirement to improve business. Example: Flexibility in creating additional reports.
 - Low: This requirement is beneficial for SACCOs but not required to fulfil short/medium term goals. Example: Multi-currency feature.
- **Source:** The project has derived requirements from SACCOs, by analysing what the regulatory framework will require and what is required to achieve best practice. These are listed as sources.

In addition to the functional and technical dimensions we approached the requirements gathering from five additional directions challenging the findings:

- **Best practice:** On an operative level what is best practice and what does the system need to provide to enable the SACCO to close any gap between current processes and best practice?
- **Restrictions to change:** Is the SACCO able to practically realise the identified opportunities by implementing and utilising the system fully? Several factors could be restrictive such as the internal capacity to read, write and review software code in order to internally administrate the system, the operational staff's information technology literacy, what dependency on IT vendors is acceptable across the need to maintain the application, are branches sufficiently connected and can any legacy systems integrate with the new core SACCO solution?

- **Regulations:** We have reviewed available and indicative information about the regulations in order to understand what explicit and implicit requirements it places on the SACCO in order to operate legally.
- **Strategy:** Several factors in the marketplace indicate that the SACCOs' environment and requirements might change drastically in the near future. Achieving regulatory compliance results in a change journey that is strategic in itself but we are also conscious of the radical growth rates some SACCOs have experienced (e.g. 100% growth in members over three years) and the significant fragmentation of the part of the market for financial services that the SACCOs operate in (in one municipality with approximately 39,000 inhabitants, out of which 14,000 live in the urban area, there were 14-21 institutions offering savings and credit products). The impact of this change needs to be understood in order to identify a solution viable in the long term.
- **Budget:** The project team is conscious of the fact that even if a system or system feature is identified as helpful a SACCO's profitability might not be sufficient to acquire it. However, it has been assumed that automation through increased use of appropriate technology solutions is necessary sooner or later for all SACCOs and thus have we not developed a detailed business case to assess the exact monetary value that can be created.

A proper financial evaluation of automation using business case depends on input such as the detailed impact the automation has on revenue and cost and the risks associated with the project. In order to decide which system to chose or which adaptations to make each SACCO is highly recommended to capture this input and produce a business case tailored to their organisation and the decision at hand. It might be that, regardless of how well the SACCO documents and analyses the costs and benefits of automation, the costs exceed the benefits under all circumstances depending on the fundamental viability and proficiency of each SACCO.

Disregarding the possibility of any external financing free of charge (grants, subsidies etc.) we have gathered requirements to understand alternative options for how to deploy automation solutions to mitigate financial constraints. These include the option to standardise requirements in order to pool the acquisition with other SACCOs and the option to outsource. Outsourcing is commonly referred to as software as a service (SaaS) and provided by an application service provider.

2.1.3 Sample selection and segmentation

Given the complexity of the topic and the need to have a dialogue to discuss the issues at hand field visits to SACCOs was decided to be the most suitable method of collecting information. The alternative would have been a survey which would have allowed the project to include a larger number of SACCOs if not all FOSA SACCOs. The survey method was abandoned as the project team would have limited means of confirming the SACCOs understanding of the survey questions or to capture any assumptions made.

The purpose of the visits was to spend enough time with each SACCO to understand their requirements in detail through individual interviews. This would require an estimated 2.5-3 full working days at each SACCO. Given the time available the project team could visit six SACCOs in total. The considerable limitation of this method was that any findings might be biased to the condition of one or a few individual SACCOs and not representative for the approximately 200 SACCOs obliged to comply with regulations. In order to mitigate this methodological deficiency the sample of SACCOs to be visited was carefully selected with the support of WOCCU and FSD to identify six institutions with the least of this tendency.

The sample also needed to represent the variation of the SACCO business model that does exist in the form of focus on e.g. agricultural sector members, integration with members employer, building up a branch network, offering microfinance products, expansion to rural areas etc. It was assumed that these SACCOs have many common core requirements but that each also has unique requirements corresponding to its segment and specific product offering. For this reason it was necessary to understand the range of different segments that existed and include one SACCO from each segment in the sample.

Two possible options for segmenting SACCOs were identified: 1) a quantitative method by which a number of key variables, that apply to all FOSA SACCOs, such as number of members, branches, assets under management would be identified and, using regression analysis, the six SACCOs which are the least unique could be identified. 2) Alternatively industry experts would be consulted to subjectively but logically identify representative SACCOs for each segment. Given the sample size (6) and the approximate population size (200), the team decided that the random variable would be too great and the benefit of the former method would not motivate the effort. Instead, the team had several conversations with subject matter experts (SMEs) from KUSSCO, WOCCU and FSD to understand what different types of SACCOs exist.

During discussions with these experts the following key SACCO characteristics were identified:

- **Urban:** Urban SACCOs are very large, Kshs 5-15 billion in terms of total loan portfolio. They are practically all head quartered in Nairobi and are characterised by access to ample supply of skilled labour and a relatively reliable and efficient telecommunication network.
- **Rural:** Rural SACCOs are among the smallest in the industry rarely exceeding Kshs 2 billion in total assets, they are found in villages or towns with 1,000-20,000 inhabitants and primarily have members with an income below the national average (for SACCO members) and are sustained through agriculture, either as employees of a plantation or as independent farmers.
- **Employer-based:** Have usually been created for employees of a specific organisation. This could be one large local private company such

as a plantation or it could be for policemen or military personnel across Kenya. They distinguish themselves by processing salaries on behalf of the employer or by letting the employer process the transactions related to the SACCOs products on its behalf.

- **Agricultural:** SACCOs who are partially or fully focused on offering products tailored to the needs of farmers.
- **Public sector:** SACCOs focused on the public sector might have developed unique practices or developed unique products that were deemed necessary to consider.
- **Private sector:** SACCOs focused on the private sector might have developed unique practices or developed unique products that were deemed necessary to consider.
- **Size (per total assets):** SACCOs with a large loan portfolio under management were expected to have developed unique practices due to the economies of scale generate by their volume.
- **Size(per number of branches):** Connecting a large and geographically dispersed branch network creates challenges that need to be overcome.
- **Software in place:** It was relevant to visit SACCOs who had recently implemented what was perceived as competitive solutions as well as those who use legacy solutions.

Any SACCO could represent one or several of these creating several unique combinations. However, from a requirements gathering perspective it was considered sufficient if the sample as a whole would represent all, disregarding the combinations. The exception is SACCOs that have a large branch network and operate in a rural area. The logic being that they face a unique challenge in connecting the branches while the available infrastructure and income per capita in the region impose severe limitations.

It was decided to choose the six candidates from those SACCOs that were affiliated to WOCCU and FSD projects or had been in contact with WOCCU/FSD earlier in order to leverage the network and contacts. The risk of restricting the sample to those 30-40 SACCOs seemed negligible.

A list of nine SACCOs: Muramati, Kirinyaga, Wakenya Pamoja, Ndege Chai, Universal Traders, Stima, Harambee, Ukulima, and Mwalimu was finally produced. These SACCOs represented a well balanced mix between the above mentioned characteristics. As the project schedule only allowed for visiting six SACCOs, three had to be ruled out. The team looked at unique features within all nine SACCOs in order to pick the ones that were given priority 1. This prioritisation was confirmed during discussions with WOCCU and FSD. The following six were chosen as priority 1 candidates to be contacted first:

- **Muramati SACCO:** Rural tea farmers SACCO, has largest number of branches and also has implemented Bankers Realm recently (interesting from a lessons learnt point of view).

- **Kirinyaga District Farmers SACCO:** Rural coffee farmers SACCO, has implemented the Co-operative Management Information System (CMIS) that about 50-70 SACCOs use (important to understand CMIS).
- **Ndege Chai SACCO:** Private SACCO, employer-based, has successfully been using FinE-Xtreme, could act as benchmark.
- **Universal Traders SACCO (UTS):** Rural SACCO with heterogeneous customer base, smallest in total assets among the six.
- **Harambee SACCO:** Urban, employer-based SACCO in the public sector, largest in total assets, also using Bankers Realm (interesting to compare with Muramati regarding implementation of Bankers Realm).
- **Mwalimu SACCO:** Urban teachers SACCO, unique segment, also using CMIS (interesting how software is implemented here in contrast to rural Kirinyaga).

2.1.2 SACCO site visits

The purpose of the site visits to the SACCOs was fourfold:

1. Understand SACCOs' functional and technical requirements
2. Evaluate technology solutions available to the Kenyan market
3. Develop strategic options to achieve automation
4. Understand implementation constraints.

By visiting the SACCOs the project team could capture information about the SACCOs and convert this to system requirements simultaneously. This was considered a significant benefit as the project team would have visibility and control of the process from raw data to system requirements and ensure consistency between each SACCO visit. Secondly the visits provided an opportunity to see the systems currently in use in a live environment. This provided a hopefully revealing 'practitioner's' view of the system. Thirdly the visits allowed the project team to have a dialogue with the SACCOs to understand not only requirements but develop a view on the strategic options that are available to achieve automation.

The approach to the visits was determined by the requirements needed to be captured, as described above, and adapted to the organisational structure of each SACCO. The approach included:

- **Establish contact and confirm engagement:** Initial discussions with the general manager of each prospective SACCO to confirm that their organisation would be appropriate as per the assumptions in our initial selection process and that they could see the value in participating. The latter was important to secure the SACCOs engagement and willingness to provide access to sensitive information. This is especially important in the light of the WOCCU impact assessment which reveals that a significant number of SACCOs are weak and use antiquated systems.

- **Cross-functional workshop:** Each visit was initiated by a cross-functional workshop. Beyond practical aspects such as creating a common understanding of project objectives the purpose was to stimulate a discussion across the SACCO's departments so that all could take part of individual reflections on topics that might not be apparent in every department. The workshop would cover the SACCOs readiness to comply with the regulations, how systems are currently used, observed strengths and weaknesses with the current system and the SACCOs ability to improve with regards to how technology is used.
- **Individual interviews:** The interviews were intended to be used to, in detail, understand the SACCOs organisation, business processes and how technology was or would be used for each of the key areas of the SACCO. The individual interviews were where the majority of the detailed requirements were expected to be captured. The workshop also served this purpose but was primarily required to create a common starting point.
- **System review:** The visits were concluded by a review of the systems which consisted of a manager or IT specialist providing an overview of the system modules and features, walking through some key processes and illustrating observed strengths and weaknesses.

2.2 AUTOMATION SOLUTION ASSESSMENT

2.2.1 Solution listing

After having understood the SACCOs' functional and technical requirements, the next step was to identify suitable automation solutions. Instead of for example placing an advertisement in a local newspaper to solicit proposals, the project decided to contact potential solution vendors directly to save time. In order to compile a list of vendors to be included, several sources were reviewed:

- a list of all vendors that had participated in the WOCCU Growth Project (software evaluation and acquisition support to SACCOs in order to stimulate growth),
- direct references from both WOCCU and FSD,
- a list of solutions currently in use provided by the IT department of the Kenya Union of Savings and Credit Co-operatives (KUSCCO), the SACCOs' national umbrella body, as well as
- a list of technology solutions currently used by microfinance institutions (MFIs) globally, put together by the Consultative Group to Assist the Poor (CGAP).¹

Efforts to obtain the list of vendors which had expressed an interest under the Co-operative Bank work proved fruitless and were abandoned.

¹ See http://collab2.cgap.org/gm/ISFund_Software_Product_Dashboard

The fact that the individual lists overlapped supported the assumption that a fairly comprehensive listing of solutions available in the market could be compiled following the chosen approach. All likely solutions taken from these sources were subject to an initial screening. That way the project team could decrease the possibility of including a vendor in the process that did not meet minimum requirements. The proposed solutions needed to offer FOSA, BOSA, and accounting functionality as well as display a proven implementation track record at East African SACCOs or MFIs. Information was taken from previous studies, software reviews, and the vendors' websites. In cases of doubt, a vendor was still included to lower the risk that a potentially viable solution was left out.

The selected vendors were sent an invitation to participate in the SACCO Automation project in the form of a request for information. To obtain the vendors' buy-in, contact was established and the project was explained before the documents were sent.

2.2.2 RFI process

The objective of the RFI was to get a more detailed view on which solutions are currently available in the market and how these could meet operational as well as regulatory requirements. Based on the responses, the project team would finally short-list the vendors for the final round of in-depth screening.

The RFI document included an executive summary of the SACCO Automation project as well as an instruction on how to respond to the RFI. Vendors were requested to complete an attached survey and answer a number of open-ended questions within a term of two weeks.

The survey consisted of approximately 120 questions concerning the functionality and features of a system. The questions had been based on the requirement categories defined earlier. Vendors had to state if their solution could meet specific functional requirements with regard to FOSA, BOSA, Accounting, Finance, and Risk management. Moreover, they were asked to provide details for the technical requirement categories of Application, Data, Security and Control, Environment, and Documentation and Support. Finally, they had to produce their minimum licence cost. Most of the survey questions were closed questions that had to be answered with either yes or no. A column was provided for information vendors who wanted to add comments and for open questions which demanded a value, number or comment.²

Additionally, the vendors were requested to answer 12 open-ended questions. The purpose of these questions was to complement the survey questions in providing a detailed picture of both the vendor and the proposed solution. Vendors were asked to provide information on their company profile, their implementation experience, and specific properties of their solution. They had

to explain their pricing approach and provide details with regard to support and maintenance services they offer.³

The responses submitted by the vendors were then scored to compare the proposed solutions. To compute a total score for a particular solution, both the survey answers and the answers to the open-ended questions were scored. This combination of quantitative and qualitative assessment was considered a comprehensive approach to evaluating the RFI responses.

For scoring the survey questions, each question had been assigned a priority from

- 1 – “The requirement is beneficial to a SACCO, but irrelevant in terms of fulfilling immediate objectives” to
- 5 – “The requirement is used to perform tasks fundamental to SACCO operations”.

This facilitated weighting of the questions as not all requirements were considered equally important. A vendor could score from 0 to 5 points in each of the approximately 120 questions. In case the proposed solution did not fulfil the requirement, i.e. the vendor answered no or provided an insufficient answer, 0 points were given for the respective question. In case a solution could meet the requirement, a vendor was awarded 1 point for fulfilment which was multiplied with the assigned priority (1 to 5). The maximum possible survey score amounted to 464 points.

Out of 12 open-ended questions 10 were scored, as the schematic illustrating the solution's architecture and the cost estimate were provided for the project team's reference and not subject to scoring. The remaining 10 questions were all regarded equally important, hence they were not assigned a particular priority. The vendors' answers were evaluated with regard to fulfilment level and points were awarded accordingly. Vendors could score between 1 and 5 points according to the fulfilment levels in table 1.

The maximum possible score for the open-ended questions amounted to 50. Once the scores for both parts of the RFI response had been calculated, they were weighted to obtain a final score. A vendor's relative score for the survey (i.e. what percentage of requirements the proposed solution could fulfil) was weighted 65%, the relative score for the answers to the open-ended questions was weighted 35% of the final score. A ranking of all solutions was finally produced based on the total score.

² See Annex 3 for FSD Kenya SACCO Automation Vendor Survey v0.2.xls

³ See Annex 4 for open-ended questions

Table 1: Scoring rules

| Fulfilment | Description | Points awarded |
|-------------------|--|----------------|
| Rejected | Demonstrates a solution that does not fulfil basic criteria, functionality is lacking, and any opportunities to improve or compensate are unrealistic. | 1 |
| Needs improvement | Demonstrates a solution that does not fulfil basic criteria in terms of what is required to operate a SACCO. | 2 |
| Acceptable | Demonstrates a solution that is expected to fulfil basic criteria in terms of what is required to operate a SACCO but there are significant improvement opportunities. | 3 |
| Good | Demonstrates a solution that is good but improvement opportunities are apparent and the solution is inferior to what is classified as best practice. | 4 |
| Excellent | Demonstrates a best practice solution. | 5 |

2.2.3 Software demonstrations

The final round of screening took place in the form of software demonstrations held by the vendors. It was estimated to be appropriate to invite 6 vendors in order to provide a sufficient selection after this final screening but also considering the time required to truly understand the solutions at this stage and the resources available to the project team. The choice of which vendors to invite to this final round was based on the ranking produced when scoring the RFI responses. However, certain vendors could be ruled out immediately as their solution or their response, respectively, was considered inadequate given minimum criteria. While the primary factor for choosing the vendors was the relative rank among the ones qualified in the RFI, the second factor was the vendors' corporate profile. The project team desired a final selection including vendors of all of the three types that had emerged from the RFI responses.

- Domestic Kenyan vendors with a deep knowledge of Kenyan SACCOs and a strong presence in Kenya in terms of SACCOs using the application and a physical presence. The purpose of inviting this group is to ensure that the screening provides solutions that are highly tailored to the SACCO model and suitable for SACCOs who prioritise proximity to the vendor and need a vendor who is familiar with the business processes.
- Foreign vendors that have developed microfinance and credit union applications and can draw on a very significant international experience from their commercial banking applications. This group has been invited to provide a different perspective and possibly also a different level of maturity, especially with regards to provision of ASP solutions. Their solutions might require more customisation than the domestic but we

do not expect it to be prohibitive or that the costs will offset the other benefit they could contribute with.

- Vendors who are expected to provide more cost efficient solutions for the SACCOs who do not have the budget for the high-end solutions. As the first two types of purposely are the vendors who performed the best we expect these to price above average and this might not suit all SACCOs.

The six selected vendors were notified of the results and invited to participate in the final round of screening. The following was requested with regard to the demonstrations:

- The demonstration was to be hosted in their premises. This choice of location would help the project team to gain additional insight into the vendor's operations and the support structure in place.
- A current version of the system including sample data needed to be made available. Sample data would facilitate live demonstration and testing of key transactions the project team wanted to evaluate, such as receiving deposit as cash/cheque, disbursing cash, processing a loan application, answering a customer query about last month's transactions, and setting up a new user and assigning access rights.
- Vendors were asked to demonstrate the main components of their system and sample key SACCO business processes. Leaving the agenda relatively open helped the project team to assess the familiarity of the vendor with core SACCO processes.
- The vendors were to provide at least two references for SACCOs which are running on the proposed solution and which could be visited subsequently. The project team assumed that this helped to make vendors answer more truthfully as they would expect an on-site assessment to take place after the demonstration.
- The vendors were asked to provide details for one example of a multi-branch installation they had completed, including information on the SACCO, the technology set-up, connectivity, data migration, and challenges they had faced. This would allow the project team to assess the vendor's proficiency with regard to multi-branch implementations.
- Vendors were requested to provide a cost estimate for two standard SACCOs, i.e. an estimated total cost broken down into license, implementation, training, and annual maintenance fees. Such an estimate would enable the project team to be able to roughly compare the price levels of the different solutions. The following information was provided on the two standard SACCOs:
 - Tea farmers-based SACCO, Kenya Tea Development Agency as sole employer, 3 branches, 20 system users, 15000 members
 - Urban SACCO with diverse membership, employees from governmental and private organisations as well as teachers and traders, 8 branches, 100 system users, 60000 members.

- A manual of the solution needed to be provided. The manual would offer the possibility to look up functionality when necessary and also give an impression about system documentation quality.
- The vendors were asked to provide a document illustrating the data model of the proposed solution. This would enable the project team to evaluate the logical data model of the solution and also to confirm that a relational database is used.

In preparation for the software demonstrations, the project team developed a standard vendor evaluation template, which included the relevant requirements for a viable system, based on the consolidated SACCO requirements put together previously. A standard approach to each of the demonstrations would facilitate comparison of the solutions later on in the process. The template was filled in during every demonstration. In case relevant topics were not covered during the actual system presentation by the vendor, the project team would follow up during a question and answer session subsequent to the demonstration, as it was mandatory to gather the same information about all solutions for comparison.

The project team requested live demonstration of typical SACCO processes, such as opening an account, processing a loan application, posting an expense into the general ledger, etc. to challenge the system. Finally, vendors were requested to walk the project team through their premises, so that the team could get an impression of the company and the support structure in place.

Subsequent to each demonstration, the project team would review the completed template and translate the information into strengths and weaknesses that had been observed. This information was consolidated once all demonstrations had been held to facilitate comparing the solutions with regard to strengths and weaknesses.

The consolidated information proved that some functionality was provided by all solutions, hence it could not be considered as strength of a particular solution but rather as fundamental functionality. Those features were collected to form the “viable solution minimum” category, which consisted of all the requirements that every viable solution needed to fulfil. Every feature above and beyond these fundamental requirements was noted as a strength for the particular solution.

A similar process was followed with regard to the solutions’ weaknesses. Weaknesses that had been observed for all solutions were collected to form the “common weaknesses” category, which included all requirements that were not fulfilled by any of the solutions. This category would not assist in making the final recommendation. A weakness for an individual solution was noted if it could not meet the “viable solution minimum” defined earlier or if some severe shortcoming had been observed. The consolidated table finally enabled the project team to compare the solutions with regard to strengths and weaknesses in particular requirement categories.

Chapter 3

REGULATORY FRAMEWORK

3.1 ANTICIPATED REGULATIONS

The project team has analysed available material to understand the anticipated regulatory framework that the SACCOs can expect to be subject to based on the SACCO Societies Act 2008. The purpose is to understand how SACCOs need to change their operations in the near future, in order to comply with regulations, to be competitive and sustainable, and what role information technology solutions will play in that process.

The project team considered the full range of regulatory requirements that can be expected based on the Act, spanning across the SACCOs' operating model but focus in particular on capital structure, liquidity and credit management. In addition to these areas, it also reviewed possible needs to build a reporting and risk management capability and how the system is used to support the SACCO governance model. The expectation is that the SACCO will utilise and be the most dependent on an appropriate system.

Based on our analysis we have made a projection of a hypothetical regulatory framework, in line with the draft SACCO society regulations which we used in our discussion with the SACCOs. We used it as a benchmark to evaluate their current proficiency, identify gaps in their current system's capability, to explain the reason and objective of the project as well as to understand how the SACCO can progress towards compliance.

The understanding we have obtained is outlined below and is relevant in this report as it is the basis for specific requirements and as a background to the recommendations for strategic choices for automation and business process improvement.

Any information with regards to specific regulatory requirements is the project team's assessment. The assessment is based on the SACCO Societies Act 2008 and regulation of similar industries in Kenya such as commercial banks and microfinance as well as interviews with key stake holders involved in drafting the SACCO society regulations. The information gathered is used in the absence of gazetted SACCO regulations.

3.2 BACKGROUND

Our understanding of the act is that it will support the SACCO movement and protect individual and institutional investors by building viable institutions. It does this by enforcing regulations that constitute sound business practices; it provides predictability through consistent adherence to these practices and transparency through reporting. In the event of breach of the regulations it provides a basis to take legal actions.

The Act specifically applies to "deposit taking SACCOs". This limits the scope to those that offer "front office savings activities", where persons who do not own shares in the SACCO can deposit money through savings accounts. We understand the legislator's intentions as focused on protecting the

persons who have deposited money with the SACCO but are not protected by the mutual interest of the shareholders or a social bond. This leaves the approximately 200 SACCOs with FOSA to choose between complying with regulations in order to legally maintain the FOSA operations or to abandon their FOSA business and focus on BOSA operations instead. The latter would be worth considering if the cash flow from FOSA in proportion to the loan portfolio is low and compliance with regulations would require a significant investment in business process re-design and IT infrastructure. However, based on the project teams observations at SACCOs this would most certainly have two negative bi-effects: 1) the SACCOs reputation would be damaged as the decision confirms in the view of the public and the members that the SACCO does not and would struggle to comply with regulations and 2) the SACCO would lose a significant competitive advantage as customers have come to expect their financial services provider to offer credit and savings products. The SACCOs would hardly be competitive relative to the banks and only be attractive to their historic credit customers who cannot obtain credit elsewhere.

This report will focus on the SACCOs who aim to comply with regulations. Providing advice to this group is a primary concern as we draw the conclusion that closing FOSA is not a realistic option for most SACCOs. Maintaining FOSA also leaves SACCOs with the more complex model where advice is more critical. We say this as in addition to protecting the deposit holders, the SACCOs with external capital such as non-member deposits and interest bearing debt from commercial creditors⁴ face a much higher risk of insolvency. Theoretically, a SACCO borrowing no external capital and only issuing a loan when fully secured by guarantors' share capital could not go bankrupt. Through credit losses it could lose all of its capital but it would be solvent. When deposits and external capital are introduced on the SACCO's balance sheet this relationship is broken unless all loans are fully secured using additional collateral to eliminate the gap between the value of the share capital and the loan portfolio.

In conclusion this leaves the SACCO with a new operating model, different from that of the traditional, and hence is it subject to the Act. To our opinion significant value can be realised by reviewing how technology is used to facilitate operations, if business processes are optimised to benefit from the capacity provided by the technology and if they are aligned with the SACCO's strategy.

3.3 IMPACT ON SACCOS

We expect the SACCO Societies Act 2008 to have a profound impact on the SACCOs that seek a licence to operate with front office savings activities. The WOCCU impact analysis⁵ highlights numerous challenges and our own

⁴ Mainly commercial banks, and in the case of the SACCOs most often Co-op Bank but also others.

⁵ "Impact analysis of the SACCO regulatory framework – Kenya SACCO sector, SACCO assessment – proposed 2006 SACCO act" by Jesus R. Chavez

studies, which have been focused on how technology currently is used to enable efficient processes and effective organisations, indicate that significant improvement is urgently required in many SACCOs. It needs to be mentioned that also the 200 FOSA SACCOs are a very heterogeneous group where some have recently implemented competitive systems and know how to use them and other operate in DOS-based systems with flat file databases, suffer data loss, lack basic SACCO features and most critically are unaware of the alternatives to their system.

We focus on the operational impact of the regulations, separating the 'if to automate' decision from the "how" as the first answer is given by the significant issues the non or poorly automated SACCOs are struggling with. One way to make the "if" decision is with the support of a business case that captures and quantifies the costs and benefits of the automation. Such a business case is dependent on a clear understanding of the strategy of the institution undertaking the decision in order to make correct assumptions. The business case answers the binary question "if" but also provides continuous financial evaluation for each shilling invested enabling the SACCO to choose between different automation solutions on a financial basis. This also requires a gap analysis specific to each SACCO. We have not gone to that level of detail as we aim to provide a selection of viable automation solutions given the regulated market.

The regulations can be divided into three categories based on the flexibility they provide the SACCO with to determine how to comply.

- **Specific tasks.** For example, submitting reports with specific information within a deadline. This can be monthly financial statements in accordance with International Financial Reporting Standards (IFRS) by the 15th working day after period end. Another example would be that all loans have to be secured using some kind of asset which requires specific tasks during the loan issuing process and ongoing management of the collateral.
- **Specification of process characteristics.** This type of requirement would not specify exactly 'which' tasks have to be performed but 'how'. One example is loan issuing and the characteristics can include requiring a certain transparency by disclosing information and conditions to the public, predictability by applying the conditions consistently and fairness by not discriminating or favouring individuals based on non-business related conditions.
- **Targets.** Irrespective of operational details of the SACCO the regulator specifies required financial performance and capital structure. The SACCO may choose how to proceed as long as the outcome is that criteria such as the ratio 'core capital to total deposits' reach or exceed a minimum level.

