



**INFORMATION SYSTEMS  
FOR  
MICROFINANCE INSTITUTIONS**

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# Introduction

## **BACKGROUND OF THE CGAP *SKILLS FOR MICROFINANCE MANAGERS* COURSE SERIES**

In 1997, Jennifer Isern and Brigit Helms of CGAP launched a pilot program in Africa to provide financial management courses to microfinance institutions (MFIs), based on industry-wide observation that the greatest constraint to the development of microfinance in the region was the lack of management capacity. The Pilot initiative had two complementary long-term objectives: 1) to improve the institutional viability of MFIs in Africa and 2) to enhance the human resource base in microfinance in Africa through sustainable training programs that would help develop stronger MFIs and increase the market for local training services. By 1999, the Africa Pilot program had become the MFI Training Program, with new partners in South and South-East Asia, Central Europe, and the Newly Independent States (NIS). In addition, CGAP launched AFCAP, an East/Southern Africa program focusing on 12 countries and CAPAF, the Francophone Africa program focusing on 19 countries, to build the capacity of national training service providers to offer training and consulting services. During the early years, Jennifer Isern and Brigit Helms served as overall coordinators of the MFI Training Program and regional programs with colleagues Tiphaine Crenn, Nathalie D'Ambrosio-Vitale, Mike Goldberg, and Joyita Mukherjee, and primary consultants Janis Sabetta, Ruth Goodwin, and Kim Craig.

Through this initiative, CGAP developed seven courses for MFI managers conceived to be globally relevant, short and practical, and incorporating adult training design. These courses are collectively called the *Skills for Microfinance Managers* series. Based on feedback from trainers and participants from hundreds of courses, the courses were revised and improved over several years. As the program matured, Jennifer Isern, Leslie Barcus, and Tiphaine Crenn managed the Global MFI Training Program. By the time CGAP transferred its training activities to the Microfinance Management Institute in January 2007, CGAP's 39 training partners had trained more than 12,000 people in 52 countries.<sup>1</sup> In 2007–2008, Tiphaine Crenn coordinated revisions and overall editing of the MFI courses to reflect changes in microfinance standards, especially in financial statements and ratios.

In line with CGAP's role as a global resource center on microfinance, the full trainer materials for the seven courses developed under the MFI Training Program are now being made publicly available.

## **NOTICE ABOUT USING THE CGAP *SKILLS FOR MICROFINANCE MANAGERS* COURSE MATERIALS**

In parallel to developing course materials, the program aimed to identify qualified national and regional training institutions and help build their capacity to deliver high-quality courses, expand their training markets, and offer courses on a cost-recovery basis. Hundreds of training of trainer (ToT) sessions were organized for the seven courses throughout the world. In some regions, CGAP also developed a certification process, and certified trainers were given broad access to the training materials. Certified training partners invested heavily in building their reputation for offering high-quality, useful courses and building up their businesses.

Although the CGAP *Skills for Microfinance Managers* course materials are now publicly available, CGAP recognizes only those partners and trainers who went through the certification process as CGAP training partners. Others who offer a course using materials from one of the CGAP *Skills for Microfinance Managers* course should not refer to themselves as CGAP trainers or CGAP-certified.

CGAP also requests that all those who offer the “Information Systems” course use the following text in their marketing materials and course descriptions: “The Information Systems course is based on the materials developed by CGAP which are publicly available on <http://www.cgap.org>. CGAP is a leading

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<sup>1</sup> By December 2008, the number of people trained was closer to 14,000, given the ongoing training activities of CAPAF's 19 training partners in Francophone Africa.

independent resource for objective information, expert opinion, and innovative solutions for microfinance. CGAP works with the financial industry, governments, and investors to effectively expand access to financial services for poor people around the world.”

## HOW TO WORK WITH THE COURSE MATERIALS

The CGAP *Skills for Microfinance Managers* course materials are all organized in the same manner, with eight to twelve sessions in each course. Each session generally consists of the following sections:

1. **Trainer Instructions** give step-by-step instructions to trainers on how to lead the session, including when to show which PowerPoint slide, distribute handouts, organize participant activities, discuss during short lectures or general discussions, etc. The instructions include suggested timing, although this should be adapted according to the context. The first page (Session Summary) of the Trainer Instructions section in each session lists all the supplies, technical materials, overheads, handouts, and case study sections that will be required for that specific session. ***Optional overheads and handouts, which are included in the course material for use at the discretion of the trainer, are clearly identified within shaded boxes in the Session Summary.*** If there are additional technical materials in the session, the Trainer Instructions include a section called Trainer Materials, marked M in the right-hand top corner. Trainer Instructions are not intended for participants. If technical explanations are included in the Trainer Instructions, they are also generally provided in the handouts for the participants.
2. **Overheads** introduce topics, underscore key messages, and summarize issues. Overheads are clearly marked O in the right-hand top corner. (For example, IS3-O2 means that this is the second overhead of the third session in the Information Systems course.) ***Optional overheads*** are identified by black (as opposed to white) reference numbers. The overheads are in PowerPoint format but can be printed out on transparencies and shown using an overhead projector. Overheads are not meant to be distributed to participants since the handouts in the same session will cover the same points, generally in greater detail.
3. **Handouts** are marked H in the top right-hand corner, in the same manner as the overheads. Handouts include exercises, instructions, and financial statements, as well as additional reading and in-depth information on the topic. Some handouts give instructions to the trainers about a publication to distribute, and these publications may need to be ordered or downloaded separately.
4. **Case studies** are used in most of the CGAP courses. Files for the case study are sometimes kept separate from the other handouts. The instructions in the Trainer Notes explain the section of the case study at each point in the session. Printing case studies on colored paper (and using different colors for different sections of the case) makes it easier for participants to organize their materials.
5. **Reference materials** and additional reading are listed for each course. Excerpts or the entire document are often included in the handouts. On the Web site, each course home page contains a box on the right-hand side with links to download the documents, if they are available publicly, or information on how to purchase them.

Please note that the overheads in PowerPoint format need to be downloaded separately. The course file contains the trainer instructions, the trainer technical materials, the overview of the overheads, the handouts, and the case study. The pages are formatted to be printed double-sided and blank pages are included as necessary.

# Overview of the Course

The “Information Systems for Microfinance Institutions” course is one of the four courses in the Operational Management Curriculum, along with “Business Planning,” “Operational Risk Management,” and “Product Development.” Microfinance, like all other forms of finance, is an information business. Yet many microfinance institutions (MFIs) face serious challenges as they seek to identify their information needs and install appropriate systems to meet those needs. This four-day course provides MFI managers with practical guidelines for developing and implementing information systems for MFIs. By working through a case study, participants learn to use a framework that allows them to conceptualize, assess, design, develop, implement, roll out, and maintain information systems for their MFIs.

## INTENDED AUDIENCE

This course is recommended for Executive Directors, Finance Managers, Credit Managers, Operations Managers, Branch Managers, IT Managers and Board Members from microfinance NGOs, credit unions, banks, and other financial institutions.

## COURSE OUTLINE

### *Session 1: Welcome and Introduction*

### *Session 2: Data, Information, Systems*

- The main components of an IS for microfinance
- The linkages of the components and their relative importance in microfinance
- The importance of IS to microfinance decision making and links to sustainability
- Defining an information problem and how to develop an IS to solve that problem

### *Session 3: Preparation*

How to:

- Identify problem and goal of IS
- Establish institutional readiness/Determine if prerequisites are met
- Define the purpose and responsibilities of the Task Force
- Form a Task Force
- Establish how the task force will function and communicate with the MFI
- State critical factors to the success of a task force

### *Session 4: Needs Analysis*

How to:

- Document the existing process
- Compare common practices with policies and procedures
- Define information needs and flows
- Analyze current information needs
- Project future information needs
- Assign priorities to information needs

### *Session 5: Selection Process – Determining Feasibility and Assessing Alternatives*

- Options that meet priority information needs
- Preliminary high level scan
- Staff, technology and costs issues of IS
- Major budget items for implementing an IS

- IS purchase options – off-the-shelf, modify, or custom design
- Shortlisting of best options available for further scrutiny

*Session 6: Selection Process – Conducting Due Diligence Using Framework and Independent Reviews*

How to:

- Conduct due diligence on shortlisted options
- Understand and use a framework to assess software options
- Be aware of IS risks and relevant internal controls for the system

*Session 7: Selection Process – Final Due Diligence and Software and Vendor Recommendation*

- Designing and developing questions for RFP
- Ordering a software demonstration
- Checking user references
- Making and justifying a software decision

*Session 8: Implementation*

- The steps in the implementation processes
- Various test procedures
- Needed documentations
- Planning for potential obstacles to implementation

*Session 9: System Optimization and Maintenance*

- The importance of system optimization and maintenance
- Major activities for system optimization and maintenance
- Key issues to address after the introduction of a new IS

*Session 10: Summary and Action Plan*

*Session 11: Course Evaluation and Closure*

***Date of last substantive update: 2002***



# References for the Course

(updated in 2009)

## KEY DOCUMENTS

Arsenault, Normand. 2003. "Answering the Top Five Myths about Selecting Software for Microfinance Institutions." Canada. Self-published white paper. <http://www.microfinancegateway.org/p/site/m/template.rc/1.9.25595>

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Lunde, Shirley A. 2002. *Understanding Information Needs for MFIs. Information Systems Planning for Microfinance, Guide 1*. Catholic Relief Services and SEAPRO LINK, 2002.

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## OTHER DOCUMENTS

Brand, Monica and Julie Gerschick. 2000. *Maximizing Efficiency: The Path to Enhanced Outreach and Sustainability*. ACCION International.

Champy, James. "Reengineering or Dead? Don't Believe It: An Interview with James Champy." Harvard Business Review, March 1, 1999.

Hammer, Michael. "Reengineering Work: Don't Automate, Obliterate." Harvard Business Review, July 1, 1990.

Isern, Jennifer and Julie Abrams with Matthew Brown. 2008. *Appraisal Guide for Microfinance Institutions. Resource Manual*. Washington, D.C.: CGAP, March. <http://www.cgap.org/p/site/c/template.rc/1.9.2972>

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Isern, Jennifer, Julie Abrams and Kim Craig with Matthew Brown. 2007. *Appraise.xls: Spreadsheet for Appraisal Guide for Microfinance Institutions*. Washington, D.C.: CGAP, March. <http://www.cgap.org/p/site/c/template.rc/1.9.2968>

**WEB SITES**

CGAP Information Systems Website: <http://www.cgap.org/p/site/c/template.rc/1.11.10944/1.26.3802/>

CGAP Software Listings and Reviews: <http://www.cgap.org/p/site/c/template.rc/1.11.10944/1.26.3104/>

CGAP Information Systems (IS) Fund: <http://www.cgap.org/p/site/c/template.rc/1.11.10944/1.26.3205/>

# SESSION 1: WELCOME AND INTRODUCTION

## Session Summary

**OBJECTIVES:** By the end of the session participants will be able to:

- State each other's names
- State the training objective and agenda
- Relate objectives to their own expectations
- List resources available for IS in microfinance

**TIME:** 91–96 minutes

**Session** A. Welcome (*10 minutes*)

**Topics:** B. Introduction (*81–86 minutes*)

**SUPPLIES:** Flipchart paper  
Markers  
Name tags or name tents (samples included)  
Masking tape  
Index cards  
LED projector or overhead projector  
Tape player to play music, if desired

### TRAINER MATERIALS

IS1-M1 Information Systems – Precourse Skills Audit Answer Guide  
IS1-M2 Suggested Duration of Sessions  
IS1-M3 Sample Name Tents

### PARTICIPANT MATERIALS

**OVERHEADS:** IS1-O1 System Development Life Cycle  
IS1-O2 Goal  
IS1-O3 Objectives

**HANDOUTS:** IS1-H1 I-Openers Worksheet  
IS1-H2 Information Systems – Precourse Skills Audit  
IS1-H3 Information Systems Goal and Objectives  
IS1-H4 Additional reading: CGAP Handbook for Management Information Systems for MFIs  
IS1-H5 Additional reading: “Management Information Systems—Between Salvation and Frustration”  
IS1-H6 Course Glossary

IS1-H7 Technology Dictionary

**Optional**

IS1-H8 Information Systems Center: Software Reviews

*Trainer Instructions*

IS1-H9 Additional reading: *Management Information Systems for Microfinance: An Evaluation Framework*

IS1-H10 Additional reading: *Maximizing Efficiency: The Path to Enhanced Outreach and Sustainability*

**Optional**

IS1-H11 CGAP IS Implementation Guidelines

**PREPARED FLIPCHARTS**

System Development Life Cycle (see IS1-O1)

# Session 1: Welcome and Introduction

## TOPIC A: WELCOME

1. (3 minutes) Representative from the sponsoring organization welcomes participants and opens workshop
2. (5 minutes) Remarks from official guests
3. (2 minutes) Introduction of facilitators/trainers

## TOPIC B: INTRODUCTION

4. (5 Minutes) Open the session by presenting a brief overview of the course using the following points as a guideline:

Over the past 20 years, a microfinance industry has emerged in response to the lack of access to formal financial services for most of the world's poor. Microfinance institutions (MFIs) serve an ever-increasing number of poor clients, but the demand for such financial services still far outstrips capacity.

Many MFIs began as nongovernmental organizations (NGOs) that initially entered the financial business for social reasons. There are now thousands of new MFIs around the world; many are small, but many more have grown to reach thousands and millions of people. As MFIs grow and become more business oriented, managers have found they gradually lose their ability to maintain personal contact with what is happening at the field level and realize they cannot adequately manage their portfolio and financial operations without better information.

CGAP designed this course to help institutions build effective information systems (IS)—manual or computerized—for their microfinance operations. The task is not a simple one, but the course will outline an IS development and management process that you can replicate once you return to your MFI.

There is no one information system that will meet every MFI's information needs. Different institutions have different IS needs in terms of both size and complexity. These differences are a function of many organizational variables, including volume of transactions, methodology(s), regulatory environment, infrastructure, and overall readiness for change, as well as the resources available.

This course will present elements of a process that can be used as a framework or a checklist in developing your own unique information system. Explain using IS1-O1.

During this course we will describe a process for designing and implementing an information system (manual or computerized). We will teach you the steps in the process, but it will be up to you to apply them in your MFI. While some parts of this process emphasize computerization, many are equally applicable to manual information systems.

Developing and managing an information system is not a simple linear process; it is an iterative transformation process that requires close examination of what your MFI has now, what it needs now, and what it might need for the future.

The course will employ a variety of adult learning techniques that will draw on participants' experience in this field, and we will work on a case study as an example. We will also develop an action plan that will help you apply what you have learned. Together, we will learn to overcome the obstacles that may arise in developing appropriate systems. Without your involvement, the course will not be a success.

This course will help you realize your MFI's ideal information system in a sound manner that supports the longevity and sustainability of your institution.

### ***Icebreaking Exercise to Introduce Participants***

*An alternative activity may be substituted.*

5. (5–10 minutes) Introduce the icebreaking exercise, "I-Openers." Distribute IS1-H1, the I-Openers worksheet. Ask participants to individually read through the entire worksheet. After a few moments tell the participants to select five statements and complete them. When finished, ask participants to complete the statement at the bottom, "The most interesting thing about me is \_\_\_\_\_."
6. (10 minutes) Ask participants to form groups of four. (Count off, color-code handouts, or divide the group in some convenient way; groups should not consist of people sitting next to each other.) Have participants share their answers with the other members of their group. While listening to the other members, each participant should complete the other statements at the bottom of their sheets—for example, "The most interesting thing I learned about the second/third/fourth person in my group is \_\_\_\_\_."
7. (15 minutes) Have each member of the group introduce one other member. Both should stand and take turns saying, "This is \_\_\_\_\_, and the most interesting thing about her (or him) is \_\_\_\_\_." Continue until everyone has been introduced.
8. (5 minutes) Explain that it is important that the group become familiar with one another. Note that it is common in a training program to be so busy learning that we fail to take time to know others who could assist us in our learning. Tell the participants that many of the assignments during this course will require a team effort—as will installing an information system—so remember that everyone has something to offer.

State: Now that we know a little about each other, we will be more comfortable working together and in learning about information systems.

Finally, remind participants of a quote about productivity from Don Peterson, former head of Ford Motor Company: "Results depend on relationships." This is very applicable to obtaining and maintaining IS results.

### **Discussion of Expectations and Precourse Skills Audit**

9. (7 minutes) State: Now we want to find out a little more about why you came to this workshop. Ask participants to think about the following: What are your expectations? What do you hope to be able to learn or know or do as a result of this training? Have each participant write his or her expectations of the workshop on an index card. After five minutes collect cards.
10. (15 minutes) Explain that in order to fine-tune the training process it will be helpful to understand what each other already knows, and ask the class to complete the Precourse Skills Audit form. Tell the participants not to worry or be embarrassed if they don't know the answers. After all, if they did, they would not need the course! Lighten any anxiety the participants may feel by stating, "We hope there are some blank spaces so that we can keep our jobs!" Distribute IS1-H2.

Collect the audit and mark for later analysis to use for group formation and course emphasis.

While participants are taking the audit, review the expectations cards and create two sets of flipcharts—one listing the expectations that will be directly met through the course objectives, the other listing those that will not be met. These lists will be reviewed in the next steps.

### **Workshop Goals, Materials, Rules, and Logistics**

11. (5 minutes) Discuss expectation-matching and schedule. Using overheads IS1-O2 and IS1-O3 and handout IS1-H3, briefly go over the workshop goals and objectives, tying the sessions into the expectations expressed by participants earlier. If certain expectations will *not* be met, candidly explain why.
12. (5 minutes) Distribute copies of documents listed IS1-H4 through IS1-H11 (note that instructions for downloading and obtaining the documents are available on the handouts themselves if the document isn't included). All contain detailed background information to accompany the course. Instructions for obtaining these documents are given in the handout section of the course materials.  
  
Also explain that each participant has been given a course binder, to be used to file all course handouts and copies of overheads and other materials. Briefly explain the numbering of handouts to assist participants in filing them.
13. (5 minutes) Complete a list of ground rules for the workshop by soliciting input from the participants (for example, start on time, everyone must participate, be sure to ask if anything is unclear, no smoking, cell phones off, one person speaks at a time, there are no "stupid" questions, and so on). Main points should be written on a flipchart and can be used to remind participants later in the course what they agreed to.

Add the following ground rule (or similar) at the end: The last person to enter the room will be the 'energizer' of the day. Explain that when anyone starts to think the class members are dragging, he or she should request a one-minute energizer (such as a joke, calisthenics, and so forth).

14. (2 minutes) Review any logistics (hotel, meals, break times, and so forth).

### **Conclusion**

15. (2 minutes) Explain that the participants are a vital part of the learning process; that they will be able to build upon the experience and knowledge of other participants; and that they should share their own knowledge and experience for the benefit of others. If desired, take some time to explain, in detail, the course methodology, emphasizing that it is a proven method of adult education. Solicit and address objections and concerns on a private, individual basis, if necessary.

Summarize by explaining the course methodology, emphasizing the used of the latest in adult education methods, the foundation of which is *learning by doing*. Acknowledge that it differs from traditional lecture-oriented courses, but participants should see better results and higher retention than in lecture-oriented courses. Point out that lectures are used only in small doses, while exercises and discussions are used to reinforce the material presented.

Conclude by stating: We are available to answer questions as needed, but we believe that the best learning and remembering comes from your own discoveries. Let's get started!

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### **Trainer Notes**

- The trainer may want to color-code the paper used for the various types of handouts distributed during the course, for example, blue paper for copies of the case study sections, yellow paper for copies of the exercises, and so on.
- To use the sample name tents (IS1-M3): Copy onto stiff card stock. Cut along arrowed line, then fold on dotted line. Make sufficient copies (preferably copied on hard paper) for all participants. Distribute to participants and ask each participants to write his/ or her name in the space provided.
- It is recommended that the trainer prepare all the additional readings (IS1-H4, H5, H6, H7, H9) in advance and provide the materials to the participants on the first day, even though some of the documents will not be used until sessions 6 and 7, and encourage them to start reading. It is also recommended that the trainer distribute IS1-H8 to the participants and encourage them to become familiar with the Web site early in the workshop. Since IS1-H10 is optional, if the trainer has obtained a copy, he or she can show the document to the participants and invite them to consult it during breaks or after training is over at the end of the day.
  - At the end of each session or topic, the trainer will distribute copies of overheads and any handouts or case study sheets not previously distributed.
  - After the session, the trainer should evaluate the IS Precourse Skills Audit and arrange the names of the participants in a list of subgroups that are based on the audit results, such that the subgroups are evenly made up of knowledgeable and not so knowledgeable participants. The flipchart titled System development life cycle, based on IS1-O1, should be hung up where it is visible and easy to use as a reference throughout the course.



- *(Optional)* The trainer may want to give a brief presentation of the basic rules for small group work and participation. Select a facilitator to lead discussions and a reporter to take notes and report discussions to plenary.
    - Encourage all to participate more or less equally.
    - Respect everyone's contributions.
    - Work toward consensus but allow minority opinions.
    - Remind participants that they will learn from each other, that they all have knowledge to share.
  - The trainer should provide IS6-H1, used in session 6, at the beginning of the course, with instructions to read it before day 3, when session 6 begins.
-

## **Information Systems – Precourse Skills Audit Answer Guide**

- 1. The major subsystems of an information system in an MFI are:**
  - Accounting system
  - Portfolio management system
  - Deposit tracking systems
  - Human resource systems
  - Customer information systems
  - Reporting systems
- 2. Four characteristics of a good IS are:**
  - Is easy to learn and to operate
  - Generates timely and accurate information
  - Has a flexible design that can easily be adapted to a user's changing needs
  - Has a secure system architecture that ensures against loss or corruption of data
- 3. Steps you might use to develop an IS for an organization are:**
  - Conceptualize the system
  - Perform detailed needs assessment and evaluate current processes
  - Develop and implement the system
  - Draw up a plan for performing regular system maintenance and conducting frequent management information system (MIS) audits
- 4. Three questions you might use to decide whether to buy an IS off-the-shelf or to develop one through your own resources are:**
  - How much money is the institution willing to invest?
  - How flexible is the institution willing to be in adapting policies and procedures to the system under consideration?
  - How reliable is technical support from the system under consideration?
- 5. Three questions for choosing IS support for your system are:**
  - What is the guaranteed response time to serious technical problems (those that make the system unusable)?
  - How successful is the provider in solving technical problems? (Ask for examples and then verify.)
  - What is the cost for providing various levels of technical support (for example: onsite visits; 24/7 phone access to technical assistance; email response in 24 hours; Web-based support; or any other technical support the organization may need)?
- 6. Two critical questions in implementing an IS in an MFI may be:**
  - How well documented are the existing policies and procedures?
  - How experienced are senior management and staff in implementing information systems?

## Suggested Duration of Sessions

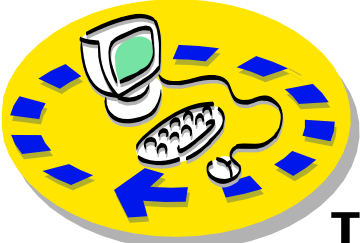
### INFORMATION SYSTEMS COURSE

	<i>Minutes</i>	
	<i>Min</i>	<i>Max</i>
1 Welcome and Introduction	91	96
2 Data, Information, Systems	90	117
3 Preparation	174	204
4 Needs Analysis	269	317
5 Selection Process; Determining Feasibility and Assessing Alternatives	166	176
6 Selection Process: Conducting Due Diligence Using Framework and Independent Reviews	149	169
7 Selection Process: Final Due Diligence and Software/Vendor Recommendation	148	162
8 Implementation	205	225
9 System Optimization and Maintenance	64	74
10 Summary and Action Plan	130	145
11 Evaluation and Closure	28	33
<b>Total minutes</b>	<b>1,514</b>	<b>1,718</b>
<b>Total hours (divide by 60)</b>	<b>25.23</b>	<b>28.63</b>
<b>Total 6-hour days</b>	<b>4.21</b>	<b>4.77</b>
<b>Total 6.5-hour days</b>	<b>3.88</b>	<b>4.40</b>

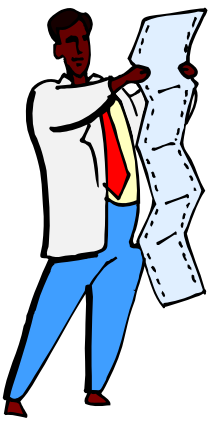


## Sample Name Tents

participating names goes here



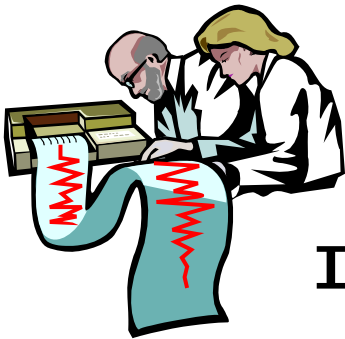
I hear, I forget  
I see, I remember  
**I do, I understand**



To Use: Cut along solid lines, then fold on dotted line. Make sufficient copies (preferably copied on hard paper) for all participants. Distribute to participants and ask participants to write their name in the space provided.



participating here



I hear, I forget

I see, I remember

**I do, I understand**







# Participant Name Goes Here



I hear, I forget

I see, I remember

**I do, I understand**

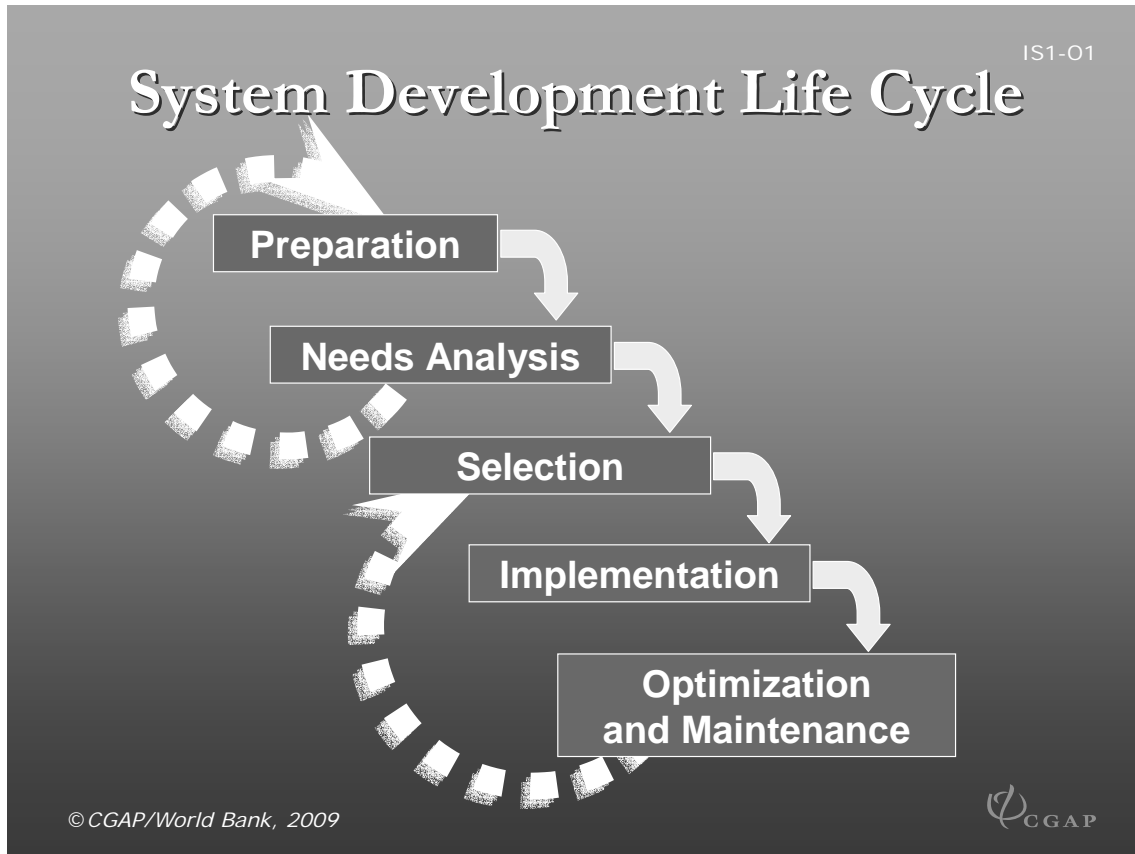




# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**





IS1-02

# Goal

To provide guidelines for

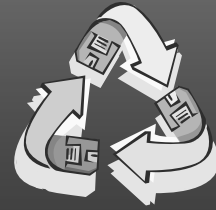
- planning
- developing
- implementing
- and managing

the **RIGHT**  
information system  
for your microfinance institution

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# Objectives

- To present a systematic process used to create and manage an information system for microfinance
- To define information systems and their importance to the business of microfinance
- To identify specific information needed to make business decisions in microfinance
- To analyze critical business processes (in the context of an IS) and streamline them for efficiency
- To use a framework tool to evaluate information system software options
- To understand the processes required to
  - plan and conceptualize
  - select, develop or acquire
  - implement, manage, maintain and optimizean information system for your MFI



# Handouts





## I-Openers Worksheet

- I organize \_\_\_\_\_
- I concentrate on \_\_\_\_\_
- I hunt for \_\_\_\_\_
- I know \_\_\_\_\_
- I produce \_\_\_\_\_
- I juggle \_\_\_\_\_
- I question \_\_\_\_\_
- I idolize \_\_\_\_\_
- I've reengineered \_\_\_\_\_
- I define \_\_\_\_\_
- I break \_\_\_\_\_
- I've learned \_\_\_\_\_
- I finalize \_\_\_\_\_

The most interesting thing about me is:

And about my group members—

\_\_\_\_\_ is  
*Name*

\_\_\_\_\_ is  
*Name*

\_\_\_\_\_ is  
*Name*









# Information Systems

## Goal

To provide guidelines for planning, developing, implementing, and managing the **RIGHT** information system for your microfinance institution.

## Objectives

- ✓ To present a systematic process used to create and manage an information system for microfinance
- ✓ To define information systems and their importance to the business of microfinance
- ✓ To identify specific information needed to make business decisions in microfinance
- ✓ To analyze critical business processes (in the context of an IS) and streamline them for efficiency
- ✓ To use a framework tool to evaluate information system software options
- ✓ To understand the processes required to
  - plan and conceptualize
  - select, develop or acquire
  - implement, manage, maintain, and optimizean information system for your MFI





## **Additional reading:**

Waterfield, Charles and Nick Ramsing. Handbook for Management Information Systems for Microfinance Institutions, CGAP Technical Tool Series No. 1, CGAP: Washington, DC, 1998.

The [Handbook](#) can be downloaded and printed from the “Additional Readings” folder included with the course materials.





## **Additional reading:**

SEEP Network, "Management Information Systems—Between Salvation and Frustration." *Nexus* (Fall 2000), Washington DC.

This document can be downloaded and printed from the "Additional Readings" folder included with the course materials.



## Course Glossary

Term	Definition
Administrator's manual	A reference document that addresses all issues that a system administrator for a management information system is likely to encounter (often called <i>systems manual</i> ).
Amortization	The process of allocating the cost of an asset to each accounting period receiving benefits; usually used in the case of intangible assets.
ATM (automated teller machine)	A computerized user interface that allows customers to transact with the bank without the need for a teller. A credit card-sized bank card and a private security code (both obtained from the banks' branch) are required before the client can gain access to her/his accounts via an ATM.
Audit trail	A permanent record of transactions and events, with sufficient detail to permit a reviewer to reverse the transaction, if so required.
BPR (business process reengineering)	An approach to affecting radical changes in the way organizations go about their day-to-day tasks. Ideally done in conjunction with the installation of a new enterprise resource planning system (see <i>ERP—enterprise resource planning system</i> ), where every process, cutting across every department, can freely be considered for optimization.
CDL (contract deliverables list)	A section of the RFP document that summarizes all items to be delivered as part of the contract.
Check digit algorithms	A computer-based routine used to reduce the chance of typing errors. It automatically calculates the cross sum of a multidigit number and compares it to a separate verification number. Example: In the account number 32406-5, the final digit is a check digit calculated by summing the digits of the account number ( $3 + 2 + 4 + 0 + 6 = 15$ ) and dropping the tens digit (resulting in a check digit of 5). If the operator mistypes a digit, the check digit will no longer match and the number will be rejected by the system.
Data	A series of observations, measurements, or facts.
Data repository	A storage location for data in a computer system. On a freestanding system the data are stored in the computer's memory (short-term only), on its hard disk, or on a floppy disk. On a computer network the data can reside either locally (same as the freestanding system) or on another computer, where they will be kept up to date until a user needs a copy of them.
Data transfer protocols	A set of technical standards that define how data are to be transmitted via cable or wireless link.
Deliverable	Any item (product or service) that a seller agrees to provide to a buyer as part of a contract.
Depreciation	The expiration of a fixed asset's usefulness; the process of allocating the cost a fixed asset to each accounting period that will benefit from its use.
Development platform	The tools used by programmers to create the finished software product are collectively known as the development platform. While it is preferable to let the programmers work with tools with which they are familiar, it is also important to make sure (particularly for custom-coded applications) the program is developed with tools that can readily be used by other developers should modifications be required.

Term	Definition
Diagnostic check	<p>A procedure to confirm that a piece of equipment is still performing according to its design specifications.</p> <p>Virtually all desktop workstations and servers come standard with built-in hardware diagnostics. At a minimum these programs should be run on an annual basis to confirm that all systems are working correctly.</p> <p>In addition, the hard disk should be defragmented and checked for bad sectors on a regular basis, again something that can be done with the standard utility programs included with most desktop workstations' operating systems.</p>
Documentation standards	<p>A set of specifications that outline what type of information is required to document a particular event, result, or occurrence.</p> <p>For software it is very important that documentation standards are clearly defined, as more than one programmer may contribute to the final product.</p>
Editable drop-down menus	<p>A common computer system user interface feature, whereby the most likely information required to be entered can be selected by clicking on a menu instead of typing the actual entry. "Drop-down" comes from the animation of the menu, making it appear when selected to roll down like a window blind. Note: the user still has the option to enter something not on the menu, hence the word "editable."</p>
ERP (enterprise resource planning system)	<p>A class of computer program suited to managing most, if not all, of a (medium to large) corporation's information. ERP systems strive to capture data only once (at source) and then immediately include this new information in every impacted management report, all the way up to board-level summary reports.</p>
File server	<p>See <i>server</i>.</p>
Formulae library	<p>A feature of some computer programs whereby a separate area of the program is dedicated to allowing the user to develop and store common mathematical relationships (i.e., formulae) defined between known variables. This feature allows for efficient implementation, reuse, and modification of the formulae without making programmatic changes.</p>
Graphical user interface (GUI)	<p>The portion of a computer program that allows users to make onscreen selections with a hand-sized clickable input device (a "mouse").</p>
Hardware requirements analysis	<p>A study undertaken to assess the optimal selection and configuration of computer equipment needed to run a computer installation. The result of the analysis frequently relies on the experience and judgment of the person or people performing it, as two systems are rarely exactly the same, making simple comparisons hard to achieve.</p>
Implementation phase	<p>A potentially ambiguous term in the context of software development. To a software engineer, implementation refers to the part of the project when the code is actually produced. To a project manager in charge of a management information system project, implementation refers to the part of the project when the organization is converted to the new system and processes. Also see <i>roll-out phase</i>.</p>
Incentive system	<p>The rules for the staff to follow to increase the size of their variable compensation bonus. A well-designed set of rules will promote healthy competition among the staff to achieve the organization's business objectives. To be effective, it is very important that the staff perceive the incentive system to be fair and free of favoritism.</p>

Term	Definition
Information	The meaning given to data by the way in which it is interpreted.
Information system	A philosophical and practical approach to managing information. It includes the management of (1) a broad range of information resources, for example, printed materials, electronic information, and microforms; (2) the various technologies and equipment that manipulate these resources; and (3) the people who generate, organize, and disseminate these resources.
Integrated solution	A management information system (MIS) that is based on a software package that addresses more than one set of information needs. In the context of a microfinance institution, it typically refers to an MIS that has a combined accounting system and portfolio management system. However, as the organization grows, it is increasingly desirable to have a fully integrated computer system that also includes a customer information system and human resource system.
Integration testing	<p>A step in the software development process when two or more units of the program are tested to make sure that all the program code has been entered with proper syntax. This is the second of testing of a computer program.</p> <p>See also <i>unit testing</i>, <i>system testing</i>, and <i>user acceptance testing</i>.</p>
Interfaces	In the context of a computer system, any data input or output mechanism for, or of, the system.
Interoperability standards	A set of technical specifications that spell out all relevant details required for two separate computers systems to communicate with each other and share data.
MIS (management information system)	The combined set of computer-based and paper-based processes employed by an organization to keep track of all of its information and processes, as well as to generate reporting data for use in decision-making activities.
Multiuser system	A computer system where more than one user can access the data and programs.
Node	In a computer network, each access point to the network; also a workstation connected to a network or another server See also <i>server</i> .
Operating environment	The computer's operating system. A separate program, its function is to control the operations of the computer's various hardware components and to provide the user with a way (see <i>user interface</i> and <i>graphical user interface</i> ) to give the computer instructions about what programs to run.
Outreach	Measure of an MFI's ability to service a financial need within a given market segment.
Outsourcing	Subcontracting of business functions for which the organization either lacks sufficient size to generate economies of scale or is not prepared to invest in staff resources to acquire the necessary skills for proper execution. Examples: janitorial services; printing and stuffing of monthly statements; support for computer systems.
PAR	Portfolio-at-risk. Key measure of portfolio quality. Sum of all outstanding amounts owing for those loans with payments in arrears.
Parsing	Literally, to trim. In the context of data manipulation, parsing refers to the act of removing unwanted data.

Term	Definition
Password functionality	A security feature that enables a computer program to restrict access to specific data and operations to only those with knowledge of a secret code word. This code word, or password, must be typed into the computer prior to attempting to access any of the restricted data or operations. Typically, in a multiuser system, each user will be assigned his or her own password to facilitate auditing of transactions See also <i>multiuser system</i> .
Prototyping	<p>When software development is done with a large amount of regular input from the end user, the development technique is sometimes referred to as prototyping. This technique relies on the programmers being able to quickly develop a functional skeleton of a program that can then be used to demonstrate to the client what each solution will look like and how it will work.</p> <p>As more and more functionality is added, the programmer eventually reaches the point at which the full program specifications have been met. This approach of frequent involvement of the client, feature by feature, has come about because of the availability of cheap and powerful microcomputers.</p> <p>Prior to the personal computer, in the world of the mainframe computers, such resources as compilers and test regions were communal property that had to be booked in advance.</p> <p>With a personal computer, the programmer can compile the code any time she or he wants, and should the machine crash during the testing, it affects no one else. This lends itself well to the prototype approach.</p> <p>The opposite of this technique is the “waterfall approach,” in which each piece of the program is methodically worked out with much less frequent client validation. The waterfall approach is well suited for mainframe software development, where the expectations of the client are very high to have a meticulously prepared design specification before any programming begins; thus, the programmer does not <i>need</i> to interact with the client to find out what each function of the program is really supposed to look like and work like.</p>
RAID (redundant arrays of inexpensive disk drives)	A category of disk drives that employ two or more drives in combination for fault tolerance and performance. RAID disk drives are used frequently on servers but aren't generally necessary for personal computers.
Raw data	See <i>data</i> .
Redundancy	A computer system design concept whereby critical pieces of equipment are duplicated so that the failure of one will not prevent the system from continuing to operate. Instead it will continue to operate via the other (still functional) piece. Typically used on the most failure-prone items of the system, such as the disk drives. See also ' <i>RAID</i> '.
Request for proposal (RFP)	A document that asks (requests) bidders to submit a suggestion (the proposal), a timeline, and a price for how to solve a clearly defined problem. The clear definition of the problem is the main part of the RFP document.
Request for quotation (RFQ)	A document that asks bidders for a price to deliver a good or a service within a specified time period. The RFQ is a suitable document to use when the required solution is well known and the main decision point for the purchaser will be the price and, possibly, the delivery date. Typically a much simpler document to prepare than an RFP See <i>RFP</i> .

Term	Definition
Rollout phase	<p>A potentially ambiguous term in the context of software development. To a software engineer, rollout refers to the part of the project when the entire organization is converted to using the new software. To a project manager in charge of an MIS project, <i>rollout</i> refers to the part of the project when the main part of the organization is converted over to the new system and processes. In the project manager's vocabulary, the rollout phase happens after the pilot phase has been successfully completed. (During the pilot phase, only a small group of end users is converted. The feedback from the pilot phase is then used to determine the optimal way to roll out the solution to the rest of the organization.)</p> <p>See also <i>implementation phase</i>.</p>
Server	<p>A computer, often of a high-performance variety, connected to a network with the primary function of providing information to workstations and other servers. Typically, the information stored on a server is of value to more than one user, and therefore the security precautions are often greater for servers than for individual workstations. Servers are typically kept in locked rooms to safeguard the data stored on them.</p>
Source code	<p>1. The term often given to the original computer program instructions authored by the programmers. In most cases the program instructions are not what gets delivered by programmers to the client. Instead, the program instructions are converted into a more efficient machine code version. A software tool called a compiler does the conversion process. When the code has been compiled, it is no longer possible to review the logic of the program or make modifications to it. Therefore, having access to the source code is a key criterion in being able to modify the program's functionalities. 2. The actual text that programmers produce when they write a program. Source code is written in a very strict syntax that is defined by the programming language being used to write the program.</p> <p>Access to the source code is required to make modifications to the program. Note that the actual program itself is released to the end users in a different format, known as executable code. Translating the source code produces executable code. This is done using a software program known as a compiler. The compiler will change the source code into a format that is optimum for machine performance, i.e., the executable code. However, the executable code is impossible for a programmer to read or significantly modify as it appears as a long string of garbled characters.</p>
Source code documentation	<p>All well-written software programs have in their source code sufficient documentation that another programmer could, if asked, understand exactly what is going on at that particular point of the program.</p> <p>See <i>source code</i>.</p>
Statement of work (SOW)	<p>In the context of a request for proposal (see RFP) document, a description of all the tasks for which the contractor will be responsible.</p>
Subsystem	<p>An integral part, or component, of a greater entity. Example: A rolodex file of clients' names and addresses can be considered to be a subsystem of a customer information system.</p>
Sustainability	<p>Measure of an MFI's ability to generate sufficient income from its operating activities to cover its operating costs (operational sustainability) and its cost of funds (financial sustainability).</p>

Term	Definition
System crash	<p>A sudden and unexpected stop in the operation of a computer software program, resulting in a condition whereby the computer is unable to continue running <i>any</i> other program until the computer is reset and restarted.</p> <p>Note: Resetting and restarting a computer typically means that all data that were active just prior to the crash may have been lost, unless special programmatic safeguards have been put in place to generate a continuous record of all transactions. See <i>audit trail</i>.</p>
System testing	<p>A step in the software development process when the entire program is tested with real data loaded into the databases and the behavior of the software is compared to the design specification to ensure that every functionality is properly included in the program.</p> <p>See also <i>unit testing</i>, <i>integration testing</i>, and <i>user acceptance testing</i>.</p>
System user interface	<p>Any device that allows access to a computer system. Often used to refer to the design of the graphics that the user encounters while accessing the system. See also <i>graphical user interface</i>, <i>GUI</i>.</p>
Systems manual	<p>See <i>administrator's manual</i>.</p>
Terms of reference (TOR)	<p>In the context of a request for proposal document, a description of the product or services to be delivered.</p>
Test cases	<p>Detailed descriptions of how a software program is supposed to respond to specific commands performed with precisely defined input data.</p> <p>Test cases from the bulk of all test plans used (typically during full-system tests and user-acceptance tests) to verify that a software program functions according to its design specifications.</p> <p>See also <i>test plans</i>, <i>full system test</i>, and <i>user acceptance test</i>.</p>
Test plan	<p>A document specifying how to test a software package and what constitutes a successful test (i.e., the measurable outcome). Test plans become key deliverables in software development contracts; typically the client will make the test plan an integral part of the contract and will only release payments against a successfully completed user-acceptance test based on the test plan.</p>
Type ahead field completion	<p>A common computer system user interface feature, whereby, as the operator starts typing the first few characters of the input data, the most likely information required to be entered will automatically appear in the input field, allowing the operator either to stop typing and accept the computer suggestion or continue typing until the correct information has been entered.</p>
Unit testing	<p>A step in the software development process when a small section of the program is tested to make sure that all the program code has been entered with proper syntax. This is the first level of testing of a computer program.</p> <p>See also <i>integration testing</i>, <i>system testing</i>, and <i>user acceptance testing</i>.</p>
User acceptance testing	<p>A step in the software development process when the entire program is tested by the end user to make sure that it performs according to the design criteria. See also <i>unit testing</i>, <i>integration testing</i>, and <i>system testing</i>.</p>



Term	Definition
User interface	A device or a computer program that can be used to access information in a computer system. Typically, a user interface will consist of a terminal (monitor), a keyboard, and a mouse, with some kind of operating system running on it. However, user interfaces for computerized banking systems can also include telephones (with automatic voice response to numerical entries), automated teller machines (ATMs), and Internet browsers.
User's manual	A reference document that addresses all issues that an end user of a software package is likely to encounter.
Variable cash flow lending	Design of a loan such that the repayment stream is unequal, in theory based on the client's varying but predictable cash flow throughout the loan period. Most commonly seen as a terminal-payment loan product, such as a cow-fattening loan, where the entire amount of cash for repayment is generated by the client once the cow is sold.
Workstation	A personal computer intended for the use of a single user (compare to <i>server</i> ).



# Technology Dictionary

The [Dictionary](#) can be downloaded and printed from the CGAP Web site.



## Information Systems Center: Software Reviews

The [IS Center](#) contains software reviews, user comments, implementation guidelines, and more. [Software listings](#) can be downloaded and printed from the CGAP/Microfinance Gateway Web site.



## **Additional reading:**

Mainhart, Andrew. 1999. *Management Information Systems for Microfinance: An Evaluation Framework*. Development Alternatives, Inc.: Bethesda, Maryland.

This [publication](#) can be downloaded and printed from the [CGAP/Microfinance Gateway Web site](#).





## **Additional reading:**

*Maximizing Efficiency: The Path to Enhanced Outreach and Sustainability*, by Monica Brand and Julie Gerschick. ACCION International. 2000.

This publication has a useful chapter on reengineering the MFI (chapter 4). If not able to provide for all participants, trainers should have a copy for reference and use in the workshop.

It is downloadable from [http://publications.accion.org/micro\\_pubs\\_list.asp](http://publications.accion.org/micro_pubs_list.asp). Hardcopies are also available.



## **Additional reading:**

CGAP IS Implementation Guidelines is an updated guide developed under CGAP's Technology Initiative: <http://www.cgap.org/technology>.



# SESSION 2: DATA, INFORMATION, SYSTEMS

## Session Summary

**OBJECTIVES:** By the end of the session, participants will be able to:

- Define and explain: *data, information, and information system (IS)*
- Identify and discuss the main components of an IS for microfinance (MF)
- Show links among the components and their relative importance in microfinance
- Discuss importance of IS to MF decision making and sustainability
- Define an Information problem and develop IS goals to solve it

**TIME:** 90–117 minutes

- Session Topics:**
- A. Data versus Information, and Why the Difference Matters (*38–48 minutes*)
  - B. What Is an Information System? (*52–69 minutes*)

**SUPPLIES:** Flipchart paper  
Markers  
LED projector or overhead projector  
Index cards

### TRAINER MATERIALS

IS2-M1 Script for Introductory Skit

### PARTICIPANT MATERIALS

**OVERHEADS:** IS2-O1 Information Is the Pillar  
IS2-O2 Data and Information (definitions)  
IS2-O3 Information and Decision Making  
IS2-O4 Information System (definition)  
IS2-O5 Information Systems (pipes graphic)

IS2-O6 Basic Information System for MFIs	<b>Optional</b>
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**HANDOUTS:** IS2-H1a Information and Decision-Making Worksheet

IS2-H1b Information and Decision-Making Worksheet – Answers	<b>Optional</b>
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IS2-H2 Technical Notes

**PREPARED FLIPCHARTS:**

Good information → Good business → Successful MFIs!

## Session 2: Data, Information, Systems

### TOPIC A: DATA VERSUS INFORMATION, AND WHY THE DIFFERENCE MATTERS

#### **Technique: Role play and processing of skit**

1. (2 minutes) Introduce the case study as follows: The last session presented the goals of the course and briefly discussed why participants are here. Remind them that a case study will be one of the main teaching tools. In the case study, the workshop will follow the experiences of an MFI called FairFund.
2. (5 minutes) Have trainers (or participants) act out the skit using IS2-M1. After the skit, let actors come out of their roles—take off their hats, remove desk, and so forth.
3. (3 minutes) Process the skit. Prompt with the question: What happened? What were the problems at FairFund? Answers include lack of information, timing problems in getting and giving information, questions as to what kinds of information to keep and who should keep it, and so forth. The problems generally revolve around *managing information*. (Note that, although FairFund uses a computerized IS, many of these same problems also exist in manual information systems.)

Ask: Can anyone suggest a potential solution? What can managers do? Focus on answers that relate to effectively managing information (planning, organization, flow, and storage) as well as information's importance to the MFI. Summarize with IS2-O1—Information Is the Pillar of Any MFI.

4. (5 minutes) Lead a general discussion on *information* using the following questions:

Ask: How would *you* define Information? Answer: Meaningful data that help someone to make sound, good-quality decisions or to gain insight.

Ask: What are the *qualities* of good information? Answers include: timely, relevant, accurate, reliable, complete, and so on.

Summarize by stating (for example): Good information is at the core of the MFI's business. Information is necessary to make optimal decisions, and it keeps us informed about the status of our businesses. Tracking and understanding financial and customer information are essential. Therefore, it is critical to have the right system in place to provide information so that we make the best decisions and thus operate efficiently and profitably.

5. (5 minutes) Ask: If information is meaningful data, what does the term *data* include? Answer: Raw facts (for example, an account number, loan principal amount, savings deposit amount).

Ask how one distinguishes between data and information, or if they are the same. Show IS2-O2 definitions. Stress that the real difference between data and information is that *information assists us in decision making*.

Ask for examples that highlight the differences between data and information—but *do not get too bogged down in the differentiation*. Try to use these examples to explain the relationship of information to the hierarchy of the organization. In other words, what is information at one level of the institution may actually be data for the next-highest level of management.

For example, a client payment record may be useful to a credit officer in making individual decisions. However, for a branch manager, the payment record may simply be one item of data. When the payment record is grouped with all the other payment records for the branch's portfolio, it becomes useful information for branch-level decision making. So a client record may be useful *information* for the credit officer, but no more than *data* for the branch manager.

6. (3 minutes) State: You now know that information plays a vital role in making the best decisions to ensure that our MFIs meet their goals and objectives. Ask: But can we expect too much of information? Do we sometimes expect more than it can deliver? Answer: Yes. Information is not a cure-all. There are things that it won't do, such as organize us, fix our poorly designed business processes, improve our own business judgment, and so on.
7. (5 minutes) State: Now let's look at some of the information you will need to make good decisions. Ask: What are some common decisions we routinely make in our MFIs—for example, how to decide to disburse a loan. (Write this question on a flipchart.)  
  
Now ask: What data/information do we need to make this decision? Take answers from the group and write responses on the flipchart. Answers may include cash flow position, client records, past repayment performance, type of business, loan application form, loan officer recommendation, and so forth. Try to ensure that information comes from more than one subsystem.
8. (5–10 minutes) Now ask participants to think of two other decisions (besides disbursing a loan) that they make in their respective MFIs. Distribute IS2-H1a. Give participants a few moments to individually complete the first two columns of the handout for their two decisions. When participants have finished completing the first two columns, ask them to briefly discuss their decisions and information needs with a neighbor.
9. (5–10 minutes) Reconvene in the large group to examine these decisions. Ask: What decisions did you come up with? And what is the specific information that is necessary to make those decisions? Take one or two examples from participants and ask for comments from the group.

Ask participants to summarize: What did you learn? What conclusions can you draw? Focus discussion on the various items of information and the various levels of detail necessary to make a decision.

Summarize as follows: There are many users of information, operating at different levels in the MFI. Different stakeholders will make decisions based on different information and will require different levels of detail. Also, they often have different purposes—for example, strategic planning, management control, and operational control. As a result, information requirements can vary considerably throughout an institution.