Most of the regulations do have implications on SACCO automation decisions, as it would be difficult to achieve compliance without the support of an effective

IT solution for most of the SACCO business processes within FOSA, BOSA and the accounting function. It will for some regulations be theoretically possible to use manual processes but automation yields several positive results, out of which we list a few illustrative examples below.

Increase efficiency, reduce manual effort and lower risk for human error:

- For a SACCO with several, geographically dispersed branches to produce consolidated monthly financial statements in accordance with IFRS by the 15th working day the following period.
- To prevent delinquency by appraising loan applications following a rigorous process that is adapted to each product.
- To monitor recovery of a portfolio of small business loans, where each borrower has a unique business that provides cash flow as collateral and means for repayment, so closely that delinquency is prevented.

Increased robustness:

- Enables management to enforce compliance with agreed business processes and can immediately identify deviation. This helps manage delinquency by ensuring that only eligible members can borrow.
- Ensures that reports are produced consistently using data that has been validated on entry to the system.

Increase information access:

- A well developed system can help evaluate which collection efforts and collection staff is effective creating an opportunity to fine tune the business.
- Reports that can be segmented providing insight to key value drivers such as growth, margin and delinquency per product, branch, month, week or day.
- To support the audit function of a SACCO to identify the most relevant deviations from agreed processes to review.

Our conclusion is that investments in automation have a significant and realisable positive net present value when fulfilment of regulatory requirements is coupled with improvement of business processes and increased use of data and intelligence for executive decision making. Based on our visits to SACCOs it is reasonable to assume that without automation many SACCOs would practically not be fully able to comply. It can also be assumed that it would not be financially viable to achieve compliance using manual solutions and the use of technology will free resources to focus on more value adding activities, e.g. in the appraisal process the SACCO can focus on whether it will be able to recover the loan from the applicant rather than on confirming that all the fields on the form have been filled.

We also expect the regulatory authority to require the SACCO management to have a documented and demonstrably profound and structured insight to the business. For example could the authority require detailed business plans to approve strategic as well as smaller changes to the SACCO, such as opening a new branch. Such plans are difficult to develop without access to a significant amount of detailed historic data and if the plan is not accurate it will not be a useful tool to the SACCO. To gain approval from the authority for various key activities the management would for example be required to explain:

- How can deposits be mobilised?
- What is the cost of debt (external capital and deposits)?
- What are the operating expenses?
- What cash reserves are required?
- What provisions can be expected to cover delinquency?
- What fixed assets would be required to operate the business?
- Forecasted operating profit.
- Economic and demographic statistical data about the area.

The authority could also make direct requirements on the minimum features of the system such as: audit trail report, adequate security, integration of operations, capacity for future expansion real time and relational database management.

3.4 REGULATIONS CONTENT

3.4.1 Credit management

We expect the regulations to focus heavily on credit management as the core business of the SACCO and the primary source of risks to the viability of the SACCO. The SACCO will need to establish a policy that provides a foundation for issuing and recovering loans in accordance with the principles of the regulation and supports financial performance at par with or exceeding the regulations. The policy needs to be applied consistently, without discriminating any person positively or negatively and the customers need to be provided insight to the process and its outcome.

Loan issuing

The role of the system during loan issuing will be to facilitate the business processes corresponding to the policy by:

- Supporting presentation of the SACCO product offering to identify suitable products to a prospective borrower by presenting the terms and conditions of the loans and loan eligibility criteria.
- Capturing applicant's data such as personal information, financial background, purpose of the loan and all necessary information about guarantors and collateral.

- Support appraisal by 1) calculating the maximum loan amount as percentage of collateral or guarantors' shares to ensure that all loans are fully secured. 2) Identify and document any relationship between borrower and SACCO employee. 3) confirm any required co-signers and 4) any additional eligibility criteria and present outcome.
- Capturing the outcome of the appraisal process and either enforce or recommend the subsequent action. Enforcing meaning that only applicants fully compliant with the appraisal criteria will be approved and the system would only allow rejection in all other cases. Recommend meaning that the system provides a recommendation which the users, depending on seniority, can follow or overrule. In the case over overruling the system will capture the basis for the decision.
- Real-time risk management in parallel with the issuing to understand how the new loan impacts 1) loan concentration, 2) the portfolio value per product and 3) the total commitment per guarantor relative to total value of shares to prevent over-commitment.
- Release loan disbursement payment when the appropriate authority has confirmed in the system.

Loan recovery

The system will perform a key role in recovery by providing an ability to automatically monitor the portfolio and take or suggest collection actions to mitigate delinquency. The system will also make accounting postings to maintain accounts in accordance with IFRS. Automation of these processes will be necessary in order to reach the efficiency required to comply with regulations.

Automated monitoring of and provisioning for loan aging is one of the systems key features as it provides the SACCO with a continuously accurate and up-to-date view of the core operation and ensures regulatory compliance. The regulations will include categories based on performance and the necessary corresponding provision as of table 2. It is necessary that the system adapts the performance reporting to the terms and conditions for each product as there is no generic definition. For example, will a product with balloon payment not be delinquent despite the fact that no payment might occur for e.g. the first 6 months of the loan duration.

In addition to the Act IFRS forms another minimum requirement for especially revenue recognition. For example no interest may be recognised as revenue for non-performing loans after 3 months and accrued interest may at no times exceed 30 days earnings of the entire portfolio. The system needs to automatically adjust when these thresholds are reached.

A SACCO needs to write-off loans under certain conditions. Several of these SACCOS cannot with full certainty be automated. The system could be required to prompt the SACCO but will require manual monitoring. However, as the posting is made the system should also capture the reason and background

for management information purposes. A full write-off is required upon the following events:

- An adverse court ruling disqualifying the SACCOs claim on a receivable.
- A customer defaults on a loan that is not fully secured, the collateral cannot be seized or the proceeds do not match the loan value.
- When the SACCO has no contractual support for its claim.
- The borrower is legally bankrupt.
- Recovery efforts are abandoned.

Table 2: Provisioning rules for loan aging

| Description | Definition | Loan-loss provision (%) |
|-------------|--|-------------------------|
| Performing | Loans which are well documented and performing according to contractual terms. | 0 |
| Watch | Loans whose principle instalment or interest has remained un-paid for one day to 30 days or where one instalment is outstanding. | 25 |
| Substandard | Loans not adequately protected by the current repayment capacity and the principle instalment or interest have remained un-paid between 31 – 90 days or where 2 – 3 instalments have remained outstanding. | 50 |
| Doubtful | Loans not adequately protected by the current repayment capacity and the principle instalment or interest have remained un-paid between 91- 180 days or where 4-6 instalments have remained outstanding. | 75 |
| Loss | Loans which are considered uncollectible or of such little value that their continued recognition as receivable assets is not warranted, not adequately protected and have remained un-paid for more than 180 days or where more than 6 instalments have remained outstanding. | 100 |

The system will also be instrumental to collateral management to prevent any costly and inefficient manual records of the large range of low value items that can be provided as collateral. Required functionality will include a register that records relevant details about the collateral to ensure that it can be located, that it is insured and the market value at no time fluctuates so that the SACCO

is unintentionally exposed to a credit risk. The latter can include establishing a depreciation schedule or simply enforcing a asset class specific discount to the collateral.

Finally the system needs to classify accounts based on customer activity and produce separate statements for each. Categories can be active, dormant (no activity in 60 days) and abandoned (no activity in 5 years).

3.4.2 Capital structure

We expect the regulations to include details about the required capital structure of the SACCO. Capital will be specified to tiers corresponding to quality. The regulations will also include reports on capital movements, trends and drivers that will have an impact on capital. The purpose is to ensure that the SACCO at all times has sufficient capital and provide time for any mitigating actions.

Capital

The regulations will set targets for the SACCO's core capital to ensure that they maintain a healthy level. The metrics are: total core capital in shillings in proportion to total assets, total deposits and a ceiling for the maximum level in percent that the loans issued to one member is allowed to represent. The SACCO will also need to demonstrate a close understanding of how key drivers relate to the capital accumulation. These drivers are: profitability, risk exposure, asset quality and loan portfolio growth.

Additional relevant capital measures are the amount of external debt and insider loans in proportion to total assets. The SACCO must also prevent any excessive accumulation of seized assets on the balance sheet. These assets should be sold within a certain time period or a provision needs to be made.

Shares and savings

It is imperative that the SACCO establishes sustainable principles to manage and maintain the share capital. Dividends, being one key and contentious area as members might have come to expect them, should essentially not exceed the annual net surplus after that statutory reserve deductions have been made.

The system should be able to distinguish between capital contributions made by members that are classified as 'shares' or 'non-withdrawable deposits' as the latter but not the former may be used as collateral. Each shareholder account needs to be kept accurately and allow clearly calculating and reporting the interest awarded deposits and the yield on shares. Based on this information the system should provide member statements that provide the transactions made and the current balance.

Financial investments and fixed assets

The SACCO is meant to be a savings and credit business. Investments made by the SACCO should only occur to generate a return on excess cash in the

short term. For the investments that are made a number of criteria need to be fulfilled and the management needs to monitor them.

- Monitor diversification and concentration risk.
- Monitor who makes the investment decision in order to ensure that only competent personnel have a decisive influence.
- Monitor the ratio of non-earning and non-current assets to total assets.
- Monitor the proportion of land and buildings to total assets.
- Financial assets in proportion to core capital and total assets.
- Provide dedicated ledgers to each investment.
- Ensure that investments do not exceed appropriate portion of core capital or deposits.

3.4.3 Liquidity

The SACCO will need to be able to manage liquidity through a profound understanding of drivers of cash flow and the balance between assets and liabilities. The cornerstone of liquidity management is cash flow forecasting that enables the SACCO to prevent unnecessary opportunity costs due to idle capital and to plan for contingencies.

The SACCO is also expected to implement internal controls to proactively manage liquidity:

- Restricted access to funds.
- Enforce minimum/maximum cash levels stipulated by liquidity policies.
- Maintain a certain level of liquid assets in proportion to deposits.
- Report average holdings and lending across the SACCO for sub-units as required

3.4.4 Governance

Governance is the area we expect will produce the least direct requirements on the system. Governance is primarily a people and process issue that does not interact with the system. Our understanding is that the key concern of the regulator is to ensure that competent people are elected to manage the SACCOS, that the process to elect and evaluate them is fair and transparent and that a logical management structure, from member to the board of directors to executive management, is put in place.

With regards to election and evaluation we primarily see that the system can contribute by providing information about decisions made and the subsequent outcome in order to evaluate and hold accountable. To do this the system would need to capture data and be configured to report corresponding to the information needs of the bodies stipulated in the regulation. These

requirements are most likely financial or operative performance reporting requirements similar to or even sub segments of the operative requirements and will be described in-depth below.

With regards to a management structure required by regulation this could form more specific and unique requirements. We are considering how the supervisory bodies interact with the executive bodies and the need to provide them with information to monitor and make decisions. For example, any system should be able to provide a board credit committee with information about the new applications in general as well as specific information about individual high-value applications where their decision might even be formally required. With regards to this example it would also be highly relevant to document 'who makes approval and rejection decisions', applications eligibility given the formal appraisal criteria and on what grounds any deviation from the formal process or the recommendation of various loans officers is overruled.

- Produce timely and accurate reports enabling executive management and the board to report to the annual shareholder assembly (AGM) as well as to monitor the business on an ongoing basis and engage with specific operative issues that require escalation to board level.
- Provide an audit trail for all decisions made that have a financial effect enabling enforcement of the governance structure and upholding accountability.
- Provide a workflow system to efficiently circulate information required to make operative decisions and capture the decisions.

The scope of the reports required by the board and management for these purposes includes:

- Financial statements with budget deviation and trend analysis.
- Capital structure detailing each capital tier.
- Loan portfolio performance with delinquent loan list and in particular growth in loans, loan losses, recoveries and provisioning.
- Liquidity & credit risk measures.
- Disclosure of sources for deposits and savings.
- Insider lending report.
- Investment portfolio performance.
- All regulatory reports.

3.4.5 Risk management

In addition to optimising how the credit operations create value for members and borrowers the management also need manage the risks the SACCO is exposed through these activities. The credit operations include efficiently offering sought after products at competitive rates and returning an attractive

yield on member share capital. The uncomfortable truth is that as this is being done by raising capital at the lowest possible cost, minimising the redundant capital in the organisation and minimising the operating costs the management is also taking risks that in the worst case can render the SACCO insolvent and erase the member capital. The key risk areas are:

- Credit risk – loans are issued to borrowers who fail to repay them or to provide security that upon default covers the value of the outstanding loan.
- Liquidity risk – disbursements exceed deposits and the SACCO is unable to raise external capital.
- Operational risk – SACCO business practices fail and prevent the SACCO from operating.

We expect the regulator to require clear policies on how the SACCO manages this risk. This implies that the SACCO is able to pro-actively manage the risks using management information and report on the SACCO's exposure. It will also be the case that certain operating practices are banned altogether and that SACCO needs to implement internal controls to confirm that such policies are followed. Example controls and principles are:

- Membership is a strict loan eligibility criterion.
- All investment documentation needs to be kept in a fire safe facility, preferably off-site.
- All information shall be backed up daily and stored in a fire safe facility. On a weekly basis the data needs to be moved to an off-site facility.
- The back-up process needs to be documented in a log.

In addition, to pro-actively manage risks, reports covering the areas below are likely to be required.

- Investment portfolio risk.
- Credit risk.
- Liquidity risk.
- Deviation report for internal controls

3.4.6 Reporting and audit

Accurate, consistent and timely financial statements make up the foundation for the regulation as it will be impossible to confirm compliance or do any meaningful analysis of the SACCO's performance without this information. The reports also need to be produced in a consistent way to allow comparison

across the industry and over time. Finally they need to be sufficiently detailed to enable root-cause analysis with regards to credit management, capital structure and liquidity as described above.

The SACCO will be required to have an audit function that independently monitors how the management delivers against the plans agreed by the annual general meeting. Reports will be required on what actions that audit function has taken and also the effectiveness of the audit functions. The latter includes analysing if the audit function manages to sample the correct transactions to audit and if it increases compliance with policies and procedures.

The reporting requirements will include:

- Financial statements produced according to IFRS and made available to the authority by the 15th working day following the month's, quarter's and year's end. These reports should enable monitoring and analysis of financial performance including production of specific ratios.
- Deviation analysis including 1) current to previous period actual and 2) budget to current actual for the month, quarter, first 6 and 9 months and the year. These reports should support evaluation of plans and identify mitigating actions.
- Business plans with financial projections that go into further detail as necessary to explain the business.
- Solvency reports that provide measures of the SACCOs capitalisation compared with minimum capital requirements. These reports should enable monitoring and management of solvency to prevent involuntary liquidation.
- Loan delinquency reports including volume, growth, losses, recoveries, provisions and ageing.
- Insider loans.
- Investment portfolio performance.
- Audit reports detailing the transactions the audit function has reviewed and what the outcome was.

3.4.7 Other requirements

The SACCO needs to be proficient in 'asset liability management'. At no time should the SACCO offer credit products at an interest rate exceeding the average cost of debt with less than the margin expected to sufficiently cover operating costs and the required profit margin.

Chapter 4

REQUIREMENTS GATHERING AND BUSINESS ANALYSIS

4.1 FIELD VISIT OBSERVATIONS

The project team carried out visits to five SACCOs in four different towns and one city across four provinces.⁶ The institutions visited proved to be diverse in several aspects and provided insight to different versions of the SACCO model. The project team got practically unlimited access to the senior management teams and could hold the necessary meetings without restrictions.

Due to the pattern of required features that evolved as expected the project team regards the 190 requirements captured as a comprehensive and practically exhaustive list. It is unlikely that any additional requirements would significantly alter the outcome of any evaluation of available automation solutions.

The outcome of the field visits is provided in three sections: the first describes a number of 'experiences' of specific conditions at the SACCOs that are very important to understand as they have a direct bearing on the probability of a successful acquisition, implementation and operation of a new application. This recommendation does not claim to fully exhaust these topics but primarily create awareness and a starting point for mitigation. The majority of the SACCOs did not have a capacity to directly articulate business requirements. In the interviews they would rather explain how business is done and leave it to the project team to analyse this information and articulate the requirements. Thus are these experiences pre-requisites and a relevant context. Secondly, the actual functional and technical requirements are described and thirdly, a number of potential business process and operating model improvement opportunities are listed.

4.1.1 Decision making rationale

SACCO strategy and decision making process are highly relevant context for this project as the system needs to be aligned with the strategy and support each executive in their decisions.

We have observed three issues with regards to these topics that could result in SACCOs acquiring a less than optimal or even directly unsuitable system and prevent them from getting the full benefit from the investment.

Firstly the project team has observed that nepotism is prevalent in the movement. Executives do not base decisions solely on the factors that one would expect given the SACCO operations but also very much relationships. E.g. not only or even primarily operational fit and suitability, cash flow, profit, risk management and outreach to the community but they would also consider or set as a prerequisite if a board candidate, executive manager or supplier has a relationship to powerful entities in the Kenyan society and if they personally know the person. A relationship with e.g. a vendor provides tangible benefits such as increased transparency and predictability but they are unlikely to be

more important than the operating, technical and financial aspects of the system. Even more importantly decision deviating from the explicit strategy of the SACCO and with no clear business logic creates significant confusion and undermines employee morale.

It will also be very difficult to articulate objectives and set targets for the automation project that are aligned with the rest of the SACCO if the acquisition decision is not aligned with the explicit strategy and requirements for the system. E.g. if the system does not fulfil the requirements for loan issuing how can the corresponding manager be held responsible for the efficiency gains and delinquency decrease expected from the investment in the system? Relationships appear to compensate for a lack of competence. When a manager or board is unable to make a proper assessment and negotiate a contract that protects the SACCO's interest they rather deal with someone they know. The project team sees any discrepancy between the actions of the board and the executive management respectively the explicit strategy and objectives of the SACCO as a major risk to a successful acquisition and utilisation of the system.

The logic of decisions will become a highly relevant topic as the regulations trigger not only the need for investments in technical infrastructure but also a review of the fundamental financial viability and competitiveness of SACCOs. In many locations the market is already heavily fragmented and members would benefit significantly from economies of scale created by consolidation. These benefits will increase as SACCOs have to carry the cost of IT systems. Quality systems are associated with minimum costs but can handle significant volume. Consequently, small SACCOs will struggle to achieve an attractive return on investment whereas larger SACCOs can leverage the scalability and also fully utilise advanced functionality. However, consolidation leads to a lower number of SACCOs and significant redundancy. Junior staff who can adapt to the computerised environment are not likely to be redundant as the IT systems will facilitate growth of the entire SACCO industry through increased outreach and thus more business. However, the number of board members can be reduced as the number of institutions and boards are decreased.

The second observation is that there is a contradictory paradigm on an operational level by which members are considered to have rights to get loans even when they do not fulfil eligibility criteria and clearly would risk reducing the surplus available as dividends to other members and in the long run the sustainability and capital of the institution. This behaviour implies that one member is more important than another and is likely to originate in a combination of lack of understanding of asset liability management and empathy with or pressure from the applicant in need of capital. The project team sees an opportunity to use information from the system to train staff in ALM, to use the rigour of automated processes to enforce policy, document deviation from policy and hold decision makers accountable and to reward the intended behaviour.

⁶ Central, Rift Valley, Eastern and Nairobi Province.

Thirdly the project team as observed how hierarchy plays a significant role in decision making. Junior officers are reluctant to contradict their superiors from fear of repercussions. Supposedly the senior officers hold their positions by merit and the junior might come to different conclusions due to lack of experience and skills. However, it is also fully possible and logical that senior officers do not have similar access or to detailed information. These functions are information intensive and have placed significant requirements on the system. If the outcome of their work is not fully considered the SACCO forgoes significant value.

4.1.2 IT strategy

It is important that not only the overall strategy is clear and that the system facilitates delivering it but that the SACCOs strategy for IT specifically is clear. IT can be seen as simply as an enabler that contributes to efficiency, an integral part of the SACCO that contributes to creating a long term competitive advantage, something that the CTO and IT department is bothered with or that each department and capability owner is engaged in, the choices are many. Regardless of the specific choices the SACCOs will benefit from having a clear view so that resources, accountability and rewards are allocated accordingly.

The project team has observed that even among the largest SACCOs in Kenya, those that have been using IT systems for over 10 years, the IT strategy is inadequate or incomprehensive. Mwalimu SACCO is one such case. Kirinyaga District Farmers SACCO (KDFS) is slightly better as it realises that CMIS from the Co-operative Development Information Centre (CODIC) is an inferior system but struggles to mobilise capital to replace it and to identify a suitable system. The SACCOs rarely demonstrate a profound awareness of how to use IT to create a sustainable competitive advantage and how the IT relates to the strategy of the SACCO. In the best cases such as Universal Traders SACCO (UTS), Ndege Chai and Muramati management cooperated with WOCCU and FSD to acquire and implement systems but are still working on capturing the full benefit of the systems by aligning the rest of the organisation through designing business processes, developing policies, training staff and changing the culture.

The IT strategy should probably not be significant in volume as the SACCOs IT issues are generally basic and their primary focus will be how to establish a sustainable business model as defined by the Act. However, it is necessary to be aware of how the system relates to this process.

Development of an IT strategy is dependent on the ability of the executive management to develop and articulate it but also on the staff to deliver it and enable evaluation of how it needs to evolve. Both can be resolved in a similar fashion, proper recruitment and training but also support and motivation. However, it is unlikely that the junior staff will drive this development. At Mwalimu SACCO, the Chief Executive Officer and the Chief Technology Officer explicitly did not recognise that a DOS-based system lacking a relational

database is a clear indicator that the system is obsolete. Mwalimu perceived CODIC as a 'one man show' where only one person has deep knowledge of the system and recognised that this is a risk. At the same time the chairman of the board clearly stated that CODIC, compared with the 'briefcase vendors' some SACCOs may be deceived to do business with, is a superior solution. This reveals a lack of understanding of the alternatives available or flawed business logic.

4.1.3 Governance and policy

SACCOs appear to use a governance model where the operative authority and competence practically lies with the officially non-executive board of directors who delegate authority to the executive management. The alternative model would be that the executive management literally has the authority and that the board of directors fulfils a monitoring position as representatives of the members and participates in strategic, non-operative decisions. Both will work but it is important that the formal governance model is followed and that there is no informal model that is the one that in reality is of relevance.

Governance has a direct bearing on the system for two reasons. Firstly the system provides an audit trail but if the persons who form the authority in the workflow do not practically make the decision the audit trail is not effective. Secondly, if the system follows the formal governance model and the policy but that is not how decisions are made it means that the system does not fully support the actual business process and the SACCO will not gain the same efficiency benefit as if the governance model, policy and system are fully aligned.

The project team is aware of these discrepancies for several reasons. Those interviewed described how various process owners did not have the executive authority to make use of the insight they have but were merely advising the board or supporting its decisions. This was reinforced as we had asked the general manager to meet with people responsible for various key processes such as Front Office Savings Activities (FOSA) and Back Office Savings Activities (BOSA). We would meet the head of accounting but it turned out that the person we should have met with to have a proper discussion about for example if the organisation held too much idle cash would have been the chief cashier who is a board member.

4.1.4 Proficiency

Between the SACCOs visited the project team observed significant differences with regards to proficiency to acquire, implement and utilise the system. This is relevant to consider as it has a direct bearing on the exchange of information between the SACCOs and the project team, i.e. can the SACCO express specific requirements and do they know what they need from the system over the life-length of the system. Secondly, this is relevant for the SACCOs to consider for upcoming decisions.

In the top tier we have observed SACCOs whose management is highly knowledgeable and has an ability to execute as required to build a sustainable financial institution. They have approximately 10 years of IT experience and have replaced incumbent systems once or twice. No SACCO is mature in terms of having a stable business model reflecting best practice but these institutions are aware and are actively complementing where they are lacking. The fact that they have terminated relationships with underperforming technology suppliers is a very good sign as they have demonstrated that these decisions were fundamentally fact based and logically consistent with the objectives of their organisations. The analysis involved in the requirements gathering and the lessons learnt from the implementation have provided these organisations with a basis to continue the change journey. They are developing policies, formalised business processes that staff can be trained on and which also provides a basis for performance management with a constant benchmark and they are in progress to comply with some of the expected regulatory requirements. These SACCOs have generally worked with organisations such as WOCCU, KUSCCO and FSD to achieve this progress. In quantitative terms these organisations have achieved significant sustainable growth. Example SACCOs are UTS, Ndege Chai and Muramati.

In the middle tier we find SACCOs that are aware that their systems are obsolete but have not yet been able to act accordingly. The inactivity is a consequence of lack of funds, which in turn is a result of the uncompetitive and unsound business practices and lack of support from the board. The management does not seem to be able to develop an IT strategy nor develop a specification of the system they need. In the absence of these two it is very difficult to articulate to the board, the members and any financiers why a new system is needed and even more so impossible to acquire and implement one. In terms of regulatory compliance these SACCOs might be making some progress but significant gaps remain.

The lowest tier consists of SACCOs who have not yet grasped the predicament they are in with regards to the system they are using, the competitiveness of their business practices or their actual financial performance. They still firmly believe that 100% of their loan portfolio is fully performing despite the fact that the expected yield (weighted average interest rate on issued loans x total nominal value of issued loans) is significantly higher than the actual yield (total cash interest income / total nominal value of issued loans). They are either ignoring such facts or do not have the information as they can't capture and report the data or are not complying with, in this example, the accounting standards.

In the middle and lower tier, discussions about topics which they did not have practical experience of were not productive. It was for example not possible to have comprehensive discussions about the SACCOs requirement to fulfil best practice on delinquency and performance management or how the need for working capital impacts the cash flow.

4.1.5 SACCO operating models

As the project aimed to identify at least one solution suitable for each FOSA SACCO segment it was required to understand the various operating models present in the market and how their unique characteristics have an impact on the automation decisions.

There are certainly noticeable differences between the SACCOs and the approach of using proxy segments proved to provide a diverse range of requirements. The key findings per segment were as follows:

- **Urban:** These SACCOs have mobile customers who may easily interact with any branch of the SACCO and expect to be able to use automated teller machines (ATMs) and similar extensions of the SACCOs network within one metropolitan area or in several urban centres making connectivity a fundamental requirement. Their customers are also more aware of the offering available in the marketplace and do compare. They have high expectations for tailored products and competitive pricing and thus the SACCO needs to be proficient at asset liability management and able to provide a diverse and frequently revised range of products.
- **Rural:** Rural SACCOs have a higher tendency to have customers employed as independent farmers and hawkers. They require credit products tailored to the needs of their unique product such as coffee or tea. The product properties will need to consider the cash cycle, from investment in seeds (loan disbursement) to harvest (recovery), the appraisal process needs to be able to consider historic payments from various associations who buy the produce from the farmer and finally the erratic performance of agriculture due to force majeure (weather, pest etc) which can effect delinquency.
- **Employer-based:** The system needs to be able to import salary information from several employers in different file formats and table structure and integrate this information with the SACCOs customer structure in order to process salaries and due payments. The inverse situation also occurs where the SACCO needs to export data relating to the due payments in a range of formats to each of the employers for them to make the deductions and send the proceeds to the SACCO. This flexibility and robustness with regards to export and load is critical for these SACCOs.
- **Agricultural:** See rural.
- **Public sector:** No specific public sector properties were identified.
- **Private sector:** No specific private sector properties were identified. However, SACCOs focused on the private sector and more recently founded SACCOs who have a clear strategy seemed more prepared to automate.
- **Size (total assets):** Small SACCOs have IT budgets that are not sufficient to acquire a competitive system. They need to consider

coordinating their acquisition and implementation with other SACCOs to share costs and improve their negotiating position.

- **Software in place:** Recent automation projects prove that significant benefits are realisable but also that certain challenges remain. Branch connectivity is consistently a remaining issue for the automated SACCOs.

Even though the segments provided a range of requirements the segments are not to be overemphasised when selecting an application. They could actually be disregarded and it would be much more helpful to use the individual SACCO as a starting point, consider each type of requirement and determine how important it is and if the SACCO has a significant and specific need within one category or if the need is more general and not material. Depending on how many unusual high-priority requirements the SACCO expects to have it is very likely to be valuable to coordinate the detailed gap analysis across several SACCOs. The economies of scale seem to be significant and material relevant to the SACCOs' budgets.

A number of trends make the SACCOs converge towards a common set of requirements:

- In order to grow the SACCOs are opening up to accept a variety of members independent of where they are located and who they have historically targeted.
- Historically rural SACCOs had the greatest need for flexible and user-friendly product configuration to match each type of farmer. Now urban SACCOs need to configure products just as specifically and frequently in order to compete with commercial banks.
- Urban SACCOs seem to target or appeal mostly to parts of the urban population who demographically are similar to the rural population.
- However important it is for employer-based SACCOs to integrate with external systems in a robust way this is a matter of uploading and utilising external data which does not have a material impact on the front-end of the application.

The following key features have been identified due to the segmentation but the project team would recommend all SACCOs to consider them.

- Make the customer independent of which the home branch is by creating one interconnected network of branches within the SACCO and also connecting this network to an ATM network.
- Enable the SACCO to configure products using diverse parameters such as payment schedule, interest calculation method, etc.
- Gain insight to the profitability of each product and to set interest rate per individual.
- Integrate the system with multiple external systems for export and load of data.

4.2 REQUIREMENTS

The following sections provide an introduction to the functional and technical requirements. A detailed description of the consolidated requirements using the previously introduced requirements matrix can be found in Annex 2.

The SACCO visits have yielded 190 functional and technical requirements stretching across the SACCO operating model enabling identification and evaluation of automation solutions. The requirements have been prioritised based on their relevance to the core operating model, regulatory compliance and strategy realisation. This allows a user to weigh the outcome of e.g. a gap analysis based on priority.

The requirements are predecessors to the strategic options meaning that a SACCO should first establish the required functional and technical requirements and then the approach to automation that fulfils them in the most appropriate way.

5.2.1 Functional requirements

Table 3: Functional requirements

| Level 1 | Level 2 | Description |
|---------|----------------------------------|---|
| FOSA | Teller operations | The SACCOs require a system that is comprehensive in the sense that it records all the key transactions that take place at the tellers. This could be disbursements, withdrawals or deposits using cash or cheque. The system needs to continuously monitor the cash balance at each teller and proactively enforce applicable restrictions with regards to how much cash the tellers are allowed to disburse and hold. The system needs to support cash and cheque reconciliation. The system should perform basic administrative tasks such as printing cheques and allow users to set-up standing orders. |
| FOSA | Processing | The system needs to be able to process key transactions such as recognising and awarding interest according to configurations as set by the SACCO. The system also needs to automatically make all postings as necessary to maintain accurate records following client and SACCO transactions. Additionally the SACCOs will increasingly offer microfinance services in addition to the traditional SACCO products and services which the system also needs to manage. |
| FOSA | General | The system needs to be comprehensive so that no workarounds are necessary. |
| FOSA | Management reporting | The system needs to provide reports covering key FOSA areas such as teller reports with opening balance, closing balance, cash deposits and withdrawals. Additionally the system needs to monitor processes such as cheque clearance and short term investments. The system needs to produce a member statement showing all transactions per member. |
| FOSA | Customer data management | All data that has ever been collected about the customer should always be available independent of module or organisational belonging (role based access rights will apply). The system needs to capture different kinds of data including images of the customer, signature and identity card. |
| FOSA | Customer service | The system needs to enable a customer service function that can easily access an overview of the customer's transactions and the services offered by the SACCO. Access to information should not be limited by the architecture of the application or the organisational belonging of the person accessing the system. The system should also enable distribution of information using the mobile phone technology short message service (SMS). |
| FOSA | Product configuration | The system needs to accommodate new savings products developed by the SACCO and allow the SACCO to configure the system independent of the vendor. The current and prospective product range includes variation in duration and conditions for withdrawal and how interest is calculated. It could also include FOSA credit products such as advances. |
| BOSA | Share and dividend processing | Share management including dividend processing and reconciliation is a key feature of the system. The shares are used to capitalise the SACCO and as collateral for the loans. In the event of default the system needs to enable the SACCO to seize shares by netting the loan value in default against the member's and guarantors' shares. |
| BOSA | Administration and configuration | The system needs to be flexible to accommodate a range of current and future credit products and allow the SACCO to configure the system accordingly independent of the vendor. The loan products can vary in terms of if and how security is provided. The SACCO might require data from external organisations such as employers and farmers cooperatives to use information about income to appraise and secure the loans. The loans will vary in terms of how interest and principal is calculated and how extraordinary transactions such as fees and penalty interest are charged. Partial payments and pre-payments need to be supported. Additionally the system needs to recalculate the loan in the event of delinquency. |

| Level 1 | Level 2 | Description |
|----------------------------|--------------------------|--|
| BOSA | Collateral | The system needs to be able to calculate credit risk by calculating the difference between the sums of the nominal value of all loans issued net of amortisation and the current market value of collateral/ security net of any depreciation. The security could be borrowers and guarantors shares or other non-withdrawable deposits or assets. The system needs to store data about loan value, recovery schedule, collateral and collateral depreciation in order to at any time provide a value of the SACCOS exposure should the borrower default on the loan at that time. The collateral management includes registering and tracking the identifiers, value and location of the asset. |
| BOSA | Loan issuing | The SACCOS require a system to fully automate the loan issuing processes and which is fully integrated with the overall business model and utilises the data that has been accumulated. The SACCO will require support with appraising a range of different loans, each with a different eligibility criteria and appraisal process. Across the loan products it is critical that approval and release is documented should evaluation be required. |
| BOSA | Reporting | It is key that the SACCO gets access to the full range of information captured in order to actively manage the loan portfolio. The information will also be used to evaluate products and customers. Marketing will also be using information about historic loan portfolio performance to target customer acquisition to the most profitable demographics. Regulations will also require a flexible and efficient reporting function as well as the board and various committees. |
| BOSA | Collections | The SACCOS are expected to enforce collection more actively in the future using a range of activities. Which activities are undertaken and what the outcome is needs to be documented and evaluated. |
| BOSA | Delinquency | The SACCOS will need a robust and comprehensive system to prevent and manage delinquency. The system in itself will have an impact by how it enables in particular the loan issuing process. Additionally specific delinquency features such as loan aging and tailored reports connecting delinquency with appraisal and approval will be required. They will also feedback to the collections department to optimised workforce management. The microfinance groups will especially need to be monitored closely as they are particularly prone to default. The delinquency also needs to be accurate taking the specific properties of each product into consideration. |
| Accounting | Core accounting features | The system needs to meet all of the SACCOS fundamental accounting needs with regards to the loan and savings operations as well as other standard corporate accounting functions. These include accounts payable for suppliers, expense management for all employees, fixed asset registry and payroll functionality. The fixed asset registry should ideally eliminate the need to rely on e.g. Excel to keep track of assets and calculate depreciation. The system should adhere to IFRS in all aspects. |
| Accounting | Reconciliation | It is essential that the system enables the SACCO to automatically reconcile accounts to avoid tedious manual processes. Reconciliation includes cash, bank, cheque and shares. |
| Accounting | Chart of accounts | The system needs to provide a structure to build a chart of accounts (CoA) that is flexible, consistent and common across the SACCO. Ideally the system should be delivered with a default CoA. |
| Accounting | Group accounting | The system should allow the SACCO to produce consolidated group accounts and reports eliminating any intra-branch transactions. |
| Accounting and Sub-ledgers | General ledger | The system should allow for sub-ledgers to track specific sub-segments of the SACCO and reduce complexity in the GL. |

| Level 1 | Level 2 | Description |
|------------|-------------------------------------|--|
| Accounting | Reporting | The system needs to provide all statutory financial reports in accordance with Kenyan law and IFRS. Additionally, the system needs to enable management reporting which will include financial and operational data. The management reporting can take a starting point in the statutory reports by filtering into relevant sub-segments of the SACCO but will also require specific and detailed reports such as loan portfolio aging. The reporting needs to be supported by a cost centre structure and an ability to post product codes in order to enable product costing and ALM. |
| Accounting | Posting to ledgers | The system should automatically make all necessary postings for core SACCO transactions where it is possible to write exhaustive rules for the transactions. Where flexibility is required the system should provide the accurate options and not grant total access to post in the CoA as required. For qualified staff the system should allow full access to all ledgers. The system should also automate postings or at least recommend postings due to other events that are not transactions. This particularly relates to loan aging where posting of provisions based on loan aging is highly recommended. |
| Finance | Reporting, planning and forecasting | The system needs to support budgeting and forecasting of statutory reports but also detailed reports such as cash management. The system does not need to have modelling capability but it needs to easily be able to upload planned data per account code and per month. The system should also be able to provide income statement and cash flow statement for the coming 12 or 24 months given the currently recorded transactions to support forecasting. |
| Finance | Investment management | The system should be able to track and report on a portfolio of short-term investments made by the SACCO to manage excess cash. |
| Finance | Reporting | The system should be able to provide basic analytical reports such as budget deviation reports. |
| Finance | Internal controls | The system should enable internal controls—such as caps, restrictions pending authorisation, rule driven alerts etc. |
| Finance | Risk management | The SACCOs are expected to work proactively with risk management including liquidity risk, credit risk and operational risk. They would do this by monitoring certain metrics, build in functions to the system and design processes to prevent risks. |

4.2.2 Technical requirements

Table 4: Technical requirements

| Level 1 | Level 2 | Description |
|-------------|-----------------------------|--|
| Application | General | The system needs to have an ability to validate entries and give alerts both in the event of deviation from defined rules and upon specific events. The system should be configurable to then prohibit transactions accordingly. |
| Application | General | The system only needs to handle Kenyan shilling (Kshs) and be available in English. Foreign transactions and users not proficient in English are rare. |
| Application | General | The system needs to enable a basic workflow meaning that tasks in the system should follow the business process of the SACCO. |
| Application | Flexibility and scalability | It needs to be possible to configure new products and modify existing products without vendor support. |
| Application | Performance | The system needs to be configured to handle a sufficient data volume and number of concurrent users while maintaining the response time. |

| Level 1 | Level 2 | Description |
|---------------------------|-------------------------|---|
| Application | Usability | Generally a logical graphical user interface (GUI) is required and the menu structure needs to be logical given content and workflow. The screens need to be consistent with regard to layout, wording, and use of colour. Reports need to be available as graphs. |
| Data | Interfaces | The system needs to support a multi-branch installation and be tolerant to connection downtimes. This is especially relevant to enable a network independent of where the account has been opened or the member is domiciled. The system needs to ensure data consistency across all system entities in different branches and allow for integration between any stand-alone systems in the branches. |
| Data | Interfaces | The system needs to support batch report generation and export of data to Excel. |
| Data | Interfaces | The system needs to allow upload of statements and salary lists provided by different banks and employers. |
| Data | Interfaces | The system needs to allow for integration with external systems and specific devices such as those for capturing fingerprints, point of sale (POS) devices, mobile phones to and similar to enable mobile banking, ATM, Vigo money transfer, and employers' systems. |
| Data | Interfaces | The system needs to demonstrate thorough integration of the core functionality for FOSA, BOSA and the accounting function. Additionally it needs to have an architecture that allows expanding the system in an integrated design to include functionality for provision of PEARLS or CAMEL reports, credit scoring and human resource management. |
| Data | Data | The data model needs to provide a unique member identifier, be based on a single database and provide unrestricted access to historical data. |
| Security and control | Access authorisation | The system needs to provide access rights to users based on value based limits, role and hierarchy. The system needs to distinguish between read and write access. Access needs to be based on passwords that follow certain robustness and are frequently replaced. The basis for the access rights is a user profile framework. |
| Security and control | Audit trail and logging | The system needs to provide an audit trail and log attempts of unauthorised access and session data. |
| Environment | Technology | The application vendor needs to have an accurate version control process in place and the database management system needs to ensure the security and integrity of the data. The database needs to be relational. |
| Environment | Operations | The system administrator needs to have access to the database, the source code and have a dedicated module for administration. The system needs to be robust and ran stably. |
| Environment | Backup and recovery | The system needs to support an automated daily backup and have recovery functionality in place. |
| Documentation and support | Documentation | The vendor needs to supply exhaustive documentation including user manual and technical system documentation. |
| Documentation and support | Training | The vendor needs to provide application training and timely and responsive support, |
| Documentation and support | Support | The vendor needs to agree to a service level agreement with the SACCO. The service needs to include on-site support and troubleshooting severe operational issues or after the implementation of system upgrades, respectively. |
| Documentation and support | Maintenance | The vendor needs to enter a maintenance agreement including application support and application maintenance. Reasonable requirements for new functionality should also be covered. |

4.3 BUSINESS MODEL AND PROCESS IMPROVEMENT OPPORTUNITIES

In addition to the observations and explicit requirements the project team has been able to identify a number of opportunities to improve the SACCO operating model and business processes. This has mainly been done by comparing the current practice with banking best practice.

For some SACCOS these have already been realised, for others we expect that these will be valuable to consider. In order to realise these opportunities the system will need to provide certain functionality. This functionality has been treated as “implicit” requirements as the SACCOS have not explicitly

required them. However, as the opportunities are all clearly value creating, not controversial and aligned with the regulations, any SACCO is expected to adopt them. These requirements have been included in the requirements matrix as with the source marked as “best practice”. The opportunities are described in detail in Annex 3.

These opportunities are provided separately as in order to be realised and for the SACCO to benefit not only does the system need to be implemented with the outlined functionality but organisational and business process change does need to be implemented.

Chapter 5

AUTOMATION SOLUTION ASSESSMENT

5.1 SOLUTION LISTING

After having gathered the operational as well as regulatory requirements, the next step was to identify automation solutions in the market which could fulfil these requirements and help the SACCOs to both manage their operations more efficiently and comply with the forthcoming regulation.

The project team decided to contact potential vendors directly and invite them to participate in the project. In order not to risk missing a viable solution a comprehensive list was put together using industry knowledge from sources such as WOCCU, FSD, KUSCCO, and CGAP. The list finally comprised 46 solutions.

To decrease the possibility of including a vendor in the process that did not meet minimum requirements, the 46 solutions were subject to an initial screening. Only solutions that offered FOSA, BOSA, as well as accounting functionality and could display a proven track record with regard to having been implemented in East African SACCOs or MFIs were to be retained. In cases of doubt, a vendor was still included to lower the risk that a potentially viable solution was left out. On the basis of the defined minimum criteria, 20 vendors were rejected. Among the 20 rejected vendors were five companies that had participated in the WOCCU Growth project software evaluation and another 15 that had been listed by CGAP.

The list of potentially viable solutions was thus narrowed down to 26 vendors that were sent an invitation to participate in the SACCO Automation review project in the form of a request for information.

5.2 THE REQUEST FOR INFORMATION PROCESS

The objective of the RFI process was to get a thorough understanding of the 26 solutions that had been selected after initial screening. The vendors were sent the RFI documents including the survey as well as the open-ended questions and were requested to submit their response within a term of two weeks. One additional vendor was included later in the process after having contacted the project team and demonstrated a potentially viable solution. Based on the responses, the project team would finally short-list the vendors for the final round of in-depth screening.

Delf Systems, one of the 27 vendors could not be reached or located. It was assumed that the vendor was either not in business anymore or operating under a different name. Since the vendor had not been successful in the WOCCU software evaluation, the project team felt the vendor could be dropped without the risk of excluding a viable solution.

Three other vendors declined their participation in the project. Two vendors, namely TietoEnator and Margill did not consider SACCOs to belong to their targeted customer group TietoEnator is now focusing on large commercial banks, and Margill only targeting credit unions with up to 5,000 due to the

lack of scalability of the solution. The third vendor, Octagon could only be contacted with some delay and then chose not to participate due to timing issues.

The remaining 23 vendors responded within the term provided. The submitted responses were very different with regard to comprehensiveness and quality of the provided information. The two main deliverables were the survey responses and the answers to the open-ended questions. Some vendors sent in extremely short and simple responses to the questions, while other vendors handled each question in a separate document. Moreover, it was noted that some vendors had specifically answered the questions that had been posed, while other vendors had just re-used generic sales material. All responses were structured and consolidated to enable the application of a standard scoring method.

The survey responses yielded high scoring results for most of the solutions: all solutions met the requirements at no less than 80%, 14 solutions even fulfilled the requirements at 95% or more. The average score was 92%. Only one vendor, namely Affinity Business Systems was left far behind at 58% as the proposed solution SACCOPAC did not seem to offer any FOSA functionality. The project team was well aware that this result could be biased due to the fact that vendors had self-evaluated their solutions and might not have been completely objective. However, it was a first insight into the available functionalities of the solutions and once complemented with the answers to the open-ended questions it would be a good tool to short-list vendors for the final round of screening.

As expected, the scoring results for the answers to the open-ended questions were lower. This was due to the fact that vendors could not easily affirm that their solution could offer the required functionality but they had to explain how their solution worked with regard to different requirements and it was finally up to the project team to evaluate the solution exclusively as per the information provided. It was observed that none of the vendors could fulfil the expectations in an all-embracing manner. While they scored maximal in one aspect, they also scored poorly in another. For instance, some vendors offered a solution with superior functionality but were lacking necessary local experience and support structure (e.g. Fern Software), while other vendors had a long track record within the Kenyan SACCO sector but could not offer a satisfying solution (e.g. CODIC). Vendors scored between 14% (Regional Computers Ltd.) and 64% (Neptune Software, Fern Software) in this part of the evaluation, the average score being 41%.

Subsequently, both scores were weighted with the relative weights that had been defined for obtaining the final score. 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.

5.3 SOFTWARE DEMONSTRATIONS

5.3.1 Short-listing

After having completed the evaluation of the RFI responses, the project team had to decide which vendors to invite to the final round of screening. The team had set aside time to attend demonstrations from six different vendors.

Nine vendors could be ruled out immediately as their solution or response was deemed inadequate. This category of vendors was considered to be in need of significant improvement in order to be able to catch up with other proposed solutions. The project team could not see reasons which justified monitoring of the solutions in the near future as the gap they needed to close to become a viable solution was regarded as too big. Affinity Business Systems, FAO-GTZ, Crystal Clear Software, Regional Computers, Computer Feeds, Trust Systems & Software, Infolite Africa, and Sigma Data & Computers were considered to fall into this category. CODIC was a particular case as the project team had been informed that a new Windows version of CMIS had been developed. However, this version could not keep its promise as it was merely the old text-based DOS version put into a Windows frame. Consequently, CODIC was also rejected.

As for the remaining 14 vendors the decisive factor for short-listing the six ones to bring forward was the relative rank, while the project team also paid attention to get a well-balanced selection of vendors. At first it was to be confirmed which of the first six vendors as per the ranking should take part in the final round of screening.

Craft Silicon's solution Bankers Realm (rank 4) was deemed the strongest domestic SACCO-dedicated solution with a high probability to meet the requirements. The team felt it was necessary to invite them as they might prove to be worth recommending.

Based on the RFI response and recommendations, Neptune (rank 2) was expected to be a high-quality international vendor with a strong product and sufficient local presence. They were of particular interest as they offered their solution Orbit as an application service provider. Taking all of that into account, the team invited Neptune to the final round.

Temenos (rank 3) was considered to offer a strong solution for microfinance and community banking. Being an international company with more than 2,000 employees with a considerable local presence, they were deemed to represent a potentially reliable partner and were invited.

Fern's credit union solution Abacus ranked first as per the RFI response scoring. The proposed solution appeared to be a high-end solution with regard to offered functionality. Cost and lack of local presence were regarded to be an issue, but as Fern could present a local partner in Kenya, they were included in the final round of screening.

Fintech (rank 5) was to complement Craft Silicon in the segment of strong domestic vendors with a particular focus on SACCOS. Their solution FinSacco could opt as an alternative for Bankers Realm. As they had provided a good response to the RFI and the project team had seen the solution working at Universal Traders SACCO, Fintech was invited to participate in the demonstrations.

Strathmore Research and Consultancy Centre (rank 6) had responded to the RFI partnering with Intracom, a Greek solution vendor offering their universal banking solution PROFITS. While the solution was not SACCO-specific, it definitely offered good functionality. However, the project team was concerned with the partnership of Strathmore and Intracom, Strathmore not being a system integration focused business and Intracom lacking local presence and SACCO experience. It was unclear what Strathmore's strategy was and if they could be counted on as a long-term partner supporting PROFITS. Consequently, the project team chose to not bring them forward in spite of the solution's satisfactory performance in the RFI process. It could potentially be worth monitoring them in the long term if they substantiate their claim to offer the solution in an ASP model.

After having screened the six vendors with the highest score and short-listed five of them for the final round of demonstrations, the project team looked at the remaining ones to validate the choice made. Infracore Technologies, IS Options, Zenith Business Systems, Spartan Systems, and CoreTec could all offer potentially viable solutions. However, their solutions seemed inferior to the systems that had already been selected from their respective segment. It could be worth monitoring it in the future, though.

The sixth candidate was thus to be chosen among Lanstar, Amtech, and Prisma. Lanstar was supposed to fall into the same segment as Craft Silicon and Fintech. Their solution FinE-X-treme had been seen live at Ndege Chai and was considered inferior to Bankers Realm and FinSacco. As the project team hoped to find a more affordable alternative, it was decided to reject Lanstar as they could not offer this cost advantage. Lanstar was considered to be definitely worth monitoring in the near future as they might prove to offer a viable solution.

Consequently, the final decision was between Amtech and Prisma. Amtech had given a good impression during the RFI process, providing a fair response across all topics. In addition, their solution EasySACCO appeared to be more affordable than Bankers Realm and FinSacco and was expected to suit the smaller SACCOS' budget. Prisma's solution SAVCO was also considered an affordable domestic option and would fall into the same category as Amtech. As the response to the RFI was good, Prisma was considered for the final round of screening. However, it was finally decided to short-list Amtech as they were deemed slightly ahead of Prisma. The latter was only rejected due to the need for prioritisation. If there had been time to attend an additional demonstration,

they would most probably have been included in the final round. Prisma was considered to be worth monitoring in the near future as they might prove to offer a viable, more affordable alternative.

The final selection of vendors was considered comprehensive, including some international market leaders for microfinance and commercial banking solutions (Fern, Neptune, Temenos), some leading Kenyan vendors of SACCO-dedicated solutions (Craft Silicon, Fintech) as well as one vendor of a more basic SACCO solution (Amtech) that was expected to be in line with the budget of smaller SACCOs.

5.3.2 Findings

Viable solution minimum

The short-listed vendors were notified of the RFI results and invited to participate in the final round of screening which would take place in the form of software demonstrations. All vendors accepted. Demonstrations were to be held on the vendors' premises. An exception was Fern who was allowed to do an online demonstration via the Internet.

Each individual vendor was allocated one day. This proved to be reasonable as demonstrations took between four and seven hours. Most vendors gave a brief company presentation before the proposed solution was demonstrated. The demonstrations were carried out interactively, the vendors presenting the main components of their solution and the project team asking further questions whenever more detail was necessary. Employing a standard approach, the aim was to collect the same information about each solution for matters of comparability. The use of sample data facilitated live testing of SACCO key transactions such as cash withdrawals, loan application processing or journal entries and helped the project team to evaluate how well a solution met a specific requirement.

Subsequent to each demonstration, the project team reviewed the completed evaluation template and translated the observations into perceived strengths and weaknesses of a solution. After attending all demonstrations, this information was consolidated to facilitate comparison of the solutions with regard to strengths and weaknesses. Consolidation proved that some functionality was provided by all solutions, hence it could not be considered as strength of a particular solution but rather as fundamental functionality. Those functionalities were considered as "viable solution minimum" and represented requirements every viable solution needed to fulfil. The viable solution minimum is presented in the table overleaf.

Individual strengths and weaknesses

Following the definition of these minimum requirements on a viable system, individual strengths and weaknesses could be noted. Every feature above and beyond these fundamental requirements was recorded as strength for the particular solution. A weakness was noted if a solution could not meet the

"viable solution minimum" or if some severe shortcoming had been observed during the demonstration. The tables in Annex 6 show observed strengths and weaknesses per vendor, following the order the demonstrations occurred in. A blank cell indicates that a solution was neither particularly strong nor weak with regard to the functionality in question.

Common weaknesses

In addition to individual shortcomings, some common weaknesses had been noted during the demonstrations, i.e. some functionality was not offered by any of the solutions. It was important to log these. However, they would not assist in making the final recommendation.