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### Trainer Notes

- **Using IS2-M1.** This is an introductory skit to highlight general issues associated with information. Its purpose is to draw participants into the course, get their attention, and focus them on the course topics. For example, an MFI has many demands for information from its many stakeholders. A good information system can help provide MFI managers with timely, relevant, and accurate information.
    - Trainers should have given actors time to practice in advance. Actors should have prepared labels for themselves that clearly define their role(s). If the skit is being performed by participants with limited English skills, the trainer may want to distribute copies of the script to all participants, so that they can follow along. If it is performed by trainers, one trainer should remain as the MFI Director/Operations Manager while the other trainer changes roles as different Information Seekers.
    - Roles in the skit are labeled by title, not name, to make them gender independent. Depending on the gender breakdown of the class, the trainer may wish to assign names, as well as titles. The trainer should prepare a sign with the name of the MFI—FairFund—and a date of a few months previous. The Information Seekers should be clearly identified using large name tags, hats, or other labels as props. They should leave the scene and reenter with each role. Popping behind the flipchart to change characters works well.
  - **Using IS2-H1b.** This answer sheet is optional and can be used at the end of activity 2. The trainer can complete it as part of his or her preparation for teaching the course. Then the completed answer sheet can be distributed to the class participants at the end of the exercise.
    - Trainer can also use the “Management Activities” table at the end of the technical notes as a handout to discuss the different types of information necessary for decision making. To do this, the trainer should remove the table from the technical notes and hand it out after discussing participants’ answers in activity 2.
-



**Topic B: What Is an Information System?**

10. (5–10 minutes) After identifying what information is needed to make decisions, it is time to determine where and how to find that information. Return to the flipchart with the loan-disbursement example and ask participants: Where would you get the information you need to make this disbursement decision? Review using IS2-O3 as necessary.

Return to the decision-making worksheet. Ask participants to write “Information Source” as the column heading for the third column. Then ask them to individually complete the third column of IS2-H1a in order to identify where the information they need comes from; that is, the department or operational area that has the information.

11. (5 minutes) Ask participants to *quickly* share the sources of the information necessary for their decisions. Write various responses on flipchart. Ask: Did anyone have only one source of information? More than one? More than two? Who had five? Seven? Ten?

Ask: What does this tell us about where we get our information? Describe how information comes from a variety of related sources within MFIs. The fact that information does not come from only one source, but rather from related sources, gives rise to the concept of information systems. MFIs need related elements that work together as a system to produce the best information for decision making. (As needed, refer back to the flipchart generated earlier and illustrate how the types of information link to sources of information.)

The trainer can reference or hand out the “Management Activities Information” table at the end of the technical notes to summarize and pull together the information sources discussion. See Trainer Notes.

12. (5 minutes) Ask participants how they would define an information system. Take a few responses and show IS2-O4, Information Systems Definition. Highlight the fact that any system consists of the following elements:

- *Inputs* (captured data, such as a loan payment amount or a savings deposit amount)
- *Processes* (actions that manipulate, analyze, or relate items of data and generally help to transform data into information)
- *Storage* (a file cabinet or a computer hard drive)
- *Outputs* (reports, lists, ratios, journals, on-screen inquiries)

13. (10 minutes) Ask: Does our definition of an information system require the use of a computer? Answer: No. Some systems are completely manual, some completely automated, and others include a combination of manual and computerized operations. Regardless, each consists of the same general elements. For example, a manual system might use a file cabinet for storage

while a computerized system uses a hard drive—but they both include storage mechanisms.

Record answers to the following questions on a flipchart:

- Ask: What are possible advantages of a manual system? Answers include: less expensive initially, no computer-literacy requirements, adaptable, places fewer demands on the infrastructure.
- Ask: What are the disadvantages of a manual system? Answers include: increasingly expensive as the MFI grows, more subject to human error, somewhat limited growth potential, often less productive.
- Ask: What are possible advantages of a computerized system? Answers include: less expensive as the MFI grows, less subject to human error, facilitates growth, higher productivity, permits more sophisticated business processes, enhances data security.
- Ask: What are the disadvantages of a computerized system? Answers include: more expensive initially, requires computer-literate users and support personnel, software may not be adaptable, places demands on the infrastructure (for example, reliable power, temperature and humidity controls).

14. (3–5 minutes) Every MFI has an information system. Ask participants to visualize what their current system looks like and then to draw a sketch or jot down notes. Is it organized? Well developed? (This is a conceptual exercise only, that is, no essays.)

15. (5–10 minutes) Ask a few participants to share their visualizations and briefly discuss. (List major components and relationships on flipchart when stated.) Summarize by noting the major subsystems/components of their systems and how they relate to each other.

Mention that systems (manual or computerized) generally consist of parts known as subsystems, or components. These subsystems are interrelated and interdependent. Microfinance subsystems can include accounting, portfolio management, deposit tracking, human resources, impact tracking, inventory, accounts payable, and so on. If these subsystems share information they are *integrated*. If they do not share information, they are *standalone*.

Ask: Which subsystems do you feel are most integral to the workings of an MFI and why? Briefly discuss.

16. (5 minutes) State that you will display a possible option for visualizing an information system, IS2-O5. It emphasizes relationships and the flow of information. *Optionally* display a second option, IS2-O6, which emphasizes the components of the system (see additional information in Trainer Notes).

Solicit and discuss brief comments from participants. Note that, while each option emphasizes different aspects of the system, both adopt a holistic approach.

17. (5–10 minutes) Note that both of the diagrams include reporting as an important element in the system. Also note that many participants did (or did not) include reporting in their visualizations. Ask: Why (or why not)? Why is reporting an important element of the information system. Answer: Reports (and outputs, in general) are the manner in which information is communicated to users so that they can make the best business decisions. Remind participants that reporting systems operate both within a subsystem and across subsystems.

Lead a brief discussion on participants' experiences with getting information from their systems. How do they get information? Who are the people who use the information? How, when, and in what format(s) is information communicated? (If necessary, think back to the skit to start the discussion.) Be sure to discuss both the reports or ratios that can be produced within a *single* subsystem and those that require combined information from *several* subsystems.

Note that no system can capture *all* information that has a bearing on *every* decision; tradeoffs will have to be made. However, a good system will generate sufficient information to provide a sound basis for decision making. Tell participants that reporting will be discussed in more detail later in the course.

18. (3 minutes) Now that participants have some idea of what an information system looks like, ask: What are the qualities of a *good* information system? Take responses from the group and record major points on a flipchart and hang it in the room.

Answers include: timely, reliable, accurate, easy to use, appropriately detailed, efficient, meets needs of various user categories, secure and has good internal controls built in, beneficial (value of having information exceeds cost to produce), and so forth. Note that the answers here are similar to the qualities of good information that was discussed earlier.

19. (3 minutes) Ask the participants to stop and think about potential problems and dangers. Ask: What are the characteristics of *bad* systems? Take responses from the group and record major points on a flipchart and hang it in the room.

Answers include: generates too much (or too detailed) information, generates too little (or not sufficiently detailed) information, redundancies, errors and inaccuracies, cost to produce information exceeds benefit of having, not suited to specific user categories, difficult to use, unreliable (for example, crashes), poor security or internal controls, can't get reports when needed, not a cure-all for everything, has to be computerized, and so forth.

State: Let us keep these good and bad qualities in mind as we help FairFund (and later ourselves) to develop an information system.

20. (3 minutes) Summarize that to make good decisions, measure performance on key areas, enhance outreach, and achieve sustainability, we need a system that can produce accurate, timely, reliable information in an easily usable format.

Explain to participants that this course will lead them through a process that will enable them to improve their MFI's information system and thereby assist them in reaching their business goals.

Take any outstanding questions. Display flipchart:

Good information → good business → successful MFIs!

(Keep it visible throughout the course.) Link to the next sessions. Distribute IS2-H2, Technical Notes.

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### **Trainer Notes**

- Trainer should distribute copies of overheads before ending the session or before beginning the next session.
  - **Explaining the bullseye diagram: IS2-O6.** The bullseye diagram shows the IS components that are most important to have automated from a cost-benefit perspective, that is, those that are the core or inner ring of the system (Accounting, Portfolio, and Deposit Tracking). They are most important to an MFI. Other systems are included in the next ring. The outer ring represents the interfaces—those that either produce data for the system or require reports from the systems (or both). The trainer should note that the reporting system often exists on two layers: one for each system itself and the other combining output for more broad-ranging information output.
    - The diagram can be a bit misleading at first, in that it seems to suggest that information flows are linked concentrically; in other words, that all the delivery mechanisms would have to connect via the Human Resources system to access the Portfolio system. That is, of course, not true.
-

## Script for Introductory Skit

This is an introductory skit to highlight some general issues associated with information. Its purpose is to draw participants into the course, get their attention, and focus them on the course topics.

Background: An MFI has many demands for information from its many stakeholders. A good information system can help provide MFI managers with timely, relevant, and accurate information.

**Setting:** FairFund—some months ago

Prepare a sign with the name of the MFI, FairFund, and a date.

The Managing Director (Chris) is sitting at a very disorganized desk.

The Information Seekers should be clearly identified using hats or labels as props. They should leave the scene and reenter with each role. Popping behind the flipchart to change characters, if necessary, works well.

### Actors:

Managing Director (Chris)

Information Seekers:

Government Regulator

Donor

FairFund Branch Manager

Nonrecurring characters can be given names to personalize the situation.

The roles of the Information Seekers can be changed to match the profile of the participants which for example can be regulatory agencies, board members, clients, donors, or commercial investors.

## DON'T FORGET TO PRACTICE!

### SCRIPT

**Managing Director (Chris):** *(speaking aloud to the group)* I am being visited this morning by so many people. I hope I will be able to give them what they want and show them how well my MFI is doing.

**Regulator:** Good morning. Are you ready for my quarterly visit? I will need the usual—your financial reports, list of nonperforming loans with at least three installments past due, list of new clients, average loan size, and all your loans to directors. I need to check your capital adequacy, yield on portfolio, solvency, and liquidity....

**Managing Director (Chris):** Yes, yes, yes. Give me a moment. *(Looks for papers)* I will have to find out where all those things are. Can you please join my secretary for lunch? By then it will all be ready.

\*\*\*Exit Regulator and enter Donor\*\*\*

**Donor:** Greetings! I'm glad I could squeeze in a visit to your MFI. I came from a new war zone where microfinance is being introduced. By the way, do you have a list of your clients who are refugees, childbearing, or illiterate to help me justify more funds to your MFI?

**Managing Director (Chris):** *(interrupts)* We really don't track that kind of information about our clients.

**Donor:** Better start then, hadn't you? And I need the usual return on assets, return on equity—adjusted, of course! Oh, we also need your portfolio-at-risk, which means any delinquent account that is at least one day past due. Need this fast. Got a plane to catch.

**Managing Director (Chris):** *(shakes his or her head)*

\*\*\*Exit Donor and enter the Branch Manager\*\*\*

**Branch Manager:** I know you are busy, but I need to collect my bonus incentives as soon as possible. You know my branch: the one two mountains away that always performs so well. I have doubled my client outreach and my loan disbursements, too. I have more new clients than old ones now!

**Managing Director (Chris):** You have traveled even faster than your data! I still don't have your reports from the field. You will have to wait.

**Branch Manager:** *(looks to the audience and sighs)* What will I do?

# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**





IS2-01

# Information



IS THE PILLAR  
OF ANY  
MICROFINANCE INSTITUTION

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IS2-02

# Data

Unprocessed basic facts about  
the activities of a business that give no  
insight by themselves



# Information

Data transformed into a meaningful form that  
helps someone to make sound, quality  
decisions or to gain insight

© CGAP/World Bank, 2009



# Information and Decision Making

Decision	Information Needed to Make the Decision	Information Source (Who/How/Where)
Disbursing a loan	<ul style="list-style-type: none"> <li>▪ Cash flow position</li> <li>▪ Client profile</li> <li>▪ Client repayment record</li> <li>▪ Loan application form</li> <li>▪ Loan officer details and recommendation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Accounting</li> <li>▪ Client records</li> <li>▪ Client records</li> <li>▪ Loan management records</li> <li>▪ Loan officer reports</li> </ul>

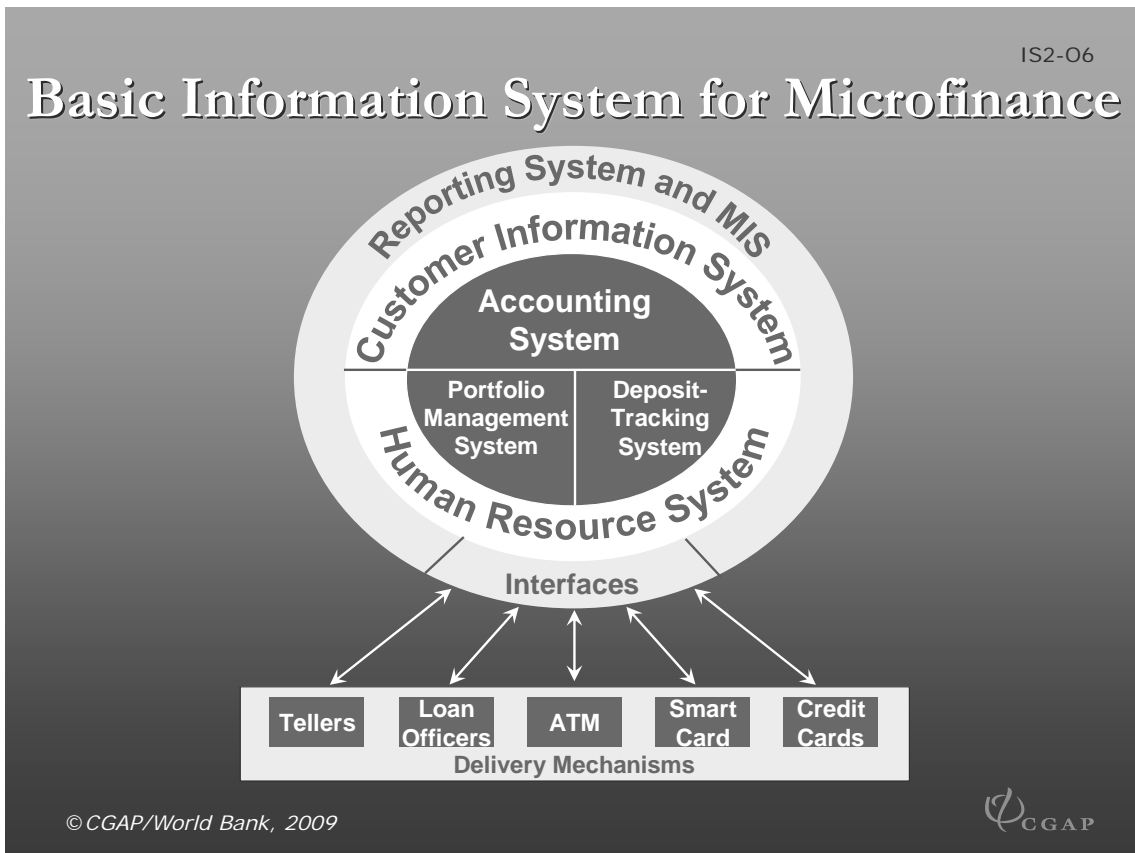
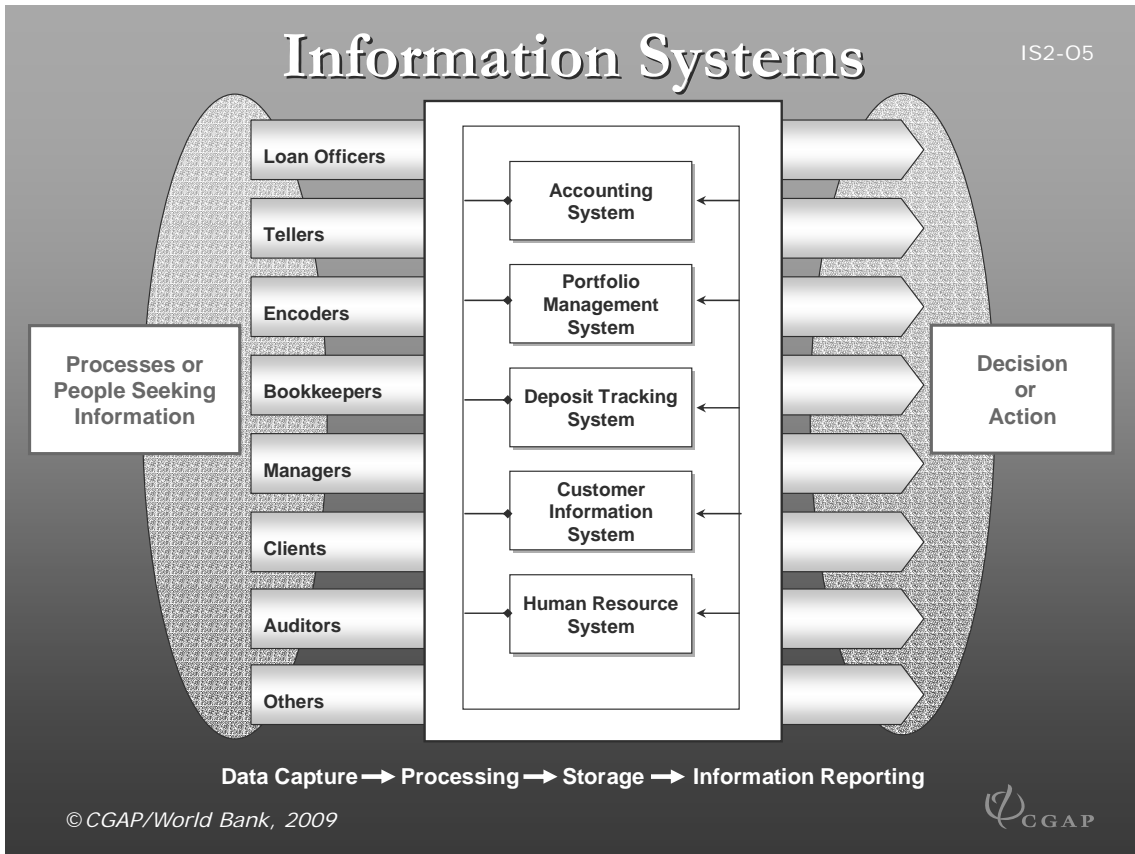


# Information System

The series of actions involved in:

- Capturing raw data from various sources,
- Processing the data into usable information,
- Storing the information; and
- Disseminating information in the form needed.







# Handouts



## Information and Decision Making Worksheet

Think of two decisions you regularly make in your MFI and then list the information you need to make those decisions.

<b>Decisions You Make in Your MFI</b>	<b>Information Needed to Make the Decision</b>





## Information and Decision Making Worksheet – Answers

Think of two decisions you regularly make in your MFI and then list the information you need to make those decisions.

<b>Decisions You Make in Your MFI</b>	<b>Information Needed to Make the Decision</b>



## Technical Notes

**Data:** Basic unprocessed facts about the activities of a business that provide no insight on their own.

**Information:** Data that are processed or otherwise transformed into a meaningful form that help someone make a decision or gain insight.

**Information is processed or transformed data.**

**Information system:** The series of actions involved in *capturing* raw data from various sources, *processing* the data into usable information, *storing* it, and *disseminating* the information to users in the form needed.

**What makes up an information system?**

- A full information system (IS) includes all the systems (both manual and computerized) an institution uses to generate the information that guides management's decisions and actions.
- The core software subsystems for an MFI are its:
  - Accounting system (keeps track of the MFI's own business activities; should conform to basic international accounting standards)
  - Portfolio management system (keeps track of all customer credit transactions)
  - Deposit-tracking system (if MFI takes deposits) (keeps track of all customer savings transactions)
- Also important are the MFI's:
  - Customer information system (basically a name and address book that uniquely identifies each client of the MFI)
  - Human resource system (used to manage MFI staff information, such as payroll data, vacation times, sick days, and so forth)
  - Reporting system (gathers data from other systems and processes it into reporting information printed or viewed online)
- A key success factor for an MFI is having all systems suitably linked to allow timely and accurate sharing of data among the various systems.
- The linking of all information systems is known as systems integration. Systems integration can be both costly and time-consuming. Furthermore, if any one of the systems is changed or upgraded at a later date, chances are that extensive integration work will have to be done yet again.

**Management Activities Information Table**

Management Activities	Data Provided by Various MFI Information Systems to Meet Needs of Management Activities						
	Accounting	Portfolio management	Deposit tracking	Human resources	Customer information	Impact tracking	Other
<b>Cash flow management</b> <ul style="list-style-type: none"> <li>• Gap analysis</li> <li>• Idle funds ratio</li> <li>• Liquidity ratio</li> <li>• Current ratio</li> </ul>	<ul style="list-style-type: none"> <li>• Cash balance</li> <li>• Current assets</li> <li>• Current liabilities</li> </ul>	<ul style="list-style-type: none"> <li>• Loan terms</li> <li>• Timing of receipt of loan payments</li> </ul>	<ul style="list-style-type: none"> <li>• Deposit balance per time bucket</li> </ul>				
<b>Portfolio quality</b> <ul style="list-style-type: none"> <li>• Delinquency rate</li> <li>• Portfolio aging</li> </ul>	<ul style="list-style-type: none"> <li>• Loan loss provision</li> <li>• Loan loss reserve</li> </ul>	<ul style="list-style-type: none"> <li>• Portfolio-at-risk</li> <li>• No. of days past due</li> </ul>					
<b>Profitability analysis</b> <ul style="list-style-type: none"> <li>• Spread</li> <li>• Adjusted return on assets</li> <li>• Adjusted return on equity</li> <li>• Yield on portfolio</li> <li>• Revenue per loan officer</li> <li>• Profitability per product</li> <li>• Profitability per customer</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue</li> <li>• Operating expenses</li> <li>• Cost of funds</li> <li>• Loan loss provision</li> <li>• Borrowed funds</li> <li>• Assets</li> </ul>	<ul style="list-style-type: none"> <li>• Portfolio outstanding</li> <li>• No. of loans outstanding</li> </ul>	<ul style="list-style-type: none"> <li>• Deposit balances</li> <li>• Number of deposit accounts, split into ranges by size of average daily balance</li> </ul>	<ul style="list-style-type: none"> <li>• Number of loan officers</li> </ul>	<ul style="list-style-type: none"> <li>• Revenue generated per customer</li> </ul>		
<b>Productivity/efficiency analysis</b> <ul style="list-style-type: none"> <li>• Administrative efficiency</li> <li>• Operational efficiency</li> <li>• Personnel cost ratio</li> <li>• Active loans per loan officer</li> <li>• Active loans per staff officer</li> <li>• Outstanding portfolio per loan officer</li> <li>• Clients per branch</li> </ul>	<ul style="list-style-type: none"> <li>• Operating expenses by branch (and product if applicable)</li> <li>• Overhead expenses</li> <li>• Personnel costs</li> </ul>	<ul style="list-style-type: none"> <li>• Portfolio size by credit officer, branch, product (if applicable)</li> <li>• Number of loans disbursed</li> <li>• Number of loans outstanding</li> <li>• Amount of loan disbursements</li> </ul>		<ul style="list-style-type: none"> <li>• Number of loan officers</li> <li>• Number of staff officers</li> </ul>	<ul style="list-style-type: none"> <li>• Number of clients by branch</li> </ul>		

Data Provided by Various MFI Information Systems to Meet Needs of Management Activities							
Management Activities	Accounting	Portfolio management	Deposit tracking	Human resources	Customer information	Impact tracking	Other
<b>Information outreach</b> <ul style="list-style-type: none"> <li>• Dropout rate</li> <li>• Percent of loans to target groups</li> </ul>		<ul style="list-style-type: none"> <li>• Number of repeat loans</li> <li>• Number of new borrowers</li> <li>• Number of borrowers</li> <li>• Avg. loan size disbursed</li> </ul>	<ul style="list-style-type: none"> <li>• Number of depositors</li> <li>• Average daily deposit balance</li> </ul>		<ul style="list-style-type: none"> <li>• Client segmentation data (gender, age, address, type of business, etc.)</li> </ul>		
<b>Donor reporting</b>	<ul style="list-style-type: none"> <li>• Assets by source</li> <li>• Expenses by application</li> </ul>	<ul style="list-style-type: none"> <li>• Portfolio size and quality</li> <li>• Number of new borrowers</li> <li>• Total loans disbursed since program inception</li> </ul>	<ul style="list-style-type: none"> <li>• Number of new savings accounts</li> </ul>		<ul style="list-style-type: none"> <li>• Client segmentation data (gender, age, address, type of business, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Program results by donor initiative</li> <li>• Change in client income</li> <li>• Change in number of employees</li> </ul>	
<b>Strategic planning</b> <ul style="list-style-type: none"> <li>• Product design</li> <li>• Branch expansion</li> </ul>	<ul style="list-style-type: none"> <li>• Assets and liabilities by branch</li> <li>• Income by branch</li> </ul>	<ul style="list-style-type: none"> <li>• Portfolio size and performance by branch (and by product if applicable)</li> </ul>	<ul style="list-style-type: none"> <li>• Average daily balances by branch (and by product if applicable)</li> </ul>	<ul style="list-style-type: none"> <li>• Staff count by branch (and by product if applicable)</li> <li>• Incentive schemes</li> </ul>	<ul style="list-style-type: none"> <li>• Client segmentation data (gender, age, address, type of business, etc.)</li> </ul>		<ul style="list-style-type: none"> <li>• Macroeconomic reports</li> <li>• Market surveys</li> <li>• Competitive analysis</li> </ul>



# SESSION 3: PREPARATION

## Session Summary

**OBJECTIVES:** By the end of the session, participants will be able to:

- Identify information system (IS)-related problems and establish IS goals and objectives
- Form a task force and define its purpose, function, and responsibilities
- Determine scope and create an initial project plan
- State critical factors for the success of the project and task force
- Establish prerequisites to ensure institutional preparedness

**TIME:** 174–204 minutes

- |                       |   |
|-----------------------|---|
|                       | A. Importance of Planning for the IS Process<br>(63–68 minutes)     |
| <b>Session Topics</b> | B. Creating the IS Task Force (65–85 minutes)                       |
|                       | C. Project Planning/Management (Task Force Operations) (28 minutes) |
|                       | D. Institutional Preparedness (18–23 minutes)                       |

**SUPPLIES:** Flipchart paper  
Markers  
LED projector or overhead projector

### TRAINER MATERIALS

IS3-M1 Skit Script – Is This IS?

### PARTICIPANT MATERIALS

**OVERHEADS:** IS3-O1 System Development Life Cycle  
IS3-O2 FairFund – Case Study Questions  
IS3-O3 Task Force Creation  
IS3-O4 Sample Excel-based Planning Tools  
IS3-O5 Before You Start

**HANDOUTS:** IS3-H1a FairFund Problem – Analysis Worksheet

IS3-H1b FairFund Problem – Analysis Worksheet (Answers) **Optional**

IS3-H2a Case Study Assignment – Task Force Worksheet  
IS3-H2b Case Study Assignment – Task Force Worksheet (Answers)  
IS3-H3 Task Force Action Planning  
IS3-H4 Technical Notes

*Trainer Instructions*

IS3-H5 Additional Reading: *Determining Information System Requirements*

IS3-H6 Additional Reading: *Understanding Information Needs for MFIs*

**CASE STUDY:** Part 1 Introduction to FairFund  
Part 2 Background for Task Force Development, Task Force Bios, and Goals of IS  
Part 3 Task Force Members and Procedures



## Session 3: Preparation

### TOPIC A: IMPORTANCE OF PLANNING FOR THE IS PROCESS

1. (3 minutes) Remind participants that the body of this course will present the *process* for developing and managing an IS that they can use in their own MFIs. (Remind the participants of the system development life cycle introduced in the first session.) This process will provide a framework and other tools participants can use to analyze their IS options and to design or select the system that best meets their needs.

Show IS3-O1 to illustrate step one of the process—preparation—and briefly explain.

2. (15 minutes) Explain that to illustrate the IS process, participants will follow the experiences of a fictitious MFI, FairFund, first introduced in the skit during the previous session. State: Now let's begin the FairFund case study that we will use throughout the course.

Distribute Case Study Part 1. Give participants time to read the case.

3. (5 minutes) Lead a group discussion on FairFund. Ask: What are your first reactions? Do you think these problems are common among MFIs? How important a role does the IS play in an MFI's operations?
4. (5 minutes) It seems that the people at FairFund think an information system will solve their problems. Have participants consider that position. Describe how Jan, FairFund's new IS manager, is starting to have nightmares about her IS experience with her previous employer, UnknownFund. As she closes her eyes each night, she hopes the nightmare won't recur—either in her sleep or in her work.

Conduct skit; see IS3-M1 for script.

5. (5 minutes) Continue Jan's story: Jan awoke from her nightmare, relieved that it was not the real thing. She is now more determined than ever to ensure that everyone understands the IS process she wants to implement. Jan decided to call a meeting of the FairFund staff to air her concerns by relating her nightmare experience at UnknownFund. The staff listened and agreed they did not want to end up like UnknownFund. They decided to list all of the things that could happen based on Jan's nightmare, and then think of ways to avoid them.

Ask the group, and record answers on a flipchart: What are the problems and issues depicted in the skit? Answers include lack of buy-in at various levels, lack of communication to field about IS, lack of input from field on the IS development (for example, reports), possible lack of staff training, lack of infrastructure, lack of system to report problems with hardware and schedule routine maintenance, lack of knowledge/system of/for what to do about viruses, budgeting problems, support problems, false expectations that an IS is a cure-all, and so forth.

6. (5 minutes) Discuss the skit. Ask: Did UnknownFund's IS solve all of its problems? Why or why not? Make sure you cover the following: An IS can solve problems that have their basis in a lack of quality information for decision making. However, it is not reasonable to expect that a new IS *alone* can solve *all* of an MFI's business and operations problems—problems that may stem from things like lack of staff training or lack of internal controls.
7. (5 minutes) Ask: How could these situations be avoided? Take answers and focus on the main issues. Answers include effective planning, building the right team, ensuring adequate training, maintaining good communication, securing staff and management buy-in, soliciting user input throughout the process, ensuring adequate infrastructure, and so forth.

Explain that the IS process described in this course will help participants avoid the types of problems that UnknownFund experienced. It will also help to ensure that the MFI's management and staff understand and agree with the goals, objectives, and capabilities of the new system.

8. (5–10 minutes) State: So, we all agree that is important to follow a comprehensive process and a well-thought-out plan in order to do things right at FairFund—and avoid UnknownFund's problems! Ask: How does FairFund begin? We begin by clearly identifying FairFund's problems and defining its goals. Every MFI should have realistic expectations and very specific goals in mind for the new system. (For example, greater efficiency by decreasing costs by 10 percent, better portfolio quality by bringing portfolio-at-risk (PAR) to less than 3 percent, and so on.)

Show IS3-O2; then distribute IS3-H1. Ask participants to consider each of these questions and write the answers on the worksheet. Demonstrate with an example, if necessary.

9. (5 minutes) Ask participants to share their answers, and then lead a group discussion.
10. (5 minutes) Let's see the goals that FairFund actually established. Distribute Case Study Part 2, and ask participants to read the *first page only*.

Post FairFund goals on a flipchart for future reference when working on the case study.

11. (5 minutes) Discuss FairFund's goals. Ask participants if they agree or disagree with these goals, and why.

Develop a consensus to move forward with the goals that FairFund developed—for example, limit fraud, project cash flow for three months, manage portfolio for growth, and better manage the new individual loan product. Remind participants to always keep these goals in mind as the class develops FairFund's information system. Note that FairFund also realizes that it needs to dedicate resources to the IS effort in order to ensure that it achieves these goals.

**TOPIC B: CREATING THE IS TASK FORCE**

12. (5–10 minutes) State: Now that we have established clear goals for our IS process, we must determine who will do the work. How? By creating a task force! As Jan’s nightmare illustrated, having the right people is critical to the success of the IS. Facilitate a brief general discussion through questioning. Use IS3-O3. Introduce and use the handout IS3-H4 to discuss how and why to set up a task force.

Ask: What is a task force? Answer: A temporary grouping of people under one leader for the purpose of accomplishing a definite objective. Ask participants what the objective of this task force would be. In this case, the answer is to ensure that FairFund’s IS goal is achieved. The members of the task force are the people who will effect change in the organization in the form of a new information system.

Ask who they think should be on an IS task force. What kind of people should they look for? What skills and perspectives should task force members bring to the group? Try to focus the discussion on the skills and experience needed. The team should reflect all important stakeholders. Specific answers include staff from all levels of the organization (including those with hands-on knowledge of all operational functions affected by the new system and branch personnel), senior management representation, person with experience in project planning and change management, human resources person to deal with human issues, skilled communicator, person (or consultant) with IS background, and so forth.

Summarize by noting again that a task force should include representatives from all major stakeholder groups. Also mention that too small or too large a team can reduce the effectiveness of the task force.

13. (5 minutes) Ask: What two task force positions play the most crucial roles in ensuring the effective implementation of the project? Take a few answers and discuss the roles of *project leader* and *project champion* (although these positions might be filled by the same person).

Ask: What does the project leader do? Answers include change management, marshalling resources, general supervision of the team, resolving administrative roadblocks, and so on.

Ask: What does the project champion do? Answers include creating a vision, keeping senior management and staff informed and committed, advocating the project throughout the organization, creating consensus, helping to resolve conflict and maintain enthusiasm. The last thing the task force wants, after all the hard work, is for management to disagree with and disregard the recommendations. Remind participants about Jan’s nightmare!

14. (3 minutes) Ask participants if they think the makeup of the task force should remain the same throughout the life of the project. Discuss why or why not. Ask: Under what circumstances might the task force membership change? (For example, more business and operations people might be needed during the needs analysis and more hardware/software professionals during installation.)

Ask what they think about using consultants as members of the task force. Discuss the pros (for example, gaining expertise not readily available within the MFI) and cons (for example, less involvement of staff, and experience being outside of the MFI).

15. (10 minutes) Invite participants to help Jan form her task force. Ask them to read the remainder of Case Study Part 2B (beginning with the second page).
16. (15–20 minutes) Distribute IS3-H2: Case study assignment—task force worksheet. In neighboring triads, discuss and complete the assignment. Choose task force members and a leader, and justify the decision.
17. (10–15 minutes) Reconvene the large group and discuss results. Focus on why specific people were selected for the task force, and briefly discuss major issues involved—such as availability, variety of skills, ability to communicate results, ability to sell concepts to management, representation of staff at all levels, and so on.

Ask and discuss briefly: Did anyone recommend periodic changes in the task force? Did anyone recommend the use of a consultant on the task force?

18. (10–15 minutes) State: Clara has finalized the task force and accepted the terms under which they will operate. Let's see who Clara actually approved, based on our suggestions. Distribute and allow participants to read Case Study Part 3 and IS3-H2b.

Then ask: Who got all of their choices onto the task force team? Who chose the project champion?

Point out that Clara has changed some of the task force's choices and that this may happen in the participants' own MFIs. Ask: What can you do if the team isn't composed as you intended? How might you handle this situation in your MFI?

19. (5 minutes) Distribute IS3-H3. Ask participants: What challenges will you face in your own organizations when forming an IS task force? Ask each participant to list, by name or position, the people they think should be on their task force. Have participants list any problems and challenges they think they will face when trying to form a task force in their MFI.
20. (2 minutes) Summarize and emphasize the importance of taking time now to carefully select the task force and clearly identify its duties. Remind participants of what can happen if this step is not taken seriously.

**TOPIC C: PROJECT PLANNING/MANAGEMENT (TASK FORCE OPERATIONS)**

21. (5 minutes) Ask: Now that we have a new FairFund task force, how do we know what the members will do? Answer: A project plan. Point out that research demonstrates that, for every hour people spend planning a project, they can save 20 hours or more in implementing it. That means a well-planned project is an efficient project.

Ask: Why else is planning important? Answers include increased chance of success, better scheduling and use of resources, better communication, better results, and so on.

State that, as with any other project, task force members will need to avail themselves of project planning and management tools to carry out their duties. Note that the planning process that is briefly described in this session is generally applicable to *any* project—whether acquiring a new computerized system or simply enhancing the operations of a manual system.

22. (10 minutes) Ask participants to describe the basic elements in any project plan. Record answers on a flipchart. Answers include setting project goals and objectives, establishing scope (note that the entire IS project may be broken down into a number of smaller, more manageable projects—perhaps based on the elements of the SDLC), outlining major tasks to be performed, determining available project resources (for example, staff hours, time period, money), allocating resources to tasks, creating a schedule or timeline, and defining deliverables.

Ask: Now that we know the elements of the project, how do we go about creating the plan? State that, although there are shareware and commercial software products, simple project-planning and management tools can be readily created using a spreadsheet program like Excel. Show IS3-O4 and explain briefly.

23. (5 minutes) Ask what major tasks should be included in the project plan and which ones serve as a basis for developing work assignments? (Note that they will be different for every project and subproject. In this case, each major element of the IS process can be a separate project.) List major points on a flipchart. These can include identifying process of implementation, implementing the process, seeking approvals, reporting on progress of implementation, interviewing, reviewing documents, performing research, and so on.

24. (5 minutes) Ask: After the task force has created its plan, how will they go about implementing it? How does the work get done? Answers include assigned responsibilities and schedules and deadlines (including start and end dates), budgets, regular (often weekly) meetings to report on progress and resolve problems, regular communications to staff and management (for example, a simple newsletter) to ensure support and buy-in, bonuses or other incentives to complete assignments on time, HR monitoring to head off potential problems, and so on.

25. (3 minutes) Ask participants to summarize the key elements of project planning. Answers include identifying the problem, setting project goals, determining scope, creating the task force, developing the initial project plan, implementing the project plan, managing the project, communicating progress throughout the organization, and developing buy-in.

Stress the importance of this step in the SDLC process. The entire process cannot move forward without goals, proper preparation, and planning, and the right mix of people to lead the effort.

Distribute IS3-H4, Technical notes. Also mention that there are notes and references to the material from this session in the framework (IS1-H10).

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### Trainer Notes

- The trainer should explain IS3-O4. If participants don't have, or haven't used, project management software, they can create simple tools using Excel or another spreadsheet program. The trainer should point out that one advantage of Excel-based tools is that the elements can be sorted in a number of useful ways.
- In the sample, the task list is an outline of the tasks that need to be performed to complete the project. They are generally numbered (in outline form), so that they can be referenced. For example, working papers and supporting documents can be coded with these numbers to form the foundation of a project filing system.
- The project manager will also need an assessment of the time and staffing analysis, including the time required to complete each task, the person assigned to each task, and the amount of time the person has available to work on the project. That allows the project manager to determine how long it will take to complete the project tasks.
- A number of excellent books are available on project planning. There is also an MFI guidebook that describes planning and management for the IS needs analysis. The trainer should distribute IS3-H5 during this topic or at the end of the session.
- Finally, the project manager will need to plot the tasks and staffing on some form of timeline or project schedule. Some project tasks cannot be started until others are completed. In other cases, tasks may have to be delayed because the person assigned is working on another project task. The trainer should recommend a number of excellent books available to introduce the basics of project management.

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### TOPIC D: INSTITUTIONAL PREPAREDNESS

26. (10–15 minutes) Ask: Now that we have the people to do the work, and an initial plan for them to operate under, how do we know that our MFI is actually ready for a new information system? Note that not all MFIs are in a position to successfully implement and operate a new IS.

Ask participants to suggest what should be in place (or planned for) before an MFI is prepared for a new system. Answers include a business plan, budget, sound business practices and internal controls, accurate historical data, staffing, and infrastructure plans.

After brainstorming, show IS3-O5 and review the main points (see IS3-H6).

Ask for participants' views on these issues, and why they think it is critical to have these things in place before the task force proceeds. (If possible, incorporate real-life experiences and points from the skit.)

Ask, for example, why a business plan is needed. What information does it contain that would prove useful? Answers include planned growth rates, anticipated changes in methodology, addition of new products and services, financial projections to determine available funds and analyze budget impact of the new system, future changes in the organizational structure (new branch operations or formalization). Point out that the business plan is arguably the most important factor in determining when an MFI should computerize.

Ask about the other elements of preparation. The process of budgeting helps MFIs to determine the financial resources they have available for an IS and the financial impact of the new system. (At this point, the IT portion of the budget will be a very general estimate; there will be an opportunity to add detail as a part of a feasibility analysis later in the IS process.) Likewise, staffing and infrastructure planning helps to determine the other resources that are available for the new system and to anticipate future enhancements that may be required.

Provide as another example: if the MFI is in crisis because of problems stemming from its business practices or methodology, a new system is likely to be less than satisfactory. The IS cannot outperform the business operations it is intended to model. Remind participants that, if they don't know or cannot communicate the details of how their MFI operates, they aren't likely to create a system that meets their needs.

Note that if the business practices and procedures are generally well documented and operating as intended, they require very little work. As a result, and for simplicity, they will be discussed as part of the needs analysis in the next session. However, if the practices or procedures are not well established and documented, they might require considerable effort and should be upgraded before starting the needs analysis to avoid complicating the analysis.

Summarize: The danger of failure increases if the prerequisites are not addressed, or there are no plans to address them before the new system is implemented. Remind participants that it is the business that drives the change and technology. If the business is not prepared for the new system, there will be no good fit.

27. (5 minutes) Ask participants to share their concerns relating to project preparation in their MFIs. Focus the discussion on soliciting and providing general solutions to the problems. Note that while the list of items to prepare can sometimes appear intimidating, it shouldn't be. Explain that the manner in which they implement each item will vary depending on their MFI's size and resources. Stress that the most important point is to carefully consider each and implement all of them to the extent that is appropriate: Do not totally ignore any of them. If the MFI is not fully prepared, the task force often takes on this responsibility as part of the overall IS project.

Distribute IS3-H6.

28. (3 minutes) Ask: Now that we have a plan and a task force in place, and we know that our MFI is prepared, what do you think the next step should be? Take a few answers and agree that the next step is to analyze and document the requirements for the new system—that is, conduct a *needs analysis*.

---

### Trainer Notes

- IS3-M1, script for skit. The setting is UnknownFund. The trainer should use a sign to set the scene. The participants must not think the setting is FairFund. The trainer should use either a combination of trainers and participants or select participants from the group. Remember to practice and keep it lively!
  - IS3-O4. If participants don't have, or haven't used, project management software, they can easily create simple tools using Excel or another spreadsheet program. The trainer should explain that one feature of Excel-based tools is that the elements can be sorted in a number of useful ways.
  - In the sample, the task list is an outline of the tasks that need to be performed to complete the project. They are generally numbered (in outline form), so that they can be referenced. For example, working papers and supporting documents can be coded with these numbers to form the foundation of a project filing system.
  - The project manager will also need an analysis of the time and staffing analysis, including the time required to complete each task, the person assigned to each task, and the amount of time the person has available to work on the project. That allows the project manager to determine how long it will take to complete the project tasks.
  - Finally, the project manager will need to plot the tasks and staffing on some form of timeline or project schedule. Some project tasks cannot be started until others are completed. In other cases, tasks may have to be delayed because the person assigned is working on another project task.
  - There are any number of excellent books available to introduce the basics of project management. While there are any number of available project-management software products, it is also relatively simple to create *basic* project management tools using Excel—similar to the sample tools indicated.
  - IS3-H1b. This answer sheet is optional. The trainer can complete it as part of the preparation for teaching the course. Then the completed answer sheet can be distributed to the class participants at the end of the exercise.
-



## Skit Script – Is This IS?

**Setting:** UnknownFund—three months earlier

Use a sign to set the scene. You do not want participants to think that this is FairFund.

**Actors:**

CEO	Finance Director
Operations Director	IS Project Manager (Jan)
Branch Manager	Secretary

### DON'T FORGET TO PRACTICE!

#### SCRIPT

**Act 1:** *Branch Manager's office*

*\*\*\*IS Project Manager (Jan) enters\*\*\**

**Branch Manager:** Good morning. Can I help you?

**IS Project Manager (Jan):** Good morning. I am visiting from the head office. I have a few questions for you. Why aren't you using the new report formats from the new automated IS?

**Branch Manager:** *(in a casual manner)* What formats? I don't know what you are talking about. By the way let me introduce myself. I am Mr. \_\_\_\_\_, branch manager. I have been here for past 12 years, the first credit officer of UnknownFund. Who are you again?

**IS Project Manager (Jan):** *(frustrated)* I am the IS project manager. You must remember me; we met at the IS launch last quarter. I was hired to implement the new IS that everyone requested. I recall you wanted the new formats the most. I cannot understand why you are not using them. *(IS Project Manager shows a file to Branch Manager.)* Is there something wrong with your computer?

**Branch Manager:** I don't think so; we use the computer if we can. But, as a result of power cuts, we cannot use it most of the time. And we don't get overtime anymore because extra money was needed to fund the IS, so we never come in at night or on weekends. Oh, by the way, what I am supposed to do about the virus that came with the new system?

**IS Project Manager (Jan):** What? A virus?

**Branch Manager:** Yes, every time I switch it on to get my email, the computer tells me there is a virus inside.

**IS Project Manager (Jan):** (sighs) Oh, no.

**Branch Manager:** Never mind. At any rate, I need written instructions from Operations before we change our reporting. We don't mind because we are all so used to the old forms; they work just fine. We rather like them. I created them myself. I haven't even seen the new formats, but I heard they take a lot of time to complete and are difficult to understand. At any rate, it seems like we are functioning quite well without them.

**IS Project Manager (Jan):** (more frustrated) What do you mean you need written instructions? You haven't even seen the new formats? Don't you realize how much better they are? And how fast you will get your reports back from head office? We have spent so much on getting this system running, and now you are not using it. This is ridiculous!

\*\*\*IS Project Manager angrily walks away\*\*\*

---

**Act 2: Operations Director's office**

**IS Project Manager (Jan):** I don't think this system is going to work with people like Mr. Branch Manager. He is set in his old ways of 12 years ago. Maybe he is not the right type for this MFI, given our new strategy.

**Operations Director:** Sorry, I cannot agree with you. He is one of our best branch managers.

**IS Project Manager (Jan):** How can you say he is one of our best branch managers when he is still using outdated reporting procedures? And he said he never saw the new formats that you sent out last month.

**Operations Director:** Did you expect me to notify everyone last month? We had our donors visiting us; then we had the holidays and the new year. Loan officers were in the field chasing delinquent clients. We had to get our figures right before the donor visit. Remember that they are the ones who said we needed a new IS and they are funding our computerization. Even your salary.

**IS Project Manager (Jan):** Fine, but let's show the donors we are using their money well. When can you get the new policies, procedures, and formats out to the field?

**Operations Director:** Give me just two months. Maybe we can discuss this in our next monthly meeting.

**IS Project Manager (Jan):** *(looking frustrated)* Let us at least start immediately with a few of the branches close to our head office. And let me handle Mr. Branch Manager 1. I need about \$200 to purchase a backup battery for his branch and some antivirus software.

**Operations Director:** That's a great idea. They have been asking for those things for a long time. But you have come to the wrong person. You need to approach the finance department for approvals and cash.

**IS Project Manager (Jan):** Ok. I will go to them then.

**Operations Director:** Before you do that, why not go to our branch in the city? They have electricity and a new computer.

**IS Project Manager (Jan):** Perhaps I will, but let me settle this problem first.

---

**Act 3:** *Finance Director's office*

**IS Project Manager (Jan):** I need an advance of \$200 for buying a UPS and virus software for Branch 1 so that we can get them to use the new IS reporting interface.

**Finance Director:** Sorry, my friend. We have to wait until next month before we invest in new equipment. This month's cash projections are not very encouraging. Moreover, we have not budgeted for this expense, and the CEO has told me not to sanction anything that is not urgent. Right now, everything needs his approval.

*\*\*\*IS Project Manager leaves Finance Director's office and goes to see the CEO\*\*\**

**CEO:** Come, come. Please take a seat. Is everything all right? How is our new IS functioning?

**IS Project Manager (Jan):** *(reluctantly shares all that has happened.)*

**Secretary:** *(Secretary enters the room with the daily paper. Headlines: "1,000 ghost clients discovered in surprise investor visit"; "UnknownFund Branch Manager buys farm.")*

**CEO:** Oh, look—how can this have happened? I thought when we hired you, my problems would be over. That does not seem to be the case. It does not look that easy either—***is this IS?*** Oh my, none of this is good news.



# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**

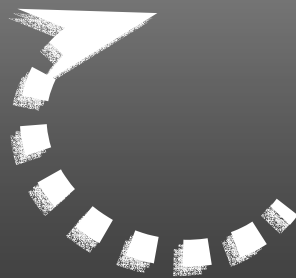


# System Development Life Cycle

IS3-01

## Preparation

- Determine reason for change and define goals
- Form task force
- Develop plan
- Determine institutional readiness



*Needs Analysis*  
*Selection*  
*Implementation*  
*Optimization and Maintenance*

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# FairFund

IS3-02

- What are the problems?
- How will the new IS help mitigate these problems?
- How will FairFund know if the IS has succeeded?
- Identify the measurable goal(s) that FairFund's new information system is expected to achieve.

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# Task Force Creation



Who serves?



What do they do?



How do they communicate?



How do they ensure buy-in?



# Sample Excel-based Planning Tools

## Task List (outline format of WBS)

**Needs Analysis Project Schedule**

Assignments	Month One			Month Two			Month Three					
	1	2	3	4	5	6	7	8	9	10	11	12
1. GL/Accounting Module												
1.1 Accounting												
1.2 Chart of Accounts												
1.3 Journal Entries												
1.4 Reports / Fin'l Stmtts												
1.5 Closing												
1.6 Budgets												
1.7 Banking												
2. Lending Module												
2.1 Transaction Volumes												
2.2 Accounting												
2.3 Methodology												
2.4 Relationships												
2.5 Clients / Customers												
2.6 Loan Products												

## Staffing/Time Analysis

**Staffing Analysis**

Skill Set / Expertise	Hours Required	Person	Hours per Week	Weeks Required
1. GL/Accounting Module				
1.1 Accounting	3	JL	8	0.4
1.2 Chart of Accounts	3	JL	8	0.4
1.3 Journal Entries	2	JL	8	0.3
1.4 Reports / Fin'l Stmtts	8	CVM	4	2.0
1.5 Closing	3	JL	8	0.4
1.6 Budgets	16	SM	8	2.0
1.7 Banking	24	AVT	8	3.0
2. Lending Module				
2.1 Transaction Volumes	4	BWF	8	0.5
2.2 Accounting	4	BWF	8	0.5
2.3 Methodology	4	BWF	8	0.5
2.4 Relationships	4	BWF	8	0.5
2.5 Clients / Customers	24	MGL	12	2.0
2.6 Loan Products	32	BWF	12	2.7

## Project Schedule

**Needs Analysis Project Schedule**

Assignments	Hrs	Month One			Month Two			Month Three			Legend			
		1	2	3	4	5	6	7	8	9		10	11	12
1. GL/Accounting Module														
1.1 Accounting	3	█												
1.2 Chart of Accounts	4	█	█											
1.3 Journal Entries	2	█	█											
1.4 Reports / Fin'l Stmtts	8	█	█	█										
1.5 Closing	3	█	█	█										
1.6 Budgets	16	█	█	█	█	█								
1.7 Banking	24	█	█	█	█	█	█	█						
2. Lending Module														
2.1 Transaction Volumes	4	█	█											
2.2 Accounting	4	█	█											
2.3 Methodology	4	█	█											
2.4 Relationships	4	█	█											
2.5 Clients / Customers	24	█	█	█	█	█	█	█	█					
2.6 Loan Products	32	█	█	█	█	█	█	█	█	█				



IS3-05

## Before You Start

### Check for:

- ✓ Business Plan and Budget
- ✓ Policies/Procedures/Practices
- ✓ Accurate, Complete Historical Data
- ✓ Internal Controls
- ✓ Infrastructure
- ✓ Personnel



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# Handouts



## FairFund Problem – Analysis Worksheet

What are the main problems at FairFund?

How will the new IS help FairFund to mitigate these problems?

How will FairFund know if the IS has succeeded?

Identify the measurable goal(s) that FairFund's new information system is expected to achieve.



## FairFund Problem – Analysis Worksheet (*Answers*)

What are the main problems at FairFund?