- With regard to cheque handling, the systems could only track cheques when they were within the SACCO and when the SACCO's bank account was debited or credited on clearance of the cheque. Any intermediate steps could not be tracked as information from outside the SACCO, e.g. the clearing house, was not available. This was not dependent on the system used, though. SACCOs need to adapt their business processes accordingly.
- With regard to planning, any modelling functionality needed to be provided through an additional or external module. The core banking systems offered the possibility to merely upload and enter budget data. None enabled forecasting, budgeting or modelling based on assumptions for key drivers.
- As for treasury and cash management, systems could provide a report of all future cash flow based on current accounts receivable and payable in the best case. No modelling or forecasting was enabled. No volatility measures or statistical tools to understand the cash flow were provided.
- With regard to risk management, comprehensive credit rating needed to be done through an additional or external module.
- All systems could be integrated with an external report writing tool such as Crystal Reports. However the use of this tool required knowledge about the tool itself as well as knowledge about the table structure. It also implied an additional cost. It had therefore been preferred if the systems had inbuilt, easy to handle functionality for creating new reports.
- None of the solutions seemed to offer a convincing workflow feature, including e.g. automatic notification of the subsequent task's owner.
- While all vendors claimed that multi-branch installations were not a major difficulty, few of the solutions seemed to have a convincing track record of connecting multiple branches of Kenyan SACCOs. For instance, both Craft Silicon and Fintech claimed they had successfully connected Muramati and UTS, respectively. However, the visit to these SACCOs had shown that their branches were still not sufficiently connected, UTS operating all branches as stand-alone units and Muramati having 3 out of 12 branches connected. The project team suggests monitoring

Table 5: Viable solution minimum

| | | |
|--|--|---|
| Front Office Savings Activities | Teller operations | <ul style="list-style-type: none"> ▪ The system offers comprehensive features to enable fully automated teller operations, including cash and cheque handling. ▪ The system can apply all relevant charges to the customer (fees, interest, principal, etc). ▪ The system provides a cashier journal with an exhaustive overview of each cashier's current cash as well as cheque holdings and transactions of the day. This supports cash reconciliation and reporting. ▪ The system can process salaries including applying a number of deductions depending on due payments of loan products held by the customer. |
| | FOSA products (Configuration and processing) | <ul style="list-style-type: none"> ▪ The system offers a comprehensive range of options for how to charge interest (fixed or floating rates). ▪ The system offers a comprehensive range of options for how to calculate interest (simple or compounded). ▪ The system offers a comprehensive range of options for how to award interest (daily, monthly, annually). ▪ The system enables standing orders. ▪ The system enables joint accounts. |
| | Customer data management | <ul style="list-style-type: none"> ▪ The system can capture comprehensive customer data, including photo and signature. ▪ The system can provide a complete overview of a customer's data including account details and allows drill-down to individual transactions and postings. ▪ The system is based on one central database which ensures that the same customer data is always available regardless of location. ▪ Comprehensive search functionality allows searching for a customer using different attributes such as last name, first name, customer number, account number. |
| Back Office Savings Activities | BOSA products (Configuration) | <ul style="list-style-type: none"> ▪ The system enables share accounts. ▪ All fundamental parameterisation options are available including different methods of calculating instalments. |
| | Share and dividend processing | <ul style="list-style-type: none"> ▪ The system provides the fundamental features to manage shares and dividend payment. |
| | Loan application processing | <ul style="list-style-type: none"> ▪ The system supports multiple methods to calculate interest including declining balance, annuity, and balloon payment. The system can recommend a loan amount given share as well as salary details and deductions are provided. ▪ The order of recovery can be defined. |
| | Customer data management | <ul style="list-style-type: none"> ▪ The system effectively supports the loan issuing process by making available customer information accessible. ▪ The application enables customer service by presenting personal details as well as information on accounts, loans, guarantors, and collateral. |
| | Credit, collateral, and collection | <ul style="list-style-type: none"> ▪ The system provides functionality to manage collateral when the loan issuing process requires these to complement guarantors. This includes capturing data and tracking collateral. |

| | | |
|-------------------------------|-------------------------|--|
| Accounting and finance | General accounting | <ul style="list-style-type: none"> ▪ Transactions are posted directly to the general ledger as configured. The system allows definition of which accounts to be debited or credited for each transaction. |
| Reporting | Available reports | <ul style="list-style-type: none"> ▪ The system is delivered with a set of relevant standard reports. |
| | Generation of reports | <ul style="list-style-type: none"> ▪ The system features pre-defined report templates that allow filtering and grouping of data. ▪ Advanced users can make use of third-party report writers such as Crystal Reports to design new reports. ▪ The system supports export of reports to Excel. ▪ The system supports scheduling of reports. |
| Usability | GUI | <ul style="list-style-type: none"> ▪ Screens are clear and consistent. ▪ Error messages are clear. ▪ Language and colour are used clear and consistently. |
| | Workflow | <ul style="list-style-type: none"> ▪ The system allows processes such as loan application to follow dedicated steps with defined exit criteria. |
| | Data entry validation | <ul style="list-style-type: none"> ▪ The system needs to allow definition and check of mandatory fields. ▪ Manually entered is validated for its existence in the system, e.g. Account number. ▪ Balancing double posting is enforced. ▪ Fields are populated automatically according to entered data. |
| System maintenance | Configuration | <ul style="list-style-type: none"> ▪ The system supports flexible product configuration. |
| | Data | <ul style="list-style-type: none"> ▪ The system needs to have a relational database. ▪ The system can handle imported data from XLS and CSV format. ▪ The system supports scheduled or manually triggered archiving of data. |
| | Security | <ul style="list-style-type: none"> ▪ The system supports user profile and access rights management. ▪ The system needs to have an audit trail keeping a record of every data entry as well as modification. ▪ User sessions need to be logged. |
| | Backup and recovery | <ul style="list-style-type: none"> ▪ Daily data backup is completely automated and can either be scheduled or runs at the click of a button. ▪ In case of a hardware failure, system crash, or the like the system needs to roll back pending transaction and inform the user accordingly. |
| | Multi-branch operations | <ul style="list-style-type: none"> ▪ The system enables multi-branch operations on a centralised server/database. ▪ A fallback scenario enabling continuity of operations in case of link downtime must be in place. |
| | Support and maintenance | <ul style="list-style-type: none"> ▪ The vendor needs to offer comprehensive support from gap analysis, design, implementation, test, installation, data conversion, training, to ongoing business support. ▪ The vendor needs to have a local presence. |

the progress at these two SACCOS. As for the remaining vendors, the project team could only rely on the information provided by them. Amtech claimed they had connected Chepsol SACCO's two branches. Fern claimed to have experience with linking up multiple branches of the same institution via a low-bandwidth connection. Neptune stated they had successfully connected five and seven branches of Embu Farmers and Necco FOSA SACCO, respectively, and Temenos claimed they have completed multi-branch installations at Faulu Kenya and Kenya Women's Finance Trust. However, this information needs to be confirmed.

Cost estimates

To get an understanding of the price levels, the project team had also requested the vendors to provide a cost estimate for two standard SACCOS. The following information about the standard SACCOS was shared:

- Tea farmers-based SACCO, Kenya Tea Development Agency as sole employer, 3 branches, 20 system users, 15000 members
- Urban SACCO with diverse membership, employees from governmental and private organisations as well as teachers and traders, 8 branches, 100 system users, 60000 members

The vendors were asked to estimate the total cost broken down into licence, implementation, training, and annual maintenance cost. Obviously, the vendors did not have sufficient information to quote an exact price as that would require a comprehensive case by case study of business requirements as well as a gap analysis. However, the cost estimates can serve as rough indication and help to understand in which price category a solution falls. The quoted prices are each exclusive of tax.

Fern never submitted cost estimates for the two standard SACCOS but proposed to have a joint automation of Kenyan SACCOS. An enterprise licence to be shared by all participating SACCOS would amount to US dollar (USD) 250,000. An individual SACCO would additionally pay USD 2,200 for their server licence and USD 1,350 per concurrent user licence. Services such as customisation, implementation, configuration, training, user acceptance testing, etc. would be charged at between USD 450 and 850 per day plus expenses.

Neptune offered the alternative of an ASP model. The SACCOS would in this case not incur a licence cost. Instead, they would pay a joining fee of Kshs 350,000, Kshs 1.4 million for the initial deployment, and Kshs 350,000 for training. This would reduce the initial investment to just above 2 million Kenyan shilling. Subsequently, the SACCOS would need to pay monthly transaction

Table 6: Cost estimates for tea farmers-based SACCO (KSh)

| | Craft Silicon | Amtech | Fintech | Fern | Neptune | Temenos |
|--------------------|------------------|------------------|------------------|-----------|----------------------|-------------------|
| Licence | 4,500,000 | 2,000,000 | 5,800,000 | | 10,700,000 | 7,130,000 |
| Implementation | 240,000 | 2,025,000 | 2,600,000 | | 2-3,000,000 | 15,300,000 |
| Training | 150,000 | | 1,000,000 | 2,960,000 | | |
| Annual maintenance | 18% | 15% | 20% | | 15% | 18% |
| Total | 4,740,000 | 4,175,000 | 8,400,000 | | 14-15,000,000 | 25,390,000 |

Table 7: Cost estimates urban SACCO (KSh)

| | Craft Silicon | Amtech | Fintech | Fern | Neptune | Temenos |
|--------------------|-------------------|------------------|-------------------|-----------|----------------------|-------------------|
| Licence | 12,000,000 | 2,000,000 | 12,000,000 | | 20,300,000 | 26,730,000 |
| Implementation | 240,000 | 3,712,500 | 3,450,000 | | 1-4,000,000 | 15,300,000 |
| Training | 750,000 | | 3,100,000 | 2,960,000 | | |
| Annual maintenance | 18% | 15% | 20% | | 15% | 18% |
| Total | 12,240,000 | 6,462,500 | 15,450,000 | | 24-28,000,000 | 44,990,000 |

fees according to the size of their membership, ranging from Kshs 15 to 30 per active member. Taking this information into account, the project team estimated the cost for the two standard SACCOs to amount to approximately 6.42 million and 12.9 million Kenyan shilling in the first year.

Temenos offered the alternative of engaging their partner Softgen in project management, implementation, and training. This would reduce total cost by approximately 20% for the tea farmers-based SACCO and 10% for urban SACCO, respectively.

The outcome of the project is a recommendation to deposit taking SACCOs describing viable applications and practical advice how to implement them. As the system is regarded as an enabler rather than having a purpose of its own the analysis will look at all key options available to the SACCOs to obtain the desired outcome.

The recommendation initially outlines key constraints and success factors, labelled considerations, which a SACCO need to address to provide a foundation for the automation. It then analyses the strategic options available to the SACCO and which specific applications are suitable for each option. Finally a roadmap is provided which organise the identified tasks of the automation in sequence.

Guiding principles for the development of the recommendation is that it is heavily fact based, focused on achieving compliance with the imminent regulatory regime to follow the SACCO Societies Act 2008 and that it only includes solutions that are currently available in Kenya.

The information gathered from the SACCO visits will form the basis for each part of the recommendation and the vendor selection process. This will be complemented by the conclusions from previous projects as well as documented best practice for credit union and microfinance organisations.

Chapter 6

RECOMMENDATION

6.1 CONSIDERATIONS

In addition to providing the key functional and technical requirements and a logical approach to automation, the project team would recommend that each SACCO also thoroughly assesses its own unique position with regards to the four key considerations outlined below. In the worst case these could be constraints completely preventing an implementation, in the not so severe cases they would prevent the SACCO from fully benefiting from the full capacity of the system. The SACCO needs to be aware of the considerations and adapt the approach to automation or develop the organisation before launching the automation project. They are also important in order to manage the vendor as the vendor will limit its responsibility and expect the SACCO to own certain aspects of the automation.

The considerations are based on our observations of the SACCOs current proficiency and the objectives of the automation decision. They include organisational, technical and financial aspects of the SACCOs and automation.

6.1.1 Ability to acquire, customise, and implement the solution

Determining the context of the automation decision

As a first step towards automation the SACCO management has to objectively assess the current system, understand the alternatives and the additional benefit they could bring. The strengths and weaknesses of the current system have to be clearly understood as otherwise the benefits of other systems which the SACCO reviews will not be clear. The automation project should be based on the SACCO strategy as the system is likely to be one of the most important factors determining if the SACCO is able to realise its strategy

or not. If they are not aligned there could be a gap between the long term goals and the system. If the strategy is not clear it will be very difficult to assess which functions need to be automated and also to set targets for the automation and the improvement it should bring.

The persons responsible for IT at the SACCO and in particular the chief technology officer (CTO) play a key role and need to continuously be aware of the development in the market for the relevant applications, in database technology and service offerings. This would enable them to realise when it is appropriate to assess the current solutions, make change requests or make a high-level business case for a new application acquisition. Once the strategy is clear and the key business owners have specified what they need from the system the CTO would be appropriate to assume the project management responsibility for the automation.

Business case as a tool to measure benefit from automation

The SACCO would benefit from developing a business case for the automation in order to make an objective decision. The business case would help document the objectives, costs and benefits of the automation and assess different options with regard to the application. It would also document key assumptions about the financial impact the automation is expected to have on the most important processes in the SACCO. These assumptions could also be used as targets to eventually measure the actual benefits of the automation.

In this project it has been assumed that the SACCO will acquire a system in order to create value for the members by doing business more efficiently. Value for a SACCO is a combination of the typical corporate value drivers and

Table 8: Automation considerations

| Consideration | The SACCO's role | The vendor's role |
|---|--|---|
| Ability to acquire, customise and implement the application. | Articulate the strategy. Gather requirements. Develop a business case. Be clear on who is making the decision. Set targets and track benefits. | Provide a proposal with detailed information about the system. Lead a gap analysis. |
| Ability to integrate branches to one network which is continuously synchronised in real time. | The SACCO needs to decide which level of integration is required and provide specifications. | The vendor and additional suppliers will support the SACCO and potentially will one take on a lead supplier role and act as project manager. |
| Ability to manage the application. | Depending on sourcing decisions the SACCO will need to build a capacity ranging from basic application management functionality to full ownership. | Application management can be outsourced leaving the vendor with responsibility for all but basic administrator support. |
| Ability to utilise the system. | The SACCO needs to adapt the organisation accordingly to fully use the system's capacity. | The vendor can provide training and support but is in likely to have the detailed understanding of the SACCO required to control and execute the organisational change. |

social factors. The first would be to generate as much cash flow as possible in the long term with as little volatility as possible. The second would be to increase outreach and inclusion with regard to financial services in the society the SACCO operates in.

The business case will require an in-depth understanding of the financial performance of the SACCOs. One of the fundamental challenges that it needs to help analyse is if the business volume and profitability is sufficient to independently support the acquisition of an application. Essentially the depreciation and running costs of the system per user and year might not be recoverable from cost reductions and increases in revenue that the system directly or indirectly contributes to if the SACCOs model is too weak or too small. Several SACCOs are currently underperforming⁷ but this is not solely due to poor use of IT. It could be that even if this factor is improved that the SACCOs cannot realise the benefits due to other limitations and the automation would lead to a loss. For smaller SACCOs it could be that, even if they realise significant benefits, that the absolute value of these do not compensate for the minimum cost of a competitive system. As regulatory compliance will be one fundamental reason to automate it could be that a SACCO automates even if the business case does not support it but at least the SACCO is aware of what value has been lost in the short term and how to compensate.

The SACCO's contribution to the automation

Once the SACCO has established what purpose the applications needs to fulfil it needs to be specified how the application will do that in terms of detailed functionality to deliver each business process. In order to do this the SACCO will benefit from having business processes documented at a high-level or at detail. Such documents will also significantly facilitate the gap analysis conducted by the vendor to identify any need to customise and configure the system. Without a proper gap analysis the vendor would struggle to make any significant warranties or price the system, implementation and support. The business case needs to be updated in parallel with the requirements gathering to assess the financial viability of the specification that is emerging.

In addition to informing the internal decision process and contributing to the functional specification, the SACCOs need to be able to establish relationships with vendors, to assess them and negotiate an agreement for the application acquisition, implementation and support. This requires in-depth knowledge of the applications in order to evaluate prices and conditions.

Prior to implementation and to making any significant payment instalments sufficient testing of the system is required. The vendors are responsible for the technical and functional tests (component, integration, performance and system test) but the SACCO needs to provide proficient users to enable the user acceptance test (UAT). These users will need to have access to some kind of

documentation of the processes that the system needs to support, otherwise the user acceptance test will be heavily dependent on the individual and take an almost random character. The relevance of the user acceptance test is also dependent on the experience and skill of the testers. An inexperienced user is unlikely to be aware of the most challenging events or outcomes of the SACCOs processes that should be used to stress test the system.

The automation will most likely be one of the larger projects undertaken by the SACCO at any time and it is unlikely that the SACCO management will have experience of managing such a project to ensure that it is delivered on time and in accordance with requirements. If the SACCO fails to fulfil its commitments to the process, the risk is that the vendor's warranties for the implementation will be void and the SACCO could be further exposed to delays and even quality issues etc. As system implementation is a practically non-recurring event that requires expertise outside the core SACCO business it is more effective to obtain assistance from independent consultants who are experts in this field than to take the risk of managing the project completely independently. It is worth noting that even if the vendor has previous experience it will be from a different perspective and they will not be objective.

6.1.2 Connectivity

None of the SACCOs the project has visited has achieved a branch network that is continuously fully integrated in-real time or to any other practically relevant updating frequency between the locations. The root cause appears to be twofold.

Firstly the available infrastructure is insufficient or prohibitively expensive for the SACCOs. The options available are mainly land or mobile networks provided by the telecom operators, 'lease lines' or satellite networks. To achieve a full integration of the application across a branch network dial-up is not sufficient. Mobile telecom networks need to be of sufficient bandwidth as, even if the vendors have tried to optimize, the applications would be as very slow when integrated through e.g. 0.5-2mbit/s. The mobile networks do suffer from disruptions and at locations in radio shadow there is no connectivity rendering them sufficient for synchronisation and reporting on an infrequent basis only. Satellite connections offer better reliability and bandwidth but at remote and mountainous locations SACCO branches have proven unable to connect to the satellite base stations as there is no direct line of sight. Lease lines provide the most reliable option with the best bandwidth but as of yet SACCOs have found this option very costly. Digital subscriber line (DSL) connections using the fixed line telecom network would not completely resolve the issue as it is not yet available in all locations where branches of the FOSA SACCOs exist.

Secondly the vendors do not appear fully capable of integrating the branch network even when there is a connection. The cause for this remains to be confirmed but it needs to be considered that the branches de facto are currently not connected despite the vendors' efforts.

⁷ WOCCU impact analysis.

Connecting the branches is necessary to manage the SACCOs and provide competitive services in a secure manner. Daily synchronisation of records would provide management with a view of the SACCO that we consider necessary to effectively manage an organisation of this type given the tempo of the marketplace. Anything else creates a lag that decreases the executive management's ability to proactively drive performance. Regarding customer service, a material number of SACCO members travel across geographical locations and are aware that competing institutions have networks that are not sent to their home locations. There is a tangible risk that members will exploit any discrepancy in the SACCO records to the SACCOs disadvantage even though this is illegal.

Currently consolidation has to be achieved by transporting the data on a physical storage medium or in the best case sending it by email. This is inadequate not only in terms of timeliness but also due to the manual effort and data integrity issues this method of data consolidation creates. The scope of the consolidation includes on average three to ten branches however the need for connectivity is not limited to branches but also includes interfaces to external networks such as ATM switches, SMS banking, money transfer systems and POS devices.

6.1.3 Ability to manage the application

In order to benefit fully from an application it needs to be managed. This is a fundamental pre-requisite to ensure acceptable system availability, integrity and to meet business requirements. Currently SACCOs suffer from inadequate application management and the impact on the business can be seen clearly. The root causes are probably a combination of factors such as lacking staff skill and training, vendor support and strategy. Acquiring a new application or making changes to the current one would not have the full intended effect unless the following is addressed:

The SACCO needs to recruit and train individuals who can act as system administrators or at least 'power users' (persons who extensively use the application and develop knowledge beyond that of regular non-technical users). For large organisations there are economies of scale of consolidating and even outsourcing such functions. For the SACCOs the cost of the individual does not motivate it and the benefit of having resources close to the business to build familiarity and keeping communications simple is considerable. While system administrators do not need to modify the application's code, they must understand the behaviour of software in order to install it and to troubleshoot problems. This requires knowledge of operating systems and skills required for software and hardware troubleshooting.

As an expert in the specific application, the system administrator will add considerable value by creating additional independence from the vendor and

considerably reducing response time to resolve basic issues. The SACCO needs to compare the investment return of training the internal system administrator versus relying on the vendor. The vendor might charge to provide service but the employee can leave the SACCO and if the employee is not fundamentally capable the training might not yield the desirable results.

The SACCO also needs to ensure that sufficient access to the relevant parts of the application is provided. This includes all administrator modules, configuration features, the source code and the database. Without this the SACCO is likely to find itself dependent on the vendor and will not have the flexibility to build an internal system administrator function as desired.

The SACCO also needs to ensure that the vendor or a third party is willing to and can realistically fulfil a service level agreement (SLA) to provide the support necessary. If the SACCO can plan which capacity it is able to build internally, and what makes operational and financial sense, it can exclude this from the SLA and thus reduce costs. The SACCO has basic knowledge of system administration and the application internally the vendor can focus on the complicated issues and providing additional capacity.

6.1.4 Realising organisational and behavioural change to utilise the system

The benefit of a system is dependent on each user's willingness and ability to use the system. Automation or improved automation will result in significant change to each person's working environment, tasks and job description. To ensure acceptance and that employees proactively identify and pursue the opportunities it brings, the management has to be conscious of this and plan accordingly. The starting point for the SACCOs will be to ensure that all users reach the required basic computer skills. This includes using a windows based PC with accessories. Then they need application specific training and finally training with regards to how the application is aligned with the SACCOs business processes, strategy and their incentives. With regards to incentives it would be logical to reward e.g. loan officers who can reduce delinquency or collections offices who can recover delinquent loans with extra pay.

The vendor is expected to support the implementation with regards to application training and integration with the SACCOs operations. Basic computer literacy skills do not necessarily need to be provided by the vendor as these are generic. The management will need to support this entire aspect closely to ensure that the application is adapted to the SACCOs strategy, not vice versa, and that the training component is sufficiently adapted to the SACCOs specific needs.

Change management

A successful automation does not only build on finding the optimal system and building it. It is also highly dependent on aligning the system with the organisational structure and the employees. As the SACCO changes with

the system implementation there will be disruptions to operations. People will need to learn and be accustomed to the new system, they need to be comfortable with new roles and ways of working. This will initially lead to lower productivity and performance. The risks of poor coordination between these are known and include considerate drops in performance and delay of benefits. These can be managed and avoided by considering some basic steps.

- **Planning:** Align the SACCO leadership, including executive management, the board and any capability owners, on the key strategies, priorities and questions relevant to the automation project. They need to have a plan for how to actively lead the project and coordinate it with the daily operations and other change projects that might be in progress.
- **Communication:** Build understanding for the project using targeted messages to specific stake holders (e.g. loans officers, collections officers, tellers). Articulate a project vision and the business case. Invite dialogue and feedback. Tie the messages to the overall transformation in the SACCO.
- **Learning:** Build skills and capabilities to enable behaviour and process changes. Train on support roles, processes, tools, knowledge management and metrics.
- **Leadership and ownership:** Be proactive and define how business processes and operating model need to change. Be aware of informal structures and unwritten rules.
- **Organisational design:** Align roles with responsibilities. Align incentives and performance management.
- **Business readiness, measurement and adoption:** Ensure ready to roll out metrics. Measure outcomes by qualitative and quantitative assessment; results and behaviours.

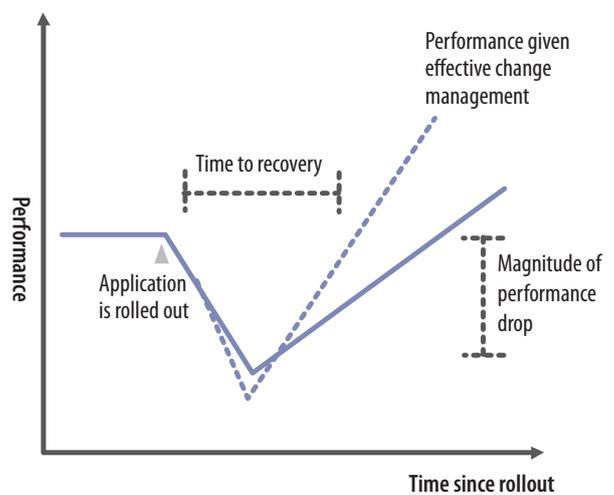
The graph below illustrates how performance can develop after a system implementation. A decrease of some kind is difficult to avoid but with the appropriate awareness, skill and plan the decrease can be limited and the recovery will occur earlier.

Different kinds of change

It is important to be aware of that there will be different kinds of change in the organisation as the SACCO implements the system. It involves the management and the employees individually and they need to work together to move the SACCO forward. Tactical change is the most basic, this is where the employee gets used to the new physical environment, behavioural change follows as a consequence but the cultural change needs to be managed and controlled. It will not happen automatically and could be a missed opportunity for the SACCO. The tactical change means that manual effort is truly reduced, the behavioural change means that the employee contributes to making the most of the system and a new culture means that the SACCO in every sense becomes

a new organisation offering better customer service, is more productive, can easier comply with regulations and in the long run create more value for the members than would have been the case if the system was just regarded as a new piece of office equipment.

Figure 1: Illustration of performance drop after system implementation

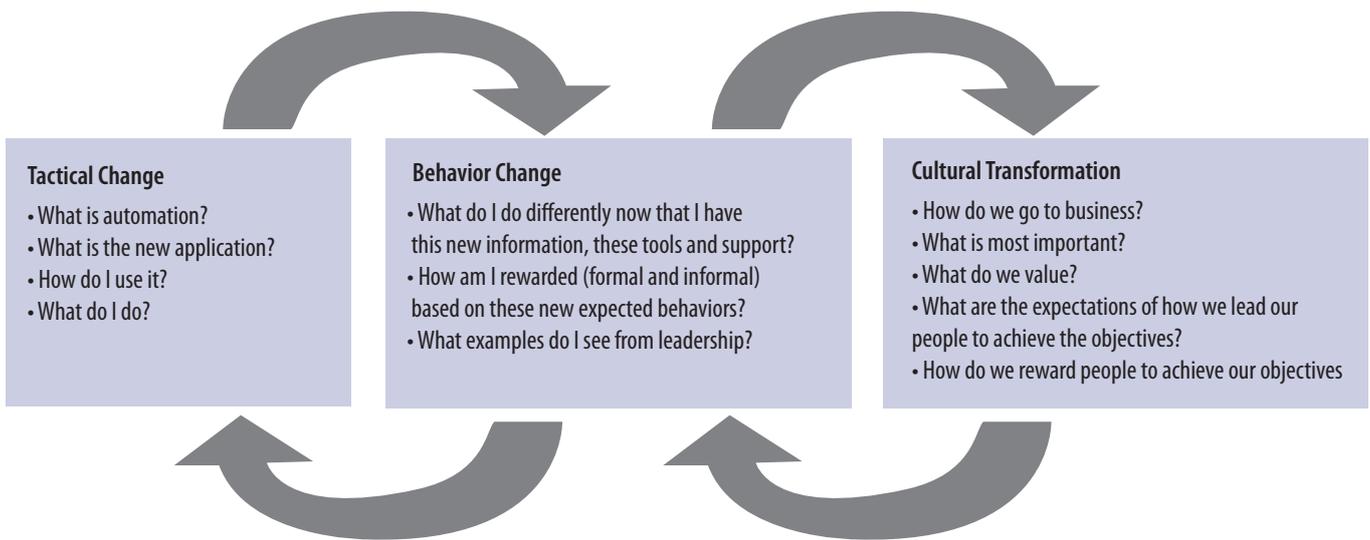


Key issues

The key things to monitor throughout the implementation which have proven prone to cause issues are:

- Ensure that all managers are aligned in terms of their objectives with the automation.
- Focus on the capability the entire SACCO can obtain, in contrast to optimising each department as a silo.
- Focus on the capabilities to drive business outcomes considering people, processes and tools. Avoid a tactical focus on isolated features and functions.
- Maintain an overview of all projects at the SACCO and coordinate. This is especially relevant if interdependent projects such as automation, regulatory compliance and general financial performance management (assuming that such projects will be core to the transformation) are in progress simultaneously.
- Provide sufficient resources.
- Validate what are realistic expectations on project outcomes.
- Ensure that the full scope of the change been understood.

Figure 2: Change Processes and Interdependence



6.2 STRATEGIC OPTIONS

In the context of the present report, strategic options are considered as alternative courses of action with regard to system technology, which have an effect on the entire organisation and also determine the long term development of the organisation. To analyse the strategic options available to SACCOS have when automating their operations, the project team first identified the range of potential options.