How will the new IS help FairFund to mitigate these problems?

How will FairFund know if the IS has succeeded?

Identify the measurable goal(s) that FairFund's new information system is expected to achieve.







## Case Study Assignment – Task Force Worksheet

1. Who do you think should be on FairFund's task force and why? Who should be the task force leader?

Who	Rationale

2. From the above list, who do you think should act as the product champion and why?

3. What will be the major tasks of the task force?

4. Develop operational guidelines for the task force. How will the members function as a team?





## Case Study Assignment – Task Force Worksheet (*Answers*)

### 1. Who do you think should be on FairFund’s task force and why? Who should be the task force leader?

- Juanita, Mayra, Robert, Anna, Betty, Felix, Monica. Also see Case Study Part 3. Members might rotate or vary depending on the task, stage of the process, and skills of the members.
- Monica is the leader. She is charged with the project and currently is the senior ranking IS person.

### 2. Which team member do you think should act as the product champion and why?

- Mayra—even though she will not be as available as desired due to her normal work activities. She has excellent rapport with staff, is a visionary, and is well respected.

### 3. What will be the major duties of the task force?

- Choose process of implementation that will be followed
- Implement plan—conduct interviews to discover information flows, gather documentation, compare, identify future information needs, research alternatives, and so on
- Report on progress
- Ensure buy-in from staff, get approvals

### 4. Develop operational guidelines for the task force. How will they function as a team?

- Weekly meetings
- Create and distribute an IS newsletter reporting progress to all employees
- Communicate all discussions through newsletter
- Assign product champion duties to liaison with management and employees to ensure buy-in and budget
- Seek solutions for how regular work gets done when task force members are serving on the task force. Who will take up the slack? Will there be an incentive to task force members to work harder? Longer?



## Task Force Action Planning

1. What prerequisites are not in place in your MFI? Business plan? Budget? Personnel? Policies/Procedures/Practices? Historical Data? Internal Controls? Infrastructure?

And what can you do to ensure they are before your MFI begins work on a new IS?

2. Before you forget, write down the names of people that you think should be on your MFI's information system task force and why. Make sure all areas are covered.

Name or Position	Reason

3. Who would be the best person to serve in the role as project champion? Why?

4. What challenges do you think you will face when trying to form a task force? Think of ways to overcome those challenges.

Challenge	Solutions



## Technical Notes

### What is a task force?

A task force is a temporary grouping under one leader for the purpose of accomplishing a definite objective.

### What are the duties of the task force? What will its members do? How will they go about implementing their duties of carrying out the life cycle?

- Duties are two-fold—technical and process/buy-in
- Lead the development of the system
- Assess current practices
- Decide how they will communicate and function as a task force
- Clearly document the processes and decisions made
- Facilitate buy-in
- Establish rules for how the task force works
- Determine process for how decisions are communicated to rest of MFI

### Who should be on the task force? What are their positions? Background? How many? Why should there be more than one person?

- Depends on the size of the organization—can range from 4 to 10
- Needs all major stakeholders to be represented —from head office to branches
- Needs fair representation of management and users
- Possibly needs to find an outside adviser to help also

### What will be the time commitment?

Long; six months to a year, or more. Could vary by member depending on the skill set required.

### Who will lead it?

A task force leader should be chosen, either by the group or by management. The leader will ensure that the work gets done!

### How can you help ensure that the MFI will follow through on the plans developed to improve its IS (or will you work to get buy-in)?

Choose a project champion: someone charismatic, respected, who is a communicator and popular in the MFI.

### How do you motivate staff on the task force to do all this extra work?

Provide HR and time issues, incentives to work, reallocation of regular work, adjustment of performance indicators, bonuses, and so forth.

**ADDITIONAL TASK FORCE NOTES**

*(per the CGAP MIS Handbook; chapter 5, 5.1.1, page 66)*

Expected challenges in working with a task force include how to:

- Select participants: High performing staff are often the most jealously guarded by their supervisors—but these are the people that are most likely to make the task force a success.
- Determine the time commitment necessary by task force members and how to manage the reassignment of task force members' existing responsibilities.
- Ensure long-term commitment from members. Authorize an explicit change to compensation policy to reward task force members for timely completion of project.
- Anticipate and deal with tendency of staff to use major change initiatives as vehicles to promote their own unrelated pet projects.
- Come up with a decision-making framework (that is, determine who has final say on sticky issues).
- Handle communications with the rest of the organization (regular updates to the rest of staff). Recognize that some people's authority may be undermined by radical process reengineering efforts, and that these people may silently oppose any changes.



## **Additional reading:**

*Determining Information System Requirements*. Information Systems Planning for Microfinance, Guide 2.

By Shirley A. Lunde, published by Catholic Relief Services and SEAPRO LINK, 2002.  
Downloadable from <http://crs.org/publications/list.cfm?sector=7>

See the following chapters:

- Who Conducts the Needs Analysis?
- How Do You Plan Your Needs Analysis?
- How Do You Conduct Your Needs Analysis?
- How Do You Manage Your Needs Analysis Project?
- How Do You Document the Results of Your Analysis?



## **Additional reading:**

*Understanding Information Needs for MFIs*. Information Systems Planning for Microfinance, Guide 1.

By Shirley A. Lunde, published by Catholic Relief Services and SEAPRO LINK, 2002.  
Downloadable from <http://crs.org/publications/list.cfm?sector=7>

See the following chapters:

Are You Ready for a New Information System?  
Can You Afford a New Information System?



# SESSION 4: NEEDS ANALYSIS

## Session Summary

**OBJECTIVES:** By the end of the session, participants will be able to:

- Review existing business practices and update where necessary
- Compare actual practices with documented policies and procedures
- Analyze current information needs based on existing business practices
- Project future information needs based upon anticipated changes
- Discuss potential security risks and relevant internal controls for the system
- Assign priorities to information needs
- Develop a report of information needs and flows

**TIME:** 269–317 minutes

- Session Topics:**
- A. Needs Analysis Defined (*7 minutes*)
  - B. Document and Review Current Business Practices (*88–108 minutes*)
  - C. Redesign Ineffective or Inefficient Business Practices (*34–47 minutes*)
  - D. Analyze and Record Current Information Needs (*13–18 minutes*)
  - E. Analyze and Record Future Information Needs (*23 minutes*)
  - F. Assign Priorities to Current and Future Needs (*31 minutes*)
  - G. Needs Analysis Report (*73–98 minutes*)

**SUPPLIES:** Flipchart paper  
Markers  
LED projector or overhead projector  
CGAP MIS Handbook, appendix with sample reports

### TRAINER MATERIALS

IS4-M1 FairFund Information Flow Worksheet (*optional*)

### PARTICIPANT MATERIALS

**OVERHEADS:** IS4-O1 System Development Life Cycle  
IS4-O2 Information Flows

Trainer Instructions

- IS4-O3 Flowchart Symbols
- IS4-O4 Sample Flowchart
- IS4-O5 Protect Your Information Assets

**HANDOUTS:** IS4-H1a Case Study Part 4 Information Flow Questions

IS4-H1b Case Study Part 4 Information Flow Questions – Answers (narrative)	<b>Optional</b>
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IS4-H2a Case Study Part 5 Documentation Discussion Guide

IS4-H2b Case Study Part 5 Documentation Discussion Guide – Answers	<b>Optional</b>
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IS4-H3a Case Study Part 6 Reports Discussion Guide

IS4-H3b Case Study Part 6 Reports Discussion Guide – Answers	<b>Optional</b>
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IS4-H4 Technical Notes

IS4-H5a Security Systems Worksheet

IS4-H5b Security Systems Worksheet – Answers

IS4-H6 Additional Reading: *Determining Information System Requirements*

**CASE STUDY:** Part 4 FairFund Loan Processing Information Flow Diagram

Part 5 FairFund Loan Processing Policy Documentation

Part 6 FairFund Sample Reports

Part 7 Synopsis of FairFund’s Business Plan

Part 8 Task Force Progress and Needs Analysis Report

Part 9 Completed FairFund Framework Document

**PREPARED FLIPCHARTS:**

Steps in needs analysis (per IS4-O1)

## Session 4: Needs Analysis

### TOPIC A: NEEDS ANALYSIS DEFINED

1. (2 minutes) Review: We have established goals, selected the members of the task force, and developed an initial project plan. Ask: What is our next step? Show IS4-O1, the System Development Life Cycle, and briefly review.

Hang the needs analysis flipchart next to the Steps in Needs Analysis flipchart for later referral.

2. (5 minutes) Ask the group: What is a needs analysis? Answer: The needs analysis is a research activity, the goal of which is to understand and record an MFI's IS requirements so that it can effectively upgrade its current system, acquire a new commercial system, or develop a new system. Note that this process is equally applicable to manual or computer-based systems.

Explain to participants that the analysis involves examination of current business practices and comparison to the MFI's policies and procedures, analysis of the MFI's current IS needs, and consideration of any future IS needs stemming from its five-year business plan. State: After documenting the MFI's needs based on this analysis, the next step is to prioritize those needs and record them in a needs analysis report.

Remind participants that the scope of the analysis is based on the MFI's IS goals and the scope of the project. For example, if the intent is only to replace or upgrade the portfolio management system, only the business practices and IS requirements related to that system would be analyzed. Discuss briefly. Note as an aside that the needs analysis can be considered a distinct project for planning purposes. The same can be said of other steps in the System Development Life Cycle, such as system selection or implementation.

### TOPIC B: DOCUMENT AND REVIEW CURRENT BUSINESS PRACTICES

3. (3 minutes) Note that, as discussed in the previous session, part of an organization's preparation involves evaluating, upgrading (where necessary), and documenting current business practices. Changes may be instituted to enhance efficiency and effectiveness, improve internal controls, or make the practices more responsive to the MFI's needs or to facilitate automation, for example. Emphasize that MFI's should not keep or automate bad practices! (Additional procedural changes may be required later in the process, after more is known more about the MFI's new system—for example, constraints and capabilities)

Ask: How many of you have an internal audit function? Note that this process of documenting and reviewing business practices is actually an ongoing activity, generally managed by the MFI's internal audit function as part of its work in internal control (or by management in the absence of internal audit). Explain that this is why, in the previous session, it is presented as a *prerequisite* to the needs analysis and not part of the analysis process itself. However, because accurate

and clearly documented business practices are essential to ensuring the success of the needs analysis, this session covers the documentation and review process in some detail here.

Remind participants that if the MFI's practices are well documented and regularly maintained, there is little additional work to do in order to prepare for the needs analysis. As a practical matter, then, this work is often performed simultaneously with the needs analysis (and is therefore discussed in this lesson). However, if the MFI's business practices are not well documented or regularly maintained, the documentation and review step can require considerable work and should be completed *before* the needs analysis to avoid complicating the analysis.

4. (5 minutes) Note that before the task force can critically review or upgrade the MFI's business practices, it needs to understand how they are intended to work. Ask: How will the task force learn this? Where does it start? What documents or other information should it have at its disposal? Answer should include policy manuals for those subsystems under consideration (for example, portfolio management, accounting and general ledger, deposit tracking, human resources), interviews with management and staff, in-person observations, internal audit reports, surveys, client forms, source and input documents, financial and management reports, organizational charts, flowcharts (flow diagrams) and other visual representations, and so forth.

Stress the importance of these written materials to document business processes. Briefly address questions regarding any of the materials listed here.

5. (5 minutes) Note that while many of these materials are textual in nature (for example, policy manuals, reports, forms, and surveys), others are visual (graphical). Graphics can communicate a great deal of information at a glance and are particularly good at documenting relationships and information flows. Ask: What do we mean by *information flows*? Solicit responses from the group; then show IS4-O2 and review the main concepts.
6. (10 minutes) One way of presenting this information graphically is in a flowchart or flow diagram. Ask who knows what a flowchart is—and if anyone has had experience in developing flowcharts. State that a flowchart is a graphical representation of a business process (for example, voluntary savings deposit, loan approval, and loan disbursement). It is also sometimes referred to as a *process map*. The flowchart visually portrays the basic elements of the process as well as the flows or relationships among them. It shows where the process starts and ends, and where the main decision-making points are. It also provides a simple, straightforward mechanism to analyze and improve processes.

Display and discuss sample flowchart in IS4-O4. Ask what the important elements are. When questions arise regarding symbols, temporarily display and review IS4-O3.

7. (5 minutes) Ask participants for their impressions of the usefulness of the flowchart in documenting and reviewing business processes. Discuss briefly. Ask:



What is the significance of this diagramming? What insight might we gain? How do you think we will use information flow diagrams in IS design?

8. (10–15 minutes) Review what's been happening at FairFund: FairFund's task force has been busy interviewing staff and observing them in action. They have created an information flow diagram for loan processing because they are examining their more important business processes first. (Note that the focus will be on analyzing FairFund's loan processes as there is not time enough to analyze all processes).

Distribute Case Study Part 4 and allow participants time to read it. While participants are reading, reproduce the marking key from the bottom of IS4-H1 (or IS4-M1, an *optional* alternative to IS4-H1 that uses color-coded stickers). Also display the flowchart symbols on IS4-O3.

Briefly review the flowchart and discuss participants' questions as a group.

9. (15–20 minutes) Distribute IS4-H1 (IS4-M1) and ask participants to gather in preassigned groups for the assignment. The groups should analyze and mark FairFund's flow diagram based on the questions in the handout.
10. (5–10 minutes) Reconvene the large group and review the assignment (questions 1–10). Ask participants what they discovered about FairFund's information flows.
11. (5 minutes) After documenting and reviewing business processes and procedures, ask: Can you assume that everyone always operates in accordance with your MFI's formal policies? Discuss answer with the group: No. Often, over time, an MFI's actual practices change and the documentation is not always updated. Also, without proper training, the staff may not always follow procedure. So it is critical to determine if the staff members are actually operating according to the documented practices.

Ask: How do you make this determination? Answer: Through interviews, observations, surveys, and internal audits.

12. (10–15 minutes) Distribute Case Study Part 5 and IS4-H2. Ask participants to read the case study. Then form the same small groups as in the previous assignment. Ask group members to discuss FairFund's documentation and answer the questions on the handout.
13. (5 minutes) Reconvene in the large group and ask participants what they discovered about FairFund's documentation. Ask if it matches the disbursement practice as diagrammed by the task force. If the documentation does not match, ask what FairFund should do.

Give the real answer, that no, it does not. For example, the flowchart says that the loan officer "*verbally* provides information about the approval process." The loan officer guidebook says, "The client should receive *in writing* a description of the loan process and what is expected of them throughout the remainder of the loan application process."

14. (10 minutes) Ask what does the MFI do if actual practices differ from documented policies (as FairFund's did)? Give the answer that, before proceeding, the MFI needs to determine how it prefers the process to work.

Ask how FairFund can resolve the policy-practice inconsistencies in its loan-disbursal process. Should it develop new policies or revise its documentation? If so, what might those be? Note that in the case of FairFund, the task force should identify any inconsistencies and communicate them to management for a resolution (ideally after considering input from staff). For example, will the policy be rewritten to reflect actual practices, or will staff be required to adapt practices in order to comply with policy?

Ask why MFIs need to resolve these inconsistencies. The answer is that an MFI's task force needs to understand the desired business policies and practices in order to determine what the information system should be able to do. It is important for these types of issues to be resolved *before* the needs analysis is completed and a new system is selected.

### TOPIC C: REDESIGN INEFFECTIVE OR INEFFICIENT BUSINESS PRACTICES

15. (5 minutes) Introduce the session: We now know how our business processes are intended to work and have taken steps to ensure that actual practice conforms to policy. But how can you be sure that you have the *best* processes to achieve your current and future business goals?

Note that during the task force's documentation and review of these practices, they might have noticed problems or inefficiencies. Have participants reconsider FairFund's loan disbursal procedures. Discuss the participants' answers to questions 11 and 12 on IS4-H1 and ask for comments on the strengths and weaknesses of FairFund's procedures. Ask if they think the right people are getting the right information when they need it. Ask what they think the task force needs to do before it can recommend any changes.

Ask if anyone has had experience with this process (that is, critically analyzing and redesigning or enhancing business processes). If so, ask them how they went about it. Note that there are numerous techniques available to assist the task force in analyzing—and possibly improving—the work flows. Among the most common are business process reengineering (BPR), which allows users to challenge their assumptions and fundamentally redefine important aspects of the way they do business; continuous process improvement, total quality management, and so on. Although the names may sound complicated, they are all simply techniques used to critically analyze and enhance or redesign business processes—something MFIs do routinely. There are many detailed texts available to describe each of these processes, if participants would like more information. (Note that additional information on BPR is available in IS4-H4, Technical Notes.)

16. (7–10 minutes) Focus the discussion of business process redesign on the end point of the information flow—the outputs, including reports, ratios, onscreen displays, and so forth. Ask: Before we begin, can someone tell us why reports are

so vital? Answer: They provide the basis for sound decision making. Ask participants to briefly summarize the general characteristics of good reports that they learned earlier—for example, reliable, accurate, timely, consistent in format, appropriate to the audience, and so forth.

Ask: What are the most useful reports for an MFI? Answer: The ones that meet the criteria for good reports are most useful. Other than that, this is really a trick question. The most useful report will depend on the specific business practices of the MFI and the person reviewing the report. In other words, the value of a report is situation-specific, MFI-specific, and job/title-specific. Different stakeholders will require different information.

17. (10–15 minutes) Tell participants that they will now have an opportunity to analyze FairFund’s reporting process. Distribute Case Study Part 6, FairFund Sample Reports, and IS4-H3. Ask them to individually review the reports and analyze them and then answer the discussion questions in the handout.
18. (5 minutes) Reconvene the group to review participants’ answers to the discussion questions. Ask what they consider to be the most critical concepts concerning reports and take several answers. Briefly summarize main points on reports and refer participants to the CGAP MIS Handbook (page 25 and the report appendix) for more information and additional samples.  
  
At this point, as trainer, you may add time to the session in order to analyze specific reports or reporting needs. A variety of sample reports are available in the CGAP MIS Handbook. You may also choose to develop sample reports that respond to local market issues. Also, you may find it useful to build more reports into the case study in order to illustrate region-specific issues.
19. (5–10 minutes) Large group discussion. Ask: What did you learn about documenting and analyzing business processes and information flows? Summarize what has been learned so far in this lesson. Ask participants how they can use this information in designing their own information system. Have them share their own experiences. How do their MFIs compare to FairFund? Ask and discuss: If they could change or improve two things at their MFIs with regard to business processes, documentation, or information flows, what would those two things be?
20. (2 minutes) Ask participants what they think they should do next in the needs analysis process.

#### **TOPIC D: ANALYZE AND RECORD CURRENT INFORMATION NEEDS**

21. (3 minutes) After the task force thoroughly understands the MFI’s business processes, it is time to begin to analyze the MFI’s current information system needs stemming from those business processes. Ideally, at this point, the needs analysis focuses on identifying and recording the MFI’s requirements for the information system, not on understanding or changing business practices.

22. (10–15 minutes). Note that a number of modifiable tools (worksheets, scripts, checklists, and framework documents) are available to assist with the analysis. An example of the framework document is IS1-H10, *Management information systems for microfinance: an evaluation framework* (the evaluation framework document, distributed at the beginning of the course). State: The framework is an IS evaluation tool developed to help MFIs, donors, and developers to evaluate information systems (including new off-the-shelf or existing systems). It helps the MFI create good information systems that cost-effectively meet the organization's needs and allow it to grow without creating problems or inefficiencies. Briefly review the organization of the framework document, using IS6-O1 as a guide.

Take questions and ask for comments. Keep the discussion lively. Ask: Has anyone used the framework before? What are its merits? Shortcomings? How could you compensate for them? How do you think the tool can be applied? How long do you think it would take? What value would you place on the results?

Discuss other available tools, for example, the needs analysis templates for MFIs reproduced in the guide titled *Analyzing IS Requirements*. Show IS4-M2 (two pages, including a sample page from a template in the guide).

Note that, as part of project planning, MFIs should incorporate the appropriate tools for conducting, recording, and reporting the needs analysis. The same tools that were used to document the MFI's needs can then be used when evaluating products to meet those needs.

#### **TOPIC E: ANALYZE AND RECORD FUTURE INFORMATION NEEDS**

23. (5 minutes) State: At this stage, the MFI's task force should have a clear idea of current IS needs and has conveyed its progress to staff and management through the regular project newsletter. The task force members next need to consider the impact of future business changes on the MFI's system. Ask: How can the task force predict future information needs? Answer: By looking at the MFI's plans for the future—that is, reviewing its five-year business plan.

Ask: Why should the task force consider future needs at this point in the system development life cycle? How does it affect how they will go forward with the development of IS? One answer, for example, is that if the task force correctly anticipates growth rates or new product introductions, the MFI will not find itself in a position of having to soon replace its new system because it cannot accommodate new or expanded business activities.

24. (5 minutes) Distribute Case Study Part 7 (Synopsis of FairFund's Business Plan, with future issues implied). Allow participants sufficient time to read the materials.
25. (10 minutes) Lead a group discussion covering the major points in the case study. Ask which of FairFund's plans for the future will have an impact on its IS needs. List answers on a flipchart. Answers include growth; changes in organizational structure, decentralization, and new branches; changes in financial products or new financial products; changes in policies or staffing; and so on.

Ask: What changes in workflow does FairFund anticipate? What is the impact of these on the IS? Are the necessary resources and skills available? Does FairFund have sufficient information on its current and future needs to proceed to the next step? Justify.

26. (3 minutes) Summarize with an assessment of current and future needs. Engage participants in a discussion through questioning on the methods used to define and analyze the current and future information needs and how this fits into developing a IS for their MFIs. Emphasize the importance of conducting these steps in detail. Take questions.

#### **TOPIC F: ASSIGN PRIORITIES TO CURRENT AND FUTURE NEEDS**

27. (3 minutes) Ask: Should MFIs expect to be able to acquire an information system that meets 100 percent of their newly documented needs? Why or why not?  
Answer: No, not unless they have an unlimited budget to acquire the system and unlimited time and personnel resources to install and manage it. Realistically, all MFIs have resource limitations that prevent them from satisfying 100 percent of their needs.

Ask: Assuming the MFI doesn't have unlimited resources, how can it be sure to acquire the best possible system? Answer: By prioritizing its needs. This means assigning a weight, or importance factor, to each item in the needs analysis.

28. (3 minutes) Ask participants how they think this might be implemented. Describe the method of applying a scale of 1 to 3 or 1 to 5 to the items defined as needs. For example, suggest their task force might assign a priority of 3 to must-have features, a 2 to wants, and a 1 to nice-but-not-necessary features. The task force can discuss priorities during its weekly task force meetings.

Ask and discuss: How important is this prioritization step? How does it affect the rest of the process?

29. (15 minutes) Note that with what participants now know about FairFund's current situation and its plans for the future, they are in a position to list its IS needs in order of importance. Have them return to their subgroups and create a prioritized list of the top five features FairFund's IS must have or things it must do to satisfy the MFI's needs, as set out in an earlier session. Remind participants that they are the task force making these recommendations. Therefore, they should keep the various stakeholders' perspectives and needs in mind. Also, remind them that the list focuses on general needs at this point

Tell participants they will have 10 minutes to discuss and 5 minutes to prepare a flipchart with the list for presentation to the large group. Remind them to justify their prioritization. It may be necessary to prompt the group to lead them in the right direction. For example, say they know that the system must have an automated accounting system and partial automation of the loan tracking system, must be able to handle branch accounting, and must have more than one product.

30. (5 minutes) Post all flipcharts and have participants walk around the room to view them. Ask them to note any questions they may have. Develop a list of questions, including asking participants to justify why items were selected.
31. (5 minutes) Take questions. Encourage debate, but agree to disagree. Keep the questioning period brief. Emphasize the importance of prioritizing and discuss ways to create consensus. To end the discussion, note that the task force's leader and champion attempt to create consensus, but it is not always possible to get everyone to agree. Nonetheless, the project must move forward. State that you will take a *preliminary* list of prioritized needs to FairFund management for consideration and approval.

### TOPIC G: NEEDS ANALYSIS REPORT

32. (5 minutes) Ask: Now that the task force has prioritized the results of its analysis, what is next? Answer: They need to be able to communicate those results. Ask: What is the output (or deliverable) of the needs analysis process? Answer: The major output is a comprehensive and prioritized needs analysis report, based on the detailed work of the task force. Briefly discuss what the report might look like; for example, it would probably include a brief overview of the MFI, the goals and scope (major elements and functions) of the system under consideration, an executive summary with the MFI's highest priorities (from the exercise in topic F), and a detailed description of the MFI's needs (organized in some meaningful way). This document is circulated for approval before the project can move forward. Note that the actual report can take on a variety of formats, including the format of the project plan or by business function.

In addition to the report, remind them that the task force should have all of its project files available as a more detailed reference, whenever necessary. The files would include the members' working papers and notes generated by the task force's team members to describe the task force's requirements and establish the priority of each item. Note that the task force should also include copies of significant forms and reports, organization and information flow diagrams, and other institutional documents, as well as copies of (or references to the location of) the MFI's policy manuals.

33. (5 minutes) Ask: How do you think this report will be used during the remainder of the IS process? Answer that the report becomes the basis for evaluating possible commercial IS systems or, alternatively, for developing specifications if the MFI is creating its own custom system. It can also be used as a guide if enhancing an existing manual system.

Depending on the scope of an MFI's IS project, this report can be quite lengthy. Ask participants if they can think of another way to use it? Answer that they can use the report's executive summary (including the MFI's very highest priorities) for screening potential systems and in initial communications with possible vendors and developers.

34. (5 minutes) Have the cotrainer interrupt you with a note. Read the note aloud. The note will say that management is reviewing the task force's preliminary list of priorities. They are concerned that the task force did not give sufficient emphasis to security needs. Though management realizes that the task force isn't finished, Chris, FairFund's managing director, feels they should be more concerned with security before they proceed. She has heard horror stories of MFIs losing everything and doesn't want this to happen to FairFund.

Ask participants: What do you think Chris is talking about? The answer should be: protecting the data and information. Ask why that is necessary. Explain that without the information, FairFund will not be able to track performance, compare trends, or make informed decisions.

Have participants say what they think the system should have in order to protect FairFund's data. List answers on a flipchart. Answers include password security for various levels of information, easy data backup procedures, virus protection, quick and easy data recovery features, offsite storage for backups, and so on. Show IS4-O5 to summarize security precautions. State that FairFund is considering security for a computerized system. Is security an issue for a manual system? Definitely! Ask how participants would provide security for such systems. Answers include providing fire protection for important files, limiting access to authorized personnel, having offsite backup copies of important documents, and so forth.

35. (10 minutes) Have the class examine these risks in more detail, along with the system features and other internal controls that can be included to mitigate them. Introduce the exercise in IS4-H5. Work through the first one as an example. Then ask participants to break into groups and complete the exercise. If time is limited, split up the tasks; for example, ask some groups to work on questions 2–5 and other groups on questions 6–10. The main idea is to ensure that participants identify the system's security issues, risks, and internal controls that need to be considered during the IS process.

36. (10–15 minutes) Reconvene the large group and discuss answers to the activity. Ask: What kinds of risks were presented? What kinds of controls did participants think could be installed to mitigate these risks? Distribute IS4-H5b. Ask what, if anything, they would want to add to their needs analysis results to ensure that whatever new system they select is secure?

Ask if there are other security issues that are not directly related to software. Examples are staff training or operating procedures. Ask how participants would ensure that these issues are addressed in their plan. Summarize and again stress the value of data.

Summarize this activity by saying: Information is arguably the MFI's most valuable asset. Many consider it even more important than the portfolio. Steps should be taken early on to protect this valuable asset. Also note that many people haven't really thought about security issues like data backup and recovery, yet the frequency with which data are backed up and stored offsite is quite important, even for manual systems. Ask: What is the MFI's responsibility, legally and

ethically, to its clients? Can that responsibility be met if the MFI doesn't know how much money it has lent out or how much it holds in savings? Note that the issues of security and control will be revisited, but participants need to keep them in mind throughout the system development life cycle.

37. (25 minutes) Lead an examination of the final results of FairFund's needs analysis. Distribute Case Study Part 8, Task Force Progress and Needs Analysis Report, and Case Study Part 9, Completed FairFund Framework Document. Allow participants time to read the cases.
38. (5–10 minutes) State that FairFund used the outline of the framework as its guide for formatting the details of its analysis (see Part 9). The FairFund task force believed that this would save time later because the MFI's needs would be recorded in the same format as the software reviews they would use for reference in selecting a new system. The task force customized the framework by adding notes about the MFI's unique requirements that were not already included in the format. Most MFIs will find it useful to add detail to the functionality portion of the framework based on the results of the needs analysis.  
  
Facilitate a discussion on the priorities for FairFund and the level of automation FairFund has chosen. Ask: How did FairFund's final documents compare with participants' own perceptions of FairFund's needs? Stress that the priorities may still change based on what systems are available, budgetary issues, further refinement of needs, and so forth.
39. (5 minutes) Ask participants: How can you apply this analytical process in your MFI? What steps will be easy? Which ones hard? Why? What kind of resistance do you expect when introducing these steps? What can you do to ensure that these steps are completed? How long do you think these steps will take? Begin to discuss possible time frames for steps of the process.
40. (3 minutes) Summarize session 4. Take remaining questions. Remind participants that a needs analysis is equally applicable to manual or computer-based systems. Then link to the next step, the selection process. Distribute IS4-H4, Technical notes, and IS4-H6, *Analyzing IS Requirements*.

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### Trainer Notes

- Note that the flowchart format in IS4-O4 is a bit different from the format that is used by FairFund in the case study. Flowchart formulas can vary, although the symbols are standardized. This format specifically identifies responsibilities and comments in columns on the flowchart. The bulk of the flowchart (in the middle) diagrams the flow of the business process. A number is assigned to the flowchart, along with notation of the date the flowchart was created and the person responsible. Off-page connectors link to the previous flowchart and the subsequent flowchart.
  - Using IS4-H1b, IS4-H2b, IS4-H3b: These answer sheets are optional. In preparation for teaching the course, the trainer can complete them. Then the completed answer sheets can be distributed to the class participants at the end of each exercise.
-



# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**



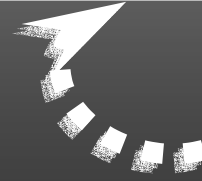
# System Development Life Cycle

IS4-01

Preparation 

## Needs Analysis

- Document, review, and (optionally) redesign **business processes** (If not routinely performed by internal audit or management)
- Analyze and record current information needs
- Analyze and record future information needs
- Assign priorities to information needs
- Write Needs Analysis Report



**Selection  
Implementation**

**Optimization and Maintenance**

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# Information Flows

IS4-02

*Define and diagram:*



Data sources

Points of transformation

Where information is used for decision making

Where and how information is stored

How, when, and to whom information is communicated



**Are the right people getting the correct information when they need it and in the appropriate format?**

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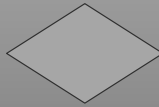


# Flowchart Symbols

(Available as AutoShapes on the MS Office drawing toolbar)



Data (Input or Output)



Decision



Process



Off-page Connector



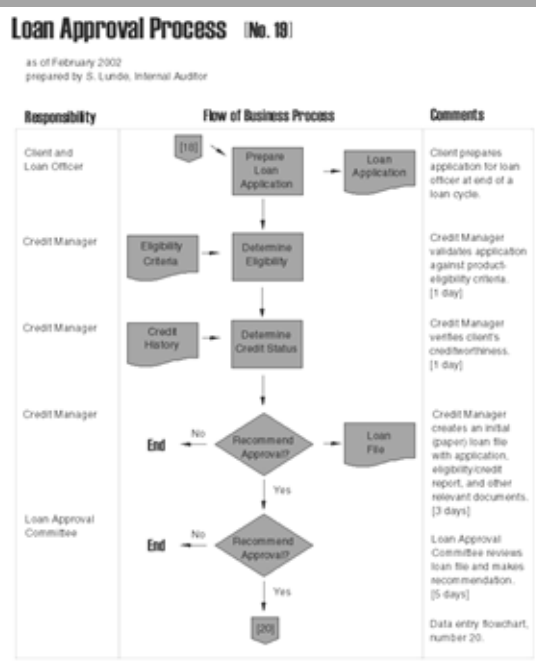
Document(s)



Flow Direction



## Sample Flowchart



Source: *Understanding Information Needs for MFIs*, by Shirley A. Lunde, CRS, 2002, p. 37.



IS4-05



# Protect Your Information Assets

**Back up**

**Secure**

**Safeguard**

**Recover**





# Handouts





## Case Study Part 4

### Information Flow Questions

Analyze the information flow for loan processing in FairFund Case Study Part 4.

Mark the flowchart with the designated symbols and answer the questions as raised. Determine if the current process is efficient and effective. If not, suggest improvements.

1. Where are the points in the process when information is being collected (“captured”)? Where are the data collected? What are the sources? Mark with a C.
2. Where are the data transformed into information? Mark points with a T. Describe the transformation point(s) and process.
3. Where are the points in the process where information is being disseminated? Mark with a D. What form is it being delivered in? (screen, paper, electronic file, other) Who needs the information? Are they getting it? Is it timely?
4. Where and when is the information stored? Mark with an S. How is it being stored? Does this seem appropriate?
5. Where are the points that FairFund could lose the client? Mark with an L.
6. Where are the points of decision for loan underwriting in the process? Mark with DM.
7. Where are the steps that are required by outside regulatory bodies? Mark with an R.
8. Where are the steps in the process that are required to conduct the business of the MFI? Mark with a B.
9. Where are the steps that are required by the client? Mark with an asterisk (\*)
10. Note how many steps or processes are not yet marked. What do you think about them?
11. Are there inefficiencies or redundancies in the process? Where?
12. Can you create a better way to complete this process? Can this flow be improved? Can a redesign make the process more effective and efficient? How? Where are the critical points at which a change could significantly improve the process?

**Marking key:**

<b>Mark</b>	<b>Represents</b>	<b>Mark</b>	<b>Represents</b>
	Where information is:		
C	Collected	L	Could lose a client
T	Transformed	DM	Decision making
D	Delivered	R	Regulatory need
S	Stored	B	Business need
		*	Client need



## Case Study Part 4

### Information Flow Questions – Answers *(narrative)*

1. Where are the points in the process when information is being gathered (captured)? Where are the data collected? What are the sources?

Data collected	Source
Preloan briefing meeting	Client
Loan application meeting	Client
Payment collection meeting	Client

2. Where are the data transformed into information? Describe the transformation point(s) and process.

Data transformed	Decision-making process

3. Where are the points in the process where information is being disseminated? What form is it being delivered in? (screen, paper, electronic file, and so forth) Who needs the information? Are they getting it? Is it timely?

Information disseminated	Form	Recipient/evaluation

4. Where and when is the information stored? How is it being stored? Does this seem appropriate?

Information stored	How/appropriateness
Credit data	Raw credit data

5. Where are the points at which FairFund could lose the client?

<b>Potential loss points</b>

6. Where are the points of decision for the loan underwriting in the process?

<b>Decision-making points</b>

7. Where are the steps in the process that are required by outside regulatory bodies?

<b>Regulatory requirements</b>

8. Where are the steps in the process that are required to conduct the business of the MFI?

<b>Business requirements</b>

9. Where are the steps in the process that are required by the client?

<b>Client requirements</b>





## **Case Study Part 5**

### **Documentation Discussion Guide**

1. Discuss and comment on the strengths and weaknesses of FairFund's documentation as extracted from its operations manual.
2. Compare the documentation with the information flow. Do they match?
3. What do you think FairFund should do now?









## **Case Study Part 6 Reports Discussion Guide**

1. Review and comment on the reports included in the case.
2. How would you change these reports?
3. What other reports do you think the system should generate, at a minimum?



## **Case Study Part 6**

### **Reports Discussion Guide – Answers**

1. Review and comment on the reports included in the case.
2. How would you change these reports?
3. What other reports do you think the system should generate, at a minimum?



## Technical Notes

### PROCESS MAPPING

This document describes two areas of information that are relevant to process mapping:

- A framework analyzing an MFI's processes
- Activity theory

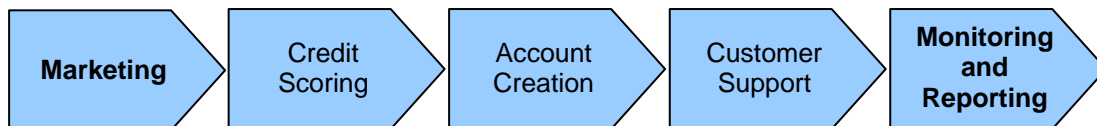
### A FRAMEWORK FOR ANALYZING AN MFI'S PROCESSES

When beginning a process-mapping exercise, it is useful to consider a framework that divides the MFI's activities into two groups:

- Operational processes
- Infrastructure processes

The framework is most useful if the operational processes follow the progression of activities a new customer would normally be exposed to when starting to do business with the MFI. Thus, a typical sequence would include:

- Marketing
- Credit scoring
- Account creation
- Customer support
- Monitoring and reporting



With this high-level process as a starting point, the process-mapping exercise can then be directed to drill down on each of the main activity areas. For example, marketing may be divided into the following tasks:

- Obtain market research and customer profiles
- Design new products
- Launch new products
- Promote products and services
- Follow up on leads

Similar task lists can be prepared for each major process step, according to the MFI's specific business processes. If required, a third (and, as needed, a fourth) round of detail can be added, with the actions of each task thus being defined down to the necessary level of detail.

Infrastructure processes include:

- Plan and manage the MFI's strategy
- Manage information systems
- Manage human resources
- Manage finance and accounting
- Provide support services

Making a distinction between operational and infrastructure processes benefits the system analysis in at least two ways:

- It facilitates thinking about the business in terms of the processes a customer faces, and thus increases awareness of the business from a client's perspective.
- It encourages thinking of the operational processes as a flow of sequential activities.
  - Note that the order of the operational processes as presented in the above paragraph approximates the work flow of a typical MFI; that is, marketing is done before credit scoring. This, in turn, facilitates potential process redesign work that may be enabled through the deployment of new information technology investments.
  - Note also that infrastructure processes are support processes to the operational processes and, though vital to the overall operation, are not generally sequential.

## **ACTIVITY THEORY**

Prior to beginning a process—mapping exercise—it may be useful to consider what level of detail should be included. Consider the following:

- Insufficient level of detail may lead to an unexpected outcome when the new process is implemented!
- Too much detail will place an onerous burden on the technical writer responsible for the documentation, particularly if the activities are subject to regular revisions.

The practical limit to the level of detail is a function of:

- The complexity of the activity
- The importance of the activity's results
- The skill set of the staff responsible for the results

*Activity theory* is a taxonomy that breaks the description of actions into four general categories, each representing a more detailed description than the previous one:

- Activity
- Tasks
- Actions
- Operations



Note that at the operation level the description is the most precise. At this level of detail, little demand is made on the user's intellectual capacity, other than to follow written instructions. The outcome of the activity is entirely based on the ability of the technical writer to communicate with the user of the information.

A larger amount of detail may be necessary when describing an activity that relies on a great deal of precision for its successful outcome—for example, how a teller is supposed to do an accounting entry. However, a lower level of detail may be better to describe an event that requires more judgment than precision to be successfully completed, such as how to do a market survey.

Ultimately, the “owner” of the process has to determine what level of detail is required before the responsibility can be delegated comfortably to a subordinate.

The following table shows the four levels of process detail associated with activity theory. The Example column shows the increasing degree of specification associated with each level. The example is based on the activity of checking e-mail on a modem-equipped personal computer running a Microsoft Windows operating system.

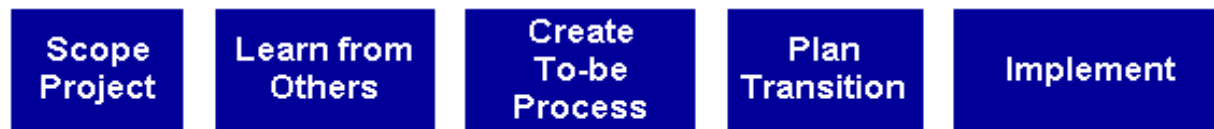
<b>Terminology</b>	<b>Example</b>
<b>Activity</b>	Check e-mail
<b>Tasks</b>	Download new messages Review new messages Respond to new messages, as required Upload responses
<b>Actions</b>	Start computer Start e-mail program Start dialer program Dial server Initiate e-mail checking function Confirm e-mail downloading is complete Disconnect from server Review e-mail Respond to email Dial server Send e-mail responses Confirm response sending is complete Disconnect from server Close e-mail program Back up e-mail directories Close down operating system Turn off computer power
<b>Operation</b>	Push Power button on CPU's front panel Push Power button on monitor's front panel Wait until operating system is fully loaded (approximately two minutes) Double-click on icon for e-mail program Double-click on icon for Dialer program

Terminology	Example
<b>Operation</b> (cont.)	Enter account data: User: EmmaGenius@smartypants.com Password: "Bigbrain" Click Dial button Click on e-mail button on Start menu Click on Send/Receive button on toolbar Wait for check-mail routine to complete Click on Dialer button on Start menu Click on "Disconnect" button

## BUSINESS PROCESS REENGINEERING (BPR)<sup>1</sup>

BPR relies on a different school of thought than continuous process improvement (CPM advocates incremental changes to an existing—and working—process). *In the extreme*, reengineering assumes the current process is irrelevant—it doesn't work or is broken, so forget it and start over. A clean-slate perspective enables the designers of business processes to disassociate themselves from the current process and focus on a new process. In a manner of speaking, it is like projecting yourself into the future and asking yourself: What should the process look like? What do my customers want it to look like? What do other employees want it to look like? How do best-in-class companies do it? What might we be able to do with new technology?

Such an approach is pictured below. It begins with defining the scope and objectives of your reengineering project and then going through a learning process (with your customers, your employees, your competitors and noncompetitors, and with new technology). Given this knowledge base, you can create a vision for the future and design new business processes. Given the definition of the "to be" state, you can then create a plan of action based on the gap between your current processes, technologies and structures, and where you want to go. It is then a matter of implementing your solution.



### Breakthrough Reengineering Model

In summary, the extreme contrast between continuous process improvement and business process reengineering lies in where you start (with today's process or with a clean slate) and with the magnitude and rate of resulting changes.

## WHAT IS THE RELATIONSHIP BETWEEN BPR AND INFORMATION TECHNOLOGY?<sup>2</sup>

Hammer (1990) considers IT to be the key enabler of BPR, which he considers as radical change. He prescribes the use of IT to challenge the assumptions inherent in the work processes that have existed since long before the advent of modern computer and communications technology. He argues that at the heart of reengineering is the notion of

<sup>1</sup> Source: <http://www.prosci.com/intro.htm>.

<sup>2</sup> BRINT Institute, New Hartford, NY. <http://www.brint.com/papers/bpr.htm>.

“discontinuous thinking—or recognizing and breaking away from the outdated rules and fundamental assumptions underlying operations...these rules of work design are based on assumptions about technology, people, and organizational goals that no longer hold.” He suggests the following principles of reengineering: (a) Organize around outcomes, not tasks; (b) have those who use the output of the process perform the process; (c) subsume information processing work into the real work that produces the information; (d) treat geographically dispersed resources as though they were centralized; (e) link parallel activities instead of integrating their results; (f) put the decision point where the work is performed and build control into the process; and (g) capture information once and at the source.

## **KEY THEMES (OR FEATURES) IN REENGINEERING**

### **Process orientation**

Improvements are achieved by looking at an entire process that cuts across organizational boundaries, not by attending to narrowly defined tasks and working within predefined organizational boundaries.

### **Ambition**

- Minor changes may not be sufficient to address the issues.

### **Rule breaking**

- MFIs need to break with old traditions as they reengineer their process. Assumptions of specialization and timing are deliberately abandoned.

### **Creative use of information technology**

- The agent that often enables the MFIs to break their old rules and create new process models is modern information technology. IT acts as an enabler that allows organizations to do work in radically different ways.

### **Business process reengineering is not:**

- The same as automation
- Restructuring or downsizing
- Software reengineering
- The same as reorganizing, delaying, or flattening an organization (*Re-engineering the Corporation*. Michael Hammer and James Champy.)

There are numerous BPR references and resources on the Internet. Simply typing “BPR” into any search engine will generate large numbers of hits, many of which offer useful information. For those who are in the process of familiarizing themselves with BPR, it is worth noting that a fair amount of criticism has been leveled against Michael Hammer and his followers for not taking proper account of the human element in a BPR process. Many companies have had to cancel or rescope BPR projects when their staff stopped believing in the potential benefits of fundamental and radical changes in their business processes.

Following are two links of interest to anyone wanting to understand more of how BPR has evolved from its inception (both references are published by Harvard Business Review and can be purchased online with a credit card).

- Article published in the 7/1/90 issue of the *Harvard Business Review* that is commonly given credit for popularizing BPR: Hammer, Michael. “[Reengineering Work: Don't Automate, Obliterate.](#)”

- Link to online source of 3/1/99 HBR interview in which Michael Hammer's collaborator on BPR defends their work against suggestions that BPR is no longer as relevant as it once seemed. Champy, James. 1999. "Reengineering or Dead? Don't Believe It: An Interview with James Champy." *Harvard Business Review* [online] (March 1).

### **SAMPLE MFI REPORTS**

1. Listing of Loans
2. Portfolio-at-Risk Report
3. Performance Report by Account Officer
4. Portfolio-at-Risk by Aging, Analysis and Business Activity

**Note: Additional report samples are available in the [dUa d\`YigYWjcb](#) of the [CGAP MIS Handbook](#).**

**1. Listing of Loans (Microfinance)**

xx/xx/xxxx Name of Bank Page : x  
 Branch Name  
 LISTING OF LOANS  
 As of xx/xx/xxxx

BORROWER'S NAME	LOAN ACCOUNT NUMBER	CUMULATIVE LOAN	DATE OF DISBURSEMENT	DATE OF MATURITY	AMOUNT OF LOAN DISBURSED	LOAN ACCOUNT BALANCE	AMORTIZATION AMOUNT	LOAN AMOUNT OVERDUE	LOAN PORTFOLIO-AT-RISK	HOLDOUT BALANCE
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
ACCOUNT OFFICER : xxxxxxxxxxxxxxxxxxxxxxxx										
Xxxxxxxxxxxxxxxxxxxxxx	xx-xxxx-x	xxx	xx/xx/xxxx	xx/xx/xxxx	x,xxx.xx	x,xxx,xxx.xx	x,xxx,xxx.xx	x,xxx,xxx.xx	x,xxx,xxx.xx	x,xxx.xx
Xxxxxxxxxxxxxxxxxxxxxx	xx-xxxx-x	xxx	xx/xx/xxxx	xx/xx/xxxx	x,xxx.xx	x,xxx,xxx.xx	x,xxx,xxx.xx	x,xxx,xxx.xx	x,xxx,xxx.xx	x,xxx.xx
Subtotal →										
Total →										

Source: MABS Project, Chemonics International. Used with permission.

**Notes:**

- This report normally is printed out at the end of every period, that is, monthly. However, the system should be able to print this anytime. The list includes all microfinance loans outstanding as of date of printing by account officer. This report will allow the user to generate reports under Microfinance Unit. Each bank shall determine if the loan is a microfinance loan or not by means of tagging at the time the loan was released.
- Legend:
  - Borrower's Name. Name of the borrower.
  - Loan Account Number. Loan account number assigned to borrower.
  - Cumulative Loan. Number of loans received including this loan.
  - Date of Disbursement. Date the loan was released/disbursed.
  - Date of Maturity. Date the loan will mature.
  - Amount of Loan Disbursed. Amount of loan released/disbursed.
  - Loan Account Balance. Outstanding balance of the loan account at the date of printout (principal only).
  - Amortization Amount. Includes payment of loan (principal and interest); does not include savings amount of deposit (amortization amount).
  - Amount Overdue. Amount overdue on loan including principal, interest, and fees.
  - Loan Portfolio-at-Risk. Includes principal balance of all loans with any payment one day or more past due. Total outstanding of the loan (g) becomes (j) if (l) has something in the column.
  - Account Officer. Name or code of account officer. (If this field is left blank, report will generate the entire branch.)
  - Holdout Balance. Savings held by the borrower in a blocked account.
- Distribution: Original copy goes to account/loan officer; duplicate copy goes to supervisor for review.

**2. Portfolio-at-Risk Report (for all loans)**

xx/xx/xxxx

Name of Bank  
Branch Name  
LISTING OF LOANS  
As of xx/xx/xxxx

Page : x

**For all loans**

Loan Account

Amount	Borrowers (a)	Clients % (b)	Overdue (c)	% in Arrears (d)	Outstanding Balance (e)	Portfolio-at-Risk (f)
Current (g)	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
1-7 days	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
8-14 days	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
15-30 days	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
31-60 days	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
61-90 days	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
Over 90 days	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
Subtotal	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%
Total	x,xxx	xx.x%	x,xxx,xxx.xx	xx.x%	x,xxx,xxx.xx	xx.x%

Source: MABS Project, Chemonics International. Used with permission.

**Report Specifications:**

- This report is normally printed at the end of each month. Include option to print all types of accounts, not just microfinance. Each bank shall determine if the loan is a microfinance loan or not by means of tagging at the time the loan was released.
- Report legend:
  - Number of Borrowers. Number of loan clients for the particular overdue age range.
  - Percentage of Clients. Percent of the number of client for the particular overdue age range to the total number of clients.
  - Amount Overdue. Amount overdue for the particular loan age range.
  - Percentage in Arrears. Percentage amount overdue for a particular loan range to the total outstanding loan balance (c/sum of e).
  - Loan Account Outstanding Balance. Outstanding balance for the particular loan age range (portfolio-at-risk amount except for the current row).
  - Portfolio-at-Risk %. Percentage of the amount outstanding for the particular loan age range to the total outstanding loan balance.
  - Current. This line details the loans NOT at risk. As such columns c and d will all report 0.00. However, e and f should report the actual figures so as to determine the outstanding loan balance and its percent to total.
- Distribution: Original goes to supervisor; duplicate copy goes to manager for review.

**3. Performance Report by Account Officer**

xx/xx/xxxx

Name of Bank  
Branch Name

Page : x

**PERFORMANCE REPORT BY ACCOUNT OFFICER**

xx/xx/xxxx-xx/xx/xxxx

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)
AO Name	No. of Borrowers	Loan Account Balance	# Loans Disbursed	Amount of Loans Disbursed	# New Loans Disbursed	Amt. New Loans Disbursed	# Repeat Loans Disbursed	Loans Disbursed	Amt. Repeat w/overdue Amount	# of Loans w/overdue Amount %	# of Loans At Risk	Portfolio-At-Risk %	Portfolio Total Revenue
1.	xx	x,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xx.x%	xxx,xxx	xx.x%	xxx,xxx
2.	xx	x,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xx.x%	xxx,xxx	xx.x%	xxx,xxx
3.	xx	x,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xx.x%	xxx,xxx	xx.x%	xxx,xxx
4.	xx	x,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xx.x%	xxx,xxx	xx.x%	xxx,xxx
		x,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xxx,xxx	x,xxx	xx.x%	xxx,xxx	xx.x%	xxx,xxx

Source: MABS Project, Chemonics International. Used with permission.

Notes:

1. This report should be printed at the end of each month. This report should allow the user to generate reports for the Microfinance Unit. Each bank shall determine if the loan is a microfinance loan or not by means of tagging at the time the loan was released.

2. Legend:

a) **AO Name:** Name of the Account Officer.

b) **No. of Borrowers:** The number of borrowers monitored by the account officer as of the last date of the range.

c) **Loan Account Balance:** Total outstanding principal as of the last date of the range (loan balance being monitored by the AO).

d) **No. of Loans Disbursed during the period.**

e) **Amount of Loans Disbursed:** total amount disbursed during the range.

f) **No. of new loans disbursed during the range (if loan cycle is 1).**

g) **Amount of new loans disbursed during the range.**

h) **No. of repeat loans during the range:** A repeat loan is one that is commenced within six months of the repayment of a previous loan. Otherwise this is classed as a new loan.

i) **Amount of repeat loans during the range.**

j) **No. of Loans with Overdue Amount.**

k) **No. of Loans with Overdue Amount %:** Number of loans with overdue amount divided by total number of borrowers (j / b)

l) **Portfolio-at-risk:** Outstanding balance of all loans with an amount overdue greater than one day.

m) **Portfolio-at-risk percentage:** (l) as a percentage of (c).

n) **Total Revenue.** All revenue (interest and fees) collected during the period.