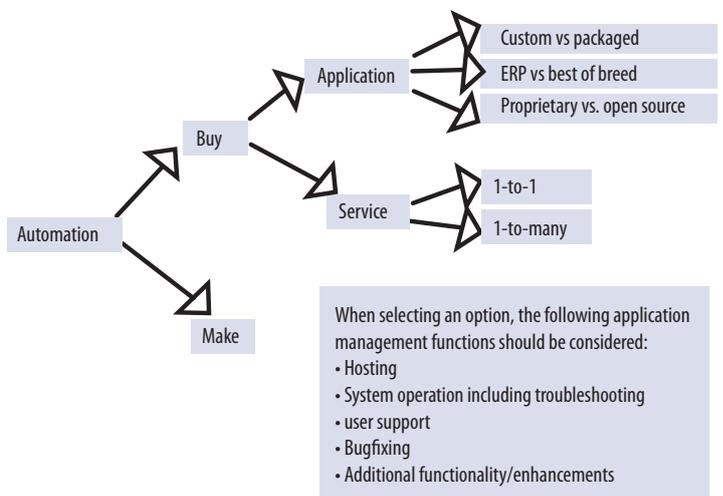
When selecting an option, the following application management functions should be considered:

- Hosting.
- System operation including troubleshooting.
- User support.
- Bugfixing.
- Additional functionality/enhancements

For a SACCO willing to automate their operations, the initial consideration is a classical “make or buy” decision: a SACCO can either acquire a system or develop it in-house. If a decision to buy is made, the SACCO faces the options of either acquiring an application or entering into an agreement with an application service provider. An ISP is a business that provides IT services to customers over e.g. the Internet. The software offered in an ASP model is called software as a service. It can be provided either on a 1-to-1 or on a 1-to-many model, i.e. the software can be individualised and offered to just one SACCO, or be a standard application where several SACCOS share the same ASP application. When acquiring an application, the SACCO can choose between custom development, i.e. bespoke software, and a software package. A

parallel decision is whether to go for an enterprise resource planning (ERP) system, which is a comprehensive system that is intended to manage all the information and functions of an organisation from a central database, or a combination of best of breed solutions for different functions. While making these decisions, a further consideration is whether open source software can be an option or whether the requirements can only be met with proprietary software. The software licence for open source software is public, which means that the software can be used, changed, improved, and distributed free of charge.

Figure 3: Strategic options for automation



In order to evaluate the identified strategic options with regard to their individual strengths and weaknesses in the SACCO specific context, the project team considered the suitability of an option within the given constraints of the SACCO environment and existing capabilities as well as the feasibility of an option.

6.2.1 Make or buy

When it has been decided to implement or upgrade system technology, a SACCO faces two elementary options: It could either buy the technology or develop it in-house. Considerations need to include cost, available skills, software quality, duration, and vendor dependence.

None of the SACCOs the project team visited is deemed to have the necessary skills to develop a system in-house. They do not only lack system development skills but also the knowledge on how to carry out a system implementation including project management, requirements analysis, functional specification, system testing, etc. To develop a system in-house, the SACCOs would thus need to employ the necessary resources and/or external consultants. It is highly questionable if they should build expertise in an area that does not belong to their core competencies and that is not related to the strategic objective of their organisation.

With regard to cost, in-house system development using internal resources can be less expensive than an acquisition. The cost advantage is reduced and might even be lost completely if the cost of having in-house capacity is factored in. In any case, it is likely that the process will take more time which in turn increases the cost to the SACCO. Also, commissioning a software vendor will increase professionalism during the whole implementation process, from project management to roll-out. A mismanaged in-house system implementation can end up being more costly because of delays and poor quality of results. Furthermore, if the SACCO cannot recruit the necessary resources, it needs to bear the cost of external consultants. It is rare that any industrial or financial services company successfully develops its own application using internal resources. The financial and operational benefits are not significant but the risks are.

An in-house implementation certainly has the advantage of not creating vendor dependence and eliminates the need for vendor management. However, considering the state of the SACCOs' IT proficiency, the involvement of a vendor can also mean obtaining a reliable partner and getting access to required capabilities. As the vendor is liable and needs to guarantee the final product, its quality might be better than that of an in-house development.

To conclude, the option of in-house development does not seem suitable, considering the observed lack of software development and IT project management skills in the SACCOs. However, it should be noted that the option is not entirely impossible as Ukulima SACCO's experience has shown. Ukulima's

operations are supported by bespoke software that was developed in-house by a single software engineer. While assessing the quality of their system was not within the scope for this project, it was noted that the implementation took Ukulima more than three years, going through the phases of analysis, design, development, and test before the software was finally accepted. The acquisition of a system and the engagement of the vendor should substantially reduce the duration required for implementing or upgrading system technology.

6.2.2 Service acquisition

When a SACCO has made a decision to acquire technology, it faces the two options of either acquiring a system or entering into an agreement with an application service provider.

What is an ASP? An ASP provides their software as a service over a network, typically owning, operating, and maintaining the servers the software runs on. Their customers can access the application through a web browser or a thin client and are typically charged a monthly fee or a fee per transaction. When evaluating the option of entering into an agreement with an ASP, considerations need to include cost, application maintenance, fulfilment of requirements, and connectivity.

ASP benefits: Cost savings are regarded as a typical benefit of the ASP model. One major advantage is the low entry cost. The considerably large capital expense that a SACCO needs to bear up front when acquiring a system is reduced to a foreseeable monthly cost in the ASP model. This benefits the SACCOs that cannot afford the initial investment associated with a system acquisition. It is also assumed that ongoing costs in the ASP model are lower than costs associated with owning and managing an application as maintenance costs are spread over a broad customer base and expenditure for internal IT personnel can be decreased. However, while total cost associated with the ASP model is assumed to be lower in the short term, the long-term cost could outweigh the costs associated with system acquisition and maintenance. A detailed analysis of the total cost of ownership is recommended before engaging an ASP.

Another major advantage of entering an agreement with an ASP provider is the transfer of application maintenance tasks to the provider. Ideally, the SACCO is not involved in maintenance of application servers, databases, and the necessary hardware as maintenance is centralised with the provider. System upgrades can also be handled centrally and do not require SACCO involvement. This implies that fewer resources are necessary within the SACCO, referring to both the number of personnel but also to the skills required. However, as most SACCOs do only have one system administrator and are likely to retain this person even when engaging an ASP, the potential benefit of saving IT personnel expenses is less relevant in the SACCO context. The ASP model can still benefit SACCOs that face constraints with regard to available IT skills.

Moreover, a service level agreement typically ensures constant availability and continuous improvement of the service, which can improve application performance considerably. Obviously, the provider needs to be managed like any other vendor, requiring certain skills.

Implementation considerations and prerequisites for ASP:

When entering an agreement with an ASP, it must be ensured that the offered functionality meets the SACCO's business requirements. It is recommended that the SACCO chooses a provider that can customise the solution according to specific requirements, employing a multi-tenant environment (1-to-1 model), but does not offer a standard service to all customers (1-to-many model). Each SACCO making use of the service can have its own virtual application with separate data for products, services, users, etc. However, offerings available in the market can also limit the SACCO's option here.

Connectivity is a major prerequisite for the success of the ASP model as the application is not hosted locally within the SACCO but on a distant server and data needs to be transmitted accordingly. Hence, engaging an ASP is not recommended for SACCOS located in regions with generally poor connectivity. Moreover, given unreliable Internet connection in large parts of the country, a SACCO still needs to have the necessary technological infrastructure in place to enable offline operations, i.e. a server with the front-end application and the local database. Otherwise business continuity cannot be ensured in case of connectivity downtimes. The necessity to maintain this infrastructure leads to a reduction of typical ASP advantages. According to the provider Neptune, the SACCO needs to have the same infrastructure in place for offline operation of an ASP model as for locally hosting an application. Maintaining this infrastructure has cost implications and necessitates retaining personnel to look after the technology.

Where connectivity is adequate, the ASP model can improve access for SACCO personnel when the service is accessible through a web browser. Staff members can then access the application from any computer or other device that is connected to the Internet instead of having to travel to the SACCO premises. This facilitates completing tasks such as loan approval by loan committee members remotely.

In order to understand the potential acceptance of an ASP in contrast to a locally hosted application, the project team asked SACCO managers about their concerns with regard to engaging an ASP. While some general managers had not heard of the concept and could not articulate their considerations, one of them stressed that the financial element would probably be the most relevant for considering an ASP. However, the provider would need to offer sufficient flexibility with regards to fulfilling specific requirements and also guarantee that data is not being exposed to competitors using the same service. He feared board members could be hesitant to engage an ASP as they would prefer to own an asset. However they could be convinced when being educated about the pros and cons.

Current state of ASP options: With regard to available providers of SACCO software as a service, Neptune claimed to have their solution Orbit ready for ASP operation. However, it became evident that both SACCOS currently using Orbit have local installations of the software and do not yet obtain it as a service over the internet. NECCO FOSA Sacco is supposed to go live on the ASP model early 2010. It needs to be confirmed if Neptune can keep their promise.

While cost savings are supposed to be the primary benefit of engaging an ASP, the project team considered Neptune's asking price as relatively high. Taking the provided information into account, the project team estimated the cost for the two standard SACCOS to amount to approximately 6.42 million and 12.9 million Kenyan shilling in the first year. This would imply that entering a one-year agreement with Neptune as an ASP would, for the larger of the two standard SACCOS, entail approximately the same cost as acquiring Bankers Realm (12.24 million), with the substantial difference that the SACCO would own an asset at the end of the year when acquiring the system. From year 2, the estimated costs would amount to Kshs 2.2 million for the annual maintenance of Bankers Realm and to a considerable 10.8 million Kenyan shilling for the continued use of Neptune's services.

Although it needs to be noted that the vendors did not have sufficient information to quote an exact price and the estimates can only serve as a rough indication, it became obvious, that the alleged cost advantage does not seem realisable in this case. One would expect the service of an ASP to be cheaper as costs can be spread over a broad customer base. The relatively high cost could be due to the fact that Neptune is only starting to offer Orbit as an ASP and prices could go down once more SACCOS make use of the service. Potentially, syndicate buying of an application can be an option to realise a cost advantage similar to what is possible when entering an agreement with an ASP.

Apart from Neptune, two other vendors discussed the option of providing their software as an ASP. Craft Silicon pointed out that they are currently implementing an ASP model in Malawi, where they offer their solution Bankers Realm to a network of 40 SACCOS through the national umbrella body, Malawi Union of Savings and Credit Co-operatives, each SACCO having an independent application. Fintech stated that they are currently preparing their solution for an ASP model, having received a corresponding request from WOCCU. However, their activities do not seem to be triggered by market demand. If the lack of demand is due to the SACCOS not being aware of the ASP option or because they are aware of it but don't like it has not been determined.

Recommendation regarding ASP options: The project team recommends actively monitoring of the progress of these two vendors in terms of offering their solution as an ASP. Moreover, it is necessary to understand their pricing approach, especially since the functionality of Bankers Realm and FinSacco is deemed more comprehensive and SACCO-specific than

the functionality Orbit offers by default. Both vendors could be an interesting alternative to Neptune.

6.2.3 Application acquisition

Evaluating the option of engaging an ASP has shown that, while the concept itself is good, not all alleged benefits can be realised in the SACCO context. This might be due to the fact that the offering is still relatively limited with regard to available solutions. SACCOs remain with the option of acquiring and maintaining an application. When evaluating this option, considerations need to include cost, application maintenance, and fulfilment of requirements.

Options for application acquisition: When acquiring a system, a SACCO faces two main options: it can commission a software development company to develop custom-built software or it can buy an application from a particular vendor off the shelf and get it customised and/or configured accordingly. Custom-built software is tailored to a SACCO's specific requirements and thus fits existing processes best. It has just the right functionality to facilitate the SACCO's operations. However, developing a system from scratch takes a lot of time and resources. Therefore, custom-built software is generally considered to be more costly. It can still be advisable for businesses retain very specific requirements, which cannot be met by packaged software, or those that consider their IT system as an instrument distinguishing them from their competitors. Both cases do not apply to SACCOs; they generally have common requirements which can be met by packaged software available in the market and perceive the system as enabler rather than strategic edge. The cost advantage of packaged software does not only become apparent in system development but also with regard to on-going maintenance. Packaged software is in most cases a more mature product with some industry experience and can ideally offer more stability than custom-built software going through inevitable teething troubles.

Apart from the choice between custom-built and packaged software, a SACCO faces the decision of whether to acquire a comprehensive ERP solution, i.e. a system, that is intended to manage most if not all information and functions from a central database, or a combination of best of breed solutions for different functions, i.e. one system for accounting, one system for teller operations, etc. Although the functionality of the individual solutions might be superior within each of the various functions, the need for integrating them practically rules out this option in the SACCO context, considering the lack of available system integration skills. A SACCO would need to rely on an external provider, which can turn out to be costly. Moreover, a combination of best of breed solutions might prove to be less stable than an integrated solution with a proven track record.

The project team also evaluated the option of using open source software instead of acquiring proprietary software. The obvious advantage is that open source software comes free of charge. While suitable systems are available,

e.g. the Mifos system promoted by Grameen Foundation, they are not deemed to fulfil SACCO requirements by default. Necessary customisation requires software development skills that SACCOs do not possess. They would thus need to rely on an external provider customising the software according to their requirements. While Mifos mentions two local partners in Kenya who offer implementation support, an assessment of their proficiency and commitment was not within the scope for this project. However, ADP experience from the microfinance industry has shown that customising open source software can become as costly as acquiring proprietary software. On-going application maintenance and support imply further costs and the SACCO also needs to find an external provider capable of offering these services.

Taking all these considerations into account, the project team recommends acquiring proprietary, SACCO-dedicated software and customising and/or configuring it according to the specific requirements.

During the final round of screening, six different applications were considered and evaluated with regard to fulfilment of requirements, cost, and application maintenance. The project team made the following observations with regard to the individual systems. The observations are presented consecutively, as per the order of demonstrations.

1. Bankers Realm MFO (Craft Silicon)

Fulfilment of requirements: Bankers Realm was found to be a fully integrated solution offering SACCO-dedicated functionality. FOSA, BOSA, and accounting functionality are considered strong and specific in comparison to other solutions. When visiting Muramati SACCO which has implemented Bankers Realm, the software was found to be able to support exotic agricultural loan products including balloon payments. To accommodate the needs of agricultural customers, it is flexible with regard to pre-payments, partial payments, loan schedule restructuring, rescheduling and postponement. As the system is an amalgamation of SACCO and MFI software, it can also cater for the increasing number of SACCOs that have begun to offer group lending. Moreover, the system has in-built functionality to connect to point of sale (POS) devices and an external network of automated teller machines (ATM) or mobile phones for mobile banking.

The system is considered highly configurable, allowing for parameterisation of products, their workflow, incurred charges, individualised labels for fields, customisable fields, system settings, etc. It features a report writing tool which can be handled by system users with basic skills to alter available report templates by changing filters, column width, and column arrangement. The system is deemed to be very user-friendly. Workflows can be defined per product and guide the user through the process. A set of dashboard items can give alerts for defined events. Data entry is facilitated by validations or automated processes that lock out the user and with it the potential for incorrect entries (e.g. definition of accounting impact for each transaction).

Cost: With regard to cost, Craft Silicon claimed they consider their customers' financial circumstances, get an understanding for the available budget, and then make a reasonable proposal. Their cost estimates for the two standard SACCOs were found to be relatively low, when compared with the other vendors. Craft Silicon provided the second lowest figures to Amtech. A SACCO willing to acquire Bankers Realm would need to confirm the specific price for an implementation of the system in their organisation with Craft Silicon.

Application maintenance and support: As for implementation support as well as ongoing application maintenance, Craft Silicon is deemed to be a satisfactory partner, having a substantial local presence. More than approximately 150 staff in the Nairobi office are dedicated to supporting Bankers Realm. Walking through the vendor's premises conveyed a positive impression of the company and the support structure in place. Procedures with regard to defect management, testing, documentation, and deployment were considered mature and proven. Necessary tools such as a defect management system existed. Moreover, Craft Silicon has completed numerous and diverse implementations in the region's SACCOs and MFIs and are therefore deemed to have gained profound industry knowledge. Craft Silicon is currently building a new office building in Nairobi and aim to increase staff base count to about 400 staff in the near future.

Recommendation: To conclude, the project team feels confident to include Bankers Realm MFO into their recommendation of viable SACCO automation solutions, regardless of a SACCO's particular type or size.

2. *EasySacco (Amtech)*

Fulfilment of requirements: EasySACCO is a SACCO-dedicated system, deemed to be capable of supporting a SACCO's core operations. The FOSA module is found to offer the key features a SACCO requires, such as teller module, overdraft facility, etc.

EasySacco has a module that enables customers to access their funds via the Co-op Bank ATM network. Amtech claims that VISA enabled ATM or POS devices are also supported. However, the vendor is not found to have the same experience in the area of mobile banking, i.e. the integration of the application with POS devices and mobile phones – Craft Silicon or FinTech. While the loan application process is generally enabled by the system, some shortcomings could be observed. The process cannot be easily configured and loan appraisal is insufficiently supported by the system. On the other hand, the system offers flexible loan scheme definition, the ability for remote loan approval, and reports that help to follow processed applications.

During the assessment the project team raised concerns about the data model of the application with regard to the storage of customer data. It was unclear whether customer data was stored in two separate database tables for FOSA and BOSA or in a single one. Subsequent to the assessment Amtech claimed

that the database structure is integrated for FOSA and BOSA. Any buyer is encouraged to review the database structure prior to a purchase to ensure that the IT fully supports the SACCO's processes with no adverse gaps between the FOSA and BOSA. The member number is no longer a unique identifier for a customer throughout the whole application and a user needs to consider the national identity card (ID) number simultaneously to identify a customer. EasySacco was considered flexible with regard to setting up different products although configuration did not seem straightforward in all cases. However, the system could not prove to be as flexible as other solutions, e.g. Abacus. Positively noted was a feature that allowed the set-up of different mappings for data import using a drag and drop wizard as well as the functionality to set up reminders for defined events.

The user-friendliness of the solution needs improvement. Screens are not completely consistent and their flow is not logical, e.g. FOSA being an item in the general ledger (GL) menu. The wording is not fully consistent and can be confusing. Field labels, drop-down menus, and error messages need to be clearer. The system does not guide the user sufficiently with regard to correct manual entries as it allows the user to choose impossible combinations, e.g. withdrawal and credit. Not all fields are populated automatically, which increases the risk of incorrect data entry.

Cost: Amtech was invited to the final demonstration as their response to the RFI gave a good impression and as they were deemed capable of providing a more cost efficient solution for a SACCO that cannot afford a high-end system. Indeed, Amtech's cost estimate for the two standard SACCOs proved to be the lowest of all vendors. However, Craft Silicon quoted a similar price for the smaller of the two. As a cost advantage cannot be realised and Bankers Realm is considered a stronger solution, the project team would not advise choosing Amtech's solution EasySacco, but rather Bankers Realm which also offers more possibility for growth. For the larger SACCOs, Amtech's proposal clearly offers a cost advantage, their estimated cost amounting to 50% of Craft Silicon's or 40% of Fintech's figures, respectively. However, the vendor does not have a track record of multi-branch installations which these two vendors have subsequent to the assessment, Amtech alleges that they have successfully connected up to three branches. In case a SACCO with multiple branches is interested in acquiring EasySacco, it is encouraged to visit one of the live sites recommended by Amtech for reassurance."

Application maintenance and support: As for implementation support and on-going maintenance, the vendor seems to have the right strategy. Amtech reports that it has 22 permanent staff spread over Nairobi, Kericho, and Eldoret offices, claimed capable of supporting implementations of EasySacco. Having completed almost 20 implementations in diverse Kenyan SACCOs, Amtech is deemed to have the required industry knowledge. However, in comparison to other solutions which made the leading domestic as well as foreign solutions, most of its implementations have been done in smaller institutions with a limited number of branches.

Recommendation: To conclude Amtech's solution EasySacco generally offers the functionality necessary to support a SACCO's key processes at a relatively affordable price. However, it cannot offer the same value as e.g. Bankers Realm or FinSacco. In order to be endorsed with no reservations, the system would need to be improved. The project team would advise monitoring the development of Amtech's offering for the benefit of the smaller SACCOs that cannot afford to buy the high end solutions.

3. *FinSacco (Fintech)*

Fulfilment of requirements: FinSacco is another strong, fully integrated solution dedicated to supporting SACCO operations. Notable is the customer enquiry screen that presents comprehensive customer data including all FOSA and BOSA accounts and transaction details, loan details including schedule, income history, and guarantors and enables a user to view the financial position of a customer at a glance. Users can use an "earmark" feature to capture and display information about a customer to every other system user. The system offers a module (FinBridge) to connect the application to Fintech's Kenswitch, enabling integration with an ATM network and facilitating SMS banking.

Lending is considered to be very well supported by the system, the default loan appraisal and approval process being straightforward and succinct. It can be tailored to build on shares, the two thirds rule common in most SACCOs, guarantors, and other collateral. The guarantors can secure more than 100% of their share assets if desired. The user is guided through the loan issuing process and can confirm the completeness of the details with the help of a checklist. The project team only saw FinSacco live at Universal Traders SACCO (UTS) and hence could not confirm that the solution supports exotic agricultural loan products by default. Positively noted was also the comprehensive accounting functionality, including the assignment of products and transactions to dedicated sub-ledgers facilitating automated posting and reporting, or the possibility to operate several CoA formats in parallel, using the same raw data.

The system is considered flexible with regard to product definition, charges definition, rule definition (e.g. authorisation requirements), comprehensive access rights management, and screen customisation. New reports cannot be designed within the system, but Fintech provides unlimited new reports for clients on annual maintenance contract. In terms of security, FinSacco's audit trail can be followed on transaction level or per user. The authorisation module provides a feature to view modifications field by field. Authorisation processes are supported, including online notification. Users at UTS were generally happy with the system, positively noting its user-friendliness. The drop-down menus are logically arranged, the system offers a side bar for quick access customisable per user role, and guide the user through processes with the help of "Next" buttons. Processes are supported by a workflow-like feature that automatically takes completed tasks to the next stage, e.g. during the loan application process. Tasks can be routed back to the previous stage, if necessary.

Cost: FinSacco is found to fall into the same price category as Bankers Realm. Fintech's cost estimates for the two standard SACCOs are slightly higher than Craft Silicon's. However, the quoted licence prices are similar. It is implementation and training cost where differences can be observed. Fintech included the modules Customer Registration, Loan Management, Financial Management, General Ledger, Cash Management, Budgeting, MIS Reports, SMS Banking, and ATM/POS interface in both cost estimates. This might justify the slightly higher price, in comparison to Bankers Realm.

Application maintenance and support: As for support and maintenance, Fintech is deemed to be a reliable partner. In their Nairobi office, the vendor has about 90 employees. A team of 12 people is fully dedicated to the development and maintenance of FinSacco. This team also handles implementation support. The procedures for implementation support and ongoing application maintenance seem to be proficient. Fintech currently has eight live sites in Kenyan SACCOs. Most of these SACCOs are employee-based or have a mixed membership. The system's suitability for farmer-based SACCOs needs to be confirmed at a live site. The industry knowledge gained through the implementations was proven during the demonstration.

Recommendation: To conclude, the project team feels confident to include FinSacco into their recommendation of viable SACCO automation solutions. With the information at hand, the project team is not in a position to favour either FinSacco or Bankers Realm, but regards them as comparable.

4. *Abacus (Fern)*

Fulfilment of requirements: Fulfilment of requirements: Abacus is a credit union solution from the United Kingdom. The system's functionality is generally considered very strong. As the solution was demonstrated to the project team it was implied that customization would be required to meet several Kenyan SACCO specific requirements. The vendor has subsequently explained that this would not be necessary in several cases. Any disadvantage from the need to customize ABACUS could be offset by the cost effectiveness the generic Microsoft platforms that ABACUS is built on offers. The project team would encourage any SACCO considering ABACUS to determine in detail what customization is required to meet its specific requirements, how this would be done and at what total cost. Whilst FERN undoubtedly has experience of credit cooperatives we see this need for software acquisition and implementation expertise on behalf of the SACCOs as a disadvantage compared to Kenyan based and SACCO dedicated solutions and would not recommend Abacus as first choice for individual SACCOs. In case SACCOs are ready to coordinate their system acquisition, Fern is deemed a reliable partner, bringing with them deep credit union expertise and a strong solution.

Teller transactions are well supported by the system. The transaction enquiry functionality is very effective. In addition to the standard customer data, Abacus enables analysis of economic customer data by capturing customers'

range of income, location, etc. New customer data fields can be configured and immediately be picked up by the respective report. A central toolbar enables effective customer search. The system can be connected to a switch to enable integration with an ATM network. However, it needs to be confirmed how suitable and flexible the system is with regards to processing salaries, including deductions. The vendor has explained that ABACUS enables a range of batch operations and that credit unions based on salary deductions are currently using ABACUS.

Lending is well supported by the system. Abacus offers a comprehensive range of options to configure loan products. Loan repayments can be scheduled to any frequency; deferred as well as balloon payments are enabled. The system can also support group lending. A what-if analysis feature enables customer care officers to advise prospective borrowers. Appraisal decisions can be supported by a credit rating produced in loan history reports. Collection is supported by loan delinquency reports and a functionality that supports automatic generation of letters. The vendor did not demonstrate a solution with the typical SACCO appraisal process based on ability by shares, income etc. However, FERN later explained how this can be configured in the loan product set up. As this is an absolute key aspect of the solution that needs to be very robust, easily available and displayed clearly all SACCOs need to confirm that a solution supports their appraisal process.

The “Loans Manager” feature that allows the definition of processes including steps and exit criteria is a checklist for an officer rather than a workflow component. Abacus offers functionality to enable share management, yet this functionality is not dedicated. The user needs to set up a special savings account and configure it as non-withdrawable. The dividend processing utility was not reviewed in detail during the demo. Dividends can cause a need for significant manual effort if the system is not aligned with the processes and product properties. It would be prudent for any SACCO to verify the systems capability with regard to dividends. The system is delivered with a standard CoA that can be fully customised. To enable automatic postings, products and transactions can be assigned to GL accounts, reducing the potential for human error.

Abacus offers comprehensive configuration options with regard to products, rules, charges, etc. Customisable fields can be added to customer data and can be immediately picked up by a report. The system is considered to be very user-friendly. The physical appearance of screens is excellent. Consistent layout and recurring arrangement of fields eases navigation, e.g. user has the same options (add, edit, delete, activate, display) for each record. The toolbar enables shortcuts and can be customised per user as desired.

Cost: In the response to the RFI, Fern proposed to a joint automation of Kenyan SACCOs. An enterprise licence to be shared by all participating SACCOs in Kenya would amount to USD 250,000. An individual SACCO would on top of that pay

USD 2,200 for their server licence and USD 1,350 per concurrent user licence. Services such as customisation, implementation, configuration, training, user acceptance testing, etc. are charged at between USD 450 and 850 per day plus expenses. Fern recommends engaging independent local consultants for time-consuming tasks such as data migration to keep costs down. While the alternative of a joint system acquisition for a number of SACCOs is endorsed due to cost saving potential, standardisation benefits, and higher probability of implementation success, the project team sees challenges with regard to the SACCOs’ will and determination to syndicate and develop a common set of requirements. This project would need to be managed by a central body, e.g. KUSCCO, in order to be successful. Fern never submitted cost estimates for the two standard SACCOs. They seemed to prefer a syndicate implementation to a single one.

Application maintenance and support: Ongoing application maintenance has to be provided by Fern as the development capability is centralised. Any software upgrade is thus provided from Northern Ireland. Implementation support as well as ongoing support can either be provided by Fern, their local partner or a blended team. Generally, Fern’s support structure in Kenya is considered inferior to those of the domestic vendors. Fern has a local partner called Software Group in Nairobi, but Software Group only has four employees. Fern claims that Software Group is fully proficient in supporting an Abacus implementation and providing ongoing application support based on previous implementations.

Additional resources are recruited in the form of independent consultants, whenever necessary to meet demand beyond what Software Group can supply. While this might be a workable solution and FERN is credible the project team still sees this as a risk compared with vendors who have mature teams readily available. Fern’s solution Abacus is currently live at approximately 50 sites in UK and Irish credit unions as well as in South African SACCOs. The vendor claims to have experience with low bandwidth connections, their system being supposed to work well over a phone dial-up connection in Papua New Guinea. However, the system has not been implemented in a Kenyan SACCO. While the vendor has a very good understanding of the credit union industry in general, they lack specific SACCO knowledge relevant in this context.

Recommendation: To conclude, Abacus can be recommended as a viable automation solution. However, it will require customisation by the foreign vendor to meet the SACCOs’ specific requirements. As the cost and risk associated with this is deemed significant, the project team does not recommend Abacus as an option for a single SACCO willing to acquire a system. In case SACCOs are ready to syndicate for system acquisition, Fern is deemed a reliable partner, bringing with them deep credit union expertise and a strong solution. To ensure a successful implementation, a sufficient local partner network and a central managing body would need to be put in place.

5. Orbit (Neptune)

Fulfilment of requirements: Orbit is a derivative of Neptune's Equinox, which has been adapted to suit SACCOs. The system is deemed sufficient, but has a few shortcomings. The teller functionality is satisfactory. Different teller types with configurable rights are provided. Rules can be applied to standing order to make certain transactions under certain conditions. To enable integration with an ATM network, the acquisition of an external module connecting the application to a switch is required. Customers are identified by a unique reference number. The assignment of customer types enables classification and respective reporting. Also products can be restricted to certain customer types. The provided search functionality is strong. However, the data model of the application is unclear with regard to the necessary synchronisation of FOSA data to the BOSA module. FOSA and BOSA data appear not to be stored on one central database and synchronisation between the two is necessary.

As far as loan application processing is concerned, the system offers flexible configuration options with regard to payment schedule, payment method, interest calculation, and disbursement. Apart from the base rate, a margin interest per customer-product-relation can be added. The user can also define the verification of security using borrowers' shares, collateral, and guarantors and the prioritisation of payments in case of delinquency. The system features what-if analysis to illustrate the change in payment schedule given different assumptions and choices. However, the system offers only limited features to present the outcome of the appraisal process or any details on the outcome. The user cannot easily understand why an application was rejected and what the applicant could do to be eligible. Whenever details of a particular loan such as payment method are changed, the payment schedule seems to only be adjusted after the end-of-day (EOD) procedure is completed. Additionally, the system would need customisation for suspending interest beyond a certain period of delinquency. While the system can classify loan performance according to the WOCCU categorisation, it does not offer credit scoring functionality and only very basic collateral management. The system's accounting functionality is deemed sufficient. The CoA is fully customisable. Moreover, the system enables the user to specify how transactions are to be posted based on e.g. product and transaction type. Postings can be tracked by product, branch or any other segmentation. An administration module tracks any incorrectly posted transactions.

Orbit product configurations options are deemed comprehensive. As the system is a simplified and down-scaled version of Neptune's core banking system Equinox, it is very scalable as additional Equinox modules can easily be reintegrated. The usability of the solution leaves room for improvement. The fact that FOSA, system administration, report wizard, EOD procedure, and account processing (BOSA) are different modules and need to be accessed individually, could create inefficiencies. Using two different report writers, Crystal Reports for FOSA and CENTURA for BOSA, makes usage more complex. While a clearly

structured toolbar facilitates navigation, labelling is deemed insufficient, abbreviations being unclear and button labels being too short. Colour should be used for emphasis, e.g. highlighting mandatory fields. The security features of the system are considered sound. Access can be restricted on modular as well as field level. Users can also be restricted from accessing specific customer data, particular GL accounts or dormant accounts. Transactions limits can be set and authorisation processes are enabled. Restriction options for periods of link downtimes help to prevent the risk of abuse where data is not coordinated. The audit trail features can be improved by using meaningful labels and not database field names. The export functionality is considered insufficient as exported data is not clearly arranged in Excel and it needs rework before it can actually be used for analysis. Moreover, the import functionality is insufficient as it does not seem to enable flexible definition of mapping different data formats and structures.

Cost: Neptune offers their solution as both local installations as well as a centralised setup under the ASP model. With regard to local installation, Neptune's cost estimates were approximately twice as high as estimates from vendors such as Craft Silicon or Fintech. This was the case for both standard SACCOs. Although the project team is aware that the estimates can only serve as rough indication, the price difference between the mentioned vendors seems substantial. Also with regard to the ASP option, Neptune's asking price is considered relatively high. Taking the provided information into account, the project team estimated the cost for the two standard SACCOs to amount to almost the same price they would need to pay when acquiring Bankers Realm or FinSacco, with the substantial difference that they did not own an asset at the end of the year. From year 2, the estimated costs for a continued use of Neptune's service would be almost five times higher than the annual maintenance fees of one of the other vendors, meaning the putative cost advantage of engaging an ASP could not be realised in this case.

Application maintenance and support: The support structure in place seems to be appropriate. Neptune has more than 30 staff in their Nairobi office that can support implementations as well as maintain and develop the application further. Their specific experience is still limited, as Orbit has only been implemented in two Kenyan SACCOs so far. It needs to be stressed that none of them is operating on the ASP model yet but have local installations. Embu Farmers' SACCO is scheduled to go live on the ASP model some time next year. It will then need to be confirmed that Neptune can deliver the proposed service.

Recommendation: To conclude, Neptune's solution Orbit offers the functionality necessary to support a SACCO's operations. However, there is room for improvement with regard to fully integrating the solution and making it more SACCO-specific. Given the observed price difference between Neptune's estimates and those of other vendors such as Craft Silicon or Fintech, the project team only recommends Orbit as a secondary option as there seem

to be solutions in the market that are both more affordable and more suitable. Neptune's ASP offering could be worth monitoring, especially their experience when going live with Embu Farmers' SACCO at the beginning of next year and also the development of their price. Currently, they cannot offer the typical cost advantage associated with ASP.

6. T24 for MCB (Temenos)

Fulfilment of requirements: T24 for MCB is a version of Temenos' core banking solution T24, simplified and down-scaled to fit SACCOs' requirements. While the system is deemed to be able to support a SACCO's operations, it is not specific to SACCOs. With regard to teller operations, the system has dedicated senior and junior teller modules, respectively, each with its own functionality. Standing orders are also supported by the system. However, it needs to be confirmed how suitable and flexible the system is with regards to processing salaries, including deductions. Currently, it does not offer the required functionality. To integrate the application with an ATM network, an additional module is required. While the system offers comprehensive configuration options with regard to lending methodology, e.g. allowing for different ways of interest calculation and for customisation of the payment schedule, it has very limited inbuilt capability to appraise a loan based on the SACCO model. This functionality would need to be developed. The system offers a comprehensive range of report templates. It also features the in-built T24 Toolkit to develop new enquiries across all tables or set different filters in existing enquiries. However, the use of the toolkit is not clear, e.g. if it does restrict the user's choice of columns to what is technically feasible.

The system is highly flexible with regard to configuring products, rules, charges, loan process checklist, etc. While configuration is done on product level, individual settings per customer are supported. As the system is a simplified and down-scaled version of the Temenos' core banking solution T24, it is very scalable as additional T24 modules can easily be reintegrated. The usability of the solution is deemed questionable, the screens looking like a mere listing of fields rather than a user-friendly (Graphical User Interface). The substantial use of codes instead of descriptions of the values in full reduces clarity. This is especially pertinent for inexperienced system users such as the SACCO personnel. Fields are insufficiently labelled and data is presented in an unclear manner as tables are not supported by the application. Navigation paths are considered too long and the fact that the GUI does not fit to the screen requires a lot of scrolling. Navigation using a search feature requires knowledge about the table structure.

Cost: With regard to cost, Temenos provided by far the highest cost estimate for the two standard SACCOs at Kshs 25.4 million for the small one and Kshs 45 million for the bigger one. While it needs to be stressed that the estimates can only give a rough indication and are not binding price proposals, T24 is out of range for the SACCOs if it proves to be that expensive. It could only be considered if SACCOs syndicate for system acquisition and thus bring down costs the individual SACCO has to bear.

Application maintenance and support: According to Temenos, there is a resource pool of approximately 30 staff supporting T24 and T24 microfinance complimenting banking (MCB). Their support centre is located in Chennai, however there are plans to bring parts of the support structure back to Kenya. While Temenos claimed to have more than 20 staff in Nairobi, this was not obvious from touring their premises at Regus Office Park. T24 MCB has been installed in Kenya Bankers SACCO and Kenyan MFIs such as Kenya Women's Finance Trust (KWFT) and Faulu. In addition, the system has more than 100 implementations worldwide. However, the vendor's exposure to the SACCO industry seems limited.

Recommendation: To conclude, T24 for MCB can support a SACCO's operations. However, SACCO-specific functionality necessary for salary processing or loan appraisal would need to be introduced. The usability of the solution is considered to need substantial improvement to suit the prospective users' system experience. The cost of the solution seems to be prohibitive if the cost estimates prove to give a correct indication. The offering is not considered to justify the high price. The project team recommends T24 for MCB only as a secondary option since there seem to be cheaper and more SACCO-specific solutions in the market.

6.3 ROADMAP

The roadmap is a summary of the steps towards automation as described in the report. It illustrates the key parts of the process, given one combination of the options described, in a sequentially logical order. The roadmap assumes that the SACCO has identified a need to acquire an automation solution, either to replace a current application or manual processes. This is not an exhaustive or exclusive list of events. Depending on the SACCOs particular situation and choices, the vendor and other factors pertinent to the process this tool should be adapted.

The assumed combination of strategic options decided on is:

| | |
|-----------------------------|-------------|
| Automate or not: | Automate |
| Make or buy: | Buy |
| Application or service: | Application |
| Custom or packaged: | Packaged |
| ERP or best of breed: | ERP |
| Proprietary or open source: | Proprietary |

A roadmap for packaged software selection and implementation would normally include the phases below. The involvement of the SACCO varies for each phase from full responsibility, collaboration with the vendor to monitoring the vendor and signing-off on deliverables. Each phase will be supported by project management and service introduction as two additional work streams that run in parallel with the phases from beginning to end of the project.

Plan the project

This phase is essentially owned and performed solely by the SACCO. The vendor might provide support, even prior to a binding agreement with the SACCO, on a business development basis. Even if the SACCO retains the vendor on a paid basis for this phase it should be clear that this does not necessarily mean that the final vendor selection decision has been made. The vendors input might be beneficial to the SACCO even though at this stage they will still be selling and not be objective or provide a comprehensive warrant.

The purpose is to initiate the automation project once the SACCO has decided that a new application needs to be implemented, confirm what parts of the SACCO are in scope and who has which expectations and objectives for the project. This phase is critical as any subsequent change is likely to cause delays and re-work.

During this phase this report can be used as a general reference, as a checklist to confirm that key strategic issues and constraints have been considered and to make initial contact with prospective vendors. The requirements matrix can be used as a reference guide for which processes could be included and how to organise them and as a template for activity step 5 below.

1. Establish the project within the SACCO by confirming project sponsor, project owner and a core team.
2. Create a realistic and achievable plan that will meet stakeholder goals and expectations.
3. Identify all stakeholders, and elicit their needs, expectations and constraints.
4. Define high-level requirements and the scope of the project based on the vision and business objectives.
5. Confirm the approach and tools to enable requirements traceability throughout the project.
6. Estimate the overall cost and schedule for the entire project.
7. Define the major user scenarios of the new application or suite of applications.
8. Identify and document potential project risks due to uncertainty with the difficulty, complexity, and feasibility of implementing a solution.
9. Estimate potential risks due to uncertainty with the solution's difficulty, complexity, and feasibility.
10. Confirm applicability of the SACCO's sourcing strategy to make sure the project has the right skills to deliver the application.

Analyse the application

This phase is also mainly owned or led by the SACCO as there could be a risk of losing direction or transparency to the project if control is fully transferred to the vendor. The vendor will have a significant responsibility for especially the gap analysis but could, or should if the SACCO has limited capacity and experience, also provide support to the requirements gathering. The SACCO does not have to commit to the vendor but theoretically half of the gap analysis might be wasted if the application is not fit for purpose. However, it might still be better to reject an application which has been proven unsuitable after the gap analysis rather than to accept an inferior application due to the sunk cost.

During this phase the application is defined as the SACCO reviews the relevant business processes in detail and documents what the system needs to provide. The requirements are analysed and prioritised to contain costs by avoiding unnecessary features. The SACCO and the vendor conduct a gap analysis to confirm how much customization is necessary. The SACCO gains the necessary insight to make the final acquisition decision and the volume of required development work is confirmed and thus is the total cost estimate also updated.

In this stage the requirements matrix can be used as a starting point for the requirements gathering and tracking and the vendor assessment can be used to compare strengths and weaknesses of the chosen application with those available on the market. The SACCO needs to:

1. Analyse business processes
2. Identify application requirements
3. Elicit, document, verify, analyse, prioritise, validate, and baseline the product requirements to provide the foundation for subsequent evaluation with the application vendors.
4. Develop use cases to further clarify the functional requirements.
5. Analyse the product requirements and use cases to create a starting point or first iteration for the application design.
6. Perform a fit/gap analysis of the packaged software
7. Create the system's integration conceptual design.
8. Define conceptual data model
9. Prepare the user acceptance test approach and leverage the high-level and product requirements to start developing test conditions and expected results.
10. Establish the approach and tools to enable and support the requirements traceability throughout the project life cycle.

Figure 4: Implementation roadmap



Customise the application

This phase is almost exclusively owned by the vendor. The SACCO would normally only need to be involved to verify design and sign-off. The purpose of this phase is to develop the application from its default state to meet the SACCOs requirements. Application customisation involves:

1. Creating the application design from the requirements, application analysis, and other analysis work products.
2. Adapting the design to address quality requirements and technical constraints, designing for performance.
3. Designing packaged software configuration to meet the business process design and application requirements. Consider alternative solutions to minimise customisation and reduce impact of future upgrades.
4. Designing reports, interfaces, conversions, extensions, forms, and workflows to fill the packaged software functional gaps.

Test the application

The vendor is exclusively responsible for steps 1 – 4 outlined below. The SACCO is responsible for providing personnel to execute step 5, the user acceptance test. This is critical as the SACCO needs to provide people who are able to write test cases that represent the most extreme events to ‘stress test’ the system. They also need to be able to correctly interpret the results.

The purpose of this phase is for the SACCO to confirm that the application fulfils the desired functional and performance requirements.

At this stage the SACCO would benefit from referring to the requirements matrix to ensure that what has been required has been delivered and that the application supports the use case or high-level business or strategic purpose.

1. Preparing and executing the assembly test to make sure components work correctly when integrated into a complete application.
2. Preparing and executing the product test to make sure each application meets the product requirements and that all applications work together.
3. Preparing and executing the performance test to make sure the application meets the performance-related metrics, such as response time, availability, and capacity requirements.
4. Performing the mock conversion to test the conversion process.
5. Preparing and executing the user acceptance test to make sure the application meets stakeholder expectations

Deploy the application

The success of this phase is dependent on mutual responsibility. The vendor clearly needs to be ultimately responsible for the technical aspects and the SACCO would be best positioned to assess the organisational and people

aspect. However, the vendor should be able to build on experience and lessons learned from previous implementations.

The purpose of this phase is to roll-out the application in a controlled and safe manner with minimal disruption to customer facing activities. The SACCO needs to be conscious of the skill the employees have obtained through the application training to prevent user error. The team would need to:

1. Plan for deployment
 - i. Develop a schedule of deployment activities and checkpoints.
 - ii. Understand requirements and assumptions regarding the application, business policies and procedures, the physical environment, the technical infrastructure, and the transition of the workforce.
 - iii. Identify risks and critical success factors.
2. Assess deployment readiness
3. Migrate data to production environment
4. Operational readiness test
5. Communication effort
6. Launch training
7. Pilot roll-out
8. Full roll-out

Service introduction

In parallel with the entire project the organisation that eventually will support the SACCO in using the application is designed and its capability is defined. The application support organisation is a function of the application design. It draws on the functional requirements of the application and the skill level of the users. The support organisation will cover any gap between the application and the user. Assuming that the application is of sufficient quality and has a logical and intuitive interface the need for support should be limited. Until all users are fully trained and have become familiar with the application the need will be higher. Definition of the support organisation and the support requirements could be handled mainly by the SACCO but as previously it would be useful to draw on the vendor’s experience.

1. Define support requirements.
2. Design support organisation.

Project management

The SACCO should also provide resources for project management even though this responsibility could be shared with the vendor. The purpose is to monitor and control the entire project so that all stake holders have visibility of progress, risks and issues. This includes input such as staff and suppliers and the output by managing scope and requirements. Project management entails:

1. Managing the project using the project plan.
2. Managing project risks and issues to verify that the project meets the business objectives and stakeholder expectations.

3. Managing stakeholder participation and involvement so that they perform their tasks in a coordinated and timely manner (e.g. reviews and signoff).
4. Balancing scope, quality, effort, schedule, budget, and risks at all times.
5. Managing project scope and requirements.

Chapter 7

CONCLUSION

FSD Kenya commissioned the SACCO Automation project with the objective to identify viable automation solutions for SACCOs. The focus was on SACCOs offering FOSA as they are the first to be targeted by the upcoming regulation under the SACCO Societies Act 2008. Information technology is considered an important enabler of compliance with the new regulation. More robust systems will enable SACCOs to manage their operations more efficiently, manage growth, and generate reliable management information reports for both SACCO executives and the forthcoming regulatory authority. The solutions needed to meet the SACCOs business as well as technical requirements, consider the constraints SACCOs are facing with regard for instance, staff capacity and budget; and improve the quality and timeliness of their management information.

To be in a position to recommend viable automation solutions, the project team needed to understand the SACCOs' business processes and circumstances and translate them into system requirements. The project team thus visited five SACCOs, each for two to three full working days, and captured requirements across the complete SACCO operating model, including FOSA, BOSA, accounting and finance, human resources, internal audit, and marketing departments. In addition to gathering requirements from analysing SACCOs' business processes, the project team analysed the anticipated regulatory requirements to assess their impact on the selection of potential systems. It needed to be understood how SACCOs would need to change their operations in order to comply with the upcoming regulation and what role information technology solutions would play in that process.

In choosing the sample SACCOs the project team paid attention to obtaining a well balanced mix between different SACCO characteristics. The selection needed to include urban and rural SACCOs, employer-based and farmer-based SACCOs, as well as small and large SACCOs as it was assumed that, while all SACCOs have many common core requirements, each also has unique requirements corresponding to its segment and specific product offering. This approach ensured that the project team captured a comprehensive set of requirements that was likely to cover the needs of the approximately 200 FOSA SACCOs and present a robust basis for the automation decision. The outcome was a list of 190 functional and technical requirements. While the different SACCO characteristics provided a range of requirements, they were not found to be as relevant as initially assumed when selecting an application. Trends such as diversification of SACCO membership as well as more sophisticated and comprehensive customer requests amplify the convergence towards a common set of requirements. For system selection, every SACCO will need to consider each requirement and decide on its relevance as well as its priority in their specific context. The requirements matrix developed by the project team can serve as a useful tool.

Once a clear set of requirements had been developed, the next step was to identify automation solutions available in the market and assess their

suitability. Several sources were reviewed to compile a list of vendors. After having screened the solutions for minimum requirements, 26 of initially 46 vendors were invited to provide more details about the specific properties of their offering through an RFI. Based on the responses, the project team finally short-listed six vendors for the final round of in-depth screening which took place in the form of system demonstrations. The final selection of vendors was a mix of domestic Kenyan vendors with a deep knowledge of Kenyan SACCOs and a strong presence in Kenya (Craft Silicon, Fintech), foreign vendors that have developed microfinance or credit union applications and could draw on significant international experience from their commercial banking applications (Fern, Neptune, Temenos), as well as a local vendor who were expected to provide more cost efficient solutions for those SACCOs which cannot afford the high-end solutions (Amtech). The vendors were each given one day to present their solution.

Consolidation of information gathered during the demonstrations proved that some functionality was provided by all solutions, hence it could not be considered as strength of a particular solution but rather as fundamental functionality. This functionality was considered as "viable solution minimum" and represented requirements every viable solution needed to fulfil. The compiled list can support SACCOs in their acquisition decision.

Following the definition of minimum requirements on a viable system, individual strengths and weaknesses could be noted. Every feature above and beyond the minimum requirements was recorded as a strength for the particular solution. A weakness was noted if a solution could not meet the "viable solution minimum" or if some severe shortcoming had been observed. In addition to individual shortcomings, some common weaknesses were noted, i.e. some functionality was not offered by any of the solutions. While it was considered important to log these, they would not assist in making the final recommendation.

Apart from the solutions' functionality and support structure, it was important to understand the price level of the individual solutions. The project team therefore asked the vendors to provide cost estimates for two standard SACCOs, broken down into licence, implementation, training, and annual maintenance cost. While the vendors would obviously need to study business requirements case by case to quote an exact price, the cost estimates could serve as rough indication and help to understand in which price category a solution falls.

Based on the findings, the project team provided recommendations on appropriate ways to tackle automation by SACCOs preparing for regulation. The project team identified theoretical strategic options that SACCOs could choose from having made the automation decision. Analysis and evaluation of the options proved that some are not particularly suitable in the SACCO context, e.g. in-house development of a system or the acquisition of open-source software. The project team came to the conclusion that the most viable

option is the acquisition of SACCO-dedicated packaged software. Engaging an ASP is deemed a good alternative definitely worth monitoring but is currently not considered attractive as not all typical benefits can be realised in the SACCO context due to the underdeveloped market and prevalent infrastructure deficiencies.

The six solutions were evaluated with regard to fulfilment of requirements, cost, and application maintenance. The project team came to the conclusion that Bankers Realm (Craft Silicon) and FinSacco (Fintech) seem to offer the best price-performance ratio. Both solutions offer strong, SACCO-dedicated functionality at a reasonable price. The vendors' strong local presence further supports recommending both as viable automation solutions for Kenyan SACCOs. With the information at hand, the project team is not in a position to favour either FinSacco or Bankers Realm, but regards them as comparable.

Amtech's solution EasySacco was found capable of supporting a SACCO's core operations. However, the system would need to be improved to be worth recommending. The scalability of the solution could not be confirmed. It could be worth monitoring Amtech's offering in the future for the benefit of the smaller SACCOs who cannot afford the high-end solutions.

Fern's solution Abacus was generally considered very strong, however would require customisation by the UK vendor to meet the SACCOs' specific requirements. As the cost associated with this is prohibitive, the project team does not recommend Abacus as first choice for a single SACCO willing to acquire a system. Where SACCOs are ready to syndicate for system acquisition, Fern is

deemed a reliable partner, bringing with them deep credit union expertise and a strong solution. To ensure a successful implementation, a sufficient local partner network and a central managing body need to be put in place first.

Neptune and Temenos both offer simplified and down-scaled versions of their core banking solutions. While both solutions, Orbit (Neptune) and T24 for MCB (Temenos) are deemed able to support a SACCO's operations, they are not tailored to SACCOs specifically. There is room for improvement with regard to fully meeting SACCO requirements. Given the observed price difference between Neptune's and Temenos' estimates and those of other vendors such as Craft Silicon or Fintech, the project team only recommends Orbit or T24 as secondary choices, given that there seem to be more suitable and affordable solutions in the market. Neptune's ASP offering could be worth monitoring. However, they currently cannot offer the typical cost advantage associated with ASP.

To build a satisfactory basis for automation, a number of considerations need to be addressed by the SACCOs. They need to assess their ability to acquire, customise, and implement the application, available connectivity, their ability to manage the application, and their ability to realise organisational change to utilise the system. Even if these considerations do not completely prevent an implementation, they would prevent the SACCO from fully benefiting from the capacity of the system. The SACCO needs to be aware of these topics and adapt the approach to automation or develop the organisation before launching the automation project.

ANNEX 1

OPEN-ENDED QUESTIONS

1. Please provide a detailed **company profile**, including information such as but not limited to number of employees, head office location, locations in Kenya, products and services offered, experience in the SACCO sector.
2. Please describe your proposed **solution and its components** in detail. Which are the specific properties of your offering that allow SACCOs to comply with regulation and support the unique features of the SACCO business model?
3. Please provide a **schematic** illustrating the architecture and components of your solution on a high level. You can either include the schematic in the Word document with your answers to the open-ended questions or use a separate Word document, with an appropriate file name.
4. Please explain clearly how **FOSA, BOSA, and accounting components are integrated** in your solution.
5. Does your solution offer an **accounting and management reporting framework** adhering to IFRS and best practice management reporting including operational and financial data? Please provide a detailed view on the properties of your solution.
6. Does your system offer dedicated **risk management functionality**? Please provide details.
7. What are the specific properties of your offering with regard to **user-friendliness**?
8. Which specific features of your solution help to make it more **flexible and scalable** than others?
9. Please describe your **experience with implementing** the proposed solution in Kenyan SACCOs. We are interested in the number as well as the variety of implementations. Please provide information on the SACCOs where it has been implemented, e.g. their business model, size, location, etc.
10. Have you completed any implementation in SACCOs with **more than one branch**? Please provide a detailed picture of your experience with regard to branch integration, segmentation and consolidation of data, connectivity and (real-time) updates, data integrity, inter-branch transactions, etc.
11. What does your usual application **support and maintenance agreement** look like? What is your change request procedure? Please provide details.
12. Please provide detailed information on your **pricing model**, including but not limited to licence fees, implementation cost, customisation cost, training cost, support and maintenance fees, cost of futures upgrades.