3. Distribution: Original copy goes to supervisor, and duplicate copy goes to manager.

\* Allow the entry of the account officer prior to running the report.

**4. Portfolio-at-Risk by Aging Analysis and Business Activity**

xx/xx/xxxx

Name of Bank  
Branch Name

Page : x

**PORTFOLIO-AT-RISK BY AGING ANALYSIS and BUSINESS ACTIVITY**  
<Print name of report either as All Loans or Microfinance Unit>

AS OF xx/xx/xxxx

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
<b>Market Vendors</b>								
<b>Current</b>	x,xxx				xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>1-7 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>8-14 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>15-30 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>31-60 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>61-90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>over 90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>SUB-TOTAL</b>			x,xxx		xx.x%	x,xxx	xx,xxx,xxx.xx	xx.x%
xx,xxx,xxx.xx			xx.x%					
<b>Food Processing</b>								
<b>Current</b>	x,xxx				xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>1-7 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>8-14 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>15-30 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>31-60 days</b>	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>61-90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>over 90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>SUB-TOTAL</b>			x,xxx		xx.x%	x,xxx	xx,xxx,xxx.xx	xx.x%
xx,xxx,xxx.xx			xx.x%					



	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
<b>Crafts and Light Manufacturing</b>								
Current	x,xxx				xx,xxx,xxx.xx			
1-7 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
8-14 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
15-30 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
31-60 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>61-90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>over 90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>SUB-TOTAL</b>			x,xxx		xx.x%	x,xxx	xx,xxx,xxx.xx	xx.x%
xx,xxx,xxx.xx			xx.x%					
<b>Fishing</b>								
Current	x,xxx				xx,xxx,xxx.xx			
1-7 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
8-14 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
15-30 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
31-60 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>61-90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>over 90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>SUB-TOTAL</b>			x,xxx		xx.x%	x,xxx	xx,xxx,xxx.xx	xx.x%
xx,xxx,xxx.xx			xx.x%					
<b>Total</b>								
Current	x,xxx				xx,xxx,xxx.xx			
1-7 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
8-14 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
15-30 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
31-60 days	x,xxx		x,xxx	xx.x%	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%
<b>61-90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>over 90 days</b>	x,xxx	x,xxx	xx,xxx,xxx.xx		xx,xxx,xxx.xx	xx.x%		
<b>GRAND TOTAL</b>	x,xxx	xx.x%	x,xxx	xx.x%	xx,xxx,xxx.xx	xx.x%	xx,xxx,xxx.xx	xx.x%

**Notes:**

1. This report normally is printed out at the end of every period, that is, monthly. This report should allow the user to report for all types of loans and just those under the microfinance. Each bank shall determine if the loan is a microfinance loan or not by means of tagging at the time the loan was released.
2. Legend:
  - a) *Number of Borrowers*: Number of loans outstanding as of the report date.
  - b) *Business Activity as a Percent of Grand Total (Number of Loans)*: Number of loans by economic activity divided by the grand total.
  - c) *Number of Loans with Overdue Amount*: Number of loans with an amount past due.
  - d) *Number of Loans with Overdue Amount Percentage*: (c) divided by subtotal (a).
  - e) *Outstanding Loan Portfolio*: Total amount of loan outstanding as of the report date.
  - f) *Business Activity as a Percent of Grand Total (Amount of Loans)*: Amount of loans by economic activity divided by the grand total (subtotal e/grand total e).
  - g) *Portfolio-at-Risk*: Total amount of outstanding loan balance of loan with an amount past due.
  - h) *Portfolio-at-Risk*: (g) divided by (e).
3. Distribution: Original copy goes to supervisor; duplicate copy goes to manager for review

## Security Systems Worksheet

The following chart details common risk elements in management information systems for microfinance institutions. Complete the worksheet naming the type of risk, the suggested internal controls, and the links to the organization's information systems.

Risk categories include accounting, fraud, governance, interest rate, liquidity, operating, security, system (hardware), system (software).

Event	Category of risk	Internal controls	Impact on IS
1 Unauthorized access and changes to system data	Fraud	<ul style="list-style-type: none"> <li>• Password protection and unique user identification with ability to define different access privileges according to the various organizational roles (i.e., teller, account officer, loan supervisor, departmental manager, branch manager, technical systems administrator) and type of system access (i.e., read, write, update)</li> <li>• Policies for regular password changes to minimize risk of sharing</li> <li>• Regular audits</li> <li>• Dual passwords for execution of changes to highest level access</li> </ul>	System security features needed
2 Theft of client data files		<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>	
3 Erroneous transaction entries due to mis-keying of account numbers.		<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>	
4 Loss of system data due to equipment failure or power failure		<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>	

Event	Category of risk	Internal controls	Impact on IS
5 Posting of transactions on wrong date	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		
6 Loss of mission-critical system due to fire, flood, or other disaster	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		
7 Failure of hard disks in system servers	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		
8 System failure due to loss of communications lines	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		
9 Loss of funds due to simultaneous withdrawals by client at multiple branches	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		
10 Suboptimal operating efficiencies and productivity ratios	<ul style="list-style-type: none"> <li>•</li> <li>•</li> </ul>		

## Security Systems Worksheet – Answers

Event	Category of risk	Internal controls	Impact on IS
1 Unauthorized access and changes to system data	Fraud	<ul style="list-style-type: none"> <li>• Password protection and unique user identification with ability to define different access privileges according to the various organizational roles (i.e., teller, account officer, loan supervisor, departmental manager, branch manager, technical systems administrator) and type of system access (i.e., read, write, update)</li> <li>• Policies for regular password changes to minimize risk of sharing</li> <li>• Regular audits</li> <li>• Dual passwords for execution of changes to highest level access</li> </ul>	System security features needed
2 Theft of client data files	Security, Fraud	<ul style="list-style-type: none"> <li>• System hardware located behind locked doors</li> <li>• Encryption of sensitive data tables</li> <li>• System network access terminals without floppy drives or modems</li> </ul>	System security features, server room design, hardware specifications
3 Erroneous transaction entries due to mis-keying of account numbers.	Operating, Accounting	<ul style="list-style-type: none"> <li>• Check sums on all account numbers and other important data fields</li> <li>• Unique lead digits on account numbers to indicate type of account (i.e., 1 for group loans, 2 for individual loans, 3 for short-term savings)</li> <li>• Automatic assignment of new account numbers to avoid duplications</li> </ul>	System security features

Event	Category of risk	Internal controls	Impact on IS
4 Loss of system data due to equipment failure or power failure	System (hardware), Operating	<ul style="list-style-type: none"> <li>Automatic transaction-logging capability built into system (capturing time, date, transaction, transaction type, value of field before and after transaction, operator identification, supervisor identification, client data) with flexible reporting capability</li> <li>Regular backups and well-defined procedures for data restore and recovery</li> <li>Offsite storage of backup data</li> <li>Uninterrupted power sources (UPS) on all computer equipment</li> </ul>	System security features, hardware configuration, system administration policies
5 Posting of transactions on wrong date	Accounting, Operating, Fraud	<ul style="list-style-type: none"> <li>Make switching of dates during data entry a two-step procedure to minimize risk.</li> <li>Include audit trail for data entry.</li> </ul>	System security features, user interface design
6 Loss of mission-critical system due to fire, flood, or other disaster	System (hardware)	<ul style="list-style-type: none"> <li>Develop a disaster recovery plan, complete with detailed instructions on where to source hardware on short notice.</li> </ul>	System administration policy
7 Failure of hard disks in system servers	System (hardware)	<ul style="list-style-type: none"> <li>Install hot-swappable RAIDs (redundant arrays of inexpensive disk drives) in system servers.</li> </ul>	Hardware configuration
8 System failure due to loss of communications lines	System (hardware)	<ul style="list-style-type: none"> <li>If local data lines (say, between head office and branches) are known to be unreliable, avoid designing processes that require online transactions between remote computers; instead, try to design systems that can operate independently and share data in a batch mode process, say, at the end of the business day.</li> </ul>	System architecture and network design
9 Loss of funds due to simultaneous withdrawals by client at multiple branches	Fraud, System (software)	<ul style="list-style-type: none"> <li>Design system with a mandatory time delay (say, 15 minutes) between transactions at different branches.</li> <li>If not networked, insist on branch-to-branch verbal confirmation.</li> </ul>	System security features

Event	Category of risk	Internal controls	Impact on IS
10 Suboptimal operating efficiencies and productivity ratios	Operating, System (software)	<ul style="list-style-type: none"> <li>• Suitable incentive system with high degree of alignment between organizational and personal objectives</li> <li>• Human resource system integrated with accounting system, portfolio management system, and deposit tracking system</li> <li>• Effective and timely reporting system</li> </ul>	Human resource management system (integration of), reporting system
11 Loss of loan fund capital due to individual client defaults	Operating, Delinquency	<ul style="list-style-type: none"> <li>• Standardize credit-scoring process and prioritize regular training of loan officers on this topic; encourage credit officers to develop and share a common set of best practices.</li> <li>• Develop efficient follow-up processes for delinquency management, including daily reporting and follow-up requirements on remiss accounts.</li> </ul>	Reporting system
12 Declining revenues due to loss of market segment share	Operating, Governance	<ul style="list-style-type: none"> <li>• Conduct annual marketing planning sessions to assess and forecast demand trends.</li> <li>• Develop inhouse core competency in designing or revising and pricing new or existing products and services.</li> </ul>	Product design module (if included in system)
13 Loss of revenues due to fluctuations in loan funding rates	Interest Rate, Liquidity	<ul style="list-style-type: none"> <li>• Match maturities of outstanding liabilities and loan assets.</li> <li>• Conduct gap analysis.</li> </ul>	Reporting system
14 Loss of margin due to excessive short-term commercial rate borrowing	Liquidity	<ul style="list-style-type: none"> <li>• Centrally managed treasury</li> <li>• Efficient cash flow projection and reporting process</li> </ul>	Accounting system, reporting system





## **Additional reading:**

*Determining Information System Requirements.* Information Systems Planning for Microfinance, Guide 2.

By Shirley A. Lunde, published by Catholic Relief Services and SEAPRO LINK, 2002. Downloadable from <http://crs.org/publications/list.cfm?sector=7>

See the following chapter:

How Do You Plan Your Needs Analysis?

Also see annexes 2–8: Needs Analysis Templates

**SAMPLE PAGE: NEEDS ANALYSIS TEMPLATE**

**Lending Work Template**

The lending template documents the requirements of your lending program.

**Reference Documents**

As a part of your analysis, gather and file copies of the following supporting documents:

- Lending policy manual
- Description of your various loan products, including eligibility criteria
- Sample payment schedule for each loan product
- List of the various account numbers used in processing loan-related transactions

**Transaction Volumes**

Information on the number of clients you serve and the volume of transactions you process helps to determine the likely size of your database, the amount of storage you require, and the processing power necessary to accommodate your lending activities.

Feature	Description	MFI's Requirements
Loan clients	How many existing loan clients do you have and what is the projected annual rate of growth? Include a breakdown by client type and loan type or loan product, if applicable.	
Historical loans	How many loans did you disburse during the last year? The last two years? The last five years?	

# SESSION 5: SELECTION PROCESS – DETERMINING FEASIBILITY AND ASSESSING ALTERNATIVES

## Session Summary

**OBJECTIVES:** By the end of the session participants will be able to:

- Identify available IS options and conduct a preliminary, high-level scan
- Discuss staff, technology, and costs issues of IS
- List major budget items for implementing an IS
- Decide IS acquisition options: off-the-shelf, modified, or custom
- Create a shortlist of best options for further scrutiny

**TIME:** 166–176 minutes

- Session Topics:**
- A. Review Resource Requirements for Feasibility (61 minutes)
  - B. Conduct High-Level Scan of Available Systems and Establish Shortlist Candidates (105–115 minutes)

**SUPPLIES:** Flipchart paper  
Markers  
Masking tape  
LED projector or overhead projector

## TRAINER MATERIALS

IS5-M1 Discussion Guide: Considerations for Automation

## PARTICIPANT MATERIALS

**OVERHEADS:** IS5-O1 System Development Life Cycle  
IS5-O2 What Is Feasible?  
IS5-O3 What Should Be Automated?  
IS5-O4 Note Well:  
IS5-O5 The Choices for a Computerized System

**HANDOUTS:** IS5-H1 Planning Ahead Worksheet  
IS5-H2a Options for Computerization  
IS5-H2b Options for Computerization – Answers  
IS5-H3 Technical Notes  
IS5-H4 INFORMATION SYSTEMS: Frequently Asked Questions  
(download from the CGAP Microfinance Gateway Web site)

IS5-H5 Local IS Software Providers and Vendors (trainer to develop)
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**Optional**

*Trainer Instructions*

- CASE STUDY:** Part 10 Determine What Is Feasible – Available Software Options  
Part 11 Shortlist Decision and Justifications  
Part 12 Evaluating the Software – Applying the Framework (*assigned as homework only*)

## Session 5: Selection Process – Determining Feasibility and Assessing Alternatives

### TOPIC A: REVIEW RESOURCE REQUIREMENTS FOR FEASIBILITY

1. (2 minutes) Refresh: During the last session, we followed a process to methodically identify our MFIs' needs and establish priorities. In this session we begin the process of satisfying those needs—selecting a new IS. We first consider available resources, and then the options for meeting IS needs within those resource constraints. Show IS5-O1 and very briefly review.

2. (3 minutes) State: If your MFI has a manual system, one of your preliminary concerns is whether to computerize or not, and if so, to what degree. If you have a computerized system, you might consider whether additional, newer, more powerful, or more comprehensive automation is appropriate.

Ask: What are the important considerations in determining if—and how much—automation is feasible? Take a few answers. Lead participants to an assessment of potential requirements relative to MFI resources in four categories: staff, technology, time, and costs. Show IS5-O2. Remind participants that they began a self-assessment of their MFI's resources during the preparation phase (session 3).

3. (10 minutes) Divide into small subgroups and assign each subgroup one of the four categories (staff, technology, time, and costs). Ask each group to consider the following for their category: What are the issues and resource requirements to be considered in pursuing a new information system? Ask groups to write their considerations on a flipchart sheet or a blank overhead. (For example, under technology they may need to determine if they have access to a reliable power supply.)

Remind participants that there are also requirements to enhance a manual system; they can complete this exercise even if they are not in a position to automate their IS. (If appropriate, ask groups to divide issues on the flipcharts into those associated with manual systems versus those associated with computerized systems.)

4. (10 minutes) Reconvene the large group and review the answers for each resource category. Ask the group for additional items; add them to the flipcharts. (Use IS5-M1, the questions in the *CGAP MIS Handbook*, section 5.1.3, and the Nexus case studies as a discussion guide.)

When discussing costs, ensure that participants consider the entire list of items to budget for an IS acquisition. Make the point that the number of items is extensive and should be considered carefully. Also ensure that the items listed on the flipcharts include long-term as well as short-term resource requirements—for example, annual support costs are a long-term commitment. The expenditures aren't complete when the system is installed! Emphasize that information systems

are *long-term* investments of an MFI's resources, so they need to be analyzed as such.

5. (5 minutes) Ask: How does the MFI task force get the data to project resource requirements? Answer: During research into available systems and vendors, they can provide estimates. Also from other MFIs that have gone through the acquisition process, experienced staff members, research on the Web, discussion groups, networks, and so forth. Note that IS project managers often double (and sometimes even triple) the initial project budget and schedule to allow for unanticipated cost and time overruns. It is important not to create unrealistic expectations among management and staff by underbudgeting.

Ask and briefly discuss: Why should MFIs be concerned with time and costs? Ask if anyone can cite examples of overbudget or behind-schedule IS projects. Were these projects eventually successful—or even completed? Use the examples in the Nexus articles, if needed, or distribute IS5-M1.

6. (5 minutes) Distribute IS5-H1 and ask participants to complete part 1 to briefly analyze their own MFI's resources in each of the four resource categories.
7. (5 minutes) Ask: Is it enough to know how much a new system might cost in time, money, and other resources? Answer: No, the task force needs to determine if the MFI can afford those costs.

Ask how they would know what resources their MFI has available to devote to the system. The answer should include their MFI's five-year business plan (with financial projections), annual budget, staffing, and infrastructure plans. Remind participants that an analysis of these resources was part of the preparation process from session 2. Now it is clear why business plans and budgets are important in determining the feasibility of pursuing a new system.

8. (3 minutes) Ask what options are available to an MFI if what the task force wants is not affordable. Ask participants what they have done in the past when they wanted more than their MFI's resources allowed. The answer is *prioritize*, and ensure that the benefits are worth the investment (that is, perform a cost-benefit analysis). Relate back to the discussion of the importance of priorities in session 4.
9. (10 minutes) Note that if an MFI cannot afford to automate all of its subsystems, it may decide to phase in the various subsystems over time. Ask participants which subsystem they think should be automated first. Second? Third? And so on? Answer: It varies based on specific needs of the MFI, but typically accounting or portfolio management should be automated first. Often, if an MFI plans to install only one subsystem in the short term, it installs portfolio because of the volume of loan-related transactions. If an MFI plans to install two or more subsystems, accounting will often precede portfolio so that portfolio can make use of the general ledger account numbers when processing transactions (and, one hopes, integrate the processed data). Show IS5-O3 and discuss. Relate back to IS2-O5 and IS2-O6. Address questions.

Remind participants that FairFund made an initial determination of subsystem priorities in its needs analysis report (accounting, portfolio management, deposit tracking, and client information). Discuss participants' impressions of these priorities. Ask whether they agree or disagree. Is FairFund missing anything—such as a separate reporting subsystem? Ask if the participants agree or disagree. Remind participants that these priorities may change after FairFund learns more about the cost of potential systems as they proceed with their selection process.

10. (5 minutes) Ask participants to complete IS5-H1, part 2, prioritizing subsystem requirements for their own MFIs.
11. (3 minutes) Briefly summarize the main points. Good research and a thorough, prioritized assessment of needs is the basis for evaluating feasibility, given the constraints of the MFI and its environment. Constraints include staff, technology, time, and costs. Again, emphasize that an information system is a long-term investment that often takes years to realize benefits. Highlight the danger of underestimating the time and costs required. Show IS5-O4, describing the high cost of not having information. Refer to the participants' experiences and to those of the MFIs noted in IS1-H6, "Management Information Systems" (in *Nexus*).

**TOPIC B: CONDUCT HIGH-LEVEL SCAN OF AVAILABLE SYSTEMS AND ESTABLISH SHORTLIST CANDIDATES**

12. (5–10 minutes) Ask: After the task force knows what their MFI needs and wants in an IS, and they have a realistic view of available resources, what is the next step? Lead a discussion: MFIs should take into consideration their goals, highest priorities (not the entire, detailed needs document at this point), and available resources—and then attempt to find systems that meet their needs. The MFI's highest priorities can be used as a screening tool to create a manageable list of likely candidates. These candidate products, and their vendors, will be subject to more detailed due diligence later in the process.

Ask: If the task force doesn't find systems that will meet the MFI's needs and are within resource limitations, what can it do? Consider our other computer-based options, for example, modifying an existing system or developing a custom system. (Note that a detailed discussion of these activities is outside the scope of this course.) Show and briefly explain IS5-O5. Alternatively, the MFI could maintain and enhance the existing manual (or computerized) system.

13. (5–10 minutes) Ask participants how they would determine which of these options is preferable. The answer is to follow a process that analyzes options relative to prioritized needs. Note that the process described in this course generally assumes that the most advantageous option is to acquire an off-the-shelf system, if one is available to meet *the majority of* their MFI's prioritized needs.

Lead a discussion of the advantages and disadvantages of each option (off-the-shelf, modified, and custom). Using IS5-H2a as a worksheet, ask participants to

form neighboring triads and to list the advantages and disadvantages of each. Consider time, required expertise, cost, suitability, support, and maintainability, among other variables. For example, acquiring an off-the-shelf system generally requires the least time, and developing a custom one takes the most time.

14. (5 minutes) Reconvene the large group, then review and discuss answers. Distribute IS5-H2b. Solicit participants' experiences. Ask how they decided to buy or build. Summarize by reminding participants that these observations will be applied to FairFund's case to make a preliminary decision as to what FairFund should do with regard to level of automation and software development.
15. (40 minutes) Distribute Case Study Part 10, FairFund's preliminary software review and high-level scan. Participants should work in preassigned subgroups to complete this assignment.  
  
Have participants review the software options presented in the case study using all of the information on FairFund that is available to this point. They can make a buy-or-build recommendation for the IS system on the basis of this review. If they say FairFund should buy, have them create a shortlist of the top two or three software options, each of which they will later subject to a more detailed due diligence process. Tell participants to be prepared to justify their choices.
16. (15 minutes) Review results, and focus on the participants' analyses and rationale. Ask: What did you decide—buy or build—and what were your reasons for the decision? If you chose buy, which software products made your shortlist and why?
17. (10 minutes) Discuss why FairFund chose the buy option and which software packages made the MFI's shortlist. Distribute Case Study Part 11, for participants to read.
18. (5 minutes) Solicit reactions to FairFund's decision and shortlist. Ask participants if they agree or disagree.
19. (10 minutes) Ask participants to apply the buy-or-build analysis to their own MFIs by completing part 3 of IS5-H1.
20. (5 minutes) Discuss their responses to the assignment. Then discuss the participants' previous experiences in this area. (It is often the case that an MFI makes several attempts at acquiring a MIS, through buying or building)
21. (5 minutes) Briefly review and address any final questions participants have. Note that in the next session, they will find out if FairFund's management approves the shortlist recommendations. If they do, the next step will be to perform a more detailed evaluation of these products. Distribute Case Study Part 12, and ask participants to review the document as homework. Distribute IS5-H3, Technical notes, and IS5-H4, CGAP FAQs.



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**Trainer Notes:**

- The product reviews were taken from the CGAP Microfinance Gateway Web site (Information System Services), fall 2001. The names of the products were changed, as follows, to provide anonymity and to avoid having to update the materials every time the product reviews change on the Web site.

<b>New Name (Fictitious)</b>	<b>Actual Name</b>
SmartSol/ABC Corporation	eMerge
MICRO/XYZ Corporation	SIEM
eLoanTracker/EFG Corporation Ltd.	Loan Performer
MicroBank/Banking, Inc.	FAO Microbanking
MFI Manager/MIS Corporation	Micromanager

- CGAP continues to review products and update this Web content. Trainers are encouraged to visit the Web site to download current information and make copies of actual content available to participants.
  - Part 12 of the case study is homework for session 6. If the trainer has scheduled sessions 5 and 6 on the same day, this part of the case study should be given as homework the day before to allow sufficient time for participants to read.
-

## Discussion Guide: Considerations for Automation

In deciding whether to automate your MFI's operations—and how much to automate—consider your MFI's resource requirements in each of the following four areas: staff, technology, costs, and time.

### STAFF

- Assessment of staffing needs: quantity, structure, need for new positions or adjustments to current roles and responsibilities
- Staff skills: staff members, existing skills and experience, training needs, resources to support staff training needs
- Displacement of current employees and if so, method of dealing with them
- Present staff's attitude: willingness or resistance to change
- Maturity of institution
- Staff's acceptance and willingness to change

### TECHNOLOGY

- Communication: availability and reliability
- Hardware and software: availability and support, source code
- Level of integration and decentralization required
- Flexibility and expandability
- Infrastructure
- Industry standard
- Training available
- Maintenance and support available for both hardware and software

### COSTS

- Links to everything
- Hardware: initial costs, replacement costs, preventive
- Software: initial, support, upgrades, licensing
- Supplies: paper, printer consumables, media costs
- Utilities, furniture, and facilities
- Staff and consultants
- Insurance
- Available budget (requires good financial projections)
- Value for money/Cost-benefit analysis)
- Infrastructure

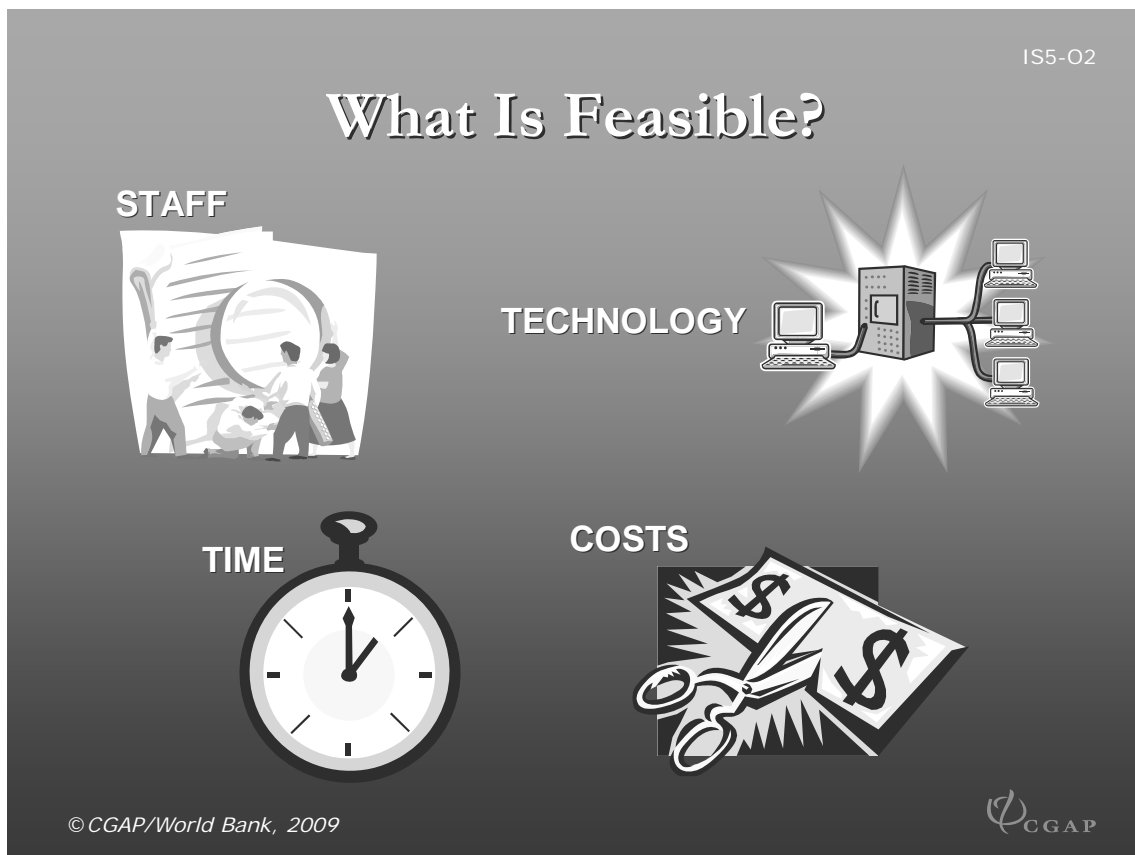
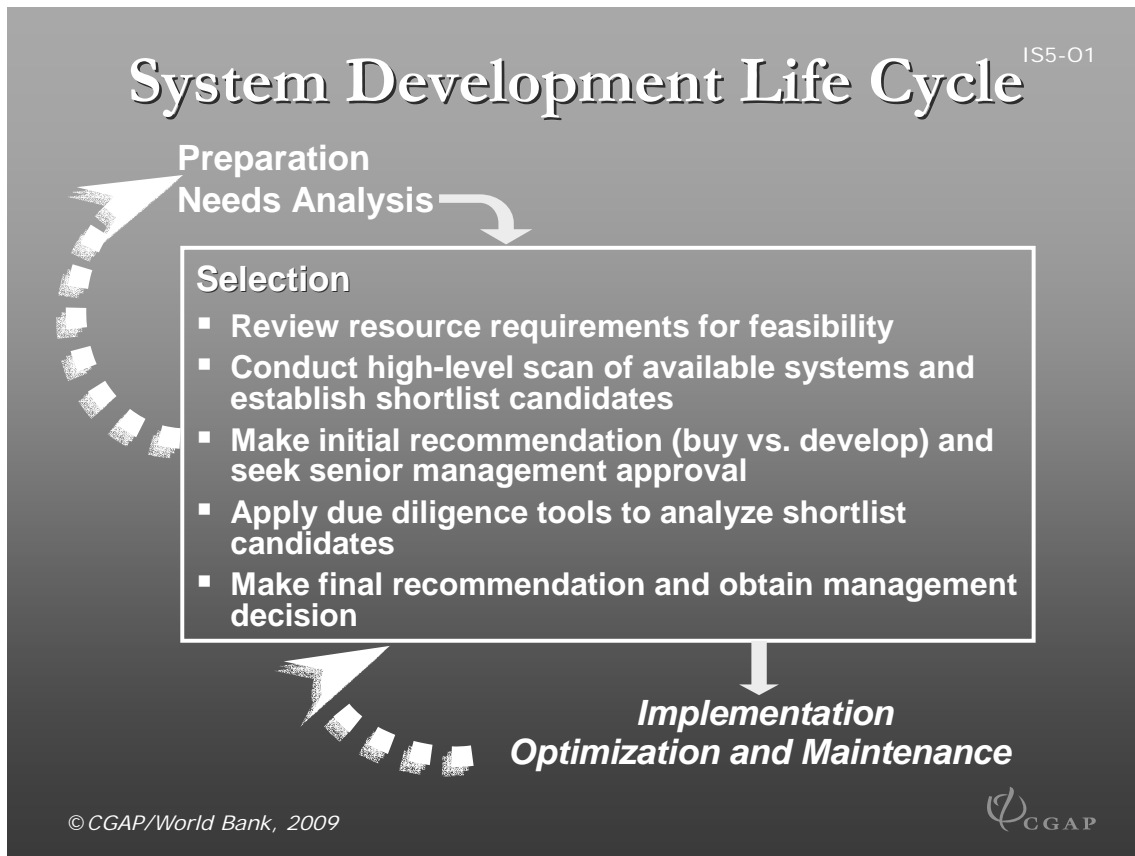
### TIME

- When needed? Urgency of the need for the system
- Strategic considerations, growth plans, product development plans
- Plan for implementation to take 6–18 months and perhaps more
- Money value of time
- Time needed for conceptual design, logical design, physical design, training, and so forth

# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**





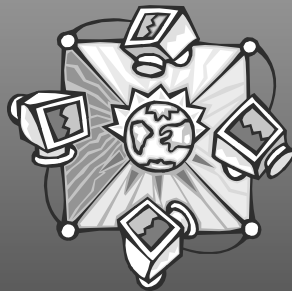
# What Should Be Automated?

Component	Criteria	Priority
Accounting System	Core system for any MFI	Essential
Portfolio Management System	Core system for any MFI	Essential
Deposit-Tracking System	Core system for any MFI that takes deposits	Essential, if deposits are taken
Reporting Systems	<p>MFI is:</p> <ul style="list-style-type: none"> <li>▪ Consistently missing out on making good management decisions due to a lack of timely information</li> <li>▪ Unable to provide its staff all the information they need to perform their jobs</li> </ul>	High

## Note Well:

The cost of installing an IS may be

*high*



but the cost of not having information is

*higher*

# The Choices for a Computerized System



Purchase off-the-shelf software

Modify an existing software system

Design a custom system







# Handouts



# Planning Ahead Worksheet

## PART 1

What would be feasible in your MFI? Think about the things that will facilitate your planning and the constraints you will face when upgrading or automating your system.

### STAFF

<b>What we have:</b>
<b>Things that will need to be overcome:</b>

### TECHNOLOGY

<b>What will work for us:</b>
<b>Things that will need to be overcome:</b>

**TIME**

**What will work for us:**

**Things that will need to be overcome:**

**COSTS**

**What will work for us:**

**Things that will need to be overcome:**

**PART 2**

Using your general knowledge (realizing you will need a detailed needs analysis to answer fully), prioritize the subsystems or components you think should be automated in your MFI. What do you think are the risks and anticipated benefits?

Requirement, subsystem, or need	Benefits to MFI if automated	Risks if not automated

**PART 3**

Do you think your MFI should buy, modify, or build the software? Why? How would you convince others in your MFI of your choice?



## Options for Computerization

Option	Advantages	Disadvantages	Situations best suited
Purchasing an off-the-shelf software system			
Modifying an existing system			
Developing an inhouse system			





## Options for Computerization – Answers

Reprinted from *Management Information Systems for Microfinance Institutions: A Handbook*, Chapter 5, Developing and Implementing a Management Information System. Technical Tool Series No. 1. CGAP.

### How the options compare

Option Advantages		Disadvantages
Purchasing an off-the-shelf system	<ul style="list-style-type: none"> <li>• Low to medium cost</li> <li>• Likely to operate relatively error-free</li> <li>• Short time frame for implementation</li> </ul>	<ul style="list-style-type: none"> <li>• Dependent on outside technical support</li> <li>• Unlikely to fully match institution's policies and procedures</li> <li>• Cannot be modified a institution changes</li> </ul>
Modifying an existing system	<ul style="list-style-type: none"> <li>• Likely to operate relatively error-free</li> <li>• Medium time frame for implementation</li> <li>• Can be closely adapted to institution's policies and procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Medium to high cost</li> <li>• Dependent on outside technical support</li> <li>• Future modifications costly</li> </ul>
Developing an inhouse system	<ul style="list-style-type: none"> <li>• Technical support is in-house</li> <li>• Can be fully adapted to institution's policies and procedures</li> <li>• Can be modified to match institution's changes</li> </ul>	<ul style="list-style-type: none"> <li>• High cost</li> <li>• Will require debugging</li> <li>• Long development time frame</li> </ul>



## Technical Notes

### EXAMPLES OF TYPICAL IS BUDGET ELEMENTS

The sample IS budget provided below has been organized into two major groupings: project expenses and project deliverables.

Project expenses are costs that, if incurred, would be written off in the same period. Project deliverables are costs that the MFI may choose to capitalize. Note that software development costs are a gray area as far as capitalization is concerned. The likelihood of ever generating a salvage value greater than zero for a custom-developed system is very small; thus, many organizations will expense the entire amount up front.

Computer hardware on the other hand is often straight-line depreciated over three years, though local accounting practices may differ. Please confirm what is normal in your area prior to finalizing the budget.

Note that the cost items in the budget below are intended as a checklist. Significant consolidation opportunities usually exist, though details will have to be worked out on a project-by-project basis.

For example, project team rentals of computer equipment can often be avoided if portions of the technical project hardware can be purchased prior to the system delivery date. Similarly, project team office rental costs can sometimes be avoided by housing the staff in accommodations provided by board member contacts. MFIs are usually not in a position to spend funds frivolously, so creative thinking is a mandatory component when putting together an IS budget.

Note that the IS project staff is ideally a group of people that will continue to work with the MFI after the project has been completed, even if in another capacity, as this will maximize the retention of knowledge within the organization.

### PARTIAL LIST OF IS PROJECT EXPENSES

#### IS PROJECT STAFF

- Project manager
- System architect
- Developers
- Testers
- Installers
- Trainers
- Technical writers (documentation)
- Hardware technologists
- Purchasing agent
- Administrative support/Accounting

## **RENTALS, CONSUMABLES, AND OTHER SERVICES**

Rent—temporary office space	ISP access
Workstation furniture rental	Security services
Office supplies	Power and water
Project team desktop, laptop, and server rentals	Janitorial services
Project team LAN equipment rentals	Transportation costs
Photocopier rental	Travel costs
Fax machine rental	Legal services
Project team phone system rentals	Outside consulting services
Telecommunications services	Insurance
Changes in infrastructure	Air conditioners

## **PROJECT DELIVERABLE EXPENSES**

### **TECHNICAL PROJECT HARDWARE**

- CPUs
- LAN/WAN equipment
- Monitors
- Input devices
- Printers
- Uninterrupted power supplies
- Cabling
- Equipment racks

### **SOFTWARE COSTS**

- Software licenses for ready made systems
- Licenses for servers and development languages
- Desktop productivity software
- Support licenses

### **OFFICE SPACE BUILDOUT**

- Construction costs
- Workstation furniture and lighting
- Theft-prevention system
- Telecommunications system

## CRITERIA FOR PRIORITIZING IS COMPONENTS WHEN CONSIDERING AUTOMATION:

Component	Criteria	Priority
Accounting System	Core system for any MFI	Essential
Portfolio Management System	Core system for any MFI	Essential
Deposit-Tracking System	Core system for any MFI that takes deposits	Essential, if deposits are taken
Customer Information System	<p>Clients are:</p> <ul style="list-style-type: none"> <li>• Large in number</li> <li>• In several different geographic areas</li> <li>• Involved in different types of businesses</li> </ul> <p>MFI is:</p> <ul style="list-style-type: none"> <li>• Interested in customer-focused product development</li> <li>• Planning to grow its size and product offering</li> <li>• Facing or anticipating facing competition</li> </ul>	High
Reporting Systems	<p>MFI is:</p> <ul style="list-style-type: none"> <li>• Consistently missing out on making good management decisions due to a lack of timely information</li> <li>• Unable to provide its staff all the information they need to perform their jobs</li> </ul>	High
Human Resource System	<p>MFI is:</p> <ul style="list-style-type: none"> <li>• Having trouble attracting and retaining the type of staff it desires</li> <li>• Spending more time than it wants to keep track of basic staff information (holidays accrued, incentive systems, job descriptions, performance reviews, and so on)</li> </ul>	Medium
Impact-Tracking System	<p>MFI is:</p> <ul style="list-style-type: none"> <li>• Required by donors to track impact on clients</li> <li>• Required to track impact as an objective of the institution</li> </ul>	Based on objectives of MFI or donor

## COMPARING VARIOUS SCENARIOS

Scenario	Realistic target	Potential benefit of project	Role of process redesign in achieving benefit
<p>1 All information processing management is done with calculators and paper-based records.</p> <p>Likely:</p> <ul style="list-style-type: none"> <li>• No technical staff</li> <li>• No technical managers</li> <li>• No technically savvy board members</li> </ul>	<p>Installation of a computerized general ledger on a standalone PC</p>	<p>Reduction in time required for preparation of financial statements</p>	<p>Marginal. Though PC will be a laborsaving device, work flow will not change significantly.</p>
<p>2 A PC is used to manage the general ledger.</p> <p>A spreadsheet or a simple (non integrated) database is used to keep track of deposits and loans.</p> <p>Likely:</p> <ul style="list-style-type: none"> <li>• Some staff with limited technical skills and/or relationship with external service provider</li> <li>• One manager with some technical skills (a minority voice on the management committee!)</li> <li>• No technically savvy board members</li> </ul>	<p>Implementation of an integrated G/L and portfolio system</p>	<p>Improved responsiveness to client service requests</p> <p>Increased productivity of field officers</p>	<p>Small but significant. New processes will be required to transact on information currently not being “managed.”</p>
<p>3 An integrated program is being used, but it does not meet all of the MFI’s current and/or future MIS needs.</p> <p>Likely:</p> <ul style="list-style-type: none"> <li>• One or more full-time technical staff</li> <li>• Several managers with technical skills</li> <li>• No technically savvy board members</li> </ul>	<p>Implementation of a fully integrated MIS</p>	<p>Ability to make maximum use of information to reduce costs and grow revenues</p>	<p>Large. The project is less about technology implementation and more about process optimization and innovation.</p>

## **INFORMATION SYSTEMS: Frequently Asked Questions**

To be downloaded from the [CGAP Microfinance Gateway](#) Web site.





## Local IS Software Providers and Vendors

*To be prepared by trainer.*



# SESSION 6: SELECTION PROCESS – CONDUCTING DUE DILIGENCE USING THE FRAMEWORK AND INDEPENDENT REVIEWS

## Session Summary

**OBJECTIVES:** By the end of the session participants will be able to:

- Plan and conduct initial due diligence on shortlisted options
- Understand how to use a needs analysis framework to assess software/vendor options
- Evaluate shortlisted options using independent reviews

**TIME:** 149–169 minutes

**Session Topics:**

- A. Planning Due Diligence for Shortlisted Products (32 minutes)
- B. Evaluating Shortlisted Products/ Vendors Using Independent Reviews (117–137 minutes)

**SUPPLIES:** Flipchart paper  
Markers  
Masking tape  
LED projector or overhead projector

## TRAINER MATERIALS

IS6-M1 Skit Script

## PARTICIPANT MATERIALS

**OVERHEADS:** IS6-O1 Framework for Evaluation

**HANDOUTS:** IS6-H1 *Management Information Systems for Microfinance: An Evaluation Framework* (IS1-H9—originally distributed at the end of session 1 as homework)

IS6-H2 Case Study Worksheet – Software Evaluation Using Framework Ranking

IS6-H3 Flow Diagram for IS Selection Process

**CASE STUDY:** Part 12 Evaluating the Software – Applying the Framework (originally distributed at the end of session 5 as homework)

## Session 6: Selection Process – Conducting Due Diligence Using Framework and Independent Reviews

### TOPIC A: PLANNING DUE DILIGENCE FOR SHORTLISTED PRODUCTS

1. (2 minutes) Tell participants that at this point in the process, they know their MFI's prioritized IS needs and available resources, they have developed a strategy for fulfilling those needs, and they have created a shortlist of available options. They have also presented their findings to management for review and approval. Of course, because acquiring an information system is not a linear process, decisions are subject to change as task force members learn more and advance through the process.

The next consideration is whether any of the products on the shortlist (and their providers) will adequately satisfy the identified requirements. The goal is to select the product and vendor that will best suit FairFund's needs.

2. (5 minutes) Conduct the skit using the script in IS6-M1.
3. (5 minutes) Discuss reactions to this event. Ask: Has anyone ever heard of a product being selected or a contract being awarded like this? What do you think Jan's (the IS manager and IS task force leader) reaction will be and why? What are the dangers and possible repercussions of selecting information systems haphazardly?
4. (10 minutes) Product and vendor selection is serious business. Ask and discuss: How would you go about selecting a system? How can you select products and vendors so that you get what you need, when you want it, and at the expected cost? Answer: Using a planned, documented process: due diligence. *Due diligence* means systematically and methodically evaluating each potential product or vendor based on the contents of a detailed, predetermined analysis of an MFI's needs. The due diligence process should be thorough and well documented. In the past, many MFIs have not given this issue sufficient attention and have therefore encountered problems. Tell participants that the process recommended in this session will help them to avoid these problems.

Remind participants that, in FairFund's case, predetermined needs that form the basis of the evaluation are documented in the Framework tool. Display IS6-O1 and remind participants of the structure and content of the framework (IS6-H1 which is the same as IS1-H9). Also use the completed FairFund framework document, Case Study Part 9, as a reference.

5. (10 minutes) Brainstorm. Ask: What can a task force do to perform due diligence on their shortlisted products? What can we do here to find out if any of the products satisfy the detailed requirements as documented by FairFund's framework document? Write answers on a flipchart. Answers include study independent third-party software reviews, contact software vendors, view a

software demonstration, actually use or test demonstration versions of the software, get references from MFIs or networks, and visit or interview MFIs actually using the software.

Some of these due diligence activities can take an extended period of time to complete, particularly ones that require scheduling meetings and trips or corresponding with distant vendors and MFIs. Tell participants to be sure to include sufficient time for these in their project plan and schedule.

Conclude by stating: As we will not be able to correspond with vendors during this course, schedule site visits and demonstrations, or actually test the software products, we will use the independent reviews in the case study as our principal means of information gathering and evaluation. However, we will discuss these other types of information exchanges in the next session.

## **TOPIC B: EVALUATING SHORTLISTED PRODUCTS AND VENDORS USING INDEPENDENT REVIEWS**

6. *(10 minutes)* Tell participants: We will begin our due diligence by using independent product reviews to evaluate our shortlisted products. Ask participants how they would find these reviews. Answers include from CGAP's Microfinance Gateway Web site, online discussion groups, contacts from network and professional affiliations, and additional research.

Ask: How will you use the reviews? Answer: You would compare the features, strengths, and weaknesses of each product (as given in the reviews) against your MFI's requirements, using the detailed needs analysis document you created as a guide. (In FairFund's case, this is the completed framework, Case Study Part 9.)

Ask participants how they would conduct the evaluation. Answer that it is important to formally record findings. The recommended method is to create a template or worksheet that follows the basic form of whatever tool was used to document the MFI's needs (in FairFund's case, the framework). One copy can be used for each product, or a single copy with columns for each product (depending on the number of products on the shortlist and the space needed for making notes). Distribute IS6-H2 as an example.

7. *(5 minutes)* Say: Let's get to work! Ask participants to refer to Case Study Part 12, including software and product reviews (assigned as homework during the session 5). Explain the activity in detail and be prepared to provide an example, if necessary.

Separate participants into small groups and assign each group one or two categories in the framework. For the assigned categories, participants are to compare FairFund's prioritized needs (as documented in the completed framework, Case Study Part 9) with the features of the shortlisted products and the capabilities of the product providers. Product features can be gleaned from the software and product reviews. The goal of the exercise is to see how well each product satisfies FairFund's prioritized needs. Each group will be asked to

rank each software product for each framework category assigned to them—using a scale of 1 to 3, with 3 representing the highest ranking—and to briefly explain their reasons for the ranking.

8. (40–50 minutes) Give participants time to complete the small-group exercise. Participants will use IS6-H2 as a worksheet to complete their assignments. They should be prepared to discuss and justify their choices.
9. (40–50 minutes) For each category in the framework, ask one group to present its findings to management for approval (that is, in front of the entire class). (Choose the group that was observed making the best use of the framework—or the one that agreed with the predetermined case answer!)

Give each group only 5 minutes to present the reasons for the rankings, including the strengths and weaknesses of each product. (Senior managers are busy people!) It may be advantageous to suggest a format for the presentation.

Allow all other groups that worked on the same software and category 2 minutes to add any information they believe to be appropriate or to disagree with the findings. (Alternatively, each group assigned to the same category could present a portion of the category—for example, one group could present the strengths, another, the weaknesses, and so on.) Then allow 3 minutes for questions and clarifications from the entire group.

Follow this process for each of the categories of the framework. Keep the reporting moving. Create a grid of the results—similar to the smiling faces of the high-level scan—on a flipchart. The grid should note first and second choices for each category of the framework.

10. (10 minutes) Process the activity. Ask participants what they think of the framework tool and of the grid/results. What conclusions, if any, can be drawn? Ask how they feel about the reliability of the results.
11. (5 minutes) State: FairFund has now used all of the product reviews that it has available to complete the *first portion* of its due diligence work. Note that if the task force does not have reviews available, it must place significantly more emphasis on the other due diligence activities in order to gather sufficient information for the evaluation—for example, vendor and user interviews.

Have cotrainer interrupt with a note—again! Read the note to the participants. It says that the management doesn't want the task force to overlook or underemphasize the security aspects of these products. They are hopeful that the task force's due diligence will cover security *extensively*. The managing director, Chris, expects to know the potential security risks for each of the shortlisted products and the internal controls necessary to mitigate those risks.

Take this opportunity to briefly reinforce the importance of information and of security. Remind participants that in session 4 we built the security issues into the task force's needs analysis framework and the resulting report to ensure that they would *not* be overlooked in the evaluation and selection process. As a result,

when evaluating products using these tools, the task force automatically includes a variety of security criteria in its analysis. Display IS4-H5 (exercise from session 4) and explain how the general format could be used to provide the product-specific security information that Chris has requested.

Ask and discuss whether and why they think Chris is so fanatical about this issue? Remind participants that information is a valuable asset (as previously discussed).

12. (5 minutes) Summarize by asking participants to review all the steps taken so far in the IS process, using FairFund to illustrate. Distribute and review IS6-H3 (another way to look at the process), using it to guide the discussion.
13. (2 minutes) Close with the reminder: We have determined your MFI's needs, researched a shortlist of available products, and begun due diligence on those products. Review the session's current position on the system development life cycle flipchart. Ask participants what they think we need to do next? Answer: Conduct additional due diligence and make a final recommendation!

## Skit Script

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**Setting:** Hotel lounge/bar at microfinance conference, with noise and music playing in the background

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**Actors:**

FairFund Board Member (*a politician on a reward trip with spouse*)

FairFund Managing Director (Chris)

Other MFI Directors

Legacy (*a software vendor; a very likable but boastful, smooth talking, developmental tourist, who has only marginal experience with microfinance*)

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**SCRIPT:**

*\*\*\*Conversation among Mr/s. Board, Legacy, and various MFI Directors\*\*\**

**Mr/s. Board:** (*Enters the room and joins a group of conference participants and other people she does not know. She shakes hands with every one and joins in the fun.*)

**MFI Director 1:** How are you? How is your MFI?

**Mr/s. Board:** I am fine. I am so glad I could come to this conference. I am a member of the board of directors for a very large and successful microfinance institution. FairFund is updating its information systems, and it seems that this is the place to be to get the latest gadgets. And my spouse is enjoying the sightseeing very much also. Oh, here comes our managing director.

*\*\*\*Managing Director (Chris) enters and introduces herself\*\*\**

*\*\*\*Conversation continues\*\*\**

*\*\*\*Legacy enters and joins conversing group\*\*\**

**Legacy:** (*breaks into conversation to introduce himself*) Hello. I am Legacy, an information expert. Have you visited my booth at the expo? I invite you all. I have lived here for a long time and know all the MFIs. I graduated with a degree in computers and now have my own business.

**Mr/s. Board:** Oh, really. You are just the person I need to talk to. We are looking for a new information system. What do you suggest?



**Managing Director (Chris):** *(frowning, interrupts)*. Perhaps you should set up a meeting to talk with our IS director.

**Mr/s. Board:** Oh, nonsense. It seems like this man knows what he is talking about. Why, he has a degree, his own business, and even a booth at this conference! He wouldn't be invited if he didn't know what he was doing.

**Legacy:** Oh yes, yes—we can make a deal right here. It is no problem for me—because I know what most everyone wants. I can just replicate something for your FairFund. It will be no problem. I could start work next week and have everything you need finished within the month. No need to delay.

**Mr/s. Board:** How true! *(laughing)* No need to delay. I am so glad that decision has been made! *(to managing director)* Let him know our contacts. And let's all have another drink on the house to celebrate the deal and FairFund's new information system!

**Managing Director Chris:** *(mutters to herself)* Oh, dear what will our IS director say?



# Overheads

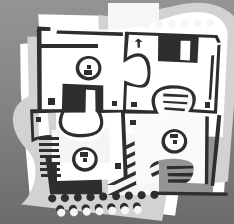
**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**





## Framework for Evaluation

- **Functionality, Expandability, Flexibility**
- **Usability**
- **Reporting**
- **Standards and compliance**
- **Administration and support**
- **Technical specifications and correctness**
- **Cost**





# Handouts





# **Management Information Systems for Microfinance: An Evaluation Framework**

*Distributed at the end of session 1 as homework (IS1-H9).*



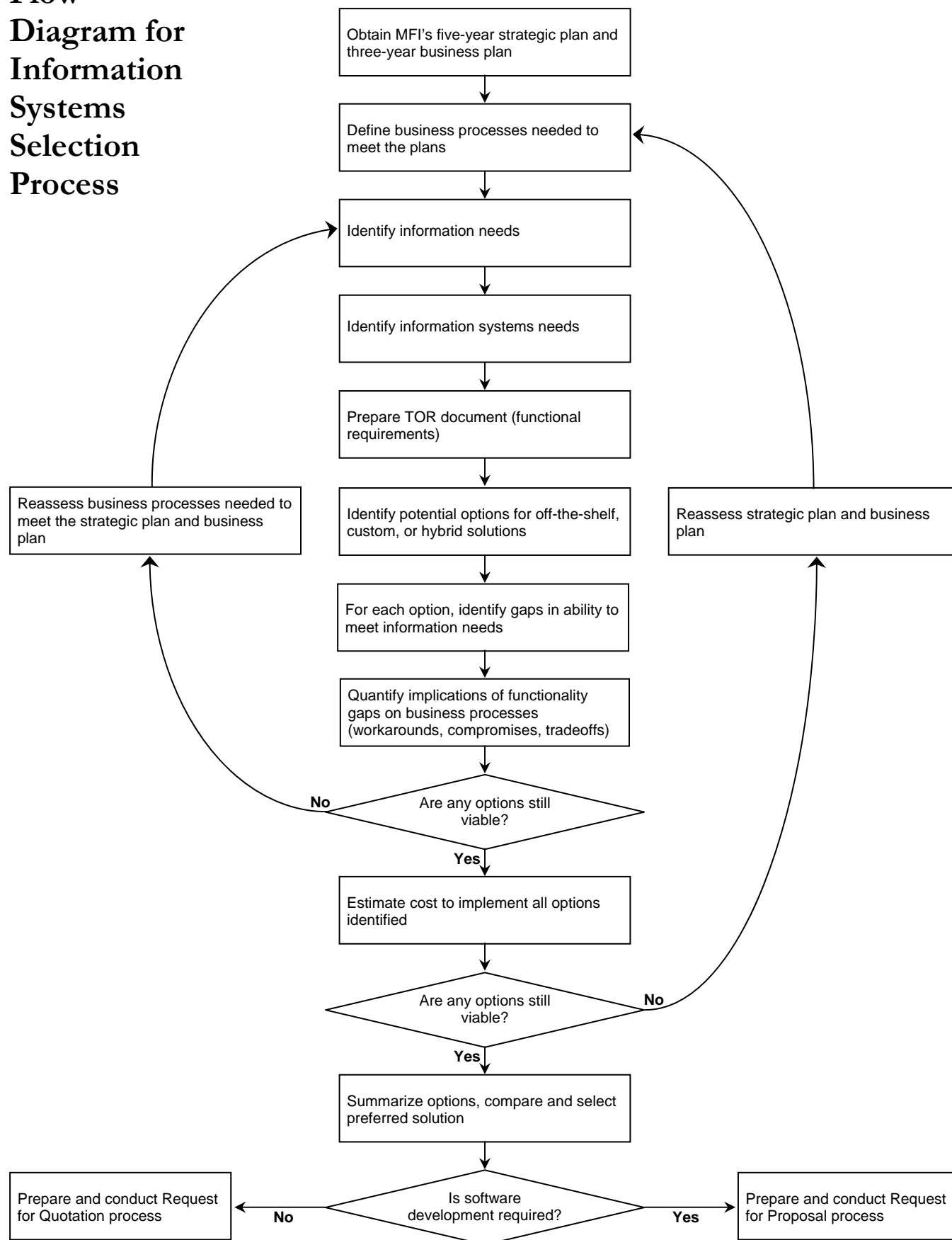
## Case Study Worksheet – Software Evaluation Using Framework Ranking

Use this worksheet to note your ratings for the shortlisted software product assigned to you. Compare the software review document with the completed FairFund framework (Case Study, Part 9).

Topic	SmartSol	ELoanTracker
<p><b>Functionality and expandability</b></p> <ul style="list-style-type: none"> <li>▪ Functional completeness, appropriateness, and integration</li> <li>▪ Accounting package</li> <li>▪ Portfolio tracking</li> <li>▪ Deposit monitoring</li> <li>▪ Customer information system</li> <li>▪ Expandability and institutional growth</li> <li>▪ Flexibility</li> <li>▪ Customer-centric vs. account-centric</li> <li>▪ Institutional types</li> <li>▪ Lending methodologies</li> <li>▪ Loan interest types</li> <li>▪ Savings and deposit account types</li> <li>▪ Deposit interest types</li> <li>▪ Payment types</li> <li>▪ Payment frequencies</li> <li>▪ Multiple branches or regions</li> <li>▪ Multiple languages</li> <li>▪ Multiple currencies</li> </ul>		
<p><b>Usability</b></p> <ul style="list-style-type: none"> <li>▪ Ease of use and user-friendliness</li> <li>▪ User interface</li> </ul>		
<p><b>Reporting</b></p> <ul style="list-style-type: none"> <li>▪ Reports</li> <li>▪ Report generation</li> </ul>		

Topic	SmartSol	ELoanTracker
<p><b>Standards and compliance</b></p> <ul style="list-style-type: none"> <li>▪ Accounting soundness and standards</li> <li>▪ Governmental &amp; supervisory adherence</li> </ul>		
<p><b>Administration and support</b></p> <ul style="list-style-type: none"> <li>▪ Security</li> <li>▪ Backup and recovery</li> <li>▪ Fault tolerance and robustness</li> <li>▪ End-of-period processing</li> <li>▪ Support infrastructure and maintenance</li> <li>▪ Version control and upgrade strategy</li> </ul>		
<p><b>Technical specs/correctness</b></p> <ul style="list-style-type: none"> <li>▪ Technology and architecture</li> <li>▪ Performance</li> <li>▪ Number and date handling</li> </ul>		
<p><b>Cost</b></p> <ul style="list-style-type: none"> <li>▪ Pricing and costs</li> </ul>		

# Flow Diagram for Information Systems Selection Process





# SESSION 7: SELECTION PROCESS – FINAL DUE DILIGENCE AND SOFTWARE AND VENDOR RECOMMENDATION

## Session Summary

**OBJECTIVES:** By the end of the session participants will be able to:

- Design and develop questions for an RFP
- Request a software demonstration
- Check user references
- Make and justify a final software decision
- Make and justify a final recommendation, and seek approval to proceed

**TIME:** 148–162 minutes

- Session Topics:**
- A. Additional Due Diligence Activities (*47–52 minutes*)
  - B. Tools for Due Diligence (*50–55 minutes*)
  - C. Final Due Diligence on Products and Vendors (*51–55 minutes*)

**SUPPLIES:** Flipchart paper  
Markers  
Masking tape  
LED projector or overhead projector

## TRAINER MATERIALS

IS7-M1 Definitions – Request for Proposal (RFP) and Request for Quotation (RFQ)

## PARTICIPANT MATERIALS

**OVERHEADS:** IS7-O1 Due Diligence Continues  
IS7-O2 Alphabet Soup – RFP, FRQ, RFI, SOW, TOR  
IS7-O3 FairFund’s Memo to Name Software and Vendor

**HANDOUTS:** IS7-H1a Question Planning Worksheet: Beyond the Product Reviews

IS7-H1b Question Planning Worksheet – Answers **Optional**

IS7-H2 Software Selection, Implementation and Negotiation of Software License and Maintenance Contract  
IS7-H3 Sample Document Formats and Templates

**CASE STUDY:** Part 13 Developing an RFP/RFQ  
Part 14 Final IS Software Recommendations

## PREPARED FLIPCHARTS:

Application question: What do you think will be the biggest problems in your MFI?

## Session 7: Selection Process – Final Due Diligence and Software and Vendor Recommendation

### TOPIC A: ADDITIONAL DUE DILIGENCE ACTIVITIES

1. (2 minutes) State: Executives at FairFund are anxious to make a final selection and procure a new system—and they are very happy to have had so many independent product reviews available to get them this far along in their selection process. However, they know they haven't completed their evaluation. They have unanswered questions (such as, portions of the needs analysis framework that have not been addressed by the reviews), and they haven't completed all of the anticipated due diligence activities.
2. (10–15 minutes) Ask: What questions do you still have concerning the procurement of IS software for FairFund? What elements of the needs analysis Framework have not been addressed? Ask participants (working in neighboring pairs) to develop a short list of questions that need to be answered before FairFund can make a final selection.
3. (10 minutes) Solicit responses to the exercise and discuss. Write the major concerns named on a flipchart as appropriate. Possibilities include costs, services provided, reliability of service from vendor, vendor reputation, client satisfaction with vendor and software, opportunity to see the software in action, estimated time factor, and so forth.

Ask participants how they would get this information. In answer, remind them of the list of due diligence activities they developed in a previous session. It included options such as interviews with vendors, software demonstrations, and interviews with MFIs currently using the software. Show IS7-O1. Note that, though these steps are listed in a natural progression, they can actually be done in almost any order based on the estimated time required to complete each.

Remind participants that some of these steps will require considerable lead time to arrange, so they must be planned for in advance. It is possible for them to start making these arrangements while are studying the independent reviews.

4. (15 minutes) Distribute IS7-H1a. In preassigned subgroups, have participants complete the worksheet. If there are time constraints, have groups “jigsaw” and work on only one part of the worksheet.
5. (10 minutes) Return to the main group to review participants' answers to the questions. Ask: What did you want to know from the vendors? From the demonstrations? From the products' current users? (Using the answer sheet is optional. If desired, complete the sheet while preparing for the workshop. Then distribute the answer sheet to participants at the end of the exercise.)



## TOPIC B: TOOLS FOR DUE DILIGENCE (RFP, RFQ, RFI, SOW, TOR)

6. (5 minutes) Have participants start obtaining some of the missing information by communicating with the vendors. Ask them how they would go about getting their questions answered. Ask: What do you expect the response to look like? How would you evaluate the merits of the responses? Obviously, there are a number of ways to communicate with vendors, including personal visits, email and paper correspondence, and telephone. The manner and intensity with which this activity is pursued depends somewhat on how much information they have gathered already, where the vendor is located, how critical the questions are to the task force's analysis, whether they are buying or developing the system, and so forth.

Tell participants that it is best to have their questions and the vendors' answers committed to writing. This reduces the chance for misunderstandings, enables them to evaluate responses objectively, provides tangible evidence of the vendors' commitments (if necessary in the future), and ultimately helps the task force to make better choices.

7. (10 minutes) Ask: How is this research typically accomplished? Are there any documents that are traditionally used to communicate with potential vendors and suppliers? Answer yes and show IS7-O2 as a summary. Briefly review the documents named: Request for Proposal (RFP), Request for Quotation (RFQ), Request for Information (RFI), Statement of Work (SOW), and Terms of Reference (TOR).

Ask: What are these documents and how are they used? Ask why they should use them. State that a well-designed document provides a formal and organized way for an MFI to get product vendors to answer their questions. The RFI, for example, should briefly describe the participant's organization and clearly state all its needs and expectations with respect to hardware, software, installation, support, upgrades and enhancements, and so on. The task force member can attach the needs analysis report or completed framework document to itemize detailed requirements. It can also include a recommended timeline for the installation and budget.

State that these are highly individualized documents. The elements of each will vary depending on the specific use to which they are put (that is, the participant's specific project). No two RFPs, for example, will be exactly the same. Explain that this is one reason the workshop can only present samples and formats and why participants can't develop one for their MFI during this course. Remind participants of the importance of using these documents.

8. (5 minutes) Distribute Case Study Part 13 and allow participants time to read it.
9. (5 minutes) Discuss the reading briefly. Ask: What do you expect the responses to look like? How will you evaluate the merits of the responses? How long do you think it will take to get a response? Tell participants that getting responses typically takes a *minimum* of one to three weeks and depends on how much information the RFP is requesting. The RFP and RFQ should clearly state when

the expected response is due back to the MFI, but the reasonableness of the request should be verified with the vendor before a deadline is set.

10. (15–20 minutes) Move on to check out the responses to FairFund’s RFP. Distribute Case Study Part 14. In small groups, have participants read and evaluate the completed responses to the RFP/RFQ. Ask groups to respond to the following questions: Which products do you want to see during a live demonstration? If you had to decide at this point, which product or vendor would you recommend to FairFund’s management? Groups should be prepared to defend their choices in to the main group.

11. (10 minutes) Reconvene the group and lead a general discussion on the responses to the RFP and the groups’ answers to the questions. Ask the participants if they feel they received all of the information they needed to make a decision. What would they do if a response was late? Then ask how confident they are in their decision. What does this tell them about the task force’s job?

Remind participants to ensure that all of their task force’s questions are answered *before* a final decision is made.

### **TOPIC C: FINAL DUE DILIGENCE ON PRODUCTS AND VENDORS**

12. (3 minutes) Ask: Do you feel ready to make a final decision yet? Or is there something else you want to do first? Quickly lead into a discussion of the importance of asking for product demonstrations and checking user references.
13. (5–10 minutes) State that there are two ways to work with the vendor to actually view the system in action. Ask: Does anyone know what these are? Answer that the vendor (or a vendor representative) will demonstrate the software for potential clients. Also, if a potential client already has a computer system that can run the hardware, the vendor may provide a demo copy for a brief time.

Lead a discussion on getting the most from vendors’ demos. Ask: When you schedule a demonstration, who should attend? What should you ask to see? Answer that they should invite people from all functions within their MFI that will be affected by the system (accounting, lending, operators, managers, and so on). Generally, within time constraints, they should arrange to have each person see those elements of the system that are most important to his or her responsibilities within the company. Also, make sure the demonstration covers all the needs prioritized in the needs assessment report from the earlier session.

Ask: Why should you ask for specific functions to be demonstrated? Answer: It is important to show that you are an active participant and not simply letting the vendor choose what to demonstrate. The vendor will always choose to show those parts of the system that work the best. Participants’ task force will want to see more than just the “wow” factor; they need to know that the software actually accomplishes their MFI’s needs and be able to evaluate the system’s ease of use and other characteristics.

14. (5 minutes) Ask: What due diligence activities can you perform with regard to the vendor's organization? (Explain that if the task force is planning to contract with a vendor to modify a system or to develop a custom system, these due diligence activities will also apply.) Lead a general discussion to cover how to research the viability of the vendors' business and make sure the business is a legal entity. For example, in many countries, various business and credit rating agencies will verify that a business is in good standing and therefore likely to be around to support its customers and products in the future.

Depending on the location, it may be possible to visit the vendor's establishment. Does it look like a going concern? How many people work for the business?

It is important to check references. Tell participants they will want to contact or schedule a visit with users of the product. They should not ask only those users provided by the vendor, as they will tend to be the happiest customers! Online lists and discussion groups (for example, DevFinance, MF Practice, CGAP's Microfinance Gateway Web page) are good places to find other users. Ask users about their general satisfaction, how they use the product, how well the vendor responds to problems (for example, response times, costs, ability to resolve), whether they have needed modifications to the basic system, and so forth.

15. (5 minutes) Refer back to the previous skit, in session 6. State that Jan, the IS manager and IS task force leader, was saved because Legacy never responded and could not be located by his supporter, the anonymous member of the board of directors. Ask if this could happen in real life and how they would deal with such a situation? Lead a brief discussion on participants' experiences with vendor selection.
16. (5 minutes) Ask participants to individually write their answer to the question written on the flipchart: What do you feel will be the biggest problems in your MFIs when developing RFP/RFQs, evaluating products and vendors, and ultimately selecting a system?
17. (5 minutes) Ask for a sampling of anticipated problems. Solicit solutions.
18. (5 minutes) State that due diligence (for example, writing a good RFP/RFQ, viewing product demos, calling user references) can be time-consuming work. Ask: Why should you take the time for these activities when you return to your MFI? Answers can be that due diligence forces MFIs to be clear about requirements, provides independent validation of products and vendors' capabilities and claims, forms a basis for the contract, helps plan costs, helps to ensure effective communications, and helps MFIs to objectively evaluate bids and choose the best options. Write responses on a flipchart and discuss the merits.
- Ask: What do you think could happen if you do not take the time to request proposals, view demos, and check references? Answer: Failure! You do not get the information necessary to make sound business decisions, the system might

not meet current or future needs, you may end up with poor equipment, cost overruns, lack of ongoing technical support, untrained staff, and so forth.

19. (5 minutes) Ask: Based on the evidence you have now, which product is your first choice for FairFund? Why? State that, generally, not everyone will agree. Note that there were some differing views on this issue after the Case Study Part 14 exercise. Therefore, even after final due diligence, it is possible to still disagree. Ask: How do members of an MFI's IS task force reach a conclusion or develop a consensus as to which product the task force will recommend? Discuss, and try to reach consensus.

Announce that Jan will draft the team's recommendations memo to management. The memo will include reference to a preliminary implementation schedule with timeline and budget. Management should approve the plan and allocate the necessary resources before beginning the next step. The team will await management's approval before proceeding.

20. (5 minutes) Announce an all-staff memo from management. Show IS7-O3. Ask and discuss: Why do you think MICRO was finally chosen? Answer: In the end, the IS task force recommended (and management approved) that FairFund purchase the MICRO product because of the following: its cost-benefit profile, easy tracking of group information as well as individual information, and ability to add modules over time as they become important for FairFund. It was a difficult decision to make, but the team thought that the SmartSol price was too high for the percentage of features that FairFund would actually use in the next three to five years. The MICRO product matched SmartSol's capabilities on enough of the requirements—and in a few cases even provided an important future option not available with SmartSol.
21. (5 minutes) Ask participants if they agreed with this decision. If they disagreed, how do they feel? Ask: How might dissension manifest itself in your own MFI's operations? How will you react? How could you manage such disagreement?
22. (3 minutes) Summarize, close, and bridge to next session. Thank the task force for its work and express sincere trust in the decision for a great IS and implementation. Review the steps taken in this session and the results. Clarify any remaining issues, take questions, and summarize the importance of using a formal process and written documents to get the best system for the money. State: We are now ready to actually implement FairFund's system in the next session. Distribute IS7-H2, CGAP's software selection guidelines, and IS7-H3, sample document formats and templates. (Download most current information from the CGAP Gateway Web site for IS7-H2.)

## Definitions

Request for Proposal (RFP) A document that asks (requests) bidders to submit a suggestion (the “proposal”) and a timeline and a price for how to solve a clearly defined problem. The clear definition of the problem is the main part of the RFP document.

Request for Quotation (RFQ) A document that asks bidders for a price to deliver a good or a service within a specified time period. The RFQ is a suitable document to use when the required solution is well known and the main decision point for the purchaser will be the price and, possibly, the delivery date. Typically a much simpler document to prepare than an RFP. (See *RFP*)



# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**





IS7-01

## Due Diligence Continues

- Collect information from the vendor, in writing
- Look for other reviews or other third-party evaluations
- Review a demonstration version of the software
- Check references with other clients using the product or the vendor
- Visit an MFI that is using the software, or see a live demo using your own data



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IS7-02

## Alphabet Soup

Request for Proposal (RFP)

Request for Quotation (RFQ)

Request for Information (RFI)

Statement of Work (SOW)

Terms of Reference (TOR)

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# FairFund

IS7-03

## *MEMO: TO ALL STAFF*

We are pleased to announce that

### **SOFT CORPORACIÓN**

has been recommended and selected to install our new information system.

The system will be based on

### **MICRO**



More details on how this will all happen to follow.

At this time we wish to thank everyone for their input, and the task force in particular for its hard work over the past several months.

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# Handouts



## Question Planning Worksheet: Beyond the Product Reviews

Jan, the IS manager and IS task force leader, was still unaware that a board member had awarded a contract to a software vendor known as Legacy, so she and the task force carried on with their work. They had a lot of information on three software selections that might suit their needs. Thanks to all the information on the CGAP Gateway Web page, they were able to apply their evaluation framework to narrow down the choice. Still, they had many questions and were a bit nervous about choosing software only by reading about it. They decided to continue their investigations using other means.

They had questions about the vendor, wanted to see the software perform, and also wanted to hear from existing users of the system. They decided they would take some time to develop questions for each and crosscheck each other to make sure no stone was left unturned.

Please complete the worksheet below by listing the questions FairFund still needs to have answered.

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1. What more do you need to know about the vendor and what information do you still need from the vendor?
  
  
  
  
  
  
  
  
  
  
2. What would you like to learn about during a software demonstration?
  
  
  
  
  
  
  
  
  
  
3. What questions would you ask of the product's users? How would you find out who they are?









# Software Selection, Implementation and Negotiation of Software License and Maintenance Contract

## SOFTWARE SELECTION:

- Introduction
- Guidelines for Software Selection and Implementation Process
- Guidelines for Purchasing and Negotiating a Software License
- Guidelines for Purchasing and Negotiating a Maintenance Contract

## INTRODUCTION

A management information system, known as an MIS or simply IS, involves all aspects of gathering, storing, tracking, retrieving, and using information within a business or organization. Thanks to the development of computers and the software applications that run on them, much of this work can now be automated and the information more readily accessed. However, the software application itself is not the information system.

*Note to the reader: Reference to a software application in this text implies the main software used to track an organization's core/critical information needs, also known as information system software or enterprise software.*

All the policies, procedures, and practices that direct an organization's operations and the staff that interact with the information, combined with the software and hardware, comprise an information system. Consequently, the selection and implementation of a new software application for tracking an organization's core information needs generally result in significant changes to the organization and the overall management information system. An organization's information technology (IT) strategies should underpin and drive the achievement of the organization's business strategies. Hence, it is critical that an organization choose its MIS software in light of its organizational goals and objectives. When the new software is selected, those organizations who are best able to realign their operational policies and practices with it will have an easier time with the implementation, create more positive organizational goodwill, successfully optimize the software, and achieve a greater return on their investment.

When considering the purchase of new enterprise software, it is important for management to look at not only the cost of the software, but also the cost of hardware; communication capacity, where necessary; training; and personnel time. As a general rule of thumb, an organization should expect to spend anywhere from 1 percent to 5 percent of its operating budget on IT and the staff to support it. However, this may not hold true for a year that involves a large capital investment in new hardware and software. The majority of the expense for the organization is not the software itself, but all the other components necessary to successfully implement and optimize the information system. Staff resources include time for the up-front software review and selection; preparation and conversion of old data to the new system; installing new hardware if necessary, as well as the new software; and running the old and new systems in parallel for a determined period of time. Also, it will be necessary to determine how much technical support is required for maintaining the software and data over time.

## **GUIDELINES FOR SOFTWARE SELECTION AND IMPLEMENTATION PROCESS**

### ***Project Team***

The process of identifying new enterprise software requires the creation of a temporary project team, as is typical with any change initiative that has organization wide impact. This project team should include individuals from all levels of the organization. While generally one person takes the lead on directing a project such as this, many people help gather the necessary information, prioritize the specification requirements, and make the final software selection. Senior management support, in both time and financial resources, is critical to the success of this type of endeavour. The team should include individuals with project management experience, MIS knowledge in general, if not specifically with the given MFI, daily operational knowledge of the MFI, and knowledge of its strategic direction and growth. Depending on the pace of the project, monthly—if not weekly—team meetings are highly recommended.

### ***Steps of Software Selection***

Below is a general overview of the steps involved in selecting and implementing new MIS software. Each of these steps can, and should, be broken down into numerous tasks.

#### **Software Selection Process**

1. *Determine Information Needs*
  - Review current and future information needs with regard to strategic operational goals and objectives.
  - Define measurable expected outcomes for the organization with the new system (that is, transaction volume, time per transaction, cycle times disbursement or payment processing, report frequency, quality, and so on).
2. *Assess the Organization's Readiness for New MIS Software*
  - Conduct an internal review of operational policies, processes, procedures, and practices to ensure completeness, soundness, standardization, and alignment among them and with the organizational goals and values. This should include internal financial and administrative controls and credit management. The accounting system should be up-to-date and follow generally accepted accounting principles (GAAP) standards.
  - Conduct an internal status review of hardware, operating and network systems, software, and staff technology capacity to determine the organization's readiness for new IS software. Where necessary, implement changes in policies and procedures and upgrade hardware.
3. *Develop Specifications Document*
  - Develop a “specifications” (requirements) document that captures the organization's current and future information needs and assigns a priority to each.
  - Determine what the new system should be able to do and prioritize those items. This is a critical step in the review and selection of new software. Most microfinance managers have general expectations for the new software, but it is important to create a detailed document of input and processing parameters and specifications. Prioritizing requirements is critical because they become the criteria for evaluating potential software. (The format of this document can be in a table or spreadsheet. The list of requirements should be categorized or grouped, and it simply needs to have a priority column for rating each item.)

#### 4. *Conduct Initial Review of Available Software Applications*

Conduct a high-level scan of available software packages for microfinance institutions, comparing them against the organization's top 5 to 10 requirements. Suggested criteria include financial products supported, user interface language, technical support provided, number of clients supported, price, hardware platform, type of database used, size, and satisfaction of the client base using the released versions (not a beta version). Additional criteria that may be on this top 10 list are user interface capabilities, importing or exporting capabilities, or any other institution-specific functionality. The result of this step should be a list of approximately four to eight viable software options.

#### 5. *Create Shortlist of Potential Software Applications*

- Review this list of potential software solutions in greater depth, compiling information from vendors and third-party sources, such as the CGAP site.
- Compare these applications against the criteria outlined in the specifications document to create a shortlist list of two to three solid options.

#### 6. *Conduct In-Depth Due Diligence with Software Demonstration*

- Conduct a thorough due diligence review of functionality for each software on the shortlist. This process should include software demonstrations from each of the vendors.
- Where possible, conduct reference checks with other institutions using the application. Also, request from each vendor a proposed plan for implementing the software and conducting training, along with a budget.

#### 7. *Make the Selection*

Make the final selection of the software application based on the priorities outlined in the specifications document. Typically, the more people involved either directly or indirectly in this process and the final selection, the greater the acceptance of the new software and their willingness to make the necessary changes for its successful implementation. After the software has been selected, but before it has been purchased, an external audit is generally recommended.

#### 8. *Develop Implementation Plan and Negotiate Software License*

- Develop a project plan with a timeline and necessary resource levels for implementation, data conversion, and training.
- Negotiate an agreement with the software vendor, which should include details on data preparation and conversion, installation of the software, technical support for the software, training, user support, ongoing maintenance, upgrades, and so forth.

#### 9. *Implement the New Software*

- Where necessary and in preparation for the implementation, streamline and revise operational policies, procedures, and practices to ensure alignment with the new software application.
- Execute the implementation and data-conversion plan, which typically requires running systems in parallel for a shortlist period of time.
- Provide training to staff on the new software and guidance on how job responsibilities will change with the new system.

10. *Evaluate the Software's Performance*

Evaluate the application's performance after a predetermined time to determine that all functionality is operating correctly and that the organization is achieving the objectives defined at the beginning of the selection process.

11. *Optimize the Information System*

Continue to optimize the organization's information system by incorporating more of the available functionality as meets operational needs, providing access to advanced training on the software, or streamlining processes that connect with the software.

### **Management Considerations**

A new automated information system will have a large impact on an MFI, and its manual procedures and policies. Any areas that are currently handled on a case-by case basis could be problematic. Therefore, the following issues need to be considered while conducting software comparisons:

1. *Organizational Policies and Procedures:*

- Workflow and Timing— Manual processes must blend into the automated system.
- Transaction Flows—Address, revise, and reach agreement on input forms, authorization signatures, and report routing.
- Organizational Rules—The system must include specification of any organization-specific rules in existence.
- System Rigidity—Once again emphasize that the flexibility of manual processes may evaporate with a new system.

2. *Computer-Related Policies and Procedures:*

- Data Entry Policies and Procedures—Who's responsible for entering the data? Does this still make sense if the business processes change with the new system?
- Timing Considerations—When will reports be generated? What are the cutoff dates for data entry?
- Data Updates—Can anyone update data at any time or will there be cutoff times or dates?
- User Access—Which users shall have access to which portions of the database and on what basis?
- Security Administration—What are the current levels of security? What level is desired? Is there a plan for the prevention of data damage or loss, the backup of data and program files, unauthorized distribution of information, computer viruses, network crashes, and interruptions in power?

3. *Input and Processing Capability:*

- Speed—Just because a system can hold a large volume of records does not mean that it can process changes to all those records rapidly. Acceptable time parameters should be established early in the project.
- Information Retrieval—Users must be able to retrieve grouped data, such as a list of certain types of loans.
- Data Integrity—A good system includes several types of procedures that maximize the accuracy of the data it contains. Most data errors occur in the data entry process through miscoding or operator carelessness. Edit and validation processes limit the types of data accepted in a particular field.

- **Printing and Report Design**—A good system is capable of producing reports for management, employees, donors, and government agencies.
- **Distribution Needs**—The form in which information needs to be disseminated has to be addressed. Options may include electronic mail, batch data, use of external databases, distributed or offline printing at multiple locations, and other telecommunications options.

#### 4. *Personnel and Training:*

- **IT Staff**—A centralized database will require the use of a network in some form to enable users access to the data. The larger the database required, typically the more sophisticated the network will need to be. Both of these elements together will require a highly-skilled network systems administrator. Consider the availability and cost of hiring such a person for the institution.
- **Users**—Depending on the daily staff's previous experience with using computers, it may be necessary to provide a much greater amount of up-front training in basic computer skills in addition to training on the new software package. For novice users, a Windows-based product can be much less intimidating.
- **Management**—Managers often receive the same training as staff users, though their primary contact with the MIS is not putting data into the system, but getting information out of the system. It is important to provide training to management that is customized to their information needs as managers. In some cases, exporting the data or reports into MS Excel or a similar tool will be necessary to do more in-depth data modeling and trend analysis. An MIS is only as good as the information its users can extract from it.

### **Implementation Plan**

An implementation plan should break down the necessary steps to bring the entire organization online with the new software in an organized and manageable manner. No two implementation plans are the same, even when installing the same product. Every organization's context, staff skills, and available resources are different. Typically, this means conducting the implementation in phases. The phases can be divided up by software modules (functionality), by levels across the organization, or by regions or departments. An MFI that is decentralized in its operation may want to phase the rollout by regional office and branch, and not necessarily just by functionality. For implementation of the first phase, it is advisable to select the region or level that has the highest degree of standardization or is the most prepared for data conversion.

#### *Phase One*

The first phase generally is fraught with unforeseen problems because this is when all the bugs in the software are being found and fixed and the wrinkles in the process are being ironed out. From the lessons learned in the rollout of the first phase, an organization should be able to improve the implementation plan in all other areas of the organization.

Implementing a new software application when it is an institution's central enterprise software is difficult. It is important to plan and pace the implementation and conversion process. While the initial installation and conversion should typically take two to six months, it may take more than a year before the organization is optimizing all of the system's functionality. Typically, this is seen as a good sign because it means the software application will meet the needs of the organization as it grows. Too frequently organizations buy a software application that meets only their current needs, and by the time the software is implemented, they have already outgrown its capacity.

### *Phase Two and Beyond*

To choose a software application that includes functionality beyond current needs, incorporate into your long-term implementation plan information on how and when the institution intends to make use of the new functional components. Typically, the first phase of implementation will involve inputting all the new loans into the new system and converting a certain portion of the old loans. When this is completed, the old and new systems reconciled, and the software stabilized, phase two begins and additional information is input into the system. For example, if your organization has been tracking life and loan insurance manually or in a separate software package from the loan tracking application, as part of phase two, you may want to begin tracking this data in the new software. Or, depending on your fiscal year-end, your organization may want to wait until the new fiscal year before converting to the new accounting module, making this the second phase of your implementation plan. For some institutions, the second or third phase of the implementation may be to start tracking savings or using PDAs (personal digital assistants) for data capturing.

Whatever plan you undertake for implementation, it is nearly impossible to overprepare for the implementation of new IS software. Inevitably something unexpected comes up during the process. However, when the implementation plan is well thought out, handling unforeseen issues is much easier.

Additional resources for this process include the "CGAP Handbook for MIS for Microfinance Institutions," 1998; the MBP publication "MIS for Microfinance: An Evaluation Framework," by Andrew Mainhart, November 1999; and the SEEP Nexus publication on "MIS Between Salvation and Frustration," Fall 2000 (PDF file).

## **GUIDELINES FOR PURCHASING AND NEGOTIATING A SOFTWARE LICENSE**

After an organization has determined which software application it wishes to use, it is time to negotiate the licensing and maintenance agreement(s). These agreements may be the same document or two separate documents depending on the vendor. The cost of the software application, or the license, as it is called, is generally a standard price for all consumers. However, the services the vendor provides the organization along with the software will vary contract to contract, client to client, and are open to discussion.

### ***Number of Licenses***

Software licenses differ in several respects from those for other goods and services. Most importantly, software licenses refer to an organization's right to use a certain number of copies at a certain number of locations. For example, an organization may have 50 staff members with unique login identification, but no more than 30 of those individuals would ever be on the system at the same time. In this scenario, the organization would only pay for a license for 30 users. Depending on the pricing structure, a vendor may have a set price per user, or may have a price based on the number of users (for example, 0–5 users, up to 25 users, more than 25 users, and so on). Because it is easy enough to increase the number of users per license by simply paying more, it is better to be conservative initially about the number of user licenses purchased. The software license should also include operator and user manuals, as well as some form of online help in the actual application.

### ***Technical Support from the Vendor***

Additionally, the initial software license should cover a certain portion of the software implementation costs, such as the installation and configuration of the software. Beyond this, any customization or special requests of the software setup are typically charged on an hourly

basis, unless negotiated otherwise. A manager should strongly consider the type of support that will be needed to get the software up and running as quickly as possible and discuss this with the vendor. However, the vendor should not be allowed to dictate the level of support the institution will need. The vendor may try to undersell because they are stretched with other clients and work, or they may oversell to drive up revenue. The amount of support needed depends on the institution's IT staff's capacity and readiness for the new technology. If the institution is already networked, having a system administrator who is already familiar with the organization's network architecture will help greatly in this process.

The consulting services a vendor may offer along with the software license include project management support, guidance and assistance with data preparation and conversion, and training. Before discussing the costs for these additional services, an implementation plan should be designed and developed that addresses the following items:

### **1. Project Management**

- How aggressive is the implementation plan, both in the timeline and volume of location rollout?
- What level of effort will be needed to keep the plan on time and within budget?
- Who in the organization can be temporarily reassigned to manage the implementation and what previous experience do they have with IS software implementation or the current MIS of the organization?
- For what length of time will these employees be needed?
- For what amount of time during that period will they be needed?
- How strong are their troubleshooting (problem-solving) skills?
- Could this person benefit from project management guidance from the vendor? If so, how much?

### **2. Data Conversion**

- What data, if any, will need to be transferred to the new system?
- What issues are involved with converting the data (for example, lack of a standard way of calculating interest from one branch office to the next)?
- What is the volume of data to be converted?
- Given time, costs, and percentage of error, would a manual or automated conversion or a combination of both be better?

### **3. Training**

- What basic training is necessary for the IT staff and for the general staff?
- Are there any training prerequisites?
- Who conducts the training?
- What is his or her training experience?
- In what language is the training offered? Is this the first language of the trainer?
- Will the training be conducted in a structured class format?
- Is there a student manual that has examples and practice exercises?
- Does a TOT (training of trainers) option exist?
- What follow-up training options are available for reinforcing basic skills, learning advanced features, or instructing new employees?
- What resources (space, computers, transparencies, and so forth) will be necessary for the training?

- Finally, does the system have complete, well-written documentation that includes every term, function, operation, and error message?

When the scope of the implementation plan has been defined, it should be rather easy to determine the remaining cost of the agreement based on what is actually being provided. If possible, participate in or visit a training session for another client of the vendor to get a feel for the quality of the training provided. It is preferable that the person conducting the training be very familiar with the software application, but if that individual doesn't have good training skills he or she won't be able to effectively convey knowledge to the students. A good software company will provide quality training with its products, either directly or through a third party.

### **GUIDELINES FOR PURCHASING AND NEGOTIATING A MAINTENANCE CONTRACT**

Maintenance contracts are of the greatest value in the period immediately following startup, because they can help the MFI start off on the right foot before inefficient or unproductive patterns become ingrained. As an example, the maintenance contract may include participation in a "users group" as a means of suggesting and creating ideas for additional functionality or improvements to the software without it being a customization request. In addition, the maintenance contract may include a limited number of programming hours for creating special reports or other types of minor customizing requests. If such options are not currently provided, they could be points for negotiation in the maintenance contract. Also, it is important to know how quickly the vendors will guarantee to respond when there is a problem. An institution cannot afford to have its system inoperable and be forced to rely on paper backup for an extended period of time. This can be a challenge for an institution that is in a different time zone than the vendor supplying the support.

In brief, a properly administered maintenance contract benefits both users and IT staff because it accomplishes the following:

- Promotes better service, with improved timing, results and accuracy
- Fosters more realistic expectations
- Helps track and predict user demands
- Establishes agreement on priorities
- Provides management with summary information

The maintenance contract is generally based on a percentage of the cost of the initial software license. The percentage varies from 5 percent to 25 percent of the cost, but 20 percent is the amount commonly charged. This agreement typically provides the organization with product upgrades as they are released, technical support if problems arise with the application or the database, and user support for individuals interacting with the application daily. Technical or user support may be provided by phone, electronic mail, a Web site, and in person. Be sure that the the maintenance agreement specifies clearly how much support is to be provided, in what languages, and the guaranteed response time without additional charges being incurred. Depending on the distance to the client site, travel expenses, per diem expenses, and an hourly rate may be charged to the client as well. Also, agree on a fee structure for support services that go beyond the limits of the maintenance agreement.



## Sample Document Formats and Templates

### REQUEST FOR PROPOSAL TEMPLATE (INCLUDING SOW AND TOR)

Below is a template for a Request for Proposal (RFP) document intended for use by an institution looking to purchase a custom-made information system to manage its microfinance activities.

The required system is described in the Terms of Reference (TOR) section of the document. It is assumed to be an integrated solution containing an accounting system, a portfolio management system, and a deposit-tracking system.

Each section of the template includes a section called "Sample topics," which contains typical system attributes that the purchaser must consider and, ultimately, define in sufficient detail to meet the institution's specific needs. Please note that the suggested topics provided are not considered an exhaustive listing, merely a starting point for discussion.

<b>Section</b>	<b>Title</b>
Section A	Solicitation/Contract Form
Section B	Statement of Work (SOW) and Terms of Reference (TOR)
Section C	Packaging and Labeling
Section D	Inspection and Acceptance
Section E	Deliverables or Performance
Section F	Contract Administration Data
Section G	Special Contract Requirements
Section H	Contract Clauses
Section I	List of Attachments
Section J	Representations, Certifications, and Other Statements of Bidders
Section K	Instructions, Conditions, and Notices to Bidders
Section L	Evaluation Factors for Award
Appendix	Contract Deliverables List (CDL)

#### **Section A – Solicitation/Contract Form**

The first page of the solicitation identifies the RFP by title and by a unique procurement identification number. It contains the table of contents for the RFP. It may also be used for the signatures of the contracting parties.

#### **Section B – Statement of Work (SOW) and Terms of Reference (TOR)**

This section contains the Statement of Work (SOW) and the Terms of Reference (TOR). The SOW tells what the contractor will do while the TOR describes the product.

#### **Statement of Work (SOW)**

The SOW is the document by which all nonspecification requirements for contractor efforts (what the contractor should do rather than what the system should do) are established and defined. The SOW is the primary instrument around which contractor costs are based. The SOW also tasks the contractor to perform work that supports the requirements in the TOR. A thorough understanding of the program requirements is necessary to write a successful SOW.

When writing the SOW, ensure that tasks are stated in action words and in chronological order. Avoid vague, ambiguous terms such as “as necessary,” or “carefully performed.” Be specific: Contractors are only required to perform what is explicitly stated. All tasks should begin with the phrase “The contractor shall...” and state the work that is required. The phrase “The contractor shall be responsible for...,” is not contractually binding—nor is anything stated in parenthesis. Do not include technical specifications in the SOW.

Note that a list of the deliverables should be prepared separately in the appendix titled Contract Deliverables List (CDL).

A SOW should be tailored to the MFI’s unique requirements. It should also:

- Include adequate detail for bidders to accurately cost out the effort
- Convey what is wanted, not how to do it
- Avoid redundancy with other sections; that is, state requirements only once

### **Terms of Reference (TOR)**

This section contains the technical requirements for a material, product, or service and includes the criteria for determining whether these requirements are met. See separate document for full details.

1. Introduction and system overview
2. Best banking practices supported by system
3. Common system functionality
4. Accounting system functionality
5. Portfolio management functionality
6. Deposit-tracking system functionality
7. Charges and fees module
8. Interbranch operations
9. Interoperability with other bank systems
10. Interfaces/Delivery Mechanisms
11. Report generation module(s)
12. System and access security
13. Software and hardware
14. Financial product design module
15. Formula library

### **Section C – Packaging and Labeling**

This section is used to describe packaging (CDs, floppy discs, versions, and so on), and mailing and labeling requirements. The requirements in this section should be consistent with any packaging and marking instructions that are in the statement of work and any accompanying specifications.

### **Section D – Inspection and Acceptance**

Quality assurance and reliability requirements are included in this section and should be consistent with the statement of work and any accompanying specifications.

**Section E – Deliverables or Performance**

This section sets forth a schedule of deliverables, a completion date, milestones, and a period of performance. It should be consistent with the Statement of Work, and the items identified in the Appendix – Contract Deliverables List (CDL).

**Section F – Contract Administration Data**

This section contains information on accounting and purchasing associated with the administration of the contract.

**Section G – Special Contract Requirements**

This section can be used to describe fully any donor or third-party-furnished property that will be used by the project team (for example, project team office space provided courtesy of a board member, computer equipment available for development and testing purposes courtesy of a donor agency, and so forth) It should not include technical requirements.

**Section H – Contract Clauses**

This section identifies all contract clauses required by law or regulation and any additional clauses that will be included in the contract.

**Section I – List of Attachments**

This section contains a listing by title, date, and number of pages of attached documents, exhibits, and other attachments, such as the contract deliverables list (CDL), to the RFP. This section does not contain the attachments themselves.

**Section J – Representations, Certifications, and Other Statements of Bidders**

This section contains any solicitation provisions that call for representations, certifications, and other statements. For example, bidders are required to identify themselves as small business, small disadvantaged business, or woman-owned business if applicable.

**Section K – Instructions, Conditions, and Notices to Bidders**

This section contains information and instructions to guide bidders in the preparation and submission of their proposal. It provides details about how the prospective bidder is to prepare the technical, management, and cost/price information of the proposal.

This section should request all information necessary to evaluate proposals in accordance with the section “Evaluation Factors for Award.” Therefore, this section should be written after the “Evaluation Factors for Award” section.

**Section L – Evaluation Factors for Award**

This section identifies all evaluation factors and significant subfactors that will be used in evaluating proposals. Cost and past performance must be considered. Other factors are chosen according to what the MFI needs from the contractor. The relative significance of these factors must also be indicated here. Unless otherwise stated, the factors are considered equal. This is also true of subfactors within a factor.

Evaluation factors should be tailored to each acquisition and include only those factors that will have an impact on source selection. The evaluation factors must allow for discrimination among otherwise essentially equal proposals. A critical question to ask: “Will this factor help discriminate among bidders?”

Only those evaluation factors or subfactors that will discriminate among bidders should be included. Remember, the proposal should be evaluated only against the evaluation factors, even though the statement of work and terms of reference may be broader in scope.

Typically, factors include the following:

- Schedule
- Technical approach
- Past performance
- Management
- Performance risk
- Support

The relative importance of each factor must be stated and no factor should favor any one product or bidder. Subfactors further qualify the most important aspects of the factor. Fewer, critical discriminating factors facilitate streamlining the evaluation. Too many factors will be equally detrimental to the evaluation as too few factors.

### ***Appendix – Contract Deliverables List (CDL)***

This section of the RFP lists all deliverables that the successful bidder will be required to provide as part of the contract. All RFP data requirements fall into three general categories:

- Administrative data, such as management plans, schedules, and reports
- Financial data, such as cost reports
- Technical data, such as design specifications and engineering drawings

Data are acquired only when there is a legitimate need for them. Data requirements are identified in the RFP so that competing bidders may consider them in preparing the technical, management, and cost portions of their proposal.

## STATEMENT OF WORK

A detailed description of the work to be performed by the subcontractor.

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Hints for drafting the statement of work:

**Use mandatory language when stating a firm requirement (for example, “The vendor shall...”).**

- **Avoid ambiguous statements and words** with multiple meanings, such as “include,” “average,” “adequate,” and “or equal.”
- **Describe** the work and associated requirements **as fully and clearly as possible** to ensure a complete understanding, but do not overspecify.
- **Do not repeat requirements** described in other parts of the subcontract and do not include unnecessary narrative.
- **Flow down specific requirements** from the prime grant or contract.
- **Do not use catch-all phrases**, such as “to the extent necessary,” “as required” or “as applicable.” Describe the extent of the need, how the extent is to be determined, or the maximum not-to-exceed extent.
- **Do not infer a requirement** or state a requirement as an adjunct to another requirement. The subcontractor may overlook the inference or true objective, thereby creating a problem for both parties.
- **Do not tell** the subcontractor **how to do the work** unless the work is planned to be performed under a design specification.
- Use **simply constructed sentences and phrases** to describe intended meaning.
- When a part, component, or item is referenced, **use the same descriptive terminology each time** in order to avoid ambiguity.
- **Avoid including an “agreement to agree”** type of provision in the statement of work. Such a provision often does not work out as planned and can cause problems.
- **Include illustrations, diagrams, tables, charts**, and so on in the statement of work if they assist in describing the work or related requirements.
- **Have the statement of work critiqued by others.** Often such reviews will uncover discrepancies, inconsistencies, conflicts, or ambiguous descriptions.

## **SAMPLE CONTENTS OF TERMS OF REFERENCE (TOR)**

This section contains the technical requirements for a material, product, or service and includes the criteria for determining whether these requirements are met. The completed needs analysis report or framework can provide the basis for the TOR.

### **1. Introduction and system overview**

A brief description to introduce the reader to the scope of the system and its intended functionality.

### **2. Best banking practices supported by system**

Business practices that must be reflected in the system to meet the MFI's needs. Sample topics:

- Rapid follow-up on delinquency
- Flexible and integrated incentive system for loan officers and staff
- Small, frequent repayment installments
- Variable cash flow lending
- Links between savings and loans programs
- Relationship banking

### **3. Common system functionality**

Detailed description (including measurable performance criteria, as applicable) of specific functionality common between portfolio management module and deposit-tracking module. Sample topics:

- All account number entry fields to incorporate check-digit algorithms to avoid miskeying
- Automatic assignment of account numbers
- Identification of accounts by branch
- Maximum number of accounts per branch
- User interface design standards, such as:
  - Editable drop-down menus
  - Type-ahead field completion
- User-defined calendar of no-banking days
- Context-sensitive help system
- Ad hoc reporting capabilities

### **4. Accounting system functionality**

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the general ledger system. Sample topics:

Required functionality:

- Integration with other systems

General ledger specifications:

- Chart of accounts
- Number of branches
- Number of journals

- Transaction recording details
- Multicurrency capability (if required)
- Full audit trail capabilities
- Automatic recovery in the event of a system crash
- Automatic calculation of
  - Average daily balance
  - Monthly depreciation and amortization expense
  - Starting balances for new fiscal year
  - Foreign exchange equivalents
  - Accruals for month-end entries on a per account basis
  - Income tax provisions
  - Month-end/year-end balances
- Bank reconciliation by week, month, and ad hoc
- Integration between general ledger and third-party accounting packages
- Suspense account management

## 5. Portfolio management functionality

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the loan system, divided into two sections, as required:

- Individual loan functionality
- Group lending functionality

Sample topics:

- Loan types
- Subloan types
- Loan application
- Reporting on pending clients, by account officer
  - Data fields
  - Text memo capability
  - Automatic loan number generation
  - Loan cycle number
  - Deductions (document stamping fees, notarization, etc.)
  - Guarantor details
- Links to savings module of system
- Disbursement policies
- Daily collection with weekly amortization
- Interest calculation methods
- Penalty calculation methods
- Fee calculation methods
- Repayment scheduling
- Early repayments
- Loan repayment and loan history
- Restructuring and write-off procedures
- Loan writeoff recuperation

- Credit line

## 6. Deposit-tracking system functionality

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the current and savings deposit system. Sample topics:

- Integration with other modules
- Standard functionality
  - Displays client's transaction history
  - Automatic withholding tax calculations
  - Automatic computation of:
    - Average daily balance
    - Fees and charges (linked to "Fees and Charges" module)
    - Account charges
    - Limits on minimum funds in accounts
  - Tiered interest payment
  - Start-of-day processing
    - Security sign-on
    - Posting of previous day's end-of-day report
    - Post late checks
      - Normal day processing
    - New accounts
      - Open new accounts
      - Process customer inquiries
      - Requisition/issuance of checkbooks
      - Passbook issuance
      - Certificate of time deposit issuance
      - Automatic debit memo/credit memo issuance
      - Bill payment or issuance
      - Manager's check
      - General certificate of deposit issuance
      - Petty cash replenishment
    - Teller transactions
      - Cash in/cash out
      - Multiple savings account transactions
      - Postdated check transactions
      - Customer inquiry transactions
      - Automated debit and credit transactions
      - Reversal processing
      - Bill payment
      - Automated loan payment
      - Passbook update
      - Account closure
      - End-of-day transaction summary report
    - Back office transactions
      - View/edit accounts
      - Monitor accounts
      - Setup/deletion of stop payment order
      - Setup/lift of hold, garnish, or earmark
      - Back-date transactions (for backup restoration; linked to audit trail)
      - Memo posting without need for machine validation



- Override for error correction without machine validation
- Branch summary inquiry
- Branch parameter setup
- File maintenance
- Report printing
- Individual check down floating
- Ability to increase number of clearing days due to unforeseen delays
- End-of-day processing
  - Rolling of floats
  - Inward clearing without the need for machine validation
  - Reverse cleared checks
  - Computation of daily average balance
  - Interest computation
  - Automatic account number assignment
  - Dormant account charges
  - Service charges
  - Certificate of time deposits/special savings deposits

## 7. Charges and fees module

Detailed description (including measurable performance criteria, as applicable) of how the various charges and fees will be handled. Sample topics:

- Rules of applications of charges
  - Charges applied
    - At the time a function is carried out or a transaction occurs
    - Based on quantity of transactions (say, two free transactions per month)
  - Fees for balances below certain minimums
  - Setup fees for loans
  - Administrative and stamping charges
  - Insurance fees
  - Account handling fees
- All charges and fees are to be administered from one source (head office).
- Changes to any charges and fees should be easily accomplished without any programming changes to the software.
- Fees and services should be adjustable at the individual account level by an authorized individual.

## 8. Interbranch operations

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to interbranch operations. Sample topics:

Bankwide:

- Manager's check encashment
- Cash transfers
- Check encashment
- Savings withdrawal
- Account deposit
- Account balance inquiry
- Collection of remittances

## 9. Interoperability with other bank systems

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the interoperability with other MIS systems, such as customer information system or human resource system. Sample topics:

- System architecture
  - Physical constraints
  - Interoperability standards
  - Data transfer protocols
  - Redundancy and operational reliability
  - Mode of data transfers
    - Full software integration with realtime transfers
      - Available data transfer mechanisms of existing systems (if any)
    - Batch transfers (network or distributed media)
      - Data replication strategy (full data store transfer vs. incremental updates)
- Required common data formats
- Contingency procedures for unsuccessful data transfers
- Data integrity
  - Record locking
  - Restoration procedures for incomplete data transfers
  - Allowable flow directions for specific data
- System security
  - Firewalls
  - Encryption
  - Password protection schemes
  - Transfer authorization

## 10. Interfaces/delivery mechanisms

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the system access devices. Sample topics:

- Teller terminals
- Loan officer terminals
- Automated teller machine access
- Smart card access
- Credit card access
- Telephone access
  - Conventional
  - Wireless
- Internet access

## 11. Report-generation module(s)

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the various systems. Sample topics:

### General ledger reports:

- Single and multibranch reporting
- Daily reports
  - Journal transaction list

- Trial balance
- Balance sheet and income statement (ad hoc)
- Weekly reports
  - Interoffice transaction float items
  - Consolidated daily status report
- Monthly reports
  - Trial balance
  - Cash flow statement
  - Income statement
  - Subsidiary ledger statement
  - Balance sheet
  - Foreign currency deposit unit financial statements (if applicable)
- Internal control reports
  - Miscellaneous cash out/cash in
  - Sundry items
  - Prepaid accounts
  - Outstanding cheques
  - Bills purchased schedule
  - Outstanding managers' check schedule
  - Interoffice float items
  - Withholding tax remittances
  - Documentary stamp remittances
- Central Bank reports
  - (as per local requirements)

Portfolio management system reports:

- Daily collection reports
- Daily loan release reporting
- Monthly loan release reporting
- Installment-due reporting
- Active loans by account officer
- Daily repayment report by account officer
- Outstanding loan portfolio by account officer
- Summary of new loans and deposits for the period
- Repayment rate by business sector
- On-time repayment rate
- Loan cycle and historical loan profile, by account officer
- Performance by account officer for the period
- Loan portfolio concentration report
- Loan profile by gender
- Loan profile by age
- Loan profile by economic activity
- Listing of loans by purpose
- Loan interest rate and maturity matching

- Total interest and fees collected

Delinquency management reports:

- Portfolio-at-risk
  - By economic activity
  - By loan size
  - By gender
- Summary delinquency report
- Delinquent loans by branch and product and account officer
- Portfolio-at-risk aging report
- Total doubtful and written-off accounts
- Loan loss rate

Deposit system reports:

- List of deposit accounts opened (by product)
- New deposit accounts within a period (by product)
- Active accounts (by product)
- Statement of account, monthly and on demand
- Accounts by deposit size
- Savings concentration report
- Summary of daily transactions (by product)
- Dormant accounts (by product)
- Time deposits, by certificate
- Upcoming maturing time deposits
- Time deposits by interest rate category
- Time deposit by size and term
- Time deposits by balance
- Time deposit expiries
- Time deposit interest accrual report
- Schedule of monthly terminated certificates of time deposit

In addition, the system should provide the ability for user to create ad hoc reports without programming changes.