ANNEX 2

BUSINESS PROCESS IMPROVEMENT OPPORTUNITIES

I) Increase automation

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|---|--|--|--|--|
| 1 | Use the system for as many rule-based, data consolidation and other non value adding tasks as possible. E.g. validating sufficient and correct population of loan applications, writing cheques and expense management. | <ul style="list-style-type: none"> Human resources focus on value adding tasks or tasks that cannot be fully automated, especially adding a qualitative aspect to the appraisal process. | Lack of confidence in the system and risks for manipulation. | Eliminate tasks and processes that are made redundant by the system and reallocate the resources appropriately. | The system needs to allow for rules with regards to population of fields and prompts and corrective action the case of deviation from the rule. |
| 2 | Automate reconciliation of bank account, cheques, share certificates and cash. | <ul style="list-style-type: none"> Reduces manual effort significantly resulting in reduced costs, increased speed and accuracy and employee satisfaction | Merging data from different sources. | Train staff on interpreting the merged data and identify the source for any non-reconciled accounts using the information from the system. | Able to merge data from two sources to identify one transaction using an identifier. E.g. the financial management system would upload transaction data from the bank, identify cheques using the serial numbers and verify these with the systems own record. |
| 3 | Evaluate criteria for how the audit function chose which loan applications or other transactions that are to be reviewed. | <ul style="list-style-type: none"> By using the system to check how many of the audited verses non-audited applications were rejected or defaulted the audit function can be continuously improved and made more effective in its sampling. | Not applicable. | Develop a statistically reliable approach to conclude if a criterion is effective. | The database needs to connect the relevant tables and allow reporting. |
| 4 | Use the system's ability to calculate and award interest with a high frequency with little marginal cost to provide updated financial statements. | <ul style="list-style-type: none"> Continuously up-to-date financial statements are available to the management. | Additional load on the system. | Not applicable. | Configure system to update by the required frequency and allow required posting rules to the GL for the applicable transactions. |
| 5 | Increase consistency of back-up processes by creating system rules such as including them in the end-of-day procedure and creating a system generated audit trail for the process. | <ul style="list-style-type: none"> Ensure business continuity and regulatory compliance. | Not applicable. | Modify the non system parts of the back-up process to store back-up media in location separate from main data. | Standard back-up functionality. |
| 6 | Track collections activities and capture outcome and impact on delinquency. | <ul style="list-style-type: none"> Evaluate collections by impact on delinquency. Manage the collections department workforce and develop a proactive collections approach. | Not applicable. | The system needs to be closely adapted to the desired collections processes. | The database needs to connect the relevant tables and allow reporting. |

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|--|--|-----------------|--|--|
| 7 | Automate analytical reports, e.g. deviation analysis (budget verses actual). | <ul style="list-style-type: none"> The entire organisation has easy access to consistent and timely reports. Manual effort to combine data is reduced. | Not applicable. | Not applicable given that reports look the same. Realistically the system can improve the layout in which case the users should be trained to interpret the reports. | Functionality that can combine actual data and budget, forecast etc. |

II) Business intelligence

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|---|--|---|--|--|
| 1 | <p>Optimise product costing in order to set individualised interest rates on loan products. This is to reflect the compounded risk for each loan issued and to generate maximum contribution margin. The product costing will consider relevant cost factors such as cost of external capital, operating costs, expected cost of delinquency but also the need to generate capital to provide dividends to shareholders and to build institutional capital.</p> <p>-Supports the long term viability of the institution by ensuring that delinquency does not erode capital and those loans, irrespective of special characteristics and target customer group, are profitable.</p> <p>-Protects members against losses generated as loans are issued to high risk individuals.</p> | <ul style="list-style-type: none"> Increased outreach as it enables individuals with varying risk profiles or credit score to obtain a loan that they would have accessed if assessed using less specific criteria and a less flexible system. | <ul style="list-style-type: none"> Product costing requires access to sufficient data. Allocation of indirect costs can create a lack of transparency as the product managers might not recognise the relation between the product and the fully loaded cost. | Interest rates are currently set annually or even less frequently and appraisal considers credit worthiness on a binary or arbitrary basis only. | Detailed business intelligence capability and product costing module. |
| 2 | Review the performance management approach to create a framework that is aligned with the SACCOS strategy and provides each individual with their set of critical few key performance indicators (KPIs). The 'critical few' are the ones that the individual can influence and that have the greatest impact on the SACCOS bottom line. Use any available capability to define key performance indicators including operational and financial data if necessary. | <ul style="list-style-type: none"> Supports consistent and fact based decision making aligned with strategy. Increased understanding of the business. Increases individual productivity and satisfaction as output can be measured and feedback provided. Increases efficiency across the organisation as only the relevant reports are produced and no distracting information is provided. | <ul style="list-style-type: none"> KPIs need to be based on a well articulated strategy, a profound understanding of the business' value drivers and clear targets. Redundant reports need to be identified and cease to be produced. | Revised enterprise performance management strategy and reporting framework. | Report production and distribution. Database acting as a data warehouse. |

III) Governance

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|---|---|---|--|---|
| 1 | Record details when a loan application rejected by the audit department or junior loan officers is approved by senior executives and hold them accountable for the performance of that loan. | <ul style="list-style-type: none"> Increased compliance with policy and formalised business processes and workflow that is easier to monitor and manage. Increased understanding of drivers of delinquency and ability to prevent it. Increased job satisfaction and productivity as the relationship between various stages in the loan issuing process and the individuals' roles are documented and feedback can be provided. | Each individual, including senior executives, need to accept that their decisions and the impact on the loan portfolio's performance are scrutinised publicly within the SACCO. | Implement a new report and evaluation process. Create incentives to reward positive behaviour and reprimands for breach of policy. | Report production and distribution. Database acting as a data warehouse. |
| 2 | Enforce policy compliance by restricting execution in the system unless policy is fulfilled and/or capture and report on any deviation. It might be preferable for certain processes to use the system to recommend rather than restrict in order to benefit from human judgement in cases where the system would be too rigid. To prevent abuse and enable evaluation deviation from policy needs to be monitored. | <ul style="list-style-type: none"> Increased policy compliance and understanding of where the policy is inadequate. Avoids that the user enters data to the system as a formality without any intention of relying on the system's ability to support appraisal of the loan application. This results in double work and poor system and organisational effectiveness and integrity. | Agree on loan appraisal criteria, process design and appropriate incentives. | Identify appraisal criteria, document processes, and design incentive scheme. | Flexible to accommodate different frameworks and criteria for loan appraisal and approval. Comprehensive to allow for a large number of outcomes depending on fulfilment of criteria. |

IV) Increase productivity

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|--|---|--|--|--|
| 1 | Review the role of BOSA, internal audit, the management and the board including relevant sub-committees to ensure that they combine and make up a logical organisation, effective in managing delinquency. | Reduce redundancy within the organisation. Create transparency to areas of responsibility. Enable measurement of performance. | A clear view of the operating model and business processes are required. Fear of impact on job security. | It needs to be clear who is processing, who manages operations, who audits and who is ultimately responsible to the shareholders. The monitoring functions need to be independent of the operational to avoid conflicts of interest. | The system needs to be tailored in terms of providing a workflow and screens that support the business processes and organisational structure. |

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|--|---|---|--|--|
| 2 | Use system data to evaluate the appraisal process, performance and collections to optimise the processes and allocation of workforce. | <ul style="list-style-type: none"> Reduced delinquency by optimising the appraisal process based on understanding of any connection between delinquency of a specific product and the product characteristics, main type of borrower and the appraisal process for that product. Increased efficiency by streamlining the appraisal process by only capturing the critically relevant information. Increased efficiency by focusing resources on the collections activities that yield the best results given the effort required. | The statistical relevance of conclusions needs to be verified before changes are implemented. I.e. if a relationship between delinquency and appraisal is established it needs to be verified if the variables are independent and if there are any temporary or random factors that would invalidate the conclusions. | Establish a framework to measure the relevant aspects (e.g. delinquency) relative to the variables (e.g. appraisal factors). Revise how the system and management information support management and allow for evaluation on an on-going basis. | <ul style="list-style-type: none"> Capture detailed information about what data is collected to support appraisal, how loan and collections officers' time is spent, which collections activities are taken and what the status and outcome is. Support a framework to statistically analyse this information. |
| 3 | Manage liquidity proactively. | <ul style="list-style-type: none"> Reduced idle cash and other working capital. Increased customer satisfaction by decreasing the risk of not being able to disburse a loan due to shortage of funds. Minimise dependency on short-term funds that assumingly have a higher average cost than long term debt and potentially also equity. Ensure that departments do not make suboptimal decisions such as allocating available cash to low margin products, e.g. long term loans verses salary advances. | <ul style="list-style-type: none"> A belief that the 'quick ratio' is sufficient is misleading and results in foregone opportunities to optimise the business. The person making the forecast needs to have access to relevant historic information, future plans and have the experience to understand and model the relationship. | <ul style="list-style-type: none"> Coordinate FOSA and BOSA. Determine the value of forecasting. Establish forecasting as a business process. | <ul style="list-style-type: none"> Consolidated information that can be exported to a modelling tool (probably manually built in Excel). |
| 4 | Design the system such that it supports business processes and delivery of customer value from beginning to end and not such that it is focused on a specific organisational entity. | <ul style="list-style-type: none"> By viewing the SACCO as a combination of processes, focused on delivering customer value by providing savings and credit products, rather than as departments, each fulfilling a function, a more cohesive and focused system design and implementation can be achieved. This results in a more coordinated organisation and higher productivity. | Not applicable. | Requires significant business process and organisational design skills as well as a clear strategy that all departments are engaged to deliver. | <ul style="list-style-type: none"> Requires a flexible system that can be designed to support the business process. The system must have a fully integrated backend (database) and allow for a workflow independent of organisational belonging. |

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|--|--|-----------------|--|---|
| 5 | Use historic loan performance and cost per acquisition to target marketing activities. | <ul style="list-style-type: none"> Cost effective marketing. Manage which type of customers are acquired | Not applicable. | <ul style="list-style-type: none"> Capture data about marketing activities such as marketing channel, target customer type and cost. A developed marketing strategy including awareness of cost per acquisition, average revenue per user, churn, and customer lifetime value. | <ul style="list-style-type: none"> The GL needs to capture financial data with sufficient detail including cost centres and product codes. Customer data such as new members per marketing activity, de-activated and re-activated members, transactions per member, etc. |

V) Integrate systems

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|-------------------------------|---|--|--------------------|---|
| 1 | Create a network of branches. | <ul style="list-style-type: none"> No customer can harm the SACCO by exploiting lack of coordination. A comprehensive and up-to-date picture of the SACCO is available to management at all times, reducing risk significantly. The SACCO reflects and is more aligned with its customers who are not stationary but might interact with multiple branches. Complete customer data is continuously available. | <ul style="list-style-type: none"> The available infrastructure in rural parts of Kenya has as of yet proven to be insufficient to provide sufficient connectivity to integrate a multi-branch SACCO on one instance of the application. The vendors try to optimise the applications to be 'light' in the sense that the data transfer requirement is minimised but some SACCOs still experience performance issues. This could of course still be mainly due to the bandwidth and not the application. | Not applicable. | <ul style="list-style-type: none"> Satisfactory connectivity between branches and head office. The system needs to have the ability to provide the application remotely either a client-server structure or as a web application. Coordinate multiple installations through a robust structure that prevents remote locations from falling out of sync with head office and transact when the connection is not available. |

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|---|--|--------------------------|---|--|
| 2 | Use the core system for as many performance management and management reporting purposes as possible. | <ul style="list-style-type: none"> Ensure consistency by using one source for all data and one system that holds all definitions. Reduce effort to produce reports by eliminating stand-alone reports produced in Excel. Logical connection between reports and processes facilitating identification and execution of necessary mitigating action, especially if drill-down capability is provided through the system. | Not applicable. | <ul style="list-style-type: none"> Develop a performance management approach (can be as simple as using e.g. PEARLS in operations). Determine who is looking at what information when and why (identify the key KPIs per role). | The system needs to have reporting functionality that is customisable and a user interface that can be tailored to each role. Alternatively provides customisable templates for each role. |
| 3 | Enable read/write access between core-system and stand-alone systems. E.g. between the core system and a dedicated credit scoring application. | The main purpose is to provide a consistent view of the members regardless of which system is accessed. By connecting the systems the manual effort required to transfer data from the external application is eliminated. | Not applicable. | Not applicable. | <ul style="list-style-type: none"> The systems need to be connected. The point solution needs to be allowed to read from the central data base in order to ensure that all basic customer information is consistent between the systems. Any updates in the process should be done in the core application as otherwise the stand-alone would need to be allowed to overwrite data in the database which is not desirable. The central database needs to allow the point solutions to write to specific parts of the database and publish the information with other customer data. |
| 4 | Allow the system to capture the outcome of business processes and write to the DB or update the system. E.g. in the event of delinquency the system could automatically make provisions and take collections actions such as sending an email, an SMS or print letters to be signed and sent. | <ul style="list-style-type: none"> Reduces manual effort. Increases integrity by reducing manual effort. Increased compliance with policy. Transparency is unchanged as even if a person does not execute a task they know by which rules the system executes it. | Accept decreased access. | Processes and rules need to be clearly specified and documented in order to adapt the system and train users. | <ul style="list-style-type: none"> The system must be closely configured to the business processes. Allow the users to choose between automatic postings or prompts to make a posting. |

| ID | Opportunity | Benefit | Obstacle | Change requirement | System requirement |
|----|--|--|---|--|--|
| 5 | Decide if to reduce dependency on stand-alone point solutions (usually locally built in Excel) used to cover gaps between the system and business processes. | <ul style="list-style-type: none"> ▪ Ensure that all employees have access to tools and data in contrast to being isolated on one workstation. ▪ Ensure consistency and quality by centralising development and control of the application. ▪ Gain efficiency from standardisation. | <ul style="list-style-type: none"> ▪ Very few core SACCO applications provide all the functionality required. Exhaustive customisation of the solutions would require a dedicated development effort including functionality the vendor have no or little experience from. I.e. the marginal cost to provide an additional module for e.g. cash flow modelling would be significant as the vendor would lack any significant economies of scale. | <ul style="list-style-type: none"> ▪ Do an inventory of which point solutions are in use and what they provide. ▪ Assess risks with the current point solutions. ▪ Assess if the functionality can be provided profitably through the core application. | The system would need to replicate the features that are custom built in Excel. This might be outside the core competence of the system and not a logical extension. E.g. modelling and analysis features required to forecast cash or tools to calculate various corporate taxes. |
| 6 | Integrate with employers' systems to exchange data for salary processing. | <ul style="list-style-type: none"> ▪ Reduced manual effort ▪ Increased speed and accuracy and thus customer service. | <ul style="list-style-type: none"> ▪ Merging data from multiple source and destination systems. | <ul style="list-style-type: none"> ▪ Determine which information is exchanged, the format of the transfer medium and the data format. | The SACCO's system needs to be able to technically exchange information with the employers system by exchanging files in a variety of formats. The table structure of the data needs to be agreed and the SACCOs system needs to be able to handle differing table structures as the employers cannot be expected to adapt to the SACCO. The system needs to be able to export information to the employers as well as import. |

ANNEX 3

INDIVIDUAL SOLUTIONS' STRENGTHS AND WEAKNESSES

1. BANKERS REALM (CRAFT SILICON)

| FOSA | Strengths | Weaknesses / For further investigation |
|--|---|---|
| Teller operations | <ul style="list-style-type: none"> The system has a cheque printing module that can print cheques automatically based on the transaction data. The system has inbuilt functionality to connect to POS devices, an ATM network or mobile phones for mobile banking. | |
| FOSA products (Configuration and processing) | | |
| Customer data management | | |
| BOSA | | |
| BOSA products (configuration) | | |
| Share and dividend processing | | |
| Loan application processing | <ul style="list-style-type: none"> Robust module for static product data maintenance. The system does not distinguish between FOSA and BOSA making integration a completely obsolete issue. The system provides indicators on member screen to indicate historic performance. Loan agreement letters are produced automatically. The system is an amalgamation of an MFI and a SACCO product to cater for the increasing amount of SACCOS that have begun to offer group loans. The system can handle pre- and partial payments and accordingly recalculate interest owed or earned. The loan schedule can be refreshed in case of irregular loan repayment or if future instalments change. Furthermore it can allow restructuring, rescheduling and instalments postponement, primarily to accommodate the needs of agricultural customers. | |
| Customer data management | | |
| Credit, collateral, and collection | | |
| Accounting and finance | | |
| General accounting | <ul style="list-style-type: none"> The system allows configuration of the accounting impact of each type of transaction to its exact needs. This ensures that accurate and appropriate postings are made. Furthermore, this configuration tool allows the SACCO to maintain the GL as well as build the CoA and the financial statements. Transactions can be viewed live from the accounting view. The system offers a module to facilitate and track reconciliation. The system has separate accounts for each cashier to facilitate reconciliation. The GL is based on three levels: institution, product, and member. Each has its own sub-ledger. | <ul style="list-style-type: none"> The system does not by default offer a module to merge data from an external data source to reconcile accounts. |
| Fixed assets | The system offers a fixed asset module including registry and calculation of depreciation based on either straight line depreciation or declining balance. | |
| Planning | | |
| Treasury and cash management | <ul style="list-style-type: none"> The system has inbuilt functionality to monitor typical-SACCO short-term investments. | |

| | | |
|---------------------------|--|--|
| Risk management | | <ul style="list-style-type: none"> ▪ Risk management is only addressed as an ability to monitor using customised reports. |
| Reporting | Strengths | Weaknesses / For further investigation |
| Available reports | <ul style="list-style-type: none"> ▪ The system can prompt users to make provisions or write-downs for delinquent loans. Provisioning can also be done automatically. | |
| Generation of reports | <ul style="list-style-type: none"> ▪ The software offers a report writer which is a feature to alter available report templates by changing filters, column width, and column arrangement (can be used by users with basic skills). ▪ Reports can be customised per SACCO (stored as report files in report component). | <ul style="list-style-type: none"> ▪ Any additional reports required, (exceeding 20) will come at a cost. |
| Usability | | |
| GUI | <ul style="list-style-type: none"> ▪ The system keeps the history of recently viewed accounts/ transactions and enables easy navigation to review them. | |
| Workflow | <ul style="list-style-type: none"> ▪ The workflow per product can be defined. Tasks cannot be taken to next step in case mandatory information is missing. | |
| Alerts | <ul style="list-style-type: none"> ▪ A set of dashboard items can give alerts for defined events. | <ul style="list-style-type: none"> ▪ Refreshing of alerts needs to be triggered by the user. ▪ New dashboard items cannot be created by the SACCO. |
| Data entry validation | | |
| System maintenance | | |
| Configuration | <ul style="list-style-type: none"> ▪ The system is very flexible allowing for parameterisation of products, their workflow, incurred charges, individualised labels for fields, customisable fields, system settings, etc. | |
| Data | <ul style="list-style-type: none"> ▪ Mappings for different data formats and structures can be defined and edited. | |
| Security | <ul style="list-style-type: none"> ▪ Rights can be differentiated on a modular level and then broken down further into add/edit/delete rights. ▪ Transaction limits can be defined. ▪ The activities log enables following the audit trail per transaction. ▪ Authorisation process can be defined for different screens such as customer details, transactions, etc. | |
| Backup and recovery | | |
| Multi-branch operations | <ul style="list-style-type: none"> ▪ Muramati SACCO centralised 6 out of 12 branches, using a VSAT connection. ▪ POS devices using General packet radio service (GPRS) are employed by field officers or during link downtimes. ▪ There are three options for multi-branch operation: a local area network set-up for single branch installation, distributed set-up for multiple disjointed branches in case of insufficient connectivity, and centralised set-up using a wide area network. | |
| Support and maintenance | <ul style="list-style-type: none"> ▪ The support resources (25 dedicated staff), procedures (defect management, testing, documentation, deployment, etc.), and tools (issue management system) leave a good impression. | |
| Kenyan presence | <ul style="list-style-type: none"> ▪ About 150+ staff in Nairobi office. | |

| | | |
|-------------------------|---|--|
| Kenyan SACCO experience | <ul style="list-style-type: none"> ▪ 12 implementations in Kenyan SACCOs. ▪ Numerous implementations in SACCOs and MFIs in the region (about 60% of 300 installations in Africa). | |
|-------------------------|---|--|

2. EASYSACCO (AMTECH)

| FOSA | Strengths | Weaknesses / For further investigation |
|--|--|--|
| Teller operations | <ul style="list-style-type: none"> ▪ The system can track cash movements from treasury to teller, from teller to teller, and from teller to treasury. ▪ The system can apply upper limits to teller cash holdings. ▪ The system can apply restrictions to transactions requiring authorisation by managers to release them ▪ The system enables an overdraft facility with inbuilt restrictions to assure authorisation prior to approval. | <ul style="list-style-type: none"> ▪ It needs to be confirmed how flexible the system is with regard to applying relevant charges to the customer (fees, interest, principal, etc). ▪ It needs to be confirmed what is required to connect the solution to an external network of ATMs, POS devices, and mobile phones. |
| FOSA products (Configuration and processing) | <ul style="list-style-type: none"> ▪ The system allows for pre-payments and partial payments and can make the necessary recalculations. | <ul style="list-style-type: none"> ▪ The system provides limited options to configure current accounts. ▪ The system's ability to handle cheques is limited as clearance is only possible in bulk. |
| Customer data management | | <ul style="list-style-type: none"> ▪ The search functionality demonstrated severe deficiencies. ▪ The system uses one central database but FOSA and BOSA rely on different tables for customer data. This can result in data inconsistencies or the fact that different users access different data. |
| BOSA | | |
| BOSA products (configuration) | | |
| Share and dividend processing | | |
| Loan application processing | <ul style="list-style-type: none"> ▪ The appraisal screen is uniform for all loan types ▪ Officers can approve applications remotely. ▪ The loan issuing process can only be completed by two different users to ensure the four-eyes principle. ▪ The loan report shows the history for the whole process including system users that processed the application ▪ The system provides flexible loan schemes defined per loan product considering various parameters. | <ul style="list-style-type: none"> ▪ The default appraisal screens only support verification of the key data such as guarantors, and applied verses approved loan value. For further analysis the user needs to produce a report but then loses the value of working in a system verses on paper as it is no longer dynamic. ▪ The loan appraisal process cannot easily be configured. |
| Customer data management | | <ul style="list-style-type: none"> ▪ The database structure might prevent access to identical customer data for different users. |
| Credit, collateral, and collection | <ul style="list-style-type: none"> ▪ The system provides a loan aging and portfolio analysis module with default reports. ▪ The system automatically makes provisions as per the loan aging module. ▪ The system enables the SACCO to deduct non-recoverable receivables from guarantors' shares. | <ul style="list-style-type: none"> ▪ The system has no dedicated credit scoring module. |

| Accounting and finance | Strengths | Weaknesses / For further investigation |
|------------------------------|--|---|
| General accounting | <ul style="list-style-type: none"> The system has inbuilt payroll functionality. | <ul style="list-style-type: none"> The user needs to decide if to debit or to credit when posting a transaction. Accuracy is dependent on the user's skill. The system allegedly has sub-ledgers but these could not be demonstrated. |
| Fixed assets | <ul style="list-style-type: none"> The system has a fixed asset module that provides an asset registry and calculates depreciation. | |
| Planning | <ul style="list-style-type: none"> The system offers a budget deviation analysis report. | <ul style="list-style-type: none"> Data entry in the budget module is highly cumbersome. Each value has to be entered manually for each account or distributed to each month by dividing the annual value by 12. This is unlikely to be satisfactory given significant seasonal characteristics of the SACCO industry. |
| Treasury and cash management | | |
| Risk management | | |
| Reporting | | |
| Available reports | | |
| Generation of reports | | |
| Usability | | |
| GUI | | <ul style="list-style-type: none"> Screens are not consistent, similar functions have different names ("edit" verses "+" button). The flow of screens is not logical, e.g. FOSA being an item in the GL menu, interest parameter setting being distributed over various screens, etc. Confusing and inconsistent wording e.g. product code is the same as account code. Labelling needs to be improved as database field names or used or some abbreviations which are unclear, e.g. IOUCHQS/L. Also the unit for some fields is unclear. Drop-down boxes contain only codes instead of the actual value. Most error messages are unclear. Some mention the technical error, some messages are not precise enough, e.g. "account has some issues". Sometimes error messages pop up that are unrelated to the current transaction. Regular run-time errors force user to re-open a module. |
| Workflow | | <ul style="list-style-type: none"> No workflow component |
| Alerts | <ul style="list-style-type: none"> It is possible to set up reminders that will send an e-mail or display a pop-up window when the defined event takes place. | |
| Data entry validation | | <ul style="list-style-type: none"> The system does not guide the user sufficiently with regard to correct manual entries. The system allows choosing impossible combinations such as withdrawal and credit, or savings account in the financial data accounting module. Not all fields are populated automatically. This enhances the risk for incorrect data entry. |

| System maintenance | Strengths | Weaknesses / For further investigation |
|-------------------------|--|--|
| Configuration | | <ul style="list-style-type: none"> The system offers only basic configuration options lacking flexibility, e.g. different interest rate for different savings products. |
| Data | <ul style="list-style-type: none"> The system enables the setup of different mappings for data import using a drag and drop wizard. | <ul style="list-style-type: none"> The member number is not a unique identifier for a customer throughout the whole application as FOSA and BOSA store their customer data in different tables. The national identity number needs to be considered in addition to uniquely identify a customer. |
| Security | <ul style="list-style-type: none"> SPY application enables monitoring of transactions that need authorisation as well as online notification. The system facilitates the delegation of authorisation rights. | <ul style="list-style-type: none"> The differentiation of access rights is too broad. The user needs to enter his user ID and password too often. The audit trail focuses on system users rather than on particular transactions. An audit trail per process (e.g. loans) can be reconstructed, but is not immediately obvious. |
| Backup and recovery | | |
| Multi-branch operations | <ul style="list-style-type: none"> Chesol SACCO connected its two branches using GPRS. A File transfer protocol tool is used for data transfer. While transactions are transmitted online, static data is only synchronised every two hours. Another multi-branch installation is scheduled for early 2010. | |
| Support and maintenance | <ul style="list-style-type: none"> The vendor has 22 permanent staff and employs programmers from India on demand as well as consultants for tasks that cannot be performed by internal staff. | |
| Kenyan presence | <ul style="list-style-type: none"> About 20+ staff in Nairobi, Kericho, and Eldoret. | |
| Kenyan SACCO experience | <ul style="list-style-type: none"> 17 implementations in Kenyan SACCOS. | |