## **12. System and access security**

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to security and access. Sample topics:

- Multilevel password functionality for the following organizational roles:
  - Teller
  - Account officer
  - Loan supervisor
  - Department manager
  - Branch manager
  - Technical systems administrator
- Checksum functionality on account number entry fields

- Audit trail capability for all data entries, with the following data for each entry:
  - Time
  - Date
  - Transaction
  - Operator
  - Client
  - Transaction type
  - Value of field before and after transaction
  - Supervisor identification number (for override transactions)
- Audit trails are required for:
  - All financial transactions
  - Client account adjustments
  - Client account functions
  - Approvals registered on the system

### 13. Software and hardware

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the hardware and software. Both the development environment and the operating environment should be described. Sample topics:

- Operating environment (for example, Windows NT for servers and Windows 98 for terminals)
- Network connections (for example, Fast Ethernet using TCP/IP)
- Development platform (for example, system should be developed using a relational database management system)
- Documentation standards

### 14. Financial product design module

Detailed description (including measurable performance criteria, as applicable) of specific functionality unique to the MFI's need for inhouse development of new products and services for both credit and savings products. Sample topics:

System should allow the user to define the following attributes for all products:

- First and last open dates
- General ledger account numbers
- Basis and frequency of interest accrual and posting calculation
- Minimum and maximum transaction and balance values
- Charges and fees (linked to Charges and Fees module)

System should also allow the user to define the following attributes for specific products:

- Term range
- Checkbook attachment
- Deposit book/passbook
- Line of credit
- Pretermination rate for deposits and special savings
- Selection of when loan interest is collected (with repayment or at loan disbursement)

System should also permit various types of interest rates to be applied from within this module:

- Tiered
- Fixed
- Variable
- Penalty
- Promotional
- Flat

## **15. Formula library**

Detailed descriptions of unique mathematical relationships used in the design of banking products.

The user should be able to add new formulas to the library without the need for programmer intervention and then be able to use the formulas in product design and (later) in operations. The formulas should be predefined at the time of the system delivery. Sample topics:

- Straight-line quarterly repayments
- Declining balance biannual repayment
- Straight-line 15-day repayment
- Straight-line monthly repayment
- MFI employee salary loans (without fees)

**REQUEST FOR PROPOSAL TEMPLATE**

<b>Section</b>	<b>Title</b>
Section A	Solicitation/Contract Form
Section B	Statement of Work (SOW) and Terms of Reference (TOR)
Section C	Packaging and Labeling
Section D	Inspection and Acceptance
Section E	Deliverables or Performance
Section F	Contract Administration Data
Section G	Special Contract Requirements
Section H	Contract Clauses
Section I	List of Attachments
Section J	Representations, Certifications, and Other Statements of Bidders
Section K	Instructions, Conditions, and Notices to Bidders
Section L	Evaluation Factors for Award
Appendix	Contract Deliverables List (CDL)

## TERMS OF REFERENCE TEMPLATE

<b>Section</b>	<b>Title</b>
1	Introduction and system overview
2	Best banking practices supported by system
3	Common system functionality
4	Accounting system functionality
5	Portfolio management module <ul style="list-style-type: none"><li>a. Individual loan functionality and group lending functionality</li></ul>
6	Charges and fees module
7	Deposit-tracking system module
8	Interbranch operations
9	Interoperability with other bank systems
10	Customer information system; human resources system; and so forth
11	Interfaces/delivery mechanisms <ul style="list-style-type: none"><li>a. Loan officer terminals; teller terminals</li><li>b. ATM access; smart card access; credit card access</li><li>c. Telephone access; Internet access</li></ul>
12	Report generation module
13	System and access security
14	Software and hardware <ul style="list-style-type: none"><li>a. Development and operating environments</li></ul>
15	Financial product design module
16	Formula library



# SESSION 8: IMPLEMENTATION

## Session Summary

**OBJECTIVES:** By the end of the session participants will be able to:

- Explain the steps in the implementation processes
- Identify and participate in various test procedures
- Outline needed documentation
- Create a plan to overcome potential obstacles

**TIME:** 205–225 minutes

**Session  
Topics:**

- A. What Is Implementation? (42–47 minutes)
- B. Implementation Responsibilities (18 minutes)
- C. Testing (38 minutes)
- D. Documentation (30 minutes)
- E. Security (10–15 minutes)
- F. Human Resources (10–15 minutes)
- G. Creating the Implementation Plan (57–62 minutes)

**SUPPLIES:** Flipchart paper  
Markers  
Masking tape  
LED projector or overhead projector

### TRAINER MATERIALS

- IS8-M1 Prepared Flipchart Questions
- IS8-M2 Test Cases – Assignments (*to be cut and distributed*)
- IS8-M3 Documentation Discussion Guide
- IS1-H5 Additional reading: “Management Information Systems—Between Salvation and Frustration” (Nexus document)
- IS1-H11 Additional reading: CGAP IS Implementation Guidelines

### PARTICIPANT MATERIALS

- OVERHEADS:** IS8-O1 System Development Life Cycle  
IS8-O2 Implementation Plan  
IS8-O3 Planning, Planning, More Planning  
IS8-O4 Testing Levels  
IS8-O5 Sample Plan – Hardware Setup

- HANDOUTS:** IS8-H1 Test Plan Worksheet  
IS8-H2a FairFund Implementation Worksheet

IS8-H2b FairFund Implementation Worksheet – Answers

**Optional**

*Trainer Instructions*

IS8-H3 Implementation Action Plan  
IS8-H4 Technical Notes

**CASE STUDY:** Part 15 FairFund Begins Implementation  
Part 16 Implementation Continues

**PREPARED FLIPCHARTS**

Forms of documentation that are necessary for IS to work

## Session 8: Implementation

### TOPIC A: WHAT IS IMPLEMENTATION?

1. (2 minutes) To introduce the session, state: It may seem that we are almost there; however, the longest and hardest part is yet to come. Show IS8-O1, the System Development Life Cycle. Ask: What is meant by *implementation*?

Implementation refers to getting the system up and running. This generally takes more time, more staff, and more money than anticipated—in fact, some MFIs have reported that it took three times the expected amount of time to complete this phase! This session will help participants learn from other MFIs' mistakes to ensure a smooth, effective implementation process.

2. (10 minutes) To return to FairFund and see how it is managing, distribute Case Study Part 15. Ask participants to divide into small groups to read, analyze, and discuss the situation.
3. (5 minutes) In the large group, process the discussions. Ask participants what they see happening. What did they learn? What conclusions do they draw or relate to their MFI's future experiences?
4. (5 minutes) Ask: What do you think should happen during this stage? Write responses on a flipchart. Focus on individual steps—hardware procurement and placement, software installation with and without source code, development and modification, testing, system configuration, infrastructure development, documentation for users and administrators, data transfer, staff hiring and training, running of parallel operations, implementation of internal controls, and so forth.
5. (5 minutes) Summarize by stating that there is plenty of work to do at this stage, regardless of what type of system is being installed. (Note that much of this also applies to implementing changes in a manual system—for example, documentation, training, internal controls, and so forth). Show IS8-O2 and explain. Remind participants that implementation is not always a linear process; some steps may be conducted simultaneously by different people—for example, staff can be hired at various times, infrastructure development may begin while the software is being developed, and so forth.
6. (5 minutes) Ask participants what they see as the different ways that the system can be implemented. (Examples include functional, feature-based, branch-based, and so forth.) Explain and discuss.
7. (5–10 minutes) Display prepared discussion questions on a flipchart as described by IS8-M1. Ask participants to develop responses in neighboring triads (or in the large group if participants have little experience).

8. (5 minutes) Discuss answers to questions in the large group. Refer to experiences in Nexus if no examples emerge from the group.

Acknowledge the participants' experiences and state that this course will help them build on—and improve—those experiences. State that the key to a successful implementation is planning! Show IS8-O3 and note that the group will discuss a few key issues in this session to help plan for implementation.

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### Trainer Notes

- Advance preparation is required before presenting IS8-M1 and IS8-M2.
  - There are several alternatives to installing the entire system at once:
    - A *functional* implementation means that the MFI phases in the system over time by installing one business function at a time—for example, portfolio tracking, accounting, deposit tracking, human resources.
    - A *branch-based* implementation means that the MFI phases in the system over time by installing it at one geographic location at a time.
    - A *feature-based* implementation means that the MFI phases in the system over time by activating the core features of the system initially and then activating additional features when appropriate or necessary.
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### TOPIC B: IMPLEMENTATION RESPONSIBILITIES

9. (3 minutes) Ask: Who is responsible for implementation? Answer: The MFI is ultimately responsible for all aspects of the implementation.

The MFI will simply monitor some activities closely (as briefly mentioned below); other activities will require more direct involvement. For example, the vendor has been asked to set up the hardware and load the software. Provided all needs have been clearly identified and competent people hired, the MFI should be able to focus on other tasks. Regardless of the activity, the MFI *must* clearly plan the component activities and assign responsibility for their completion. Planning again!

10. (5 minutes) Ask: What parts of the implementation is the MFI directly responsible for? Focus responses on human resources (for example, hiring, training), documentation, testing, and other management considerations such as new policies, procedures, institutional interface, security, controls. The next step takes a closer look at a few of these elements.
11. (10 minutes) Ask and discuss: What steps are the vendors/programmers primarily responsible for? Answer that the contracted vendors/programmers will be responsible for some of the implementation, such as installing hardware, loading software, programming modifications, and doing basic testing of modifications.

Ask participants how the work is contracted and verified. How do the vendor and the MFI interact? Point out that much of the vendor's work is based on requirements provided to them through the RFP/RFQ and contracting documents.

The vendors/programmers must work closely with the users to gain ongoing feedback during the process. Certain limitations may arise that will require specific parameters to be redesigned. Users will become more involved in the testing stages as well as the creation of the documentation and a new institutional interface.

Ask: What kinds of issues may arise (or did arise in your MFI) when dealing with the vendor? Issues may include how the work is monitored, who checks the progress and reports back to the MFI, when to pay, at what point(s) the users are involved, scheduling delays, and so forth.

### TOPIC C: TESTING

12. (5 minutes) Point out that one of the implementation steps the MFI should be more involved in is testing. Facilitate discussion of testing by first asking: What do we mean by testing? What kinds of tests are there? Who does the testing? When, why, and for how long? When is the testing over?

13. (5 minutes) Build on responses and briefly explain types of testing using IS8-O4 and technical materials. Note that the responsibility of the unit and integration tests lies largely with the vendors/programmers; however, the MFI may be interested in the results of the tests and the issues arising from such tests. Personnel from the MFI become more involved in the full system test and have primary responsibility for the user acceptance tests.

Ask: How would testing differ for build versus buy options? For manual versus computerized systems? Although the initial testing (unit, integration, full system, and so forth) is more applicable to custom-developed systems, it is still applicable to custom modifications for purchased systems. User acceptance tests are applicable to both built and bought systems. And although testing is obviously different for manual systems, it is still important to verify that the system functions as intended.

Ask participants why testing is crucial. Answer that testing ensures that the system works as intended and as the MFI needs it to function (as specified in the MFI's prioritized needs).

14. (3 minutes) Ask: What should the task force do to prepare for the testing phase? Answer: Develop test data or test cases. Ask: What does that mean? Explain using an example from the worksheet if needed.
15. (10 minutes) Conduct a practice exercise. Divide participants into six small groups. Distribute IS8-H1, Test Plan Worksheet, plus one topic per group taken from IS8-M2 (or written and assigned from a flipchart). Have each group work on a different topic to complete a worksheet.
16. (10 minutes) Review and discuss responses. Ask each group to present its responses for inputs and expected outputs. Use IS8-H4, Technical notes, for an answer guide.

17. (5 minutes) Process the lesson. Ask participants what they learned about testing. What do they think about developing and using test data? For example, participants should understand the importance of creating test cases to identify whether the system is producing the required output. It is vital that the system be tested initially, and periodically, by the users (and through an internal audit) to validate system operations. The more sophisticated the system, the more detailed the testing will need to be.

Ask: What happens when the system does not perform as intended during testing? Answer: The MFI must go back to the people responsible for programming the system and have them make corrections until they get it right! Summarize the main points on testing and take any questions.

#### TOPIC D: DOCUMENTATION

18. (5 minutes) Ask: What is another step of implementation for which the MFI is responsible? Documentation.

Ask participants to suggest the kinds of documentation MFIs need. Quickly acknowledge various types by writing major ones on a flipchart: technical and source code documentation, system specifications, user's manual, system administrator's manual, institutional interface documentation (that is, how the system interfaces with the MFI's business practices), and so forth.

19. (10 minutes) Form subgroups and assign one or two types of documentation to each. Have each group answer the following questions (have them written and clearly visible to all on a flipchart). Briefly review the questions to make sure they are clear.

- What is the purpose and value of this manual?
- Describe its contents.
- Who writes it and when?
- Who are the primary users?
- How is it distributed? To whom?
- Who maintains it? When and how is it updated?

Ask participants to prepare answers for their assigned documents.

20. (10 minutes) Reconvene the main group and ask representatives to summarize the answers developed by each group. Lead a discussion on any points that require further explanation. See IS8-M3 for answer guidelines. Keep the presentations short and the plenary discussions lively. Summarize by highlighting the main differences between the documents and how the differences may vary by institution and type of information system. Distribute IS8-M3 if desired.

21. (5 minutes) Ask what could happen without this documentation. For example, the MFI can't use the system and can't fix the system. State: If your MFI does not know how to use the system, it won't satisfy its need for information!

Explain that unless a system has been installed without modification, each manual will be unique to the MFI and its information system. Each MFI needs manuals that suit its business practices and information system. Encourage participants to collect and review a number of samples to gather good ideas. Distribute outlines at the end of the session.

#### **TOPIC E: SECURITY**

22. (5 minutes) Introduce data integrity and system security in FairFund by asking: What has Chris, FairFund's managing director, been so insistent on during the entire process? Lead participants in a discussion of data integrity and system security. This is another aspect of IS for which the MFI is responsible. Ask participants if they have experience with these aspects. What does the MFI do to address them? Relate back to earlier work on security and internal controls, and discuss running parallel systems as a measure to mitigate these risks.
23. (5–10 minutes) Have the group brainstorm answers to the question: What are the major management considerations concerning system use and protection of the quality of the information? Elements of the system that need to be addressed can include restricted access, data backups, new policies and procedures (reengineering), new information flows, new staff, new report outlines, distribution and timing, data entry policies, and so forth. (See IS7-H2, CGAP information systems services—software selection guidelines). Note: This answer sheet is *optional*. Complete it while preparing for teaching the course. Use for discussion and distribute to the class participants at the end of the exercise.

Summarize by stating that all these aspects of the system need to be addressed in the implementation plan. New policies might be required that need to be documented, communicated, monitored, and so forth. All of these issues take thought and resources and are vital to the ongoing success of the IS. Protect your information assets!

#### **TOPIC F: HUMAN RESOURCES**

24. (5–10 minutes) Introduce human resources by asking and discussing: How do you ensure that the MFI's management and staff will use this IS? What aspects of the IS need to be addressed? Answers include new procedures as a result of automation, computer skills, understanding of the new system from input to output, new staffing patterns (hiring, firing, and changes), ongoing training programs, plans to deal with resistance to change, and so forth.
25. (5 minutes) Ask participants what problems they envision regarding an MFI's most valuable resource—its staff. List and discuss some thoughts on how to ensure the involvement of the people who make up the MFI. Possible answers: lack of skills, refusal to use IS, no time to attend training, and so forth. Remember, it is the people who use the information system.

## TOPIC G: CREATING THE IMPLEMENTATION PLAN

26. (20–25 minutes) State: Knowing what we now know, with a little thought, perhaps we can help FairFund. Have participants form into preassigned subgroups to develop a plan for completing the IS implementation for FairFund. Distribute Case Study Part 16 and IS8-H2. Mention that Case Study Part 15 will be helpful in completing the exercise.

Have groups note areas that FairFund should correct, and what was missing and still needed. Make sure they note who is responsible and how long it might take. Focus the time on the major problem (or potential problem) areas and on the human resources, security, and institutional interface issues (that is, how the system interfaces with the MFI's business practices). Show IS8-O5 as an example of the format.

27. (10 minutes) Reconvene the group to discuss what the small groups identified as FairFund's main areas of weakness. Ask: What did you learn about planning for implementation? What was easy and what was difficult about coming up with an implementation plan? Why do you think FairFund will be better off as a result of your plan?

The major lesson for participants is that it takes a lot of time and thought to implement a new system. Many things could go wrong without properly planning the steps and paying attention to the people and processes.

28. (10 minutes) Ask participants to summarize the main points in the overall session. Address any questions they may have. Then lead a general discussion to draw conclusions about what was learned. Ask them to describe the importance of each step of the implementation process. What could happen if steps are skipped or not completed correctly? What are the most critical steps? How can they be involved in making sure implementation goes smoothly? Ask them to consider how implementation relates to other stages of IS design.
29. (10 minutes) Ask the participants to take a few moments to think about implementation in their MFI. Have them complete IS8-H3.
30. (5 minutes) Ask participants to state some of their conclusions, concerns, or ideas of how to conduct implementation in their MFIs.
31. (2 minutes) Close the session and link to session 9. Distribute IS8-H4, Technical notes.



## **Prepared Flipchart Questions**

Prepare the following discussion questions on a flipchart titled “Describe your experience with implementation.”

What were the strengths and weaknesses of the process?

What was the most important thing you learned?

What you would change if you had to do it again? What would you do the same?



## **Test Cases – Assignments**

For the testing exercise, cut and distribute one topic per group.

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**Loan Repayment – Final Payment**

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**New Client Induction**

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**Efficiency Ratios**

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**Budget Analysis**

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**Client with Simultaneous, Multiple Products**

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**Portfolio Aging Report**

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## Documentation Discussion Guide

**Contract** – All licensing agreements should be treated with the same level of respect as all other contracts for the organization, meaning double copies, originals in a fire-safe place, and so forth.

**Institution documents** – These are process and information flows that show how staff members interact with the actual system. Internal control manuals and other policy and procedure guidelines would be considered institution documents. An institution can create a separate MIS policy book or write its policies into the other books. The MIS aspects may change over time as new releases come out and other functionality is used, so it is best to have documents in easily editable form. Also, any notes taken by the task force members should be kept in a journal to document the process, along with all the documents that were created (such as the specifications document or recommendations memo). Future decision makers may want to learn or revisit why certain choices were made.

**Source code** – The source code should have an overview of the software design—similar to a table of contents—with a detailed description of all the variables. Within the routines there should be a description at the header of each one, and within each, the notes should be very detailed and of sufficient quantity to explain the logic.

**Sys Admin (system administrator)** – This term should explain the design of the software in layperson's and technical terms, including step-by-step instructions on how to install the software and how to manage the software (for example, everything from reindexing the database to setting up a new user and password to making changes in the configuration and backing up the data). A good one will have a table of contents and an index for looking up items.

**Training manual (for users)** – This should be similar in language to the user's manual but should be formatted more like a workbook. Practice data should be available, enabling users to actually walk through the different transactions in the software.

**Training manual (for system administrators)** – This would be similar to the System Manual, but again should have a practice component that walks the user through examples using practice data. Both training manuals should be good enough that system administrators could present the course on their own.

**User's manual** – This should use laypersons' terms and include a glossary. A table of contents and index make all the difference to the software's user-friendliness as well. The manual should explain, in a very methodical, step-by-step process, how to use the software. It should cover everything from setting up a new client, to making a deposit or loan payment, running standard reports, or doing ad hoc queries, and any other critical repeated actions a user would do. Typically the instructions follow the menu options because those are generally in order of use or according to work flows. Examples should be provided where appropriate. Some, if not all, of the information in the user's manual should be available through an online help menu.



# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**





# System Development Life Cycle

IS8-01

Preparation  
Needs Analysis  
Selection



## Implementation Plan

- Finalize contract negotiations
- Set up hardware
- Install and configure software
- Test
- Document
- Transfer and convert data
- Hire or train staff
- Create institutional interface
- Run parallel systems



Optimization and Maintenance

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## Implementation Plan

IS8-02

- Finalize contract negotiations
- Set up hardware
- Install and configure software
- Test
- Document
- Transfer and convert data
- Hire or train staff
- Create institutional interface
- Run parallel systems



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IS8-03

# Planning

# planning

# more planning

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IS8-04

## Testing Levels


Unit

Integration

Full System

**User Acceptance**

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## Sample Plan – Hardware Setup

Task	R	Time	D
2.1 Design network infrastructure		2w	
2.2 Prepare Request for Quotation		2d	
2.3 Purchase equipment		4d	
2.4 Prepare facilities		4w	
2.5 Configure hardware		1w	
2.6 Install and test equipment		3d	
2.7 Prepare documentation		3w	
2.8 Train or contract for hardware support staff		1w	

R = Responsibility

D = Dependency



# Handouts



## Test Plan Worksheet

Design a test plan for the event on the strip of paper given to you by the facilitator.

**EVENT:** \_\_\_\_\_

What parts of the system will be tested?

What will the input be? Where will it come from? Another system? A written form?

What do you expect the output to be? Who will use it?

What actions do you recommend if the actual outputs are not as expected?





## FairFund Implementation Worksheet

What tasks or concepts seem to have been overlooked in the original plan?

What would you do to remedy the current situation?

What can you plan for that will make the process of adding branches to the system go smoother?

If you had to develop a plan for FairFund, what would it look like? Concentrate on the branch-expansion phase and use the following table if desired.

Task	R	Time	D

**R** = Responsibility    **D** = Dependency



## FairFund Implementation Worksheet – Answers

*This answer sheet is optional. The trainer may complete it during preparation for teaching the course. The completed answer sheet can be distributed to the class participants at the end of the exercise.*

What tasks or concepts seem to have been overlooked in the original plan?

What would you do to remedy the current situation?

What can you plan for that will make the process of adding branches to the system go smoother?

If you had to develop a plan for FairFund, what would it look like? Concentrate on the branch-expansion phase and use the following table if desired.

Task	R	Time	D

**R** = Responsibility    **D** = Dependency



## Implementation Action Plan

1. Thinking once again about your past experience with implementation, if any, describe what you would change.
  
2. How would you convince management and users to plan for and follow every step in the implementation phase? How would you go about creating your plan?
  
3. List possible constraints to implementation in general:

*Specifically list those constraints you anticipate for:*

- a. Testing and documentation
  
  - b. Data integrity and system security
  
  - c. Human resources (hiring, training, and so on)
  
  - d. Institutional interface
4. Discuss with your neighbor and develop a plan to overcome the above constraints.



## Technical Notes

### DETERMINING HARDWARE REQUIREMENTS

- Hardware needs to be evaluated and specified in order to support both the current expected workload and the (presumably larger) workload at the end of the hardware's service life.
- Hardware requirements are commonly defined in two ways:
  - Hardware specifications
  - Performance requirements
- *Hardware specifications* refers to common industry standards. For example, a computer workstation is generally specified by its processor, memory, and hard disk space, plus the peripherals to be included (modem, network card, graphics card, monitor, CD-ROM drive, and so forth). Hardware specifications are often based on the culture of the organization. For example, it may be company policy for all computer workstations purchased to have a Pentium III processor, running at a speed no less than the fastest version of the processor available one year ago.
- Performance requirements refer to the measurable results that a system is capable of, given a specific workload. For example, one of the specifications for a general ledger system may be that an ad hoc balance sheet should take no longer than 60 seconds to generate and print (assuming that a one minute delay is acceptable). This type of specification puts the onus on the supplier to come up with an acceptable hardware configuration. When delivered, the adequacy of the system can readily be verified.
- Determining what the workload will be several years into the future can be challenging. Often the best answer will be a carefully measured guess, based on some generally observed relationships between workload and capacity. For example, workloads on computers are often limited not by the hardware but by the data entry person's key-stroke speed. Thus, if a PC terminal is currently occupied less than 50 percent of the time, it can be reasonably assumed that the same PC could support at least a doubling in transaction volume.
- Capacity of networking equipment, on the other hand, is estimated on the basis of the anticipated data traffic volume. One model for network traffic growth states that the volume will increase as the square of the number nodes, or connection points, to the network. For example, if the number of nodes goes from 10 to 20, then network traffic volume can be estimated to quadruple (that is,  $(20/10)^2 = 4$ ).
- The technical jargon for hardware's ability to accommodate growth in usage is scalability. Scalability is often a selling feature of many hardware products. Thus, it is quite reasonable to expect that computer hardware equipment can have its service life extended by adding additional processing power, bandwidth or memory, normally at a fraction of the cost it would take to replace the entire unit.
- Should the organization think it lacks the expertise to deal with the hardware specifications, it can still get started by asking potential systems providers for general guidelines on types of hardware that could run its system. This should provide enough information to suffice for a first-round cost estimate. However, before making a final decision it is strongly suggested that the organization retain the services of an experienced systems architect to prepare a hardware requirements analysis. Ideally, this person will have no vested interest in selling either software or hardware to the organization.

## **PURCHASING HARDWARE**

- Most computer hardware can be considered commodity items, and good pricing is readily obtained by observing standard purchasing practices, such as requesting three or more price quotes, minimizing the overall number of suppliers (trying to generate maximum purchase volume for the strongest possible bargaining position), and not being too attached to a particular vendor.
- Computer purchases should generally be delayed for as long as possible because the cost for processing power is continually dropping.

## **SETTING UP AND CONFIGURING HARDWARE WITH BASIC SOFTWARE: OS, WORD PROCESSOR, SPREADSHEET, NETWORKING**

- Configuring hardware and installing basic software are frequently done by the hardware supplier. This service, if available, should definitely be taken advantage of, as there are many types of nondocumented operating system peculiarities that are best left to a specialist.
- Note: Should an MFI wish to develop inhouse capability in the area of hardware configuration and software installation, a large number of technical resources are available in most bookstores, and, of course, on the Internet.

## **CONVERTING AND TRANSFERRING THE DATA**

- Preparing existing electronic data for transfer into a new system can be very time consuming, as data need to be carefully groomed before being transferred. The review of existing data requires judgment, as it will uncover incomplete, contradictory, or misplaced information that then will have to be addressed.
- This task is best assigned to a work group consisting of both experienced end users of the current information and data technicians skilled in the manipulation and parsing of large quantities of data.
- For paper-based systems, the work team will not need as much input from a data technician, though one still needs to be involved to ensure that the data are properly accounted for in the new data model.

## **TRAINING PERSONNEL**

For a systems installations project, three types of training generally need to be considered:

- Technical administrator training
- End user training
- Executive team training

Each group will have its own training needs. These need to be identified and training materials prepared. Generally, training should take place as close as possible to the time the new skills will be needed.

## **TESTING—THE FIVE W'S**

The following material provides introductory level information on software testing. The following questions are addressed:

- What is testing?
- When is testing done?



- Where is testing done?
- Who does the testing?
- Why test program code?

### ***What is testing?***

Software testing refers to the actions taken by the programmers and end users to make sure the product (that is, the program) will do exactly what the design specifications indicate. Clearly, the quality control processes of any software development project will rely heavily on testing to achieve this goal.

Activities performed during testing include both a static review of code printouts and dynamic testing. During dynamic testing, the code is executed under controlled conditions (often one program instruction at a time) that permit the tester to verify that the program performs as expected.

Testing is such an important part of programming that most serious programmers consider the design of the testing process to be one of three essential design activities of programming (the other two being code design and data structure design). In other words, the test design must be developed at the same time as the program is being designed.

### ***When is testing done?***

Even relatively simple programs are too complex for testing to wait until the programming is finished. Instead, the most common test strategy is to start testing as early as possible, often testing only a specific section or subroutine of the program. This is called *unit testing*.

The business functionality of the application is usually not considered during unit testing. Instead, the focus at this stage is to confirm that the syntax of the programming language has been correctly applied. The following list shows the types of questions that programmers address during unit testing. The terminology may be somewhat unfamiliar to a nonprogrammer. However, the list may still give a sense of the issues at this stage of testing:

- Is the number of input parameters equal to the number of arguments?
- Do parameter and argument attributes match?
- Is the number of arguments transmitted to called modules equal to the number of parameters?
- Are the attributes of arguments transmitted to called modules equal to the attributes of parameters?
- Are the number of attributes and order of arguments to built-in functions correct?
- Are there any references to parameters not associated with the current point of entry?
- Are file attributes correct (for input/output units)?
- Are OPEN/CLOSE statements OK?
- Do buffer sizes match record sizes?
- Are end-of-file conditions correctly handled?

After they have been unit tested, pieces of the program are joined, like pieces of a puzzle. The process of joining units of code is called integration. As units are joined, testing continues (now called integration testing), until eventually all units of the program have been joined, or integrated. The focus of the integration test is still on the syntax of the program.

The sequence of unit integration must be carefully considered. Ideally, integration should follow the overall flow of the program's structure from input to output, as this will minimize the possibility of retesting.

After the program has been fully integrated, the programmers will perform a complete test of the application (a full system test). Before starting a full system test the program should be initialized with a sample of representative data loaded into the database in order to simulate actual operating conditions.

A final test phase is the user acceptance test. At this point the testing is focused on confirming that the programmers have followed the customer's design specifications. (Operational functionality should already have been confirmed during the full system test).

### ***Where is testing done?***

Unit testing and integration testing are typically done on the programmers' workstations. Their computers are usually equipped with specialized tools for generating, modifying, manipulating, and analyzing computer code.

Full system tests and user acceptance tests should be done on a system that identically replicates the hardware configuration of the intended installation.

### ***Who does the testing?***

Unit testing and integration testing are typically done by the programmers. As the time for full system testing approaches, a customer representative will start to participate, if not in the actual testing process, then at least in the meetings, to review the results of the testing.

An actual end user, preferably assisted by a programmer, should perform user acceptance testing.

### ***Why test program code?***

Computer programs are incredibly complex constructions. The only way to make sure they will do what they are designed to do is to confirm the functionality through testing.

In fact, the issue is not so much whether to test or not (all programmers will perform some form testing as part of their code development process), but how to ensure the most efficient use of testing resources for the best possible results.

When working with a subcontracted programmer, the user acceptance test and subsequent signoff by the customer are typically a key milestone for release of payments. Thus, it is vital that the purchaser has a test plan that accurately reflects the true requirements of the system.

## **TESTING OF MICROFINANCE SOFTWARE**

The following material discusses testing considerations for three software solutions of potential interest to microfinance institutions:

- Off-the-shelf software
- Modification of existing software
- Custom-coded software

A software program will generally undergo at least four different levels of testing before it is finished. The four levels of testing are presented in the order that they are typically performed:

- Unit testing
- Integration testing
- Full system testing
- User acceptance testing

The scope of each level of testing is summarized in the following table:

<b>Test</b>	<b>Scope</b>
Unit testing	Individual components or subroutines of the software
Integration testing	Several functionally related units of program code
Full system testing	The whole program, under design operating conditions and with realistic data
User acceptance testing	The whole program, to validate the program's successful completion

The programmers normally perform unit testing, integration testing, and full system testing as part of the software development process. One common view is that programmers should not test their own code, as they will tend to not notice their own mistakes. This is sensible advice, although it is not always followed in practice. In general, the more explicit the testing procedures are, the easier it is for a programmer to catch her or his own mistakes.

The end user performs the user acceptance test, preferably with some assistance from a programmer.

### **TESTING OFF-THE-SHELF SOFTWARE**

When a microfinance institution purchases an off-the-shelf software program, for example, an accounting package, it will normally perform only a full system test and a user acceptance test. The software publisher's programmers, prior to the program being made available for sale, will have already done unit testing and integration testing.

The microfinance institution will likely perform the full system test as part of a prepurchase evaluation of the software.

To prepare for a full system test and a user acceptance test of an off-the-shelf software package, the end user must first assemble a test plan that will include specific information on:

- Functionality that should be tested
- Operating conditions to use for the test (for example, how should the program be initialized)
- Inputs to use for the test
- Expected result of the test

During the full system test and user acceptance test all activities and results must be documented. The goal is to collect enough information so that another tester or a programmer can replicate the results (good or bad) at a later date.

## TESTING MODIFIED OR CUSTOM-CODED SOFTWARE

Should an organization choose to either modify an existing software package or develop a custom-coded software program, it will also have to allow for unit testing and integration testing of the program prior to conducting a full system test and a user acceptance test.

A custom-coded program is very similar to a rewrite of an existing program. A rewrite of an existing program is essentially like a brand new program where large pieces of the code have already been integrated. In both cases the new code must be unit tested and then integrated.

Even though the testing of the rewritten program may not be as extensive as that of a custom-coded solution, it will still be necessary to retest all units of the existing code that are downstream of the new code in the structure of the overall program. The new code may cause those portions of the existing code that depend on it to behave in an unexpected way. The only way to find out is to test the program.

After unit testing and integration testing both software alternatives have to be put through full system testing and user acceptance testing.

Table 1 summarizes the scope of testing for three different software solutions.

Table 2 shows who is responsible for preparing test specifications for each of the three different software solutions considered in this note.

Note that a test *strategy* is different from a test *plan*. A test strategy will specify syntax-checking tools, techniques, and approaches to testing. A test plan specifies the input and the expected results for all of the design functionalities to be included in the program.

Defining a test strategy rather than preparing a test plan is a more useful approach to testing in the early stages of the programming effort, when piecemeal program functionality only exists in small code fragments, if at all. At this point it makes little sense to insist on a specific test result because the program to deliver those results is still under construction.

A test plan is the most efficient way to ensure adherence to the design requirements of the final product, and this makes it a suitable approach to test specifications for full system testing and user acceptance testing.

**Table 1 Scope of testing for three different software solutions**

Software solution	Scope of testing		
	Unit testing and integration testing	Full system test	User acceptance test
Off-the-shelf software package	<b>Not included</b> (done by software publisher's programmer in advance of releasing the software for sale)	<b>Included</b> (done by end user's software evaluator prior to purchasing the software)	<b>Included</b> (done by an end user prior to rollout)
Rewrite of existing code, or custom-coded solution	<b>Included</b> (done by end user's programmer while developing the program)	<b>Included</b> (done by end user's programmer while developing the program)	<b>Included</b> (done by an end user prior to rollout)

Table 2 Responsibility for test specifications

Software solution	Responsibility for test specifications		
	Unit testing and integration testing	Full system test	User acceptance test
Off-the-shelf software package	Not applicable (done by software publisher's programmer in advance of releasing the software for sale)	End user prepares a test plan to be used during software evaluation	End user prepares user acceptance test plan
Rewrite of existing code, or custom-coded solution	End user's programmer suggests a test strategy to be approved by end user	End user prepares a test plan to be used during software development	End user prepares user acceptance test plan

If a microfinance institution is planning to subcontract any programming work, the user acceptance test plan should be included in the bid documentation that the programmers review prior to preparing their quotation. The user acceptance test plan should also be included as an integral part of the programming contract, as one of the conditions for successful completion of the contract.

### SAMPLE TEST CASES

Sample test case 1: loan repayment	
<b>Input</b>	<b><i>In the Loan Portfolio Module:</i></b> The last loan payment is entered into an account (that is, loan is repaid).
<b>Expected</b>	<b><i>In the Loan Portfolio Module:</i></b> Payment shows up on the client's account activity report with the correct date; amount outstanding should show zero. Daily collection report should no longer show the account. Credit officer should get a reminder to arrange a new loan disbursement (if this has not already been done). Any restricted savings tied to this loan should be freed up. <b><i>In the Accounting Module:</i></b> Journal entry for the payment with correct account references. After end-of-day closing: On balance sheet: an increase in cash (entire payment) and a corresponding decrease in the loan portfolio. On income statement: an increase in financial income corresponding to the interest earned on the payment.
<b>Actual</b>	
<b>Analysis</b>	
<b>Action</b>	

<b>Sample test case 2: new client induction</b>	
<b>Input</b>	<b><i>In the Loan Portfolio Module:</i></b> A new client profile is entered.
<b>Expected</b>	<b><i>In the Loan Portfolio Module:</i></b> Client should show up in the general client list and on the appropriate credit officer client summary reports. An error message should be displayed if the same name and address information has already been entered once before. A unique client number should have been assigned. <b><i>In the Accounting Module:</i></b> No change (unless there is a mandatory deposit or loan to become inducted).
<b>Actual</b>	
<b>Analysis</b>	
<b>Action</b>	

<b>Sample test case 3: efficiency ratios</b>	
<b>Input</b>	<b><i>In the Loan Portfolio Module:</i></b> A sample set of clients, loan officers, loan portfolios. <b><i>In the Accounting Module:</i></b> Operating expense data.
<b>Expected</b>	<b><i>In the Reporting Module:</i></b> Efficiency ratios should be correctly calculated and displayed.
<b>Actual</b>	
<b>Analysis</b>	
<b>Action</b>	

<b>Sample test case 4: budget analysis</b>	
<b>Input</b>	<b><i>In the Accounting Module:</i></b> Complete financials for previous two years.
<b>Expected</b>	<b><i>In the Reporting System:</i></b> Accurate budget analysis reports showing historical, planned, and actual results.
<b>Actual</b>	
<b>Analysis</b>	
<b>Action</b>	

<b>Sample test case 5: client with multiple products</b>	
<b>Input</b>	<i>In the Loan Portfolio Software:</i> Enter data for multiple products (two or more) for a client.
<b>Expected</b>	<i>In the Loan Portfolio Software:</i> Correct information on client profile, account summary, loan officer reports, and collection sheet.
<b>Actual</b>	
<b>Analysis</b>	
<b>Action</b>	

<b>Sample test case 6: portfolio aging report</b>	
<b>Input</b>	<i>In the Loan Portfolio Software:</i> Enter data for several accounts with various payment-in-arrears profiles (make sure to include arrears within each aging period as specified by the organization's policy on calculation of aging). Define the aging report parameters (days in arrears limits plus probability of repayment for each category).
<b>Expected</b>	<i>In the Reporting Module:</i> The correct calculation of and display of the aging report. <i>On the pro forma balance sheet for the current period:</i> A correct estimate of the loan loss reserve.
<b>Actual</b>	
<b>Analysis</b>	
<b>Action</b>	

## **SAMPLE USER'S MANUAL – TABLE OF CONTENTS**

The User's Manual describes how to use the system. It is not to be confused with the Operations Manual, which describes the complete business processes of the organization. The User's Manual should be able to assist a user who knows what she or he needs to accomplish but may need some help with the details of how to interact with the system to achieve the desired results.

Note: Documentation must always be tailored to the specific functionality of the actual system. Examples are provided only as an indicator of the type of information that may be included and should not be considered complete.

### 1. Introduction

- Summary of the benefits a user will obtain from reading the manual plus the expectations the manual puts on its audience (skills required before being able to use the system and required system access authorization)
- Name of person responsible for keeping the manual up to date and date of last update

- Contact information for additional assistance (system administrative staff)
  - System access and security processes. How to:
    - Log on
    - Change a password
    - Request a different security access level
2. Description of common system functionality
- Check-digit algorithms to avoid miskeying
  - Automatic assignment of account numbers
  - User interface design standards, such as:
    - Editable drop-down menus
    - Type-ahead field completion
  - Context-sensitive help system
  - Ad hoc reporting capabilities
3. Accounting system
- Journal entries
  - Working with multicurrency transactions (if required)
  - Accessing the audit trail
  - Recovering in the event of a system crash
  - Bank reconciliation by week, month, and ad hoc
  - Suspense account management
    - Closing out an accounting period
    - Performing a trial balance
    - Adjusting the trial balance
    - Creating financial statements
    - Printing reports
4. Portfolio management system
- Recording a loan application process
  - Credit scoring and loan approval
  - Recording a loan disbursement
  - Printing collection reports
  - Recording loan collection
  - Recording loan renewal
  - Printing delinquency management reports
  - Writing off a loan
  - Recuperating a loan
5. Deposit tracking system
- Display client's transaction history
  - Security sign-on
  - Posting of previous day's end-of-day report
  - Posting of late checks
  - Open new accounts
  - Process customer inquiries
  - Requisition/issuance of checkbooks
  - Passbook issuance



- Certificate of time deposit issuance
  - Automatic issuance of debit/credit memo
  - Bill payment or issuance
  - Manager's check
  - General certificate-of-deposit issuance
  - Petty cash replenishment
  - Teller transactions
    - Cash in/cash out
    - Multiple savings account transactions
    - Post-dated check transactions
    - Customer inquiry transactions
    - Automated debit and credit transactions
    - Reversal processing
    - Bills payment
    - Automated loan payment
    - Passbook update
    - Account closure
    - End-of-day transaction summary report
  - Back office transactions
    - View/edit accounts
    - Monitor accounts
    - Setup/deletion of stop payment order
    - Setup/lift of hold, garnish, or earmark
    - Back-date transactions (for backup restoration; linked to audit trail)
    - Memo posting without need for machine validation
    - Override for error correction without machine validation
    - Branch summary inquiry
    - Branch parameter setup
    - File maintenance
    - Report printing
    - Individual check down-floating
    - Increasing the number of clearing days due to unforeseen delays
6. Adjusting fees and charges
- Authorization procedure for completing an adjustment of fees and charges
  - Adjusting charges applied based on the:
    - Time a function is carried out or a transaction occurs
    - Quantity of transactions (say, two free transactions per month)
    - Fees for balances below certain minimums
    - Setup fees for loans
    - Administrative and stamping charges
    - Insurance fees
    - Account handling fees
7. Interbranch transactions
- Clear a manager's check drawn on another branch
  - Clear a personal check drawn on another branch account
  - Perform bankwide savings withdrawal
  - Perform bankwide account deposit
  - Perform bankwide account balance inquiry

- Perform bankwide collection of remittances
- 8. Printing reports
  - General ledger reports:
  - Daily reports
    - Ticket transaction list
    - Trial balance
    - Balance sheet and income statement (ad hoc)
  - Weekly reports
    - Interoffice transaction float items
    - Consolidated daily report of condition
  - Monthly reports
    - Trial balance
    - Income statement
    - Subsidiary ledger statement
    - Balance sheet
    - Foreign currency deposit unit financial statements (by currency)
  - Internal control reports
    - Miscellaneous cash out/cash in
    - Sundry items
    - Prepaid accounts
    - Lapsing schedule
    - Outstanding out-of-town checks
    - Bills purchased schedule
    - Outstanding manager's check schedule
    - Interoffice float items
    - Withholding tax remittances
    - Documentary stamp remittances
    - Central bank reports (in accordance with local requirements)
  - Portfolio management system reports:
    - Daily collection reports
    - Daily loan release reporting
    - Monthly loan release reporting
    - Installment due reporting
    - Active loans by account officer
    - Daily repayment report by account officer
    - Outstanding loan portfolio by account officer
    - Summary of new loans and deposits for the period
    - Repayment rate by business sector
    - On-time repayment rate
    - Loan cycle and historical loan profile, by account officer
    - Performance by account officer for the period
    - Loan portfolio concentration report
    - Loan profile by gender
    - Loan profile by age
    - Loan profile by economic activity
    - Listing of loans by purpose
    - Loan interest rate and maturity matching
    - Total interest collected
    - Portfolio-at-risk

- Delinquency management reports:
    - Summary delinquency report
    - Delinquent loans by branch and product
    - Repayment account aging report
    - Total doubtful and written-off accounts
    - Loan loss rate
  - Deposit system reports:
    - List of savings accounts opened
    - New deposit accounts within a period
    - Statement of account—monthly and on demand
    - Accounts by deposit size, percentage
    - Deposits by size category
    - Active savings account by product
    - Savings concentration report
    - Summary of daily savings transactions
    - Dormant savings accounts
    - Newly opened current accounts
    - Active current accounts
    - Dormant current accounts
    - Time deposits by certificate
    - Upcoming maturing time deposits
    - Time deposits by interest rate category
    - Time deposit by size and term
    - Time deposits by balance
    - Time deposit expiries
    - Time deposit interest accrual report
    - Schedule of monthly terminated certificates of time deposit
    - Active accounts by product
    - Current account, daily transactions summary
9. Description and diagrams of all system user interfaces
- Teller terminals
  - Loan officer terminals
  - Automated teller machine access
  - Smart card access
  - Credit card access
  - Telephone access—conventional, wireless
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12. Appendix B – Answers to Frequently Asked Questions (FAQs)

### **SAMPLE SYSTEM ADMINISTRATOR’S MANUAL – TABLE OF CONTENTS**

*(Note: Documentation must always be tailored to the specific requirements of the intended target audience. Examples are provided only as an indicator of the type of information to be included and should not be considered complete.)*

1. Emergency contact information

List of phone numbers and names of people to contact in case of:

- a. Client care issues
- b. Head office issues
- c. Branch issues
- d. Security and access issues
- e. Fire (emergency)
- f. Electrical system issues
- g. Building maintenance
- h. Fraud
- i. Hardware failure
- j. Software failure

2. Introduction

Summary of the benefits a user will obtain from reading the manual plus the expectations the manual puts on its audience (skills required for administering the system); also, the name of person responsible for keeping the manual up to date and the date of last update.

3. Security and access control

Detailed descriptions on how to perform all security-related procedures, including planning considerations and checklist for:

- Setting up a new user
- Changing access privileges
- Revoking access privileges (staff termination)

4. System monitoring tools and procedures

Description of routine system monitoring procedures, available system tools, and reports to help administration staff keep the system operating at peak performance.

5. Start-up

Checklist for starting up the system.

6. Shutdown

Checklist for shutting down the system.

7. Backup

Checklist for performing system backup plus detailed description of how to label and manage the backup media and offsite safekeeping procedures.

8. Recovery and contingency plan

Checklist for performing a data recovery process, including authorization procedure. Note: Data generated since most recent backup may be lost when performing a “restore.” These data will then need to be recaptured by the system.

9. Hardware configuration

Description of hardware components, with sufficient detail to enable a request for quotation, should a component need to be replaced.

10. Software installation

Detailed information on how to initialize the hardware and install all necessary software on every piece of equipment included in the system, including authorization procedure for obtaining access to stored program media.

11. System change requests

Description of procedure to follow when requesting authorization to modify any part of the system (process, hardware, or software).

12. Support model

Description of how the system support responsibilities are organized, including:

- Support roles and responsibilities
- System support team
- Activity chart, including:
  - Daily tasks (list of tasks with references to detailed descriptions, as required. Example: daily backup; report generation; error log review)
  - Weekly tasks (Example: weekly backup; report generation)
  - Month-end tasks (Example: processing of month-end accounting system routines; monthly backup; report generation)
  - Year-end tasks (Example: processing of year-end accounting system routines, annual archiving of information; report generation).

Appendix A – Frequently asked questions (FAQ)

List of common questions and answers that the system administrator is expected to provide. Examples:

- How to reset a user's password
- How to restart a crashed system—instructions to give staff over the telephone

Appendix B – Topology diagrams for systems

Conceptual schematic showing how the MIS's components are linked in terms of data flows, data repositories, and interfaces and delivery mechanisms.



# SESSION 9: SYSTEM OPTIMIZATION AND MAINTENANCE

## Session Summary

**OBJECTIVES:** By the end of the session, participants will be able to:

- Define and state importance of system optimization and maintenance
- List major activities for system optimization and maintenance
- Develop a plan to ensure that both are part of the IS process
- Identify key issues that will need to be addressed after the introduction of a new IS

**TIME:** 64–74 minutes

	A. What Is Optimization? What Is Maintenance? <i>(17–27 minutes)</i>
<b>Session Topics</b>	B. Planning for Optimization and Maintenance <i>(47 minutes)</i>

**SUPPLIES:** Flipchart paper  
Markers  
Masking tape  
LED projector or overhead projector

### TRAINER MATERIALS

IS9-M1 Skit Script

### PARTICIPANT MATERIALS

**OVERHEADS:** IS9-O1 System Development Life Cycle

**HANDOUTS:** IS9-H1 Technical Notes

**CASE STUDY:** Part 17 Identifying Ways to Optimize and Maintain the System

## Session 9: System Optimization and Maintenance

### TOPIC A: WHAT IS OPTIMIZATION? WHAT IS MAINTENANCE?

1. (2 minutes) State: Now that the IS has been fully implemented, you can sit back, relax, and let the system do the work for you. Ask: What do you think: Is this true, are they finished? Take a few answers. Show IS9-O1. Introduce the next step in IS development: the optimization and maintenance phase of the system development life cycle.
2. (5 minutes) Refresh participants' minds on the status of FairFund's search for a new IS. Conduct the skit using IS9-M1.
3. (5–10 minutes) Ask and discuss: Is Jan's work finished? What is happening at FairFund? Why are these things happening? How can they change?
4. (5–10 minutes) Ask: What do we mean by maintenance? What examples did you see in the skit? Note that *maintenance* refers to keeping the hardware and software up to date, working, and functioning properly. Does the hardware still work? Are the controls working? Does the MFI have the latest version of the software? Most of this work will fall to the information technology (IT) staff or contractor.

Ask what is system optimization? What examples did you see in the skit? Define *optimization* as the effort to get the most out of the IS by coordinating processes, workflows, and methods of interfacing with the system. Ask: Is FairFund using the system to its maximum advantage? Is it meeting the goals established in the beginning?

Ask: Why should an MFI be concerned about system optimization and maintenance? How do these activities relate to the other parts of the SDLC? Remind participants once again that the stages are not totally distinct and linear and that they will see more places of overlap now.

### TOPIC B: PLANNING FOR OPTIMIZATION AND MAINTENANCE

5. (2 minutes) Explain that FairFund wants to continue planning for the success of the system, even though the system is now operational, has passed all tests, and is almost ready to cease parallel operations. FairFund is beginning to see additional, ongoing challenges, as noted earlier in this session. Jan, realizing that her work will never be finished, needs to figure out how to better manage the system in the future.
6. (15 minutes) Distribute Case Study Part 17. Divide participants into subgroups. Assign half of the groups to work on maintenance and the other half to work on optimization. Using the data in the skit and in the case study, have each group develop a list of activities that they think FairFund should carry out. They should also suggest how these activities will be conducted and managed, clearly identify



who will be responsible for them, and note how often the activities are to be conducted.

7. *(15 minutes)* Ask groups to present their results. Discuss responses and take questions. Discussion should include the following topics: hardware routine maintenance; version-based software; budgeting for maintenance; staff turnover; methods for responding to new policies, procedures, and products; ongoing training; processes for evaluation and feedback; assigned responsibility for optimization and maintenance; and so forth.
8. *(10 minutes)* Ask and discuss: What do you think about optimization and maintenance as part of the SDLC? What experiences do you have with them? What could happen if this step in the SDLC is overlooked?
9. *(5 minutes)* Summarize main points and address questions. Distribute IS9-H1.

## Skit Script

---

**Setting:** FairFund Branch and IT department, four months after implementation of the information system.

Prepare a sign with the name FairFund and a date.

---

**Actors:**

Branch Officer

Credit Officer

Two Data Entry Clerks

Managing Director (Chris)

IS Director (Jan)

---

**DON'T FORGET TO PRACTICE!**

---

**SCRIPT**

**Act 1**

*IS Director enters branch and posts sign about ongoing systems training. Branch Officer enters and approaches IS Director.*

**IS Director (Jan):** Hi. How goes the work at your branch? What are you doing? Seems like things are a little slow here.

**Branch Officer:** Oh, hi! Yeah, I am really bored. That new IS system is really cool—it does most of my work! So when I am here, there isn't much to do. Why are you going to have training now? I thought that was all over with. Well, I don't really need it anyway; I've got no work to do now!

*\*\*\*Credit Officer enters and speaks to IS Director\*\*\**

**Credit Officer:** Hi, you know what? I heard from my cousin who works at FundAll, and they use the same software as we do. *(showing a report to IS Director)* See what they can do with their system? My cousin says it is a new feature of the latest version. Wouldn't that be great if we could do that too? Imagine how much faster we would get information about our portfolio. Follow-up could be immediate; I bet delinquency would almost disappear.