3. FINSACCO (FINTECH)

| FOSA | Strengths | Weaknesses / For further investigation |
|--|---|--|
| Teller operations | <ul style="list-style-type: none"> Features are clustered logically providing efficiency. The system allows internal transfer of cheques to the senior cashier. The system offers a module (FinBridge) to connect the application to Kenswitch to enable integration with an ATM network. | <ul style="list-style-type: none"> SMS banking is only enabled through a separate module. |
| FOSA products (configuration and processing) | | |

| Customer data management | <ul style="list-style-type: none"> ▪ All details about a customer can be viewed from the customer enquiry screen. It provides comprehensive customer data including all FOSA and BOSA accounts and transaction details, internal loan arrears and interest arrears account details (sub-account to main loan account), loan details including schedule, income history, and guarantors. A user can view the financial position of a customer at a glance. ▪ Customers can be identified by a unique reference number. ▪ The system can capture images of the customer, its signature and ID card using a webcam and a scanner. ▪ The system employs an “earmark” feature that can capture and display information about a customer to every system user as a reminder/warning. | <ul style="list-style-type: none"> ▪ Integration with biometric devices for verification is planned but not yet enabled. |
|-------------------------------|---|---|
| BOSA | Strengths | Weaknesses / For further investigation |
| BOSA products (configuration) | | |
| Share and dividend processing | | |
| Loan application processing | <ul style="list-style-type: none"> ▪ The user is guided through the loan issuing process and can confirm the completeness of the details with the help of a checklist. ▪ The tools section includes screens to parameterise loans which are detailed, comprehensive, and yet clear. ▪ The default appraisal and approval process is straightforward and succinct. It can be tailored to build on shares, the 2/3 rule, guarantors or other collateral. ▪ The user can choose if and how to compound interest. ▪ Charging penalties is enabled for pre-payments. ▪ The insurance premium can be charged specifically. ▪ Defining charges for preferential treatment is possible. ▪ The system has a very efficient search functionality to identify guarantors. ▪ Disbursement options can be varied. ▪ The system can capture the purpose of the loan to support marketing and product development. | <ul style="list-style-type: none"> ▪ Microfinance functionality is only provided through an additional module. |
| Customer data management | <ul style="list-style-type: none"> ▪ The application has a strong customer data structure where the member number is a unique and logical amalgamation of branch ID, product codes and serial number e.g. A05-001\00275-01. ▪ The screens to register members are logical and clear. ▪ The identification features are robust (photo, ID, and signature). ▪ Restrictions are used to ensure use of the ‘four-eyes’ principle and authorisation of transactions. | |

| Credit, collateral, and collection | <ul style="list-style-type: none"> ▪ The system provides basic credit scoring and offers an optional comprehensive credit scoring module that builds on “the 5Cs of credit”: character, capital, capacity to pay, conditions, and collateral. | <ul style="list-style-type: none"> ▪ The feature providing automatic provisions for delinquent loans has been removed. But the vendor said it can be reintroduced without major effort. ▪ The system can attach collateral to loans but valuation and depreciation needs to be done outside the system or in an additional collateral module. ▪ If the SACCO does not have the collateral module, the collateral associated with the loan is not considered during the appraisal ▪ The credit scoring module is not included in the core offering. ▪ FinSacco offers reporting on delinquency. If further functionality is required the SACCO has to acquire the debt management module. ▪ Collection tasks are not supported by the system. |
|------------------------------------|--|--|
| Accounting and finance | Strengths | Weaknesses / For further investigation |
| General accounting | <ul style="list-style-type: none"> ▪ The system provides a security feature by not allowing cash transactions to be posted until reconciled. ▪ The system can operate several CoA formats in parallel and the CoA is fully customisable. A custom CoA can be imported from Excel and then populated with raw data accordingly. ▪ Products and transactions are assigned to sub-ledgers to facilitate automated posting and reporting. ▪ Every teller has their own GL account to facilitate reconciliation. ▪ The system offers a report with all posted transactions that facilitates audit and reconciliation. ▪ Specific control accounts are used for key topics like arrears. | |
| Fixed assets | <ul style="list-style-type: none"> ▪ The core application does not offer an asset registry. The user needs to use Excel or so and then post journal entries manually. | <ul style="list-style-type: none"> ▪ Comprehensive fixed asset, inventory, and fleet management modules are only provided through additional modules. |
| Planning | <ul style="list-style-type: none"> ▪ It is possible to generate a cash flow forecast report based on current accounts receivable and payable. | |
| Treasury and cash management | | <ul style="list-style-type: none"> ▪ The core FinSacco application can only track investments as any other accounts receivable. |

| | | |
|------------------------------|---|--|
| Risk management | <ul style="list-style-type: none"> The system provides default reports to monitor risk. | <ul style="list-style-type: none"> The system has no dedicated risk management features in addition to reports. |
| Reporting | Strengths | Weaknesses / For further investigation |
| Available reports | <ul style="list-style-type: none"> The system is by default delivered with a mapping of the CoA to PEARLS which enables the export of data to the PEARLS system for report generation. | |
| Generation of reports | <ul style="list-style-type: none"> Unlimited reports will be provided for clients on annual maintenance contract, if required. | |
| Usability | | |
| GUI | <ul style="list-style-type: none"> Drop-down menus are logically arranged into customer data, journal entries, cash transactions FOSA, non-cash transactions FOSA, BOSA, GL, reports, and system administration. The system offers a customisable side bar for quick access. The system guides the user through processes with the help of "Next" buttons. | |
| Workflow | <ul style="list-style-type: none"> Processes are supported by a workflow-like feature: tasks are taken to the next stage automatically, e.g. loan process. Tasks can be routed back to the previous stage. | <ul style="list-style-type: none"> Owners of the subsequent task are not notified automatically. |
| Alerts | <ul style="list-style-type: none"> There is a task management module in which users can define events to trigger alerts. | <ul style="list-style-type: none"> Additional module needs to be acquired. |
| Data entry validation | | |
| System maintenance | | |
| Configuration | <ul style="list-style-type: none"> The system is flexible with regard to product definition, rule definition (e.g. authorisation requirements), access rights, screen customisation (e.g. side bar), etc. | |
| Data | <ul style="list-style-type: none"> A clear concept for data modelling is used, e.g. account number L01-001\000275-01 (product code\branch code\member no\serial number for concurrent products). | |
| Security | <ul style="list-style-type: none"> Rights can be differentiated on module, sub-module, and field level, as well as into read and write access. Authorisation processes are supported, including online notification. The audit trail can be followed on transaction level or per user. The authorisation module provides a feature to view modifications field by field. | |
| Backup and recovery | | |
| Multi-branch operations | <ul style="list-style-type: none"> The system has been installed across multi-branches of UTS and Mau SACCO. The system has been optimised to enable inter-branch communication via low GPRS bandwidth, e.g. only incremental data is submitted to lower data volume to be transmitted. There are three options for connecting multiple branches: i) centralised database using lease line, issues are cost and availability, ii) decentralised databases per branch with regular updates (e.g. every 5 min), or iii) stand-alone operation with scheduled data synchronisation (e.g. every month). Issues observed include timeouts, delay of generators in case of power cuts, and, low priority of data compared to voice in GPRS network. | |
| Support and maintenance | <ul style="list-style-type: none"> The procedures for implementation and support seem to be proficient. A team of 12 people is dedicated to maintenance and development of FinSacco. The same team also handles support. | |
| Kenyan presence | <ul style="list-style-type: none"> About 90+ staff in Nairobi office. | |
| Kenyan SACCO experience | <ul style="list-style-type: none"> At least 8 live sites in Kenyan SACCOs. | |

4. ABACUS (FERN)

| FOSA | Strengths | Weaknesses / For further investigation |
|--|--|---|
| Teller operations | <ul style="list-style-type: none"> ▪ The system offers effective transaction enquiry functionality. ▪ The system offers a feature to connect the application to a switch to enable integration with an ATM network. | <ul style="list-style-type: none"> ▪ It needs to be confirmed how suitable and flexible the system is with regards to processing salaries, including deductions. ▪ Based on current European clients FERN explains the available range of batch processing features that supports deductions and salary-based operating models. |
| FOSA products (configuration and processing) | <ul style="list-style-type: none"> ▪ Standing orders to external banks and between accounts within the SACCO can be handled according to FERN. | |
| Customer data management | <ul style="list-style-type: none"> ▪ The system enables analysis of economic customer data by capturing customers' range of income, location, etc. These features are fully configurable and can be picked up by a respective report. ▪ The system offers a central field for customer search. | |
| BOSA | | |
| BOSA products (configuration) | | |
| Share and dividend processing | | <ul style="list-style-type: none"> ▪ The system has functionality to enable share management, this is however not dedicated. The user needs to configure a default account during member set-up to act as a share holding account. |
| Accounting and finance | | |
| Loan application processing | <ul style="list-style-type: none"> ▪ The system has a centralised product maintenance feature and offers a comprehensive range of options to configure products. Key features include: <ul style="list-style-type: none"> • Group loans. • Loan schedule to any frequency. • Rebates. • Repayment insurance. • Deferred payments. • Balloon payments (balloon amount can be defined). ▪ The system can produce draft schedules to enable loan and customer relationship officers to have a discussion with prospective borrowers. It enables what-if analysis on varying input data such as loan value, maximum monthly payment, or duration. ▪ The system can calculate penalty interest. ▪ The system is very advanced with regards to fee structure, enabling calculation of fees, using custom formulas. ▪ Interest rates configuration can be amalgamated as an asset liability management tool. The user can build up the rate to cover the SACCO's cost of debt and operating costs, a product-specific margin, and a premium to cover the risk associated with each individual. ▪ Loan data by loan officer is immediately available. | <ul style="list-style-type: none"> ▪ FERN explains how the stages of the usual SACCO loan issuing process (application, appraisal, approval and disbursement) are integral to the design of ABACUS. The project team would recommend SACCOs to verify this relative to their own process. |

| Customer data management | Strengths | Weaknesses / For further investigation |
|------------------------------------|--|--|
| Credit, collateral, and collection | <ul style="list-style-type: none"> ▪ The system captures all the fundamental information necessary to report on delinquency. ▪ The system enabled automatic generation of letters for various purposes. <p>The vendor additionally explains that:</p> <ul style="list-style-type: none"> ▪ The system provides a loan aging and portfolio analysis module with default reports following the recommended CGAP reports. ▪ The system automatically calculates a detailed and summary bad debt provision. ▪ Non-recoverable receivables are automatically linked to guarantors' shares. | <ul style="list-style-type: none"> ▪ FERN explains how collateral management is integral to the design of ABACUS. The project team would recommend SACCOS to verify this relative to their own processes as it was not covered during our evaluation. |
| Accounting and finance | | |
| General accounting | <ul style="list-style-type: none"> ▪ The system is delivered with a standard CoA that can be fully customised. ▪ The system attaches GL accounts to products, which enables automatic postings. ▪ The system enables withholding of tax and flexible choosing of the tax calculation method. | |
| Fixed assets | | <ul style="list-style-type: none"> ▪ The system only allows registering the purchase of an asset. Depreciation calculation needs to be done externally. |
| Planning | <ul style="list-style-type: none"> ▪ The system offers a basic planning module, in which a budget can be prepared by account. ▪ Variance analysis is sufficiently enabled. | |
| Treasury and cash management | | <ul style="list-style-type: none"> ▪ Investments can only be registered and tracked as any other asset. |
| Risk management | <ul style="list-style-type: none"> ▪ The system enables credit scoring using a loan history report. | |
| Reporting | | |
| Available reports | | |
| Generation of reports | <ul style="list-style-type: none"> ▪ An inbuilt reporting service is available for advanced users. ▪ Reports allow drill-down to detailed information. | |
| Usability | | |
| GUI | <ul style="list-style-type: none"> ▪ The physical appearance of screens is excellent. ▪ Recurring layout eases navigation, e.g. same options for each record (add, edit, delete, activate, display). ▪ The customisable toolbar enables shortcuts to static data and transaction details. | |
| Workflow | | <ul style="list-style-type: none"> ▪ The "Loans Manager" module which allows the definition of processes including steps and exit criteria is a checklist for a loans officer rather than a workflow component. |

| Accounting and finance | Strengths | Weaknesses / For further investigation |
|-------------------------|--|--|
| Alerts | <ul style="list-style-type: none"> Reminders for collection are provided in debt management module. | <ul style="list-style-type: none"> Extra module needs to be acquired. |
| Data entry validation | | |
| System maintenance | | |
| Configuration | <ul style="list-style-type: none"> The system offers very flexible configuration functionality with regard to products, rules, fees, etc. Customisable fields can be added to customer data and can be immediately picked up by a report. | |
| Data | | |
| Security | | |
| Backup and recovery | | |
| Multi-branch operations | <ul style="list-style-type: none"> The vendor has experience with low bandwidth connections. The system is allegedly working well over a dial-up connection in Papua New Guinea across over 25 branches. <p>Additionally the vendor explains:</p> <ul style="list-style-type: none"> The central database can be kept updated using GPRS enabled PDAs remotely. This enables loan origination, collections and daily cash collections to be monitored centrally. Online and offline transactions are processed using a synchronisation tool. A thin browser based client is available to facilitate internet-based operations. | |
| Support and maintenance | | <ul style="list-style-type: none"> The vendor is not directly present in Kenya but represented by a local partner. The local partner has allegedly successfully implemented ABACUS with other clients in Kenya but is currently has very limited capacity. FERN explains how their and the local partners capacity could grow to meet increasing demand using local independent IT professionals. FERN brings credibility on this topic from other markets but the project team considers this as a risk compared with organisations that have a mature support organisation in place in Kenya currently. |
| Kenyan presence | | <ul style="list-style-type: none"> The vendor is not directly present in Kenya but represented by a local partner. |
| Kenyan SACCO experience | <ul style="list-style-type: none"> Implementations in Kenyan MFIs and in Uganda, Rwanda and Sudan. In total approximately 50 implementations of Abacus worldwide. | <ul style="list-style-type: none"> No implementation in a Kenyan SACCO |

5. ORBIT (NEPTUNE)

| FOSA | Strengths | Weaknesses / For further investigation |
|--|---|--|
| Teller operations | <ul style="list-style-type: none"> ▪ The system enables correspondence to customers using letters and e-mail as configured. ▪ The system provides a number of different teller classes each with configurable authority. ▪ Transaction codes are used as “quick commands”. ▪ Cash transactions are attached to a default GL account in order to enable automatic posting. ▪ The system can automatically print receipts. | <ul style="list-style-type: none"> ▪ The vendor explains that no external module or bridge is required to enable the integration with an ATM network. Orbit would integrate to any switching systems using ISO 8583 protocol. The project team would recommend any SACCO to verify this given its own integration needs. |
| FOSA products (configuration and processing) | <ul style="list-style-type: none"> ▪ The system can charge penalty interest for overdue payments. ▪ The system can apply rules on standing orders to make certain transactions under certain conditions. | |
| Customer data management | <ul style="list-style-type: none"> ▪ Customer types can be assigned to enable classification and respective reporting. ▪ The system allows the restriction of certain products to certain customer types. ▪ The system can capture various customer information including education, occupation, reason to open the account etc. ▪ Customers can be identified by a unique reference number (RIM number). ▪ The system allows for definition of relationships and eligible signatories. ▪ Account relationships are used to generate notes to system users, guarantors, etc. SMS, printout, e-mail, and fax are supported. ▪ The system allows creation of prospective members, prior to verification by either graphical or biometric means. ▪ The system can separate the data entry roles from the approvers. ▪ The system offers strong search functionality across the data available to the SACCO. | <ul style="list-style-type: none"> ▪ The vendor explains that FOSA and BOSA database is all stored in one central server and only branch specific front office data is stored in Branch servers for purposes of offline operations. Synchronization between branch and central servers is automatic without any manual intervention. The project team would recommend any SACCO to verify how Orbit meets its need for offline operations and to support an integrated branch network in this regard. |
| BOSA | | |
| BOSA products (configuration) | | |
| Share and dividend processing | | |

| FOSA | Strengths | Weaknesses / For further investigation |
|------------------------------------|--|---|
| Loan application processing | <ul style="list-style-type: none"> ▪ The system offers a range of options to configure the loan product. The key ones are: <ul style="list-style-type: none"> • payment schedule (set up per individual loan). • payment method. • (no) capitalisation of interest. • different interest calculation options (simple, add-on, amortised, in advance). • different disbursement options. ▪ The system offers a range of options to configure the loan issuing process. The key ones are: <ul style="list-style-type: none"> • verification of security using borrowers' shares, collateral, and guarantors. • separation of collateral into different types and specification of their market value/loan ratio. • configuration of statements. • prioritisation of payments in case of delinquency. ▪ Pre-payments and partial payments are supported. ▪ The system includes a workflow-like feature taking the application to each subsequent step. The system features what-if analysis to illustrate the change in payment schedule given different assumptions and choices. ▪ Apart from the base rate, a margin interest per customer-product-relation can be added. | <p>The vendor has provided the following clarification:</p> <ul style="list-style-type: none"> ▪ The outcome of appraisal process can be overridden but only by authorised users. (Project team note: this would in fact be an important strength and should be moved to the left column in the report with the comment above). ▪ The system gives reasons for rejections from a list of reason codes supplied by the Sacco during implementation. These are user defined and even a provision for putting additional comments is provided. ▪ The system provides a delinquency management /product control feature by which interest beyond a certain point can be set to zero. ▪ The system can instantly generate updated payment schedules when payment method is changed and is not dependent on the EOD procedure being executed. |
| Customer data management | | |
| Credit, collateral, and collection | <ul style="list-style-type: none"> ▪ The system can classify loan performance according to the WOCCU categorisation. ▪ The system can produce letters for collection. | <p>The vendor has provided the following clarification:</p> <ul style="list-style-type: none"> ▪ Credit scoring is not part of the offering defined above but provided through an additional and optional Orbit module. ▪ Reporting and provisions for loan aging can be made automatic given the latest version of Orbit. |
| Accounting and finance | | |
| General accounting | <ul style="list-style-type: none"> ▪ The CoA is fully customisable. ▪ The system enables the user to specify how transactions are to be posted based on e.g. product or transaction type. An administration module tracks any incorrectly posted transactions. ▪ Tax rates can be set up and tax can be withheld automatically. | <ul style="list-style-type: none"> ▪ The system only supports reconciliation through an additional module. |
| Fixed assets | | <ul style="list-style-type: none"> ▪ The system does not offer any functionality to track fixed assets. Fixed assets have to be managed using an additional module. |
| Planning | | <ul style="list-style-type: none"> ▪ The system does not offer a module or functionality dedicated to planning. |
| Treasury and cash management | | |

| FOSA | Strengths | Weaknesses / For further investigation |
|--------------------------------|--|--|
| Risk management | | The vendor has provided the following clarification: <ul style="list-style-type: none"> ▪ Risk management reports are not available by default but can be defined by client during implementation. |
| Reporting Available reports | | <ul style="list-style-type: none"> ▪ PEARLS reports can be created, however a respective mapping yet needs to be created. |
| Generation of reports | | <ul style="list-style-type: none"> ▪ Data can be exported in a range of formats depending on the SACCOS requirements. The project team suggests that it be verified how it can be arranged to fit the destination system. The vendor has provided the following clarification: During the demo 'Crystal reports' was used for FOSA and 'Centura' for BOSA but the SACCO can decide to use either. |
| Usability | | |
| GUI | <ul style="list-style-type: none"> ▪ The clearly structured toolbar facilitates navigation. | The vendor has provided the following clarification: <ul style="list-style-type: none"> ▪ Colour coding is not used for identification purposes (e.g. mandatory fields) as people with disabilities could be prevented from using the system. Identification is provided through other means. ▪ During the demo there was not a single sign-on for any of the modules accessed (FOSA, system administrative report wizard, EOD procedure, BOSA) but there could have been. |
| Workflow | <ul style="list-style-type: none"> ▪ Individual supervisors can be chosen from a list and will be notified automatically in case of necessary authorisation. | |
| Alerts | <ul style="list-style-type: none"> ▪ Tellers can be alerted in case of reaching cash limits ("buy/sell cash from vault"). ▪ The system provides a pop-up feature to alert supervisors when the system has rejected a cashier to transact. ▪ The system enables triggering of alerts on specified events. The alerts can be distributed by SMS, letter, e-mail, etc. | |
| Data entry validation | | |
| System maintenance | | |
| Configuration | <ul style="list-style-type: none"> ▪ The system offers comprehensive product configuration options. ▪ The system is scalable as additional modules from the core banking solution Equinox can be integrated easily. | <ul style="list-style-type: none"> ▪ Some configuration options are not well thought-out e.g. different overdraft setting per cycle. |

| FOSA | Strengths | Weaknesses / For further investigation |
|-------------------------|---|---|
| Data | | <ul style="list-style-type: none"> ▪ The project team is cautious of the fact that the upload functionality is insufficient as it does not enable flexible definition of mappings for different data formats and structures. ▪ The project team was also concerned with how the data model supports synchronization across the FOSA and BOSA modules. <p>The vendor has explained that:</p> <ul style="list-style-type: none"> ▪ Synchronization does occur based on replication of the following subsets of the data model: customer information, account information and transaction information. ▪ The entire process is based on bi-directional data replication using a periodic refresh algorithm. At the core of the system is a set of cache tables that are managed by a set of data journaling services. The frequency of periodic refreshes and updates is user defined. |
| Security | <ul style="list-style-type: none"> ▪ Access can be restricted on modular as well as field level, to customer data, to GL accounts, to dormant accounts, etc. ▪ Transaction limits can be set. ▪ Authorisation processes are enabled. ▪ Unsuccessful logon attempts are logged. ▪ Transaction options can be differentiated for link downtimes to prevent customers' abuse of the lacking coordination. | <ul style="list-style-type: none"> ▪ The use of database field names in audit trail requires understanding of the database structure. |
| Backup and recovery | | |
| Multi-branch operations | <ul style="list-style-type: none"> ▪ The system has been installed in multiple branches of Embu Farmers' SACCO (5 branches) and Necco FOSA SACCO (7 branches), using a KDN VSAT connection. ▪ A bandwidth of 128 mbits/sec is sufficient. Volume issues have not been experienced. | |
| Support and maintenance | <ul style="list-style-type: none"> ▪ The support structure seems appropriate. | |
| Kenyan presence | <ul style="list-style-type: none"> ▪ +30 staff in Nairobi office and +40 across Kenya. | |
| Kenyan SACCO experience | <ul style="list-style-type: none"> ▪ 2 implementations in Kenyan SACCOs. ▪ 20 additional sites in Africa. | |

6. T24 MCB (TEMENOS)

| FOSA | Strengths | Weaknesses /For further investigation |
|--|---|---|
| Teller operations | <ul style="list-style-type: none"> ▪ The system has dedicated junior and senior teller modules, each with distinctive functionality. ▪ The system supports standing orders. | <ul style="list-style-type: none"> ▪ To enable the integration with an ATM network, the acquisition of an external module which connects the application to a switch is required. ▪ It needs to be confirmed how suitable and flexible the system is with regards to processing salaries, including deductions. |
| FOSA products (configuration and processing) | <ul style="list-style-type: none"> ▪ The system allows numerous savings products beyond practical restrictions (<999). | |
| Customer data management | <ul style="list-style-type: none"> ▪ The system separates potential customers from approved ones for data integrity reasons. ▪ The system supports group management. ▪ The system records signatories for each account. | |
| BOSA | | |
| BOSA products (configuration) | | |
| Share and dividend processing | | |
| Loan application processing | <ul style="list-style-type: none"> ▪ The system supports different ways of calculating interest and types of interest. Capitalised, i.e. compounded interest calculation is enabled. ▪ Products can be restricted per customer data. ▪ The system can consider member maturity, employment, and savings during the loan application process. ▪ Workflows can be supported by the system to encompass all necessary stages. ▪ The system is comprehensive, flexible and does not have obvious practical restrictions with regards to lending methodology. ▪ The payment schedule can be customised. | <ul style="list-style-type: none"> ▪ The system has limited inbuilt functionality to appraise a loan based on typical SACCO processes. |
| Customer data management | <ul style="list-style-type: none"> ▪ The system has good search functionality. | <ul style="list-style-type: none"> ▪ To obtain complete, comprehensive customer information, customisation is required as the so-called customer relationship management view is not inbuilt. |
| Credit, collateral, and collection | <ul style="list-style-type: none"> ▪ The system allows the SACCO to cease accruing interest for loan arrears beyond a certain period. ▪ The order in which received funds are used to meet due payments can be specified. ▪ The system can handle pre-payments. ▪ The system provides a table for provisioning based on loan aging. While provisioning can be done automatically, write-offs need to be done manually. ▪ The system allows the SACCO to choose between physical write-off and financial write-off depending on status of loan recovery efforts. ▪ The system can calculate penalty interest. Grace periods are enabled to delay charging penalty interest if desired. | |

| Accounting and finance | Strengths | Weaknesses /For further investigation |
|------------------------------|---|--|
| General accounting | <ul style="list-style-type: none"> ▪ The CoA can be fully customised. | |
| Fixed assets | <ul style="list-style-type: none"> ▪ The system has a comprehensive fixed asset registry. | |
| Planning | | |
| Treasury and cash management | <ul style="list-style-type: none"> ▪ The system does not have dedicated portfolio management functionality built in as Temenos offers an additional module for this purpose. However, investments could be tracked using the (customised) asset registry. | <ul style="list-style-type: none"> ▪ A separate module is required for cash forecasting. ▪ Customisation of reports is required to produce an as is cash forecast based on accounts payable and receivable. |
| Risk management | <ul style="list-style-type: none"> ▪ The system only offers reports to monitor risks. | <ul style="list-style-type: none"> ▪ It needs to be confirmed if the system can calculate the necessary ratios to measure and monitor risk. |
| Reporting | | |
| Available reports | <ul style="list-style-type: none"> ▪ The system offers a vast range of report templates. ▪ The enquiry tool offers good search functionality. | |
| Generation of reports | <ul style="list-style-type: none"> ▪ The software features the inbuilt T24 Toolkit to develop new enquiries across all tables or set different filters in existing enquiries. | <ul style="list-style-type: none"> ▪ The use of the Toolkit is not clear, e.g. does it restrict the user's choice of columns to what is technically feasible? |
| Usability | | |
| GUI | | <ul style="list-style-type: none"> ▪ The usability of the solution is questionable, given the following characteristics: <ul style="list-style-type: none"> • substantial use of codes reduces clarity; • insufficient labelling of fields; • insufficient data presentation, e.g. repeating all fields per record instead of using tables for clear illustration; • navigation paths are long and navigation requires knowledge about the table structure; • GUI is not fit to screen, requiring a lot of scrolling. |
| Workflow | | |
| Alerts | | |
| Data entry validation | <ul style="list-style-type: none"> ▪ Manual data entry is facilitated by configurable drop-down menus. | |
| System maintenance | | |
| Configuration | <ul style="list-style-type: none"> ▪ The system is highly flexible with regard to the configuration of products, rules, charges, loan process checklist, etc. ▪ While configuration is done on product level, individual settings per customer can be made. ▪ The system is scalable as modules of the T24 core banking solution can be integrated easily. | |
| Data | <ul style="list-style-type: none"> ▪ Different formats and structures are supported with regard to data import. | |
| Security | | <ul style="list-style-type: none"> ▪ The user rights management module is difficult to use as single letters need to be entered for modules and functions. |

| System maintenance | Strengths | Weaknesses /For further investigation |
|-------------------------|---|---------------------------------------|
| Backup and recovery | | |
| Multi-branch operations | <ul style="list-style-type: none"> ▪ The software has been installed in multi-branch institutions (KWFT, Faulu). | |
| Support and maintenance | <ul style="list-style-type: none"> ▪ There is a resource pool of about 30 staff supporting T24 and T24 MCB. ▪ The support centre is located in Chennai, however there are plans to bring parts of the support structure back to Kenya. ▪ The support structure is not obvious from touring the premises. | |
| Kenyan presence | <ul style="list-style-type: none"> ▪ About 20+ staff in Nairobi office | |
| Kenyan SACCO experience | <ul style="list-style-type: none"> ▪ 1 implementation in Kenyan SACCO. ▪ Kenyan MFIs such as KWFT, Faulu ▪ About 100+ implementations in MFIs worldwide. | |