Oh, and by the way, what is the news of getting a replacement for our UPS? It has been broken for a week now.

**IS Director (Jan):** Your uninterruptible power supply is broken? Does Felix know? I will get right on it. And can I have a copy of that report? I will check with the IT guys and bring it up with the operations manager to see if we can generate it and incorporate it into our operations.

---

## **Act 2**

*IT department, with two newly hired data entry clerks. One is playing games, and the other seems to be reading personnel files; neither is actually entering data.*

*IS Director (Jan) enters. She begins to say something to the clerks, but is interrupted by the entry of the managing director (Chris).*

**Managing Director (Chris):** *(to IS Director, Jan)* Hi. I saw you come in here; I have been looking for you. Our annual report to the stakeholders is due next week. You know there will be many questions about the new IS. Can you prepare a report and include how we are meeting our goals? You know, the ones that we used to sell the system to the board!



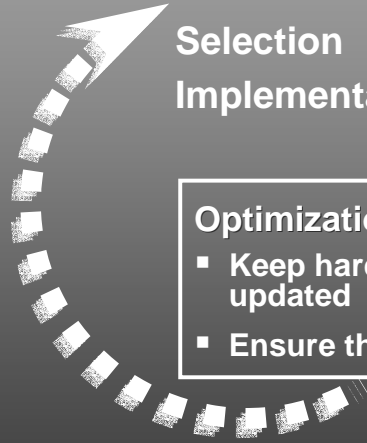
# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**



# System Development Life Cycle

Preparation  
Needs Analysis  
Selection  
Implementation



## Optimization and Maintenance

- Keep hardware and software functioning and updated
- Ensure the system is used to maximum advantage





# Handouts



## Technical Notes

### MAINTENANCE

Maintenance activities include all aspects of the MIS, both process- and system-related. The following items need to be considered:

- End-user documentation
- System administration documentation
- Hardware maintenance
- Software upgrades
- Software modifications (change requests)
- Staff training

*See also separate table with details on each consideration.*

### ONGOING SUPPORT

Ongoing support is an absolute necessity, as staff turnover and organizational growth will continue as long as the organization is a going concern. Generally, the support requirement is greatest right before and immediately after the introduction of a new system. Within a few weeks of the transition to the new system, the demand for support will start to trail off, as staff members gain the necessary experience to carry out their responsibilities on their own. For this reason it makes sense to take on temporary support staff (either contractors or temporary reassignment of the MFI's own staff) for the period around the transition. Demand for support services should be tracked by management on a weekly basis to determine when the support capacity can safely be reduced.

The following information system areas typically require ongoing support considerations:

- Hardware support
- Software—end-user reported system errors
- Transactional process support

### VERSION-BASED SOFTWARE

Software is normally never totally completed. There are always extra features and enhancements that the programmers would like to add. At some point, however, a decision is made that the first version of the product is ready to ship to clients. This version becomes known as the 1.0 release.

Contentious programmers often enroll a limited number of prerelease testers to identify critical errors that will crash the program. Thus, technically, there is a release before version 1.0, often called a beta release, or a beta “build,” which gets circulated only in small quantities.

- *Builds* are simply numerical and sequential versioning numbers that the programmers use to keep track of the code.
- Generally, there are many builds before a beta release. Depending on the complexity of the program and the skills of the programmers, there can be several beta releases before the official version is shipped.

Assuming the software is popular (that is, generating revenue), the software publisher will very likely come out with additional releases of the software, both to fix bugs (inevitably there always are some) and to add new features.

The guiding principle is that small incremental bug fixes are given “dot release” status, meaning they only amount to a decimal increase in the version code, as in “version 1.1.”

Major rewrites of the program are given full “dot-zero” status, meaning they warrant a full digit increase in the version number, to, say, version 2.0.

Many larger software publishers come out with regular dot releases on a predetermined schedule, say, every third month, permitting their clients to plan in advance any software upgrade activities they want to undertake on their systems.

### SAMPLE ROLLOUT PLAN OUTLINE AND TEMPLATE

The following control chart identifies the major activity areas for the rollout of a computerized management information system.

- The sample rollout plan assumes that the decision has already been made as to what type of information systems are going to be used, that the software has already been sourced (either off-the-shelf, modification of an existing system, or custom-developed software), and that a solid project plan for the software exists.
- It is also assumed that the institution is large enough to warrant a separate pilot group. In a multibranch organization it likely makes sense to select one branch as the pilot group and then to phase in the other branches according to the capacity of the training staff to prepare the staff for the new system.
- Note that two columns have been left blank; **R** (Responsibility) and **D** (Dependency). The information for these two columns will be unique to each installation. Some tasks, such as training and communications, will need to be timed according to the progress of the system development and testing. Too much time between training and launch will limit the effectiveness of the training. Ideally, staff should be trained less than one week before they need to apply a new skill.

**Time estimates provided should be considered starting points for discussion.**

#### Implementation and rollout plan control chart

Task	R	Time	D
<b>1 Inform staff</b>			
1.1 Prepare internal communications plan		3d	
1.2 Prepare materials		1w	
1.3 Launch internal communications plan		entire project	
<b>2 Set up hardware</b>			
2.1 Design network infrastructure		2w	
2.2 Prepare Request for Quotation		2d	
2.3 Source equipment		4d	
2.4 Prepare facilities		4w	
2.5 Configure hardware		1w	
2.6 Install and test equipment		3d	
2.7 Prepare documentation		3w	
2.8 Train/source hardware support staff		1w	

Task	R	Time	D
<b>3 Configure system</b>			
3.1 Install software		2d	
3.2 Set up chart of accounts		1w	
3.3 Define financial products		1w	
<b>4 Test system</b>			
4.1 Load sample historical data		1d	
4.2 Confirm all system functions		2w	
4.3 Clean existing live data		4w	
4.4 Transfer live data to system		1w	
<b>5 Train staff</b>			
5.1 Define training needs (by staff role)		1w	
5.2 Prepare training materials		3w	
5.3 Conduct pilot group staff training		2w	
5.4 Conduct general staff training		4w	
<b>6 Define support model</b>			
6.1 Determine support requirements		1w	
6.2 Source support staff (mix of temporary/full-time)		3w	
6.3 Plan and prepare support systems (logs, references)		2w	
6.4 Train support staff		1w	
<b>7 Inform clients &amp; community</b>			
7.1 Prepare external communications plan		3d	
7.2 Prepare materials		1w	
7.3 Launch external communications plan		8w	
<b>8 Pilot system</b>			
8.1 Transfer branch (or portion of staff) to new system		1d	
8.2 Run parallel operations (old and new systems concurrently)		8w	
8.3 Conduct pilot review and optimize operations		2w+	
<b>9 Go live</b>			
9.1 Transfer remaining staff to new system		1w	
<b>10 Conduct systems audit</b>			
10.1 Schedule and conduct regular audits of system functionality		annually	

## **OTHER MAINTENANCE AND OPTIMIZATION ISSUES**

### **1 End-user documentation**

*Significance* The documentation needs to be reviewed and updated whenever a change in policy, process, or procedure is implemented.

*Responsibility* Process owner (director of MIS); best delegated to staff with most knowledge and hands-on experience (*and* technical writing skills!)

Note: Many organizations with networked computers will choose to maintain documentation online as a “living document,” meaning that it is supposed to be updated as often as required and thus the latest information will always be accessible to the end users. This strategy assumes that all staff with a need for documentation access can get online whenever they so require.

Shared terminals in hard-to-reach locales will impede the online approach. In those situations a printed document may still be the best solution.

### **2 System administration documentation**

*Significance* It is very important that the system administrator keep detailed records of all significant system events in case of staff turnover or for review by outside consultants or system auditors.

Documentation must exist for both routine tasks such as backups, which need to be carefully labeled and systematically recycled, and unique events, such as configuration changes, upgrades or fixes applied to intermittent system problems.

*Responsibility* System administrator

Note: System administrators generally have continuous access to a terminal, so their documentation task is well suited for the “living document” approach (see above). However, a hard copy journal should always be on hand because the system could be down for the very reason that needs to be documented.

### **3 Hardware maintenance**

*Significance* All systems should be put through an annual diagnostic check to ensure proper operation and system capacity.

*Responsibility* Hardware technician, system administrator, or technical contractor (if outsourced)

### **4 Software upgrades**

*Significance* Good software vendors will release regular maintenance releases of its code (often referred to in jargon as “dot releases”, as in “Version 3 dot 2a,” or V.3.2a.) Each dot release should come with a list of “fixes” that have been addressed in the code. Often the fixes will address a function or functions that may not be an issue for the end user at that point in time. However, it is still advisable to install the latest versions whenever possible as this may simplify future diagnoses of errors.

Note: One exception to installing updates is when the organization has created a customized version of a particular release, or if customized links to other programs have been created. In these case installing an upgrade will likely destroy the custom functionality!!

*Responsibility* System administrator, technical support staff, or software contractor (if outsourced)

## **5 Software modifications (change requests)**

*Significance* It may well happen that a change to the source code is required to meet an unexpected need or to fix an annoying “bug.” Changes to the code are typically very expensive, as they will necessitate a complete retesting of the program, plus installation, training, and documentation revisions. Note also that if customizations are done to externally supplied code, those changes will be lost when the next version of the code is released by the software vendor (unless the vendor has decided to include the customized feature in its next release, which is possible, but by no means guaranteed).

*Responsibility* Director of MIS must approve all change requests, as they will involve significant resource commitments.

## **6 Staff training**

*Significance* Staff turnover and additions occur frequently in almost all organizations. Process improvements, policy changes, and new products introductions make regular training of new and existing staff essential. Frequent training seminars ensure effective use of the MIS and, if done well, can serve as team-building opportunities that enhance staff morale.

*Responsibility* Joint responsibility of human resource coordinator and line managers to ensure it happens. Training can be done by internal technical staff or outsourced.





# SESSION 10: SUMMARY AND ACTION PLANS

## Session Summary

**OBJECTIVES:** By the end of the session participants will be able to:

- List and describe the main messages of the course
- Discuss steps to information system installation
- Prepare to install an information system in their MFIs

**TIME:** 130–145 minutes

<b>Session Topics</b>	A. Enhancements: Starting the Process Again (90–105 minutes)
	B. Action Plan (35–40 minutes)

**SUPPLIES:** Flipchart paper  
Markers  
Masking tape  
LED projector or overhead projector  
Noisemakers and small gifts (*optional*)

### TRAINER MATERIALS

IS10-M1 Quiz Game Questions – By Category (*optional*)

### PARTICIPANT MATERIALS

**OVERHEADS:** IS10-O1 Daily News Headlines

**HANDOUTS:** IS10-H1 System Development Life Cycle  
IS10-H2 Action Plan Worksheet

## Session 10: Summary and Action Plan

### TOPIC A: ENHANCEMENTS: STARTING THE PROCESS AGAIN

1. (5 minutes) Show IS10-O1. Ask: Do you think the process is finished now? Why or why not? Take answers and ensure that the participants understand that the process never ends. Part of optimization is to ensure that the information system meets the needs of the MFI.

Ask: What happens when FairFund introduces a major new product, such as savings? Answer: The process starts all over again! FairFund will have to reevaluate its systems to see how and if it can handle savings. State: This is what we will do now: go back to the beginning and review all the steps that FairFund will take as it tries to determine if and how its systems can handle a savings product. Ask: What will FairFund do first? Next? And then? Keep asking until the main parts of the lifecycle have all been named.

Take time to review the main points of the IS design process as presented in this workshop: preparation and planning, needs analysis, product and vendor selection, implementation, and maintenance and optimization. After review, state: We will now begin our implementation plans to take what we have learned and apply it in our institutions.

2. (5 minutes) Distribute IS10-H1 as a review guide. Tie the summary and review to the continuous cycle of systems development. Introduce the concept of using the summary and review as a step in starting new business processes such as introducing savings products.

3. (70–80 minutes) To review, use one of the following two options.

**Option One:** Divide participants into five subgroups. Ask participants to think back to the first steps of the SDLC. They should review what happens in each step and state what they would need to do to accommodate a new savings product into an MFI's information system. For example, the type of new product introduced has determined the reason for change. Ask: Does the MFI need to establish a system goal? What would it be? What should the system do for the savings product? What about institutional readiness? Continue through the SDLC.

After approximately 40 minutes, assign each of the subgroups to present *one* part of the SDLC as it applies to the new savings product.

For the final 30 minutes, have participants present a summary of the course. As one group presents, the other groups add ideas or ask questions.

**Option Two:** Quiz game, using IS10-M1. Post the prepared flipchart with categories of questions where everyone can see it. (See IS10-M1 for instructions to prepare.)

Make up groups of three to five participants, depending on group size. Give each group a noisemaker of some sort, or have them use their hands to slap on the desk.

Select one category and ask one of the questions in it. The first group that indicates they know the answer by making noise has the first chance for a correct answer. (If this group does not get the answer right, the next-fastest group can answer.) Continue until a group gets the right answer. This group gets one point (keep a record of points by group on the bottom of the flipchart page) and also gets to select the next category. Keep it fun and lively.

When all questions for a category have been asked, cross off the corresponding square on the flipchart sheet. Continue until all questions have been asked and correctly answered. (*Optionally, provide small gifts for each group.*)

4. (10–15 minutes) Clarify any outstanding issues arising from the summary.

#### **TOPIC B: ACTION PLAN**

5. (15–20 minutes) State that all this learning will go to waste if we don't have another plan! That plan is how we will use the information we have just learned in our MFIs. We will begin that process now. Have participants complete an action plan—either individually or with other members of their MFIs. Distribute IS10-H2.
6. (15 minutes) Review the action plans by asking participants to share their ideas, concerns, and solutions. Take any remaining comments
7. (5 minutes) Close the session and the content portion of the course.

## Quiz Game Questions – By Category

The trainer, using a ruler and marker, will have prepared a flipchart sheet by dividing it into six equal squares. Each square will contain the labeled category and questions or headings (but not the answers).

---

### Data, Information, Systems (Category 1)

1. Name the four major activities performed by an information system.

- Capture
- Store
- Process/transform
- Report

2. Name three major software subsystems of an information system.

- Accounting
- Loan portfolio
- Deposit tracking
- Client information
- Human resources

3. What is the difference between data and information?

**Data:** Unprocessed basic facts about the activities of a business that give no insight by themselves

**Information:** Data transformed into a meaningful form that helps someone to make sound, quality decisions or to gain insight

4. Name four qualities of good information.

- Timely
- Reliable
- Accurate
- Relevant
- Complete
- Appropriate (level of detail, and for user/purpose)

---

### Preparation (Category 2)

1. What is the definition of a task force?

A temporary grouping of people under one leader for the purpose of achieving a defined objective

2. What is the responsibility of the project champion?  
Create vision, generate buy-in, maintain enthusiasm, advocate project, develop consensus
3. Name two things an MFI should have in place before it is ready for a new information system.  
Business plan  
Budget  
Policies and Practices  
Internal controls  
Infrastructure (or plans for)  
Personnel (or plans for)  
Historical data
4. Why is project management an important responsibility of the task force?  
It helps to ensure the success of the project (that is, goals are being met) and that resources are used efficiently and effectively.

---

### **Needs Analysis (Category 3)**

1. How can an MFI predict its future information needs?  
By creating a thorough, well-thought-out business plan and using it as a basis for the prediction
2. Given limited resources, how does an MFI ensure that its most important information needs are met?  
By prioritizing
3. How does the task force communicate the results of its needs analysis process and its prioritized needs?  
Needs analysis report
4. What is a flowchart?  
A graphical representation of a business process

---

### **Selection (Category 4)**

1. To determine how much automation is feasible, an MFI should consider its resources in what four categories?  
Staff  
Technology  
Time  
Funds/costs

2. What is an RFP?

(Request for Proposal) A formal document that asks potential vendors to submit a proposal for satisfying a specific need, including costs and timeline

3. Name three due diligence activities.

Check references

View a product demonstration

Read independent product reviews

Visit the vendor

Visit an existing user

Draft thorough documents (for example, RFP, RFQ, SOW, TOR)

4. *(Multiple choice question—Trainer will write choices on flipchart sheet.)*

Software/vendor selection should be based on:

a. The personal friendships of the managing director and board members

b. Cost

c. Technical capabilities of system and vendor

d. Both cost and technical capabilities

**Answer:** d

---

## Implementation (Category 5)

1. Name three installation activities.

Procure hardware and software

Install hardware and software

Test system

Transfer and enter initial data

Hire and train staff

Run parallel system to validate system

2. Why is testing crucial?

It ensures that the system works as promised and as needed by the MFI.

It highlights bugs, if any.

3. Name an implementation activity the MFI is generally responsible for.

Staff hiring

Internal controls

Security implementation

Parallel testing

Transferring of data

Acceptance testing

4. Name an implementation activity the vendor is generally responsible for.

- Hardware installation
- Basic software testing
- Loading of software
- Program modifications
- Initial training

---

### Optimization and Maintenance (Category 6)

1. Define *system maintenance*.

Activities that ensure the system continues to perform over time—for example, the hardware and software continue to function properly

2. Define *system optimization*.

Activities to ensure that the system is used to maximum advantage

3. (*Multiple choice question—Trainer will write choices on flipchart sheet.*)

Who is responsible for system optimization and maintenance?

- a. The managing director
- b. The IS manager
- c. The vendor
- d. All staff

**Answer:** d

4. Name three optimization or maintenance activities.

- Hardware maintenance
- Software upgrades
- Ongoing staff training
- Ongoing support
- Ongoing testing and auditing
- Documentation maintenance





# Overheads

**THE COMPLETE SET OF OVERHEADS IS IN A SEPARATE POWERPOINT FILE ENTITLED "CGAP INFORMATION SYSTEMS OVERHEADS"**



IS10-01

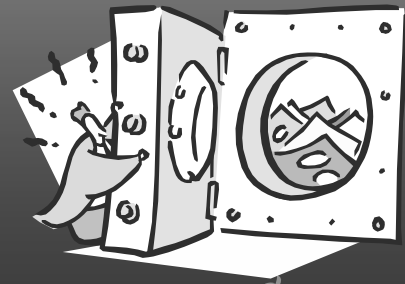


## Daily News Headlines

# FairFund

*granted banking license*

**WILL TAKE  
SAVINGS!!**



© CGAP/World Bank, 2009

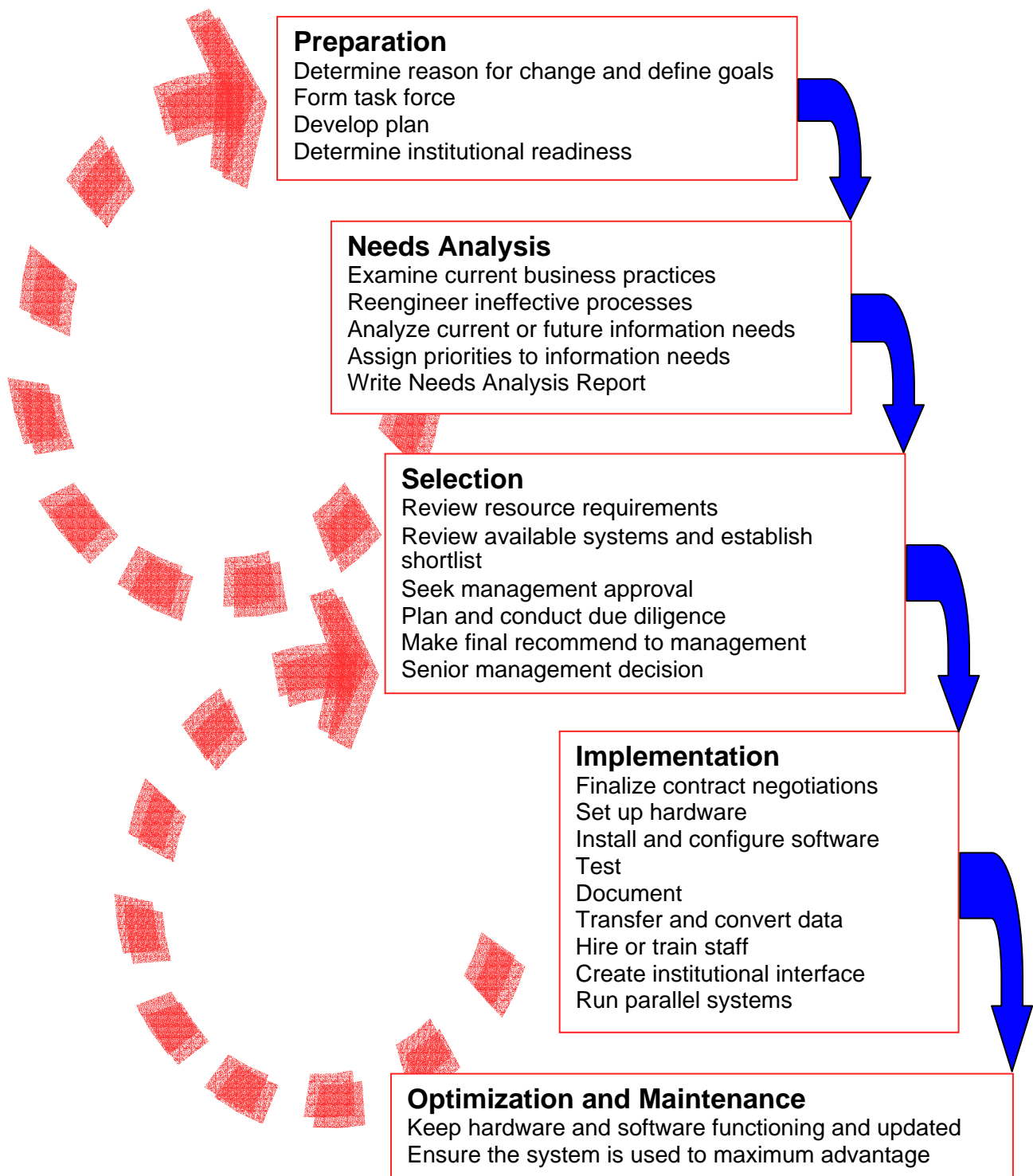




# Handouts



# System Development Life Cycle







## Action Plan Worksheet

The course has presented a step-by-step approach to information system installation. Think through the steps and how they will be applied to your MFI. Focus on the component tasks, the obstacles, and ideas to overcome those obstacles.

### Preparation

Steps of most interest to my MFI:

Anticipated obstacles:

Ideas to overcome the obstacles:

### Needs analysis

Steps of most interest to my MFI:

Anticipated obstacles:

Ideas to overcome the obstacles:

## **Selection**

Steps of most interest to my MFI:

Anticipated obstacles:

Ideas to overcome the obstacles:

## **Implementation**

Steps of most interest to my MFI:

Anticipated obstacles:

Ideas to overcome the obstacles:

## Optimization and maintenance

Steps of most interest to my MFI:

Anticipated obstacles:

Ideas to overcome the obstacles:

## Human resources

Steps of most interest to my MFI:

Anticipated obstacles:

Ideas to overcome the obstacles:

**Other issues or ideas to remember!**

A large, empty rectangular box with a thin black border, intended for the user to write down other issues or ideas to remember.

# SESSION 11: COURSE EVALUATION AND CLOSURE

## Session Summary

**OBJECTIVES:** By the end of the closing session participants will have:

- Completed the training audit
- Completed course evaluation forms

Trainers will have:

- Issued certificates to participants
- Officially closed the workshop

**TIME:** 28–33 minutes

**Session** A. Workshop Evaluation (*15–20 minutes*)

**Topics:** B. Concluding Remarks and Certificates (*13 minutes*)

**SUPPLIES:** Flipchart paper

Markers

Certificates

LED projector or overhead projector } (*Optional background*)

Goals (IS1-O1)

## PARTICIPANT MATERIALS

**HANDOUTS:** IS11-H1 Information Systems – Post-Training Audit

IS11-H2 Information Systems Course Evaluation

## Session 11: Course Evaluation and Closure

### TOPIC A: WORKSHOP EVALUATION

1. (5–10 minutes) Remind participants that the course is finished, and that you sincerely hope the session has met their expectations. (Optionally display IS1-O1.)

State: To help the trainers check how effective we were, we ask you to take five minutes to complete a quick post-training audit. Distribute IS11-H1. Explain that it is similar to the pretest at the beginning of the course. State: Hopefully, you will be encouraged by how much better you can answer the questions!

2. (10 minutes) Ask participants to evaluate the course. Encourage the participants to be objective in completing the course evaluation form because their input will be used to improve the course. The participants are given the course evaluation form (IS11-H2) to complete *in the room*.

Collect evaluation forms.

### TOPIC B: CONCLUDING REMARKS AND CERTIFICATES

3. (5 minutes) The representative of the host training institution makes closing remarks.
4. (5 minutes) Issue certificates to the participants.
5. (3 minutes) The training institution's representative officially closes the workshop and once again thanks participants.

# Handouts





## Information Systems – Post-Training Audit

Name: \_\_\_\_\_ Organization: \_\_\_\_\_

State the major software subcomponents of an MFI's information system.

Describe the major steps in the System Development Life Cycle.

Why would you use a process like the one presented in this course when considering an information system?

Comment on the use of the evaluation framework as a tool to evaluate software options.

For what would you use the CGAP Microfinance Gateway/Information Systems Web site?

How would you select a vendor for your IS?

## Information Systems Course Evaluation

Please rate and comment on the following:

1 = Poor 2 = Fair 3 = Average 4 = Good 5 = Excellent

Overall course	1	2	3	4	5
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Comments:

Length of course	1	2	3	4	5
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Comments:

Course content	1	2	3	4	5
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Comments:

Course methods	1	2	3	4	5
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Comments:

Course materials	1	2	3	4	5
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Comments:

Trainer 1	1	2	3	4	5
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Name \_\_\_\_\_

Comments:

Trainer 2	1	2	3	4	5
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Name \_\_\_\_\_

Comments:

Course organization	1	2	3	4	5
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Comments:

Precourse organization, communication, advertising	1	2	3	4	5
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Comments:

Facilities	1	2	3	4	5
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Comments:



# Case Study



# Case Study



## A Case Study: Information Systems for Microfinance

The FairFund case study is based on the experiences of many microfinance institutions (MFIs), but no one specific institution. It presents a number of current information system (IS) issues experienced by microfinance organizations.

The software reviews referenced in this case study are available from the Consultative Group to Assist the Poorest (CGAP) Web page. They are not the only software products on the market for use in microfinance, and their use here does not constitute a recommendation for your particular institution. To choose the best software for your situation, it is recommended that you follow the process presented in this course and select from the range of products available on the market when your institution is making its decisions for IS changes.

### Case Study Part 1: Introduction to FairFund

#### THE FAIRFUND EXPERIENCE

Chris Castillo, the managing director of FairFund, is preparing for the week's senior staff meeting. The agenda for the meeting is filled with a series of critical issues. Chris knows the organization is meeting its aggressive growth targets, and in the case of one branch exceeding its goals, although Chris doesn't recall when she last saw any official reports to verify this. In addition, the staff is expanding quickly, and not everyone is being trained as thoroughly as others had been in the past. In what was hoped to be an isolated incident of fraud by one of the newer employees, FairFund's credibility had been put at risk, and Chris is wondering how it could have happened. If those were not enough challenges, the new individual loan product has been in such great demand since it was launched six months ago that it is putting enormous pressure on the cash flow of the institution. Previously, FairFund was able to project its cash flow needs three weeks out and that had been sufficient. But because of the higher demand and the slowness of acquiring additional loan capital from First Bank, FairFund now needs to know what its cash flow requirements will be for the next 8 to 12 weeks.

The senior management team gathered, and, after a great deal of discussion, found solutions to a number of the immediate problems. However, overall the managers felt frustrated and overwhelmed. Although they might be able to resolve the current problems, they believed that more crises would arise with FairFund's continued fast-paced growth. As Chris listened to the grievances of the different managers—the director of finance, the director of operations, the senior internal auditor, and the various branch managers, a common theme began to emerge. It seemed the managers either didn't have

## *Case Study Part 1: Introduction to FairFund*

the information they needed, didn't have access to information when they needed it, found the information to be in an unusable form, or, worse yet, found it to be inaccurate.

Chris wondered if it weren't time to improve the organization's means of managing information. Not being well versed on the different types of systems that other microfinance organization use, and a little intimidated by the technology revolution in general, she thought it might be best to delegate the job to one of the up-and-coming managers. She presented the idea to the rest of the management team, all of whom believed it to be a good idea because none of them had time to lead such a project. It was agreed that Jan, the new IS manager, would look into revamping the way FairFund managed its information.

Later, Jan had a brief but important meeting with her boss, Chris, the managing director of FairFund. As the newly appointed manager of IS, Jan is now responsible for all existing information systems activities, and she has also been appointed to spearhead an initiative to improve the way FairFund manages its information. The managing director had handed Jan her first task: to research alternatives to FairFund's current information system and make recommendations for improvements. The activity has to be completed before the next quarterly board meeting, when budget decisions for the next year will be made, which means Jan has almost three full months to work on this project. Still, that is not a great deal of time; she will have to be diligent about the work.

The managing director had hinted broadly to Jan about the possibility that she could assume the role of director of IS if she could come up with a proposal that would both satisfy the board and—even more important—enable FairFund to effectively manage its information needs in general and effectively track individual loan products and deposits in particular. The managing director, a famously quick-tempered individual, had confided that she didn't really have a strong grasp on the technology aspect of the business and would be very interested in having a qualified director that understood both technology and the business side of the operations. Jan recognized fully that the managing director was giving her the opportunity to show that she was capable of managing this project.

### **HISTORY OF THE ORGANIZATION**

FairFund started out as a nonprofit, nongovernmental organization (NGO) with broad involvement in community-based improvement activities. It was in its eighth year of operation. In the first few years it had been very successful at growing its membership. The mandate to assist the enterprising poor with a combination of social services—such as health care and community support groups—and basic financial services, had been well received.

However, a little more than two years ago, the charismatic managing director—also the founding force of the organization—had suddenly decided to retire due to unforeseen personal circumstances. Since then, FairFund has been challenged to maintain the donor community's interest in supporting the social equity-building portion of its operation. The institution has survived by evolving into a financial services organization that focuses on assisting the enterprising poor with credit and savings. Its outreach has suffered from the cutback to the community programs, and it has had to reduce its staff somewhat. Now the tide has turned, however, and it appears that FairFund is again rapidly growing its portfolio while gradually improving its sustainability.

The organization still has the support of a couple of multilateral donors who seem to have taken a special interest in the MFI. However, even they are beginning to make demands on the organization to reach operational and financial self-sufficiency “soon,” or risk losing their annual subsidies. Other donors are also asking FairFund to adopt more professional and businesslike (banking) approaches to the management of its operations.



## **NEW PRODUCT OFFERING**

Initially, FairFund offered only Grameen-type group lending products. The product proved popular and the institution managed to build up a sizable operation, with seven branches and just more than 18,000 clients. Most of the group loans were focused on trading, and it was from fear of losing its best clients to other institutions that FairFund began making individual loans.

Many group loan clients demonstrated excellent discipline in repayment and were thus considered good credit risks. When they started asking for individual loans, it only seemed logical to accommodate them, rather than risk losing them as clients. Subsequently, FairFund decided to start offering individual working capital loans to the many vendors in the local markets. It was the development of this product that had required operating manual documentation in order to secure donor support.

## **JAN'S DILEMMA—WHAT IS THE PROBLEM? THE SOLUTION?**

Jan wonders what exactly the problem is. How will a “new and improved” IS help? How will she know if the changes have been successful in solving the problem(s)? How will she show the managing director quantitatively the impact of the new and improved information system?



# Case Study

## Case Study Part 2: Background for Task Force Development, Task Force Bios, and Goals of IS

### PLAN AND GOALS

Jan did not want to live out her UnknownFund nightmare or to see FairFund go through the disastrous IS experiences she had heard about from other MFIs. Having recently read the the SEEP 2000 newsletter article on implementing an information system, she was determined to develop clear goals and a detailed plan for FairFund's process in order to avoid problems.

As Jan understood from her initial meeting with her boss, Chris, she and the task force would be responsible for identifying a better information system for FairFund. The specific goals of the information system are to:

1. Limit FairFund's risk for further fraud
2. Enable management to project their cash flow needs two to three months in advance
3. Enable better management of portfolio quality, even in times of aggressive growth
4. Enable more flexibility and better tracking of the new individual loan product

One of their initial tasks will be to come up with indicators to measure whether these goals are being met. By breaking them down into measurable objectives, it will be easier to calculate the return on investment for the new system.

### TASK FORCE: MEMBERS AND OPERATIONS

Jan also knew that she would need considerable help to choose the best system for FairFund. Thanks to a little online surfing of the Microfinance Gateway, she had also found the *CGAP Handbook for Management Information Systems for Microfinance Institutions*. She had downloaded the document, but had only enough time to skim it. She did, however, see the section on creating a task force for this type of project. Having been involved with a similar type of task force at a previous job, she easily understood the added value of a team effort.

She immediately began trying to decide which people she might want to have assist her in this project (see tables that follow). She would have to make a convincing case to the managing director, Chris, to ensure that these folks would be given time to be involved. She must choose carefully; otherwise, she might get stuck with some of the "difficult" employees in the organization. She decided to make a list of the skills and experience the people selected would need to have to complete the project and how the roles and responsibilities might be divided. She reminded herself to ask Patricia, the office manager, for a list of employees and their experience in case there was someone with experience she wasn't aware of.

Because Jan was confident that most of the potential members of the task force had not been involved in this type of project before, she wanted to pull together some examples of the process used by other organizations. Her first challenge was to get everyone on the team to agree to the specific process that would guide them. Second, she needed to get some agreement on expected outcomes. If everyone had different expectations about the group's mandate, it could lead to a lot of political infighting. Having this type of consensus would help solidify her leadership on the project as well.

*Case Study Part 2: Background for Task Force Development,  
Task Force Bios, and Goals of IS*

Chris, the managing director, had specified that she wanted a weekly update from Jan on the progress of the project. Because the branch managers weren't in easy reach of the central office, Jan and the managers would have to figure out when to meet and how often. Jan thought it would be ideal to meet once a week but didn't know if that would always be feasible. In addition to Chris, she and the branch managers would need to figure out the best way to keep the rest of the organization informed about their progress. Typically, information had a very slow trickle-down effect at FairFund. Employees at the branches seemed to always be a month behind the news, and, boy, did that annoy them.

Now that Jan had finished pulling together a rough outline of the first meeting of the task force, she needed to gather all the materials to aid the discussion. Because this was her first opportunity to lead such an important project, she was already nervous thinking about the next day's meeting.

Case Study Part 2: Background for Task Force Development, Task Force Bios, and Goals of IS

Name	Title at FairFund	Time in		Education	Professional Experience/Career Goal
		Position	Time with MFI		
Ms. Juanita Alvarez	Assistant to the credit supervisor	2 years	4 years	2 years of college studying history	<ul style="list-style-type: none"> <li>Worked as the office assistant at a branch; then was moved to the central office in the credit department. Her initial task in the central office was to assist in the documenting of all the organization's credit and accounting policies and procedures.</li> <li>Career goal: Unsure what she wants to do; mostly content in her job, but would like to finish her degree in some other field.</li> </ul>
Ms. Betty Arnoux	Training manager/human resource department	1 year	6 years	Bachelor's degree in sociology	<ul style="list-style-type: none"> <li>Professional experience: Worked with another nongovernmental organization (NGO) delivering client social services. Moved to FairFund to do similar work, along with research to track client impact for future funding proposals. With the reorganization became a loan officer; then was put in charge of collections and training new loan officers.</li> <li>Career goal: Would like to go abroad and complete a master's degree in psychology.</li> </ul>
Mr. Walter Bingham	Director of finance	3 years	7 years	Bachelor's degree in accounting, with certified public accountant license	<ul style="list-style-type: none"> <li>Worked as an accountant at a leasing company before becoming an accountant with FairFund.</li> <li>Career goal: to become a chief financial officer for a company.</li> </ul>
Mr. Tony Delgado	Branch manager	3 years	3 years	Bachelor's degree in business administration	<ul style="list-style-type: none"> <li>Worked as an accounting assistant, then as a loan officer, and finally a credit manager at the national bank before switching to microfinance. (He has not always been an advocate of computer technology.)</li> <li>Career goal: senior management position in the organization, with the flexibility to control his own schedule and workload.</li> </ul>

Case Study Part 2: Background for Task Force Development,  
Task Force Bios, and Goals of IS

<b>Name</b>	<b>Title at FairFund</b>	<b>Time in Position</b>	<b>Time with MFI</b>	<b>Education</b>	<b>Professional Experience/Career Goal</b>
Mr. Felix Lee	Information technology administrator	18 months	2.5 years	Completed 2 out of 4 years toward an electrical engineering degree	<ul style="list-style-type: none"> <li>▪ Started part-time helping a friend in his computer service business while attending university, became more interested in the salary than finishing school, and took a job at a large nonprofit with a sophisticated computer system. Move to FairFund to get a slight increase in pay, but, more important, to have more responsibility and the opportunity to move up.</li> <li>▪ Career goal: hoping to take a senior position with FairFund at some point in the future (Felix is the nephew of FairFund's managing director).</li> </ul>
Ms. Jan Loub	Manager of IS	6 weeks	4 years	College degree in business administration	<ul style="list-style-type: none"> <li>▪ Previously worked at another MFI and, as credit manager, was involved in instituting new initiatives (new products and operational improvements). Came to FairFund as a Branch Manager, but has not wanted to advance to credit supervisor. Prefers the overall business of running the organization and improving operational efficiency. The opportunity to move into the new position of Manager of IS came at a very opportune time.</li> <li>▪ Career goal: would like to become a senior manager in a microfinance organization or similar business.</li> </ul>
Ms. Hilda Luz	Branch manager	2 years	3 years	Bachelor's degree in business administration	<ul style="list-style-type: none"> <li>▪ Worked for several years as a loan officer at another microfinance organization, but wanted to have a shorter commute, so she switched to FairFund. Shortly after coming to FairFund, an opening for a branch manager became available. Attended one conference where she met others working in the microfinance industry and found it inspiring and motivating learning from the experience of others.</li> <li>▪ Career goal: not exactly sure; enjoys working with other branch managers and always looking to improve her branches' operations.</li> </ul>

Case Study Part 2: Background for Task Force Development,  
Task Force Bios, and Goals of IS

<b>Name</b>	<b>Title at FairFund</b>	<b>Time in Position</b>	<b>Time with MFI</b>	<b>Education</b>	<b>Professional Experience/Career Goal</b>
Ms. Mayra Perez	Credit Supervisor	3 years	3 years	1 year of college studying criminology, later completed degree in business administration	<ul style="list-style-type: none"> <li>Worked for Electromatic appliance store in the credit department, started as an office assistant, and then began taking applications and doing collection follow-up. Eventually she became a credit underwriter and moved up to manager of her department. She came to FairFund well respected by employees and with strong reputation for fairness. In general, she has had a smooth transition into the job because of her charismatic personality and good ideas. FairFund's shift in direction two years ago was due largely to her suggestion and encouragement.</li> <li>Career goal: would like to be a senior manager of a very large credit operation.</li> </ul>
Ms. Anna Riccio	Junior Accountant	3 years	3 years	Bachelor's degree in accounting	<ul style="list-style-type: none"> <li>This is her first job since graduating, but she is quickly gaining more and more responsibility in her job.</li> <li>Career goal: plans to, within a year or two, take the national exams to become a chartered accountant</li> </ul>
Ms. Patricia Salverda	Office manager	4 years	8 years (since inception)	High school graduate	<ul style="list-style-type: none"> <li>Started at FairFund as the assistant to the managing director and worked her way to office manager. In addition to managing office administration, she is responsible for keeping personnel records.</li> <li>Career goal: is very happy with her current position.</li> </ul>
Mr. Robert Wong	Branch Manager	3 years	5 years	Bachelor's degree in business administration, working on an MBA through a distance education program	<ul style="list-style-type: none"> <li>Spent two years at Banco Popular in its credit card department processing payments and assisting with collections. Previously worked as loan officer before being promoted to Branch Manager at FairFund.</li> <li>Career goal: to manage an entire microfinance institution.</li> </ul>





# Case Study

## Case Study Part 3: Task Force Members and Procedures

### TASK FORCE MEMBERS

Jan requested that her team be composed of the following people:

- Juanita Alvarez
- Betty Arnoux
- Felix Lee
- Mayra Perez
- Anna Riccio
- Robert Wong

In her first project report memo to the managing director, Jan described why she wanted these individuals.

**Juanita Alvarez** will be responsible for most of the documentation of the process, including task force meetings, communication to the organization as a whole, conducting interviews, and compiling results of the interviews. Clearly, this person needs to be good with details and have a sense of the larger picture.

**Mayra Perez** is loved by everyone in the organization and has a true understanding of where the institution is headed. While she is not as available as Jan would like, at least she could be a key adviser and decision maker on the task force team, and she could be used to convey the ideas to the organization.

**Robert Wong** will be excellent on the task force because he is an innovator and as a branch manager really understands the operational needs. He was one of the first branches to really get the individual loan product out on the street. Who better than he to make sure all the needs in this area are met by the new system?

**Anna Riccio** is a junior accountant in the organization, but she is quick with numbers, understands the important nuances of accounting, and communicates well with her boss. She also knows what her boss needs the system to be able to do if he is going to manage the institution's growth well in the next four years.

**Betty Arnoux**, from FairFund's newly emerging Human Resources department, will be great because she understands the impact of FairFund's training needs. This will help enable the team to work in a proactive manner. Plus, she is responsible for some of the research that is done in the organization, which will make her perspective on data gathering for impact results or new product development useful.

And, **Felix Lee**, Jan's assistant systems support person, will be responsible for all the actual technology research and setup.

In the end, after senior management review, Chris signed off for all the task members. However, because she didn't want Robert Wong to be bogged down with all the work, she requested that Tony

Delgado (another branch manager) be added to the team. Tony will share duties with Robert. Jan had suggested another manager because Tony was not thrilled about working with Chris. Chris thought that, as one of the more senior branch managers, Tony should be involved with the task force to ensure the highest success rate of buy-in from all in the organization.

### **TASK FORCE OPERATIONAL GUIDELINES**

Chris also approved the process and guidelines under which the task force would operate. These include project meetings, reporting to management, communicating progress to the entire organization, and the general process which the data gathering, analysis, and decision making would follow. Chris previously had requested that Jan report to her once a week on the progress of the task force, both verbally and in writing. It was also agreed that at definitive points in the process there would be a more formal document presented, capturing the progress to date for institutional memory banks. Because information traditionally had not always been disseminated effectively through senior management to branch managers or to staff in general it was decided that Mayra would be the team-appointed project manager. She would visit one branch meeting a month to convey the progress of the task force directly to staff. She would also be the IS task force voice at regular management meetings. This would be her main task as a member of the team, in addition to participating in the key decisions of the task force. The branch managers were too far away to come to the main office for a weekly meeting, so it was determined that the task force would buy a teleconferencing device to have weekly status calls. Once a month, and as specific needs arose, the group would gather at the central office to review information gathered and discuss issues and next steps along the way.

Deciding on the process to follow was somewhat problematic because members of the team had different ideas about what should be phases and what constituted a task of a phase. In the end they agreed to the following four-phase approach drawn from the SEEP newsletter and a diagram Jan had received from a peer. The diagram depicted a process Jan's colleague had learned while attending a CGAP course on IS.

The process included:

- Phase I Gather information about the organization's information usage, work processes, and future needs
- Phase II Analyze the information to determine areas for improvement and information priorities
- Phase III Research alternatives to meeting the defined needs
- Phase IV Implement the new system

Depending on a task force member's responsibilities, he or she would be involved anywhere from 5 hours to 30 hours a week on this project. Individual meetings were held with Chris to determine what other responsibilities would be set aside for the moment or assigned to others in the organization. A flat bonus amount would be awarded as well to ensure that the necessary work was completed in time for the next board meeting, when budget decisions would be made. (A flat bonus was chosen so as not to conflict with the existing employee bonus structure, which is based on percentages relative to performance goals.)

# Case Study

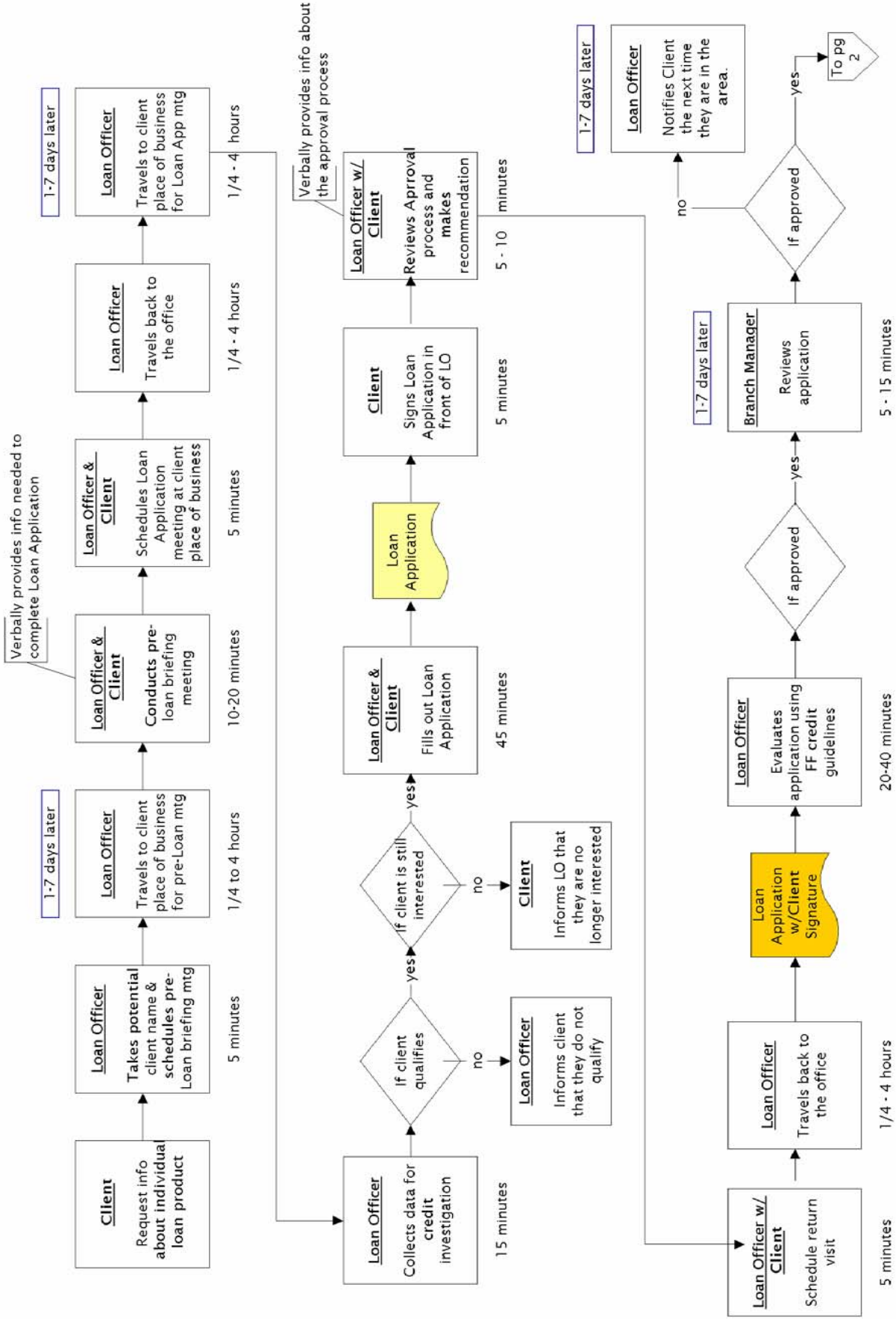
## Case Study Part 4: FairFund Loan Processing Information Flow Diagram

To the surprise of many in the organization, FairFund thinks it has exceeded its target for this quarter toward the first year growth goal; however its growth is not being managed well. With an increase in the number of clients per branch, the paperwork facing the branch managers is becoming difficult to keep up with and the frequency of errors is increasing. This backlog in paperwork has resulted in delayed delivery of reports to the central office, which is having an impact on the senior management's ability to project cash-flow needs for the institution and make other timely decisions. Also, while there is a ledger in place to track the individual loans, the accuracy of the fines to be charged for late payments is insufficient.

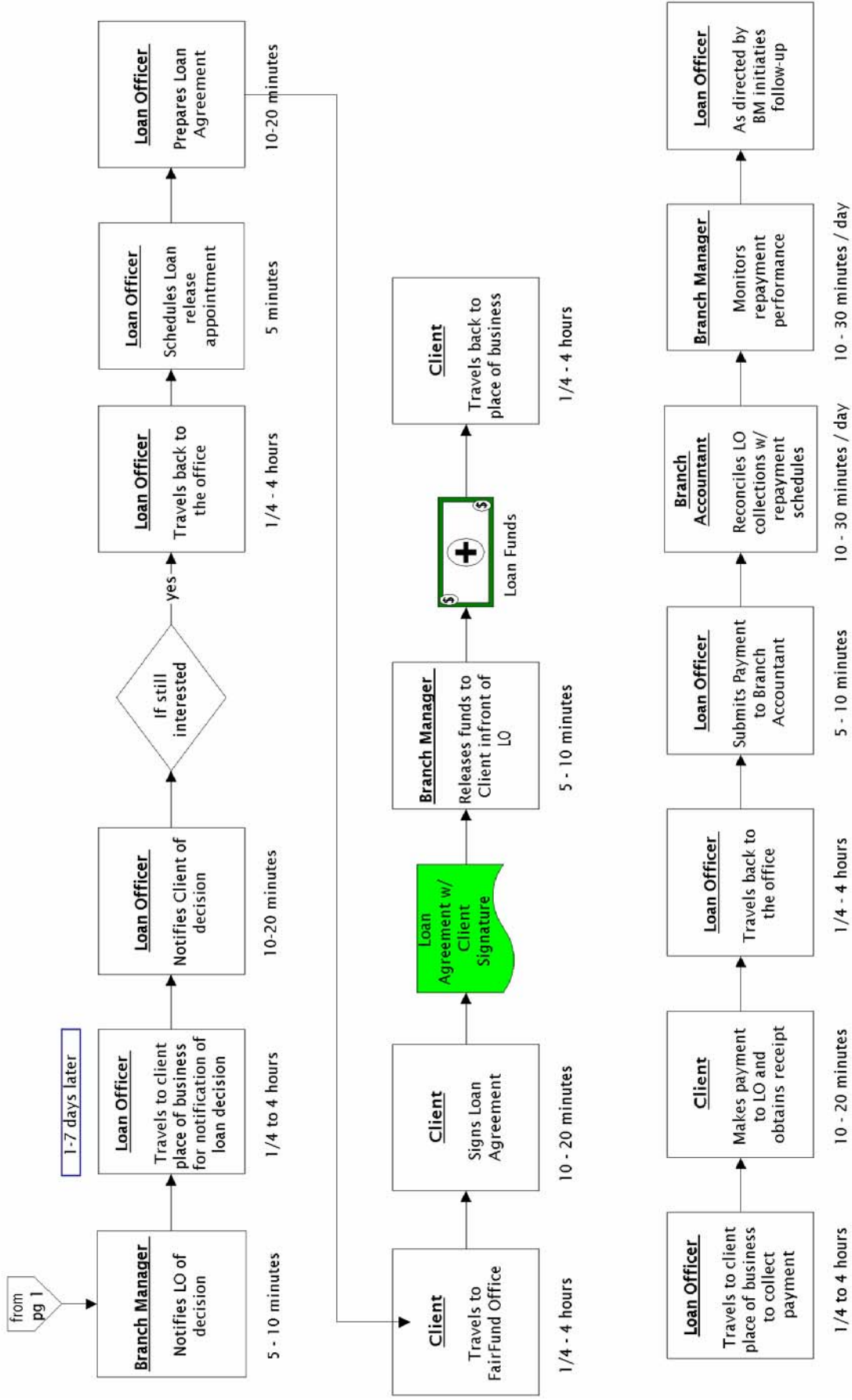
As the task force determined early on, Jan, Juanita, and the branch managers would interview employees in all the departments and several of the branches to learn the operational processes actually being performed. The information would be compiled in both visual and text format and then double-checked with the staff. When they had sign-off from the most senior person in the department or branch, Jan and Juanita would cross-compare the actual processes with FairFund's policy and procedure guidelines to identify any discrepancies. Here is one information flow diagram the task force created to illustrate the data they had gathered on the process for underwriting the individual loan product.

Case Study Part 4: FairFund Loan Processing Information Flow Diagram

**FairFund Individual Loan Process**



### FairFund Individual Loan Process





# Case Study

## Case Study Part 5: FairFund Loan Processing Policy Documentation

Jan and Juanita found the next step to be a little more challenging: what to do when practice doesn't match procedural guidelines. For this activity it was very important to get the appropriate senior managers to agree either to change the guidelines or create a better means of ensuring that the procedures were followed. Reproduced below is page 23 from FairFund's "Loan Officer Guidebook," used by the team to compare to the flow diagram they had created.

### **B. Individual Loan Application Procedures**

1. All potential clients must own a business and qualify as low-income according to FairFund's qualification standards, FairFund Credit Manual, page 5.
2. All loan applications must be signed by the requesting client. In the event that the client is not literate, a second signature is required by a companion of the client to give proof that the loan information as written by the loan officer on the loan application is in fact what the client said.
3. After a loan application is signed and submitted to the loan officer, the client should receive in writing a description of the loan process and what is expected of them throughout the remainder of the loan application process.

### **C. Individual Loan Underwriting Procedures**

1. All loan applications must be complete with client signature before presenting to the branch manager for a final decision. In addition, a summary review sheet should be attached to the front of the application with the loan officer's name, reasons for approval of the loan, and his or her signature.
2. As part of the loan application evaluation, the loan officer making the recommendation is required to visit the loan applicant's place of business one time. The observations of this visit should be added to the documentation of the loan file.
3. A client who has previously been denied credit must wait a minimum of three months before reapplying, even with a different loan officer of FairFund.

### **D. Individual Loan Disbursement Procedures**

1. All loans disbursed must be done so in the presence of at least two FairFund employees, the branch accountant, and the respective loan officer. In the case of the absence of the branch accountant, the branch manager may disburse the funds. In the case of the absence of the recommending loan officer, a fellow loan officer or the branch manager may stand in. If both parties are absent at the same time, the disbursement must be postponed.
2. Clients must sign the loan agreement before receiving the loan amount. Clients should receive a copy of the loan agreement. In the absence of the recommending loan officer the client must present his or her national ID or similar type of government-issued identification, such as a passport.
3. Clients have the choice of funds being either cash or check for loans under US\$300. All loans higher than this amount must be disbursed in the form of a check.

### **E. Individual Loan Payment Procedures**

1. Loan payments are due on the date designated by the loan agreement. Any loan more than five days late will be assessed a late fee. A late fee may be assessed for every payment due. The amount of the fee is set at US\$5. Only the branch manager has the authority to waive late fees.
2. Payments received will first be applied to interest, then principal, and, last, fees. Branch managers have the authority to override this application of payment, but must document the occurrence and reason for the exception.
3. If three payments are missed in a row, this loan is considered "in collection," and, at the discretion of the branch manager, repossession of some form of collateral should be undertaken.





# Case Study

## **Case Study Part 6: FairFund Sample Reports**

### **CURRENT SYSTEM OUTPUTS**

The following are the report examples the task force collected during its investigation process. Jan and Juanita reviewed the reports with the different users to learn which information was most important to them, when they generally needed it, and what format was the best for quickly locating the necessary information. The goal of their investigation was to identify ways to improve the timeliness and accuracy of the reports being created, as well as their effectiveness as a management tool. More often than not, the latter was greatly affected by the consistency of format and the amount of detail provided to the appropriate manager—branch, loan supervisor, or the managing director.

# Delinquency Report

10/30/2004

Page: x

**FAIRFUND  
NAME OF BRANCH  
DELINQUENCY REPORT AS OF 11/15/2004**

(a) Borrower's Name	(b) Loan Account #	(c) Disbursed	(d) DATE-----Maturity	(e) Amount of Loan Disbursed	(f) Portfolio-At-Risk	(g) Total Amount Due	(h) # of Loan Amortization Missed	(i) Days Overdue	(j) Holdout Balance	(k) Exposed Amount
ACCOUNT OFFICER: xxxxxxxxxxxxxxxxxxxxxxxx										
xxxxxxxxxxxxxxxxxxxx	xx-xxxxx-xx	xx/xx/xxxxx	xx/xx/xxxxx	xx,xxx.xx	xx,xxx.xx	xx,xxx.xx	xxx	xxx	xx,xxx.xx	xx,xxx.xx
xxxxxxxxxxxxxxxxxxxx	xx-xxxxx-xx	xx/xx/xxxxx	xx/xx/xxxxx	xx,xxx.xx	xx,xxx.xx	xx,xxx.xx	xxx	xxx	xx,xxx.xx	xx,xxx.xx
xxxxxxxxxxxxxxxxxxxx	xx-xxxxx-xx	xx/xx/xxxxx	xx/xx/xxxxx	xx,xxx.xx	xx,xxx.xx	xx,xxx.xx	xxx	xxx	xx,xxx.xx	xx,xxx.xx
xxxxxxxxxxxxxxxxxxxx	xx-xxxxx-xx	xx/xx/xxxxx	xx/xx/xxxxx	xx,xxx.xx	xx,xxx.xx	xx,xxx.xx	xxx	xxx	xx,xxx.xx	xx,xxx.xx
xxxxxxxxxxxxxxxxxxxx	xx-xxxxx-xx	xx/xx/xxxxx	xx/xx/xxxxx	xx,xxx.xx	xx,xxx.xx	xx,xxx.xx	xxx	xxx	xx,xxx.xx	xx,xxx.xx
<b>SUB TOTAL: xx accounts xx,xxx.xx</b>										
<b>GRAND TOTAL: xx accounts xx,xxx.xx</b>										

Source: MABS Project, Chemonics International. Used with permission.

Notes:

- Account officer normally prints the report after every day. However, the system should be able to print this any time. The list includes all loans outstanding as of printing by the account officer (AO). This report will allow the user to generate reports under the Microfinance Unit. Each bank shall determine if the loan is a microfinance loan or not by means of tagging at the time the loan was released. The report is to have two (2) options to allow the report to show consolidated information (for example, information is not split by the AO) or the regular printout by the account officer.
- Legend:
  - Borrower's Name: Name of the borrower.
  - Loan Account #: Account number assigned to the borrower.
  - Date Disbursed: Date the loan was disbursed.
  - Maturity Date: Date the loan will fall mature.
  - Amount of Loan Disbursed: Amount of loan disbursed/released.
  - Portfolio-at-Risk: Outstanding principal balance of loans with an amount overdue.
  - Total Amount Due: Total amount (principal + interest + penalties) due from borrower as of date of printing (including current and overdue accounts).
  - # of Loan Amortization Missed: Number of loan amortization due but not received.
  - Days Overdue: Number of days the amortization was overdue (oldest overdue or most prior overdue).
  - Holdout Balance: Savings held by the borrower in a "blocked" account.
  - Exposed Amount: Total amount due less holdout balance (g-i). This amount should not be negative.
  - Account Officer: Name of account officer.
- Distribution: Original copy goes to the account/loan officer; duplicate copy goes to supervisor for review.

**FairFund Microfinance Institution**  
 Branch Balance Sheet  
 31 October 2004

Report No: E3  
 Date Printed: 20-Oct-04  
 Prepared By: Anna Riccio

	Combined	Financial Services	Nonfinancial Services
<b>ASSETS</b>			
<b>Current Assets</b>			
Cash and bank current accounts	20,000	15,000	5,000
Reserves in Central Bank	0	0	0
Interest-bearing short-term deposits	3,000	3,000	0
<b>Total Quick Assets</b>	<b>23,000</b>	<b>18,000</b>	<b>5,000</b>
Loans outstanding			
Current	30,000	30,000	
Past due	2,000	2,000	
Repossessed collateral	0	0	
Restructured	1,000	1,000	
Loans outstanding	42,060	42,060	
(Loan loss reserve)	(14,200)	(14,200)	
<i>Net loans outstanding</i>	27,860	27,860	0
Other current assets	3,000	2,100	900
<b>Total Current Assets</b>	<b>53,860</b>	<b>47,960</b>	<b>5,900</b>
<b>Long-term Assets</b>			
Long-term investments	39,500	33,000	6,500
Property and equipment			
Cost	80,000	45,000	35,000
(Accumulated depreciation)	(50,000)	(28,000)	(22,000)
<i>Net property and equipment</i>	28,000	17,000	11,000
<b>Total Long-term Assets</b>	<b>67,500</b>	<b>50,000</b>	<b>17,500</b>
<b>TOTAL ASSETS</b>	<b><u>121,360</u></b>	<b><u>97,960</u></b>	<b><u>23,400</u></b>
<b>LIABILITIES</b>			
<b>Current Liabilities</b>			
Short-term borrowings (commercial rate)	3,700	3,700	
Passbook savings	0	0	
Time deposits (under one year)	0	0	
Other short-term liabilities	6,000	3,000	3,000
<b>Total Current Liabilities</b>	<b>9,700</b>	<b>6,700</b>	<b>3,000</b>
<b>Long-term Liabilities</b>			
Long-term debt (commercial rate)	20,000	20,000	0
Long-term debt (concession rate)	18,500	18,500	0
Restricted/deferred revenue	0	0	0
<b>Total Long-term Liabilities</b>	<b>38,500</b>	<b>38,500</b>	<b>0</b>
<b>TOTAL LIABILITIES</b>	<b>48,200</b>	<b>45,200</b>	<b>3,000</b>
<b>EQUITY</b>			
Paid-in capital	31,000	18,500	12,500
Accumulated donations, prior year	23,000	15,500	7,500
Donations (donor capital), current year	31,000	16,500	14,500
Shareholders' capital	0	0	0
Retained net surplus/(deficit), prior years	(11,100)	(4,500)	(6,600)
Current-year net surplus/(deficit)	1,260	8,760	(7,500)
<b>TOTAL EQUITY</b>	<b>75,160</b>	<b>54,760</b>	<b>20,400</b>
<b>TOTAL LIABILITIES AND EQUITY</b>	<b><u>123,360</u></b>	<b><u>99,960</u></b>	<b><u>23,400</u></b>



# Case Study

## Case Study Part 7: Synopsis of FairFund's Business Plan

After months of work documenting the organization's information flows and analyzing every aspect of FairFund's operations, the task force was very ready to move on to the next step in this phase of the project. All involved agreed however that the previous step had been necessary and very informative. Already they had identified opportunities to standardize and streamline operations that would create greater efficiency. Through improvements to report formats, managers would have an easier time keeping tabs on the portfolio-at-risk and basic financial performance. Now it was time to turn their attention to future information needs.

FairFund's undertook a strategic planning process two years ago as part of its transition toward an organization that delivers financial services to low-income individuals exclusively. The direction of the institution was set toward becoming a self-sustaining MFI. The outcome of this planning process, which took nearly a year, was a five-year strategic plan for the organization to use as a guideline. Currently, FairFund is in the final quarter of its first year of the strategic plan.

In order for FairFund to reach its goal of financial sustainability, it was determined that it would need to maintain an average client growth rate of 35 percent, and increase its portfolio an average of 50 percent. In order to achieve this growth in a controlled manner, FairFund must focus on increasing the volume per branch of the existing branches in the first and second years, and offering more and larger individual loans in all branches to raise the portfolio size. In the third, fourth, and fifth years of the strategic plan, FairFund would need to open approximately eight new branches—starting with two branches in the third year, followed by three new branches in the subsequent years.

By the end of the fifth year, this growth would bring the total number of branches to 15. Ideally, each branch would have at least 10 group loan officers, 3 loan officers for individual loans, 2 account/office staff, and a branch manager—that would be potentially 225 staff who need to interface with the information system. The central office would add another 30 individuals needing access at various levels to detailed and consolidated or summary information, in particular the accounting department and internal auditors.

As part of the growth plan, FairFund intends to further decentralize the responsibility for performance to the branch level, as a means of motivating branch managers and staff. In order to treat each branch as a cost center, it will be necessary for the new information system to be able to track financial and portfolio information by branch. In addition, FairFund hopes to eventually begin taking deposits as a means of attracting customers and generating loan capital. Given the recent early success of the individual loan product, in two years FairFund may begin a pilot program to offer other alternative loan products to better meet customer needs.



# Case Study

## Case Study Part 8: Task Force Progress and Needs Analysis Report

FairFund's task force conducted an analysis of its organizational practices, policies, and procedures, along with current and future information management needs. Through this process the team determined what data were being captured where, how they were being stored, and in what format and with what frequency they were being retrieved. The result of the task force's investigations, analysis, and verifications were compiled in a "needs analysis report" that it created.

Jan, with the help of Juanita, prepared the following memo for Chris, the managing director, which summarizes the results of the IS task force's efforts to date and recommends the priorities for the new information system.

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### *MEMO*

To: Chris Castillo, Managing Director  
From: Jan Loub, IS Manager, and the IS Task Force Team Leader  
Date: November 2004  
Re: Progress and Needs Analysis Report Document

The IS Task Force has completed the first phase of our project, identifying all the current and future information needs for FairFund based on today's practice and tomorrow's vision as outlined in the Business Plan. We have identified with great detail what the new system should be able to do for us. We have also prioritized what we consider to be the most critical components of the new information management system. While it took some time to develop consensus among the team, we believe that the following components of the new system are the most important for FairFund. In order of priority, these include the following:

1. An accounting system that can readily produce financial reports for the entire organization and broken down for each branch (cost center) as well. For this reason the accounting system will definitely need to be automated, and more sophisticated than what we are currently using in Excel. This is especially vital given the five-year growth plan.
2. Because FairFund is now offering an individual loan product and intends to increase the number of these loans, the information system must be able to track both individual and group loans with a moderate to high degree of detail. This implies the necessity for an automated loan-tracking tool that is more flexible and accurate than a handwritten system. FairFund is also interested in separating forced savings from the loan product and wants to be able to track voluntary deposits it hopes to introduce in the future.
3. To keep up with the aggressive growth rates that FairFund has set forth, it is important that as many of the routine tasks be automated as possible to ensure timeliness in reporting and good customer service.
4. The ever-increasing inflation makes it critical that the system can manage the large numbers without creating errors or time consuming work around solutions.
5. We expect this system, as selected, to serve our needs for the next five to seven years, so the initial capital investment into the system will need to be realistically depreciated over that time span. Also, the ongoing cost of the system should not exceed 5 percent of the total operating budget. An initial amount of US\$30,000 already has been secured for the system, but depending on the functionality

*Case Study Part 8: Task Force Progress and Needs Analysis Report*

offered and the number of users on the system over time, it may be necessary to raise additional funds to acquire the software and hardware with the best fit for our future needs.

6. Finally, FairFund's clients along the border regions of the country often get paid in the neighboring currency, which is not nearly as inflationary. With little access to formal places for exchanging money, it would be an additional advantage if FairFund could accept payments in the second currency. To do this, the information system must be able to help enforce a standard currency rate across the organization.

Attached is a Needs Analysis Report, which includes these priorities, as well as additional "would be nice to have" capabilities. Please let me know if you have any further questions. To keep our progress moving forward on schedule, please let us know before the next IS Task Force meeting if you and the management team are in agreement with our assigned priorities and our recommendation to automate a great deal of FairFund's information system.



# FairFund Needs Analysis Report

## Executive Summary

### INTRODUCTION

#### Overview

The purpose of this document is to outline, at high and detailed levels, the specific requirements for FairFund's new information management system. This document lays out the methods used in data collection and analysis, any assumptions or outstanding issues, as well as documents used in the process. Also included are specific requirements for the different components of the new information system and important management considerations for moving forward.

FairFund's new information system must help address the problems outlined by senior management at the onset of this project—for example, the lack of timely and accurate reporting (in particular the portfolio quality report), limited cash flow projections, fraud and other operational risks, and insufficiently skilled employees as a result of high staff turnover and insufficient training. The goals of the system as specifically stated by the task force team and concurred with by senior management are as follows:

1. Limit FairFund's risk for further fraud.
2. Enable management to project cash flow needs for two to three months into the future.
3. Enable better management of portfolio quality, even in times of aggressive growth.
4. Enhance flexibility and provide better tracking of the new individual loan product.

#### Analysis Methodology

A series of interviews were conducted with individuals covering all positions in the organization. Where appropriate, several employees in a given area were interviewed. Information regarding their work and information usage was gathered and compiled in the form of information flows and a list of requirements. These documents were compared to the organization's procedure manuals and then vetted appropriately across the institution, providing managers and employees an opportunity to give feedback and verify accuracy. The requirements list was then prioritized and converted into this specifications document for use as a guide throughout the selection process for the most appropriate system solution.

#### Assumptions

It is understood among the task force members that solutions to be evaluated include computerized systems and that appropriate funds can be acquired to ensure that all branches will have at least one computer. It is also presumed that e-mail access will be a possibility given the availability of local Internet service providers. While most FairFund branch offices allow individual loan clients or members of a group to make loan payments onsite, all offices are not set up with teller facilities, and no plans exist to add such facilities in the near future. And, finally, it is important to acknowledge FairFund's commitment to maintaining the system when it is selected or created and then implemented.

#### Outstanding Issues

Still outstanding is the need to prioritize the organization's standard reports. The system will allow for streamlining some reports and radically changing others. This streamlining is in progress and upon completion a priority will be determined. Also, we are waiting to hear from external auditors on a cash

system versus an accrual-based system for both the loan portfolio and accounting. More research is under way to determine the type and amount of security needed for an automated system. Part of this information will come from vendors when they are identified; however, other sources of research are being explored by the IS department.

### **Referenced Documents**

In the process of this evaluation and analysis, several documents were used, including FairFund's "Loan Officer Guidelines," "Accounting Procedures," "Internal Audit Procedures," "Loan Portfolio Management Guidelines," and "Impact Evaluation Guidelines."

### **RECOMMENDED SYSTEM PRIORITIES**

The information system needs to include a loan portfolio management system and an accounting system. If these systems are available as an integrated application, that would be preferred, but a loan-tracking system with a separate accounting system could be used. The software interface will need to be in English. However, if a version is available in a local language as well, that would be a plus. The software should be compatible with the PCs that FairFund already owns, which are running the latest version of Windows. A network, if one is needed, can be set up on any platform that is appropriate. The database must be able to handle FairFund's projected 65,000-plus clients over the expected life of the system.

#### **Accounting**

- Includes user-defined chart of accounts
- Handles two different currencies
- Handles high-volume numbers due local currency and high inflation
- Treats branches as cost centers, therefore able to generate financial reports at branch level as well as institution level

#### **Loan and Savings Management**

The information system must be able to track:

- Group loans, including groups within centers, along with auxiliary information about the group—name, date of formation, meeting location, group leader, center chief
- Individual loans within groups
- Individual loans, with multiple disbursements and uneven payment schedules, and, in particular, balloon payments
- Late fees, as well as to provide automatic assessment and permit a manual override if an authorized user wants to wave the fees
- Compulsory savings—separate from the loan amount and possibly from voluntary savings
- Voluntary deposits taken from clients
- Delinquency reports and portfolio quality by loan officer or combination of loan officers (for example, those with more than three years of experience), and to allow printing of these reports

#### **Client Information**

- Basic client information, including address, marital status, age, education level, date joined
- Client business information—type of enterprise, size of business, number of loans, location of the business, collateral, registered, insurance

- Impact data about the client—changes in above fields
- Customized ad hoc reporting for donors based on the above indicators; therefore must be able to sort data according to these fields

### **System Security**

- Enables all users to have unique passwords, and can create access levels by position (for example, accountant, loan officer, branch manager, auditor, and so forth)
- Has protected database to prevent users from accessing the data other than through the application
- Provides audit trail for all transactions, including setting of system level parameters

### **OTHER CONSIDERATIONS**

**Time Factor**—Because FairFund is reaching nearly 25,000 clients currently, all of which are tracked by hand in paper ledgers, it will be important to find a solution that will enable FairFund to transfer at least the new loans on the books for this fiscal year.

**Training**—Given current FairFund’s staff size of 124, training will be a key issue because most of the employees have never had the opportunity to work with a computer or similar type of technology.

**Change Awareness**—Job tasks could change significantly for some employees, which will need to be addressed as part of the process of implementing any system.

**Data Integrity and Security**—FairFund will need assistance in developing a plan for protecting and backing up any data captured electronically, as there is no one with this type of expertise currently within the organization.



# Case Study

## Case Study Part 9: Completed FairFund Framework Document

FairFund notes on requirements and priorities are displayed in bold italics, based on results of needs analysis, goals, and resources available.

### **FUNCTIONAL COMPLETENESS, APPROPRIATENESS, AND INTEGRATION**

The features of the system meet the needs of the business in an appropriate fashion. Integration refers to how well the different components of the system can communicate with each other, thus allowing data sharing and reducing the need for multiple entry of data.

<b>Criteria</b>	<b>Rating</b>	<b>Comments</b>
<ul style="list-style-type: none"> <li>▪ Accounting functionality</li> <li>▪ Portfolio tracking facilities</li> <li>▪ Savings/deposit-tracking facilities</li> <li>▪ Client information tracking facilities</li> <li>▪ Systems integration</li> <li>▪ Nonfinancial information tracking</li> </ul>		<ul style="list-style-type: none"> <li>▪ Must include accounting and loan portfolio management, with some savings management capacity.</li> </ul>

### **ACCOUNTING PACKAGE**

Ability of the software to perform a full range of accounting activities.

<b>Criteria</b>	<b>Rating</b>	<b>Comments</b>
Integrated with the savings and portfolio-tracking system, or standalone		<ul style="list-style-type: none"> <li>▪ Prefer a system that is already integrated, but can be separate components.</li> </ul>
Level of integration—direct (changes made in savings and/or portfolio tracking system immediately affect the proper accounts) or indirect (accounting package is separate, necessitating a periodic update of accounting data)		<ul style="list-style-type: none"> <li>▪ When information is added or updated in the portfolio tracking, is it directly or indirectly updated to the accounting module?</li> <li>▪ Prefer, but not required.</li> </ul>
Complete, consistent, flexible, and user-definable chart of accounts (number of digits, levels, and formats)		<ul style="list-style-type: none"> <li>▪ Currently using Excel with account codes predetermined by the national banking regulatory body.</li> </ul>
General ledger		<ul style="list-style-type: none"> <li>▪ Must be included.</li> </ul>
Treasury functions		<ul style="list-style-type: none"> <li>▪ Must be included.</li> </ul>

Case Study Part 9: Completed FairFund Framework Document

Criteria	Rating	Comments
Tracking of cash flow, revenues, and expenses by several sources or profit/cost centers (donor, account, branch, product, etc.) in addition to consolidated tracking of this information		<ul style="list-style-type: none"> <li>▪ Must be able to track all of these reports for the organization and each branch.</li> </ul>
Ability to perform cost/profitability analysis by product, branch/region, client, etc.		<ul style="list-style-type: none"> <li>▪ Would be great if it had this analysis capability, but as long as it captures the raw data and can export to Excel we can use that as our analysis tool.</li> </ul>
Cash vs. accrual—if accrual, proper provisioning of receivables		<ul style="list-style-type: none"> <li>▪ We haven't decided between cash versus accrual provisioning of receivables, so both for now.</li> </ul>
Loan-loss provisioning and loan-loss reserves		<ul style="list-style-type: none"> <li>▪ Would be useful to have this capacity.</li> </ul>
Permits entry of nonportfolio or deposit related income and expenses		<ul style="list-style-type: none"> <li>▪ How does the accounting module handle nonportfolio or deposit-related income and expenses?</li> <li>▪ As long as it can at least be posted through the general ledger, that is sufficient.</li> </ul>
Track and apply overhead expenses		<ul style="list-style-type: none"> <li>▪ What method is used to apply and track overhead expenses?</li> <li>▪ Some means necessary to handle branches as true cost centers, i.e., cost of funds.</li> </ul>
Asset and liability management facilities (i.e., depreciation, short-term loans, special grants, real estate, fixed assets)		<ul style="list-style-type: none"> <li>▪ Yes, to a greater or lesser extent.</li> </ul>
Fixed assets module		<ul style="list-style-type: none"> <li>▪ Not sure how this is different from above.</li> </ul>
Full range of standard financial reports (balance sheet, income statement, cash flow, etc.), along with trial balances.		<ul style="list-style-type: none"> <li>▪ List the range of standard financial reports provided by the accounting module.</li> <li>▪ Profit &amp; Loss, Balance Sheet, Cash Flow, Trial Balance, and budgets if possible. All reports include options for date/period range and detailed or summary and be printed by organization, loan supervisor, branch (manager), and loan officer.</li> </ul>
Payroll module		<ul style="list-style-type: none"> <li>▪ Does the accounting module include any type of payroll functions? If it doesn't, does the module integrate with any particular third-party payroll application?</li> <li>▪ Would be great to have, but not required.</li> </ul>
EOP processing		<ul style="list-style-type: none"> <li>▪ Must be easy.</li> </ul>
Budgeting		<ul style="list-style-type: none"> <li>▪ Would be nice to have, but can be done in Excel. If possible, would like to be able to import final budget straight from Excel into the accounting module to track against actuals.</li> </ul>

**Portfolio Tracking:** Ability of the software to monitor and manage the loan portfolio.

Criteria	Rating	Comments
Integrated with accounting system deposit monitoring, and/or customer information system		<ul style="list-style-type: none"> <li>▪ What is the core type of lending your product is developed to service and track?</li> <li>▪ What are all loan products that can be tracked through the portfolio module?</li> <li>▪ How are loan numbers assigned in your product (i.e., randomly system assigned or user-defined and system-generated)?</li> <li>▪ Must be able to track both individual and group loans at the individual loan and payment amount.</li> </ul>
Permits the addition and modification of loan products Loan product setup		<ul style="list-style-type: none"> <li>▪ How does the portfolio module permit the addition and modification of loan products?</li> <li>▪ Can it handle the inclusion of loan insurance as part of the calculated monthly payment amount?</li> <li>▪ We haven't discussed this before.</li> <li>▪ Describe how it does or does not link with the setup of a new loan in the system.</li> </ul>
Loan authorization & disbursement		<ul style="list-style-type: none"> <li>▪ Would be useful if could mimic our current loan decision process with different authorization levels, at least for individual loans.</li> </ul>
Loan product status		<ul style="list-style-type: none"> <li>▪ What is the status system the portfolio module provides for the loans?</li> <li>▪ We have five different status levels for our loans. It would be helpful to be able to define these ourselves.</li> <li>▪ How can the loan status be changed?</li> <li>▪ How does the portfolio module handle loan restructuring?</li> <li>▪ How does the portfolio module handle loan refinancing?</li> <li>▪ How does the portfolio module handle a new loan for a repeat client?</li> <li>▪ Does your product track the legal value as well as the accounting value of loan?</li> </ul>
Historical data on products		<ul style="list-style-type: none"> <li>▪ We want to go back to at least the beginning of this fiscal year if possible.</li> </ul>
Forced deposits (linked to deposit monitoring) with ability to block access to forced savings (where appropriate)		<ul style="list-style-type: none"> <li>▪ How does the portfolio module link forced savings to loans or "client membership?"</li> <li>▪ This could be a very useful feature to have.</li> </ul>
Linking of forced savings to loans or "membership"		<ul style="list-style-type: none"> <li>▪ Does the portfolio module have the capacity to track forced deposits separate from loan payments and voluntary deposits?</li> <li>▪ Must have for group loans.</li> </ul>

Case Study Part 9: Completed FairFund Framework Document

<b>Criteria</b>	<b>Rating</b>	<b>Comments</b>
Collateral (cash and noncash) tracking		<ul style="list-style-type: none"> <li>▪ Does the portfolio module have the capacity to track collateral, cash, or noncash items?</li> <li>▪ We currently don't use collateral in lending decisions, only repossess items when clients can't pay.</li> </ul>
Guarantor tracking and number of guarantors per loan		<ul style="list-style-type: none"> <li>▪ Does the portfolio module have the capacity to track guarantors, and how many per loan product?</li> <li>▪ Necessary for individual loans.</li> </ul>
Identifying and cross-referencing of group guarantees		<ul style="list-style-type: none"> <li>▪ Can your product track the various loan cycles (number of loans) of the group separately from the individual's loan cycle?</li> <li>▪ Must somehow be able to do this type of group data tracking.</li> <li>▪ Does the portfolio module have the capacity to identify and cross-reference by group guarantees?</li> <li>▪ Interesting option.</li> </ul>
Loan officer specific information (active portfolio, delinquency, number of clients, etc.)		<ul style="list-style-type: none"> <li>▪ Does the portfolio module have the capacity to track active portfolio, delinquency, number of clients, etc., by various levels and breakdowns, such as regions, branches, satellite offices, loan officers, credit manager, and loan type?</li> <li>▪ Must be able to do so by at least loan officer, branch, and possible loan supervisor.</li> <li>▪ What mechanism is used to show these relationships (i.e., loan number)?</li> <li>▪ Does the portfolio module have the capacity to track loan attributes for each loan, even if the attributes change over the life of the loan?</li> <li>▪ Does the portfolio module have the capacity to separate out for the purpose of reporting the various loan products based on changes in loan conditions?</li> </ul>
Correct portfolio aging mechanisms		<ul style="list-style-type: none"> <li>▪ What methods are offered in the portfolio module for calculating delinquency?</li> <li>▪ What aging mechanisms are provided in the portfolio module?</li> <li>▪ Must be able to set our own parameters for calculating delinquency.</li> <li>▪ Does the portfolio module operate on a cash or accrual basis?</li> <li>▪ Not sure we need this capacity.</li> <li>▪ Is there an actuarial (real amortization) model or tool?</li> <li>▪ Not necessary.</li> </ul>



Criteria	Rating	Comments
Proactively informs the users of potential problems (delinquency, cash standing, productivity, etc.)		<ul style="list-style-type: none"> <li>▪ Does the portfolio module offer red flags or other mechanisms for informing the users of potential problems regarding delinquency, payments, disbursements, cash standing, productivity, etc.? For example, does the portfolio module have the capacity to block disbursement of forced savings or additional credit? What levels or flags are available for various degrees of delinquency?                             <ul style="list-style-type: none"> <li>▪ Would be useful to have.</li> </ul> </li> <li>▪ Does your product provide the capability to setup flags in the system for items like business, title or insurance renewals, balloon payments, payoff within a specified number of days, or other?                             <ul style="list-style-type: none"> <li>▪ Not sure what this entails.</li> </ul> </li> </ul>
Delinquency management facilities		<ul style="list-style-type: none"> <li>▪ Should be able to calculate interest daily for individual loans.</li> <li>▪ Delinquency periods should be set for the entire organization at 30, 60, 90 and 180 days.</li> </ul>
Handling of early, late, partial, and extra payments Handling of fees		<ul style="list-style-type: none"> <li>▪ How does the portfolio module handle early, late, partial (under or over) and extra payments?                             <ul style="list-style-type: none"> <li>▪ We allow all of these for the individual loan product, but previously the amount of interest owed is not recalculated because it was done by hand. Having this capacity would surely help the profitability of the organization.</li> <li>▪ What flexibility does the portfolio module have for the assessment of late fees?                                     <ul style="list-style-type: none"> <li>▪ What fees (closing, late or user-defined) or commissions can be tracked in the portfolio module?   <ul style="list-style-type: none"> <li>▪ We currently only have two fees—late fee, standard amount, and loan processing fee, standard amount. Must be able to automatically assess late fees.</li> </ul> </li> </ul> </li> <li>▪ How does the portfolio module calculate the payoff value of a loan?                             <ul style="list-style-type: none"> <li>▪ Would like to have for all transactions, including setting of system level parameters.</li> </ul> </li> </ul> </li></ul>
Mistake prevention and security (audit trail)		
Credit-scoring capabilities		<ul style="list-style-type: none"> <li>▪ Does your product offer any credit-scoring capabilities in this module or other modules?                             <ul style="list-style-type: none"> <li>▪ Not sure how this works. Have not previously used this functionality, but are hearing of other organizations beginning to use it. Possibly something we could use in the near future.</li> </ul> </li> </ul>

Criteria	Rating	Comments
Advanced functionality, such as credit cards or smart cards		<ul style="list-style-type: none"> <li>▪ Does the portfolio module have the capacity to electronically send and receive (and apply) payment information from a bank system or similar? If so, explain how this functionality works.</li> <li>▪ Does the portfolio module have the capacity to send and receive electronic formats for credit reporting? If so, in what file formats?</li> <li>▪ Does the portfolio module support advanced features, such as credit cards, debit cards, smart cards, or wire transfers?</li> </ul>

**Deposit Monitoring:** Ability of the software to handle deposit accounts

Criteria	Rating	Comments
Integrated with accounting system, portfolio tracking, and/or customer information system		<ul style="list-style-type: none"> <li>▪ Is the deposit module a standalone piece or an integrated portion of the software package?</li> </ul>
Permits different account types		<ul style="list-style-type: none"> <li>▪ What different types of deposit accounts, or savings products, does the deposit module permit (passbook—with or without passbook, term deposits/certificates of deposit, group savings, off-book group savings, demand deposits, overdraft protection)?</li> <li>▪ For now, just needs to be able to track separately compulsory and voluntary savings contributions made. If this capacity could be added in down the road (4–6 years), so as not to pay for functionality we don't need now, that would be very good.</li> </ul>
Permits the addition and modification of deposit types		<ul style="list-style-type: none"> <li>▪ Does the deposit module permit the addition and modification of different deposit types?</li> </ul>
Permits different account types		
Savings interest calculations		<ul style="list-style-type: none"> <li>▪ Describe how your product handles deposit interest calculations. What types of deposit interest calculations do you support (day of deposit to day of withdrawal, minimum daily/monthly/quarterly balance, average daily/monthly balance, other user definable)?</li> </ul>
Historical data on savings products		<ul style="list-style-type: none"> <li>▪ Does the deposit module have the capacity to track historical data on the deposit products even if they change over the life of the account?</li> </ul>
Voluntary deposits (with some tracking of or information about forced savings-linked to portfolio tracking)		<ul style="list-style-type: none"> <li>▪ Does the deposit module have the capacity to track separately voluntary savings from forced savings?</li> <li>▪ Yes, some capacity.</li> </ul>

Criteria	Rating	Comments
Performs account transfer functionality (from forced to voluntary or vice versa, one geographic location to another, etc.)		
Advanced functionality such as ATMs, wire transfers, and smart cards		<ul style="list-style-type: none"> <li>Does the deposit module support advanced functionality such as debit cards (ATMs), wire transfers, or smart cards?</li> </ul>
Tax-withholding functionality		<ul style="list-style-type: none"> <li>Does the deposit module offer tax withholding functionality?</li> </ul>
Dormancy for inactive accounts		<ul style="list-style-type: none"> <li>How does the deposit module handle dormancy for inactive accounts?</li> </ul>
Identification of beneficiaries in case of death or incapacitation		<ul style="list-style-type: none"> <li>Does the deposit module track/hold identification of beneficiaries in case of death or incapacitation?</li> </ul>
Option for jointly held accounts		<ul style="list-style-type: none"> <li>Does the deposit module offer the option for jointly held accounts, for how many individuals?</li> </ul>

**Client Information System:** Ability of the software to maintain information about clients.

Criteria	Rating	Comments						
Maintains customer information such as name, family information, age, gender, address (home and business), and type of business, as well as impact information		<ul style="list-style-type: none"> <li>What are the data fields offered for maintaining nonfinancial client information?  <table border="0"> <tr> <td><i>Individual Member Info</i></td> <td><i>Group Info</i></td> <td><i>Business Info</i></td> </tr> <tr> <td>Name, address, phone, age, education level, marital status, date joined, loan cycle or number of years of membership, children</td> <td>Name, formation date, loan officer(s), leaders</td> <td>Business, business type, size of business, number of loans, location of the business, collateral, registered, insurance</td> </tr> </table> </li> </ul>	<i>Individual Member Info</i>	<i>Group Info</i>	<i>Business Info</i>	Name, address, phone, age, education level, marital status, date joined, loan cycle or number of years of membership, children	Name, formation date, loan officer(s), leaders	Business, business type, size of business, number of loans, location of the business, collateral, registered, insurance
<i>Individual Member Info</i>	<i>Group Info</i>	<i>Business Info</i>						
Name, address, phone, age, education level, marital status, date joined, loan cycle or number of years of membership, children	Name, formation date, loan officer(s), leaders	Business, business type, size of business, number of loans, location of the business, collateral, registered, insurance						
Strong search capabilities		<ul style="list-style-type: none"> <li>What are the various data points that the CRM module can search by or sort on (i.e., client name, lending group, loan number, type of business, location, loan officer, loan cycle, etc.)?</li> <li>Must be able to sort by the following fields: client name, loan purpose, group, business type, branch, loan cycle, education, age, home address, marital status, sex, and with or without children under 18. Would like to be able to sort by any and all of the fields in the columns above.</li> </ul>						
Tracks clients at different levels, from individual to group to center to village bank, etc.		<ul style="list-style-type: none"> <li>What relationships can be set up for tracking clients across different levels, such as individual to group, to center, to village bank, to branch, to city or region, etc.?</li> <li>Must have file on every client/member with the organization and be easily associated with a group, if applicable.</li> </ul>						

Criteria	Rating	Comments
Able to maintain group and/or village bank information		<ul style="list-style-type: none"> <li>▪ Does the CRM module have the capacity to track group or village bank information? (i.e., founding date, commencement date of each loan cycle, number of active members each loan cycle, founding members, and/or current members, current and historical elected officers, current and historical loan officer of the group, location of meeting, even if it varies overtime, and general location of borrowers)</li> <li>▪ All of this would be nice, but we can work around options.</li> </ul>
Facilities to check customer behavior—such as credit and deposit status and history (either from external or internal sources)		<ul style="list-style-type: none"> <li>▪ Would be nice to print summary reports for clients and loan officers at the end of the year.</li> </ul>
Historical data on customers		<ul style="list-style-type: none"> <li>▪ Date first received a loan.</li> </ul>
Aggregation of customer data (by region, area, economic activity, loan officer, etc.)		<ul style="list-style-type: none"> <li>▪ Yes, necessary for writing funding proposals and marketing.</li> </ul>
Able to track clients at different stages of the process		<ul style="list-style-type: none"> <li>▪ Not necessary.</li> </ul>
Tracks nonclient information, especially guarantors		<ul style="list-style-type: none"> <li>▪ OK to have.</li> </ul>
Identifies potential duplicates (i.e., double entry of clients)		<ul style="list-style-type: none"> <li>▪ Does the CRM module identify potential duplicate client entries? If so, how?</li> <li>▪ Important to have this capability.</li> </ul>

**EXPANDABILITY AND INSTITUTIONAL GROWTH**

Ability of the system to support horizontal and vertical institutional growth. In essence, the scalability of the system is in question.

Criteria	Rating	Comments
Modules available to support new products and services (e.g., demand deposits, credit cards, mortgage loans, lines of credit, and money transfers, in addition to standard microfinance services)		<ul style="list-style-type: none"> <li>▪ In general, what capacity does your product have to support other or new financial products and services (i.e., demand deposits, revolving credit, lines of credit, mortgage loans, money transfers, insurance, etc.)?</li> <li>▪ Possibly home improvement loans or insurance.</li> <li>▪ Please explain any advantages or disadvantages your product has in integrating with other software applications, such as loan origination (credit-scoring software), data warehousing, client relationship management, web-based applications, along with telephone or Internet access for employees and/or clients.</li> </ul>

Criteria	Rating	Comments
Can move with the organization from informal (NGO) to formal financial institution (appropriate reports, treasury functions, etc.)		<ul style="list-style-type: none"> <li>▪ Yes it can, given the savings and loan modules and flexibility in reporting.</li> <li>▪ Important in 4–6 years.</li> </ul>
Number of concurrent users it can support efficiently—with reasonable response times		<ul style="list-style-type: none"> <li>▪ How many users can be on the system at the same time maintaining reasonable response time?</li> <li>▪ 25–50 possibly.</li> </ul>
Number of clients it can handle with reasonable response times		<ul style="list-style-type: none"> <li>▪ How many clients can the system hold, including historical client information, and still maintain reasonable response time?</li> <li>▪ 65,000-plus clients along with historical information.</li> </ul>
Additional modules or features that can be purchased and added to the system		

**FLEXIBILITY**

Software is considered flexible when the system is easily altered to meet a new or different business requirement. Flexibility also refers to how adaptable an application is to different organizational or business situations. The adaptations or alterations can be in the form of changes to the program itself (such as code) or parameters used to set up the information system. In addition, the flexibility of a system is reflected in how easily important business-level items (for example, products, tracking information, such as donor, sex, or business type, and so forth) can be added, modified, or deleted. Flexibility basically asks the question of how extensible or configurable is the system.

Criteria	Rating	Comments
<p>Client-centric or account-centric view</p> <p>Software of this nature can view the world as starting either from a customer or from an account. This simple nuance can determine how flexible a system is, because a customer-centric system is usually more flexible than an account-centric system. In the customer-centric view, accounts are associated to a customer. In an account-centric view, customers are associated to an account.</p>		<ul style="list-style-type: none"> <li>▪ Allows a customer to have more than one account and account type (deposit, credit, etc.).</li> <li>▪ Allows the tracking and maintenance of customer data such as contact information, gender, marital status, business activity, etc.</li> <li>▪ Allows detailed information about each account to be stored, such as account type, usage of funds, amount, etc.</li> <li>▪ Prefer customer-centric.</li> <li>▪ Would you classify your software product to be accounting-centric, product/loan-centric or client-centric? For example, does the software allow the customer to concurrently have more than one account and/or account type (i.e., deposit, credit, etc.)?</li> </ul>

Case Study Part 9: Completed FairFund Framework Document

Criteria	Rating	Comments
<p>Institutional types: Full-service banks, limited-service banks, cooperative savings and credit societies/unions, microfinance institutions, limited liability companies, foundations, or trusts, other</p>		<ul style="list-style-type: none"> <li>▪ For what types of enterprises or organizations is your product intended (full service banks, limited-service banks, cooperative savings and credit societies/unions, microfinance institutions, limited liability companies, foundations or trusts, other)?</li> <li>▪ Microfinance institution, currently an NGO.</li> </ul>
<p>Lending methodologies: Handles only one lending methodology or can handle multiple methodologies simultaneously. Typical lending methodologies include individual clients, solidarity groups with individual loans, solidarity groups with group loans, village banks with individual loans, village banks with group loans, other</p>		<ul style="list-style-type: none"> <li>▪ Does your product serve a single lending methodology or multiple methodologies simultaneously?</li> <li>▪ Must handle both group and individual lending.</li> </ul>
<p>Loan interest calculations: Flat, declining balance, discounted from the loan, capitalized, variable rate, stepped rate, commissions and fees, penalty fees for late payments, other (user-definable, etc.)</p>		<ul style="list-style-type: none"> <li>▪ What types of loan interest calculations does the portfolio module support (i.e., flat, declining balance, discounted from the loan, capitalized, variable rate, stepped rate, or other)?</li> <li>▪ Must handle flat, declining balance, variable rate, and stepped rate.</li> <li>▪ Must be able to automatically assesses late fees either flat or percentage by loan product.</li> <li>▪ How does the portfolio module calculate interest (365, 360, 332, 50 weeks, or other)?</li> <li>▪ 365, 360, 50 weeks</li> </ul>
<p>Savings and deposit account types: Passbook (with or without passbook), term deposits (i.e., certificates of deposit), group savings, group insurance fees, off-book group savings, demand deposits, overdraft accounts, current accounts</p>		<ul style="list-style-type: none"> <li>▪ Not required in the short term.</li> </ul>
<p>Savings and deposit interest calculations: Day of deposit to day of withdrawal, minimum daily balance, minimum monthly balance, minimum quarterly balance, average daily balance, average monthly balance, other (user definable, etc.)</p>		<ul style="list-style-type: none"> <li>▪ Not required in the short term.</li> </ul>

Criteria	Rating	Comments
<p>Payment types: Term loans with constant payments, term loans with constant principal, irregular payments, single payment, balloon, selection of initial and subsequent payment dates, other (user definable, etc.)</p> <p>Payment methods: Cash (different currencies where appropriate), check, credit card, smart card, money order, other</p> <p>Special payment modifications: Permits the suspension of penalty fees, permits deferment of loan payment, permits grace periods, permits refinancing (recalculation of payment amounts) of loan</p>		<ul style="list-style-type: none"> <li>▪ Can your product handle tracking of (intra- or inter-) bank or client account transfers?</li> <li>▪ Might be useful to have this option.</li> <li>▪ What types of payment methods does the portfolio module handle? (term loans with constant payments, term loans with constant principal, irregular payments, single payment, a balloon payment, other user-definable)</li> <li>▪ Must be able to handle term loans with constant payments, term loans with constant principal, irregular payments, balloon payments, but another option would be good.</li> <li>▪ What forms of payment are able to be tracked in the portfolio module (cash, check, smart cards, debit cards, credit cards, money orders, other)?</li> <li>▪ The application of the payment is currently in the following order—loan interest, principal, fees, but we want the flexibility to change it either on an individual basis, with approval, or across the institution, or a given loan product.</li> <li>▪ What flexibility does your product have for determining automatic application or manual override of payments between interest, fees, principal, credit insurance, forced or forced savings, life or health insurance, extra or special payments, etc.?</li> </ul>
<p>Payment frequencies Daily, weekly, biweekly, semimonthly, once every four weeks, monthly, other (user-definable, etc.), days (or weeks) of the year supported: 365, 360, 332, 50 weeks</p> <p>Other payment aberrations support: Prepayments, late payments, underpayments, overpayments</p>		<ul style="list-style-type: none"> <li>▪ What flexibility exists in the portfolio module for setting payment dates? What payment frequencies are supported in the module (daily, weekly, bi-weekly, semi-monthly, once every four weeks, monthly, other user-definable)?</li> <li>▪ Weekly, biweekly, semimonthly, once every four weeks, monthly</li> <li>▪ What flexibility exists for controlling modifications in payments, such as suspension of penalty fees, deferment of loan payment, grace periods, refinancing or restructuring of a loan?</li> <li>▪ What, if any, audit trail is available for tracking these types of modifications?</li> <li>▪ Would like to have audit trail capacity.</li> </ul>
<p>Multiple branches and regions: Mechanisms for separating information on an office basis, mechanisms for aggregating office level data (online, store and forward, etc.), reporting on an office or area basis, frequency of updates to head office or area office, bank and/or account transfers (intra- or inter-)</p>		<ul style="list-style-type: none"> <li>▪ In the case of organizations with multiple branches or regions, can your product update data to the central system in realtime or in batch mode, either hourly, daily or weekly? Then, with what frequency can the head office receive or run reports?</li> <li>▪ By branch.</li> </ul>

Criteria	Rating	Comments
<p>Supports multiple languages: Supports local language (if written), can support languages on a user basis—multiple languages simultaneously, all messages are in the language of choice, all screen information is presented in language of choice, multiple language support requires recoding (language is hardcoded) or is intrinsic to the system (language is parameterized)</p>		<ul style="list-style-type: none"> <li>▪ What languages for the user interface does your product currently offer and/or support? Will it be able to support user-defined languages?</li> <li>▪ Must be available in English, but would be nice to have in local language if available.</li> </ul>
<p>Supports multiple currencies: Supports local currencies and foreign currencies, supports payments and disbursements in different currencies, supports foreign exchange exposure calculation facilities, handles maintenance of value accounts and other inflationary risk mitigation functions</p>		<ul style="list-style-type: none"> <li>▪ Does your product support local currencies and foreign currencies for both payments and disbursements?</li> <li>▪ Must have some capacity to support a second currency.</li> <li>▪ Does your product support foreign exchange exposure calculation facilities?</li> <li>▪ Would be useful.</li> <li>▪ Does your product handle maintenance of value accounts and other inflationary-risk mitigation functions?</li> <li>▪ Not mandatory.</li> </ul>

**UsABILITY**

Criteria	Rating	Comments
Ease of use and user friendliness		<ul style="list-style-type: none"> <li>▪ Must be very intuitive for new computer users.</li> </ul>
User interface		<ul style="list-style-type: none"> <li>▪ Must be in English, but local language a plus.</li> </ul>
User support		<ul style="list-style-type: none"> <li>▪ What support for users is provided with your product (i.e., guidebooks or written documentation, imbedded tutorials, help index or library, 1-800 technical support, Internet resources, and e-mail)?</li> <li>▪ As much as possible, and very easy to use for beginners.</li> <li>▪ Do you have any documented third-party survey results or ratings on the level of user friendliness of your product?</li> </ul>
End-of-period processing		<ul style="list-style-type: none"> <li>▪ What level of administrative intervention is required to perform end-of-period processing?</li> <li>▪ What duration periods for processing are provided by your product (i.e., daily, weekly, monthly, quarterly, yearly, other user-defined)?</li> <li>▪ Currently, we do end-of-day and month, half-yearly, and yearly.</li> </ul>



Criteria	Rating	Comments
User training		<ul style="list-style-type: none"> <li>▪ How much up-front training is generally necessary for the users of your product?</li> <li>▪ What training does your company provide prior to the conversion?</li> <li>▪ What is the nature of the training, and how many people are generally involved?</li> <li>▪ Is the cost of the training incorporated into the licensing agreement?</li> <li>▪ Is the training conducted onsite or at your training facilities?</li> <li>▪ Is the training offered in a standardized format or customized to each client?</li> <li>▪ What other roles might the trainer hold within your company?</li> <li>▪ What training, manuals and resource materials do you provide for inhouse IT personnel?</li> <li>▪ Would like onsite training.</li> </ul>

**REPORTING**

Criteria	Rating	Comments
Standard reports		<ul style="list-style-type: none"> <li>▪ Are reports (either hard copy or screen view) generated by a separate report writer application or an internal reporting functionality?</li> <li>▪ Can the report be saved electronically? If yes, in what file formats can they be saved and are these formats easily exported?</li> <li>▪ Do the standard reports offered by your product follow Micro-Banking Bulletin standard reports, another industry-reporting standard, or CGAP's example reports?</li> <li>▪ Due to new users, must have very easy to use standard reports. Specifically, must allow for printing of delinquency reports and portfolio quality according to loan officer or combination of loan officers (e.g., those with more than three years of experience). Still need to review all current reports to determine which are most important.</li> </ul>
Custom/Ad hoc report generation		<ul style="list-style-type: none"> <li>▪ How much customization, both in content and layout, is available for the existing reports and/or creating user-defined reports? Can templates be saved for customized reports, and added to the list of available reports?</li> <li>▪ With what frequency or volume can the various reports be generated (i.e., batch, or ad hoc)?</li> <li>▪ Are there any printer or paper size limitations?</li> <li>▪ Should have some possibility of creating additional standard reports, or doing ad hoc queries.</li> </ul>
Exporting to other applications		<ul style="list-style-type: none"> <li>▪ Should be able to export to Excel easily, with minimal to no transfer problems.</li> </ul>

**FINANCIAL STANDARDS AND COMPLIANCE**

Criteria	Rating	Comments
Accounting soundness and standards		<ul style="list-style-type: none"> <li>▪ Does this product adhere to the Generally Accepted Accounting Principles (GAAP), International Accounting Standards (IAS), or French Accounting Principles?</li> <li>▪ Semiregulated, therefore accounting principles should be pretty standard.</li> <li>▪ Does this product allow for modifications in the accounting module to meet local legal requirements?</li> <li>▪ Semiregulated, therefore should be fairly flexible.</li> </ul>
Government and supervisory adherence		<ul style="list-style-type: none"> <li>▪ Does this product meet specific government or supervisory financial or consumer regulations?</li> <li>▪ Must allow for following nationally set chart of accounts.</li> <li>▪ Can the portfolio or CRM modules be modified to meet changes or additions to regulatory governance requirements?</li> <li>▪ Does the product meet or support reporting requirements of a central bank?</li> <li>▪ Does the product integrate into a national payment system?</li> <li>▪ How does your company anticipate and monitor new legislative compliance requirements, insurance product requirements and consumer lending product requirements?</li> </ul>

**SYSTEM ADMINISTRATION AND TECHNICAL SUPPORT**

Criteria	Rating	Comments
Security		<ul style="list-style-type: none"> <li>▪ What are the different levels of access (and related activities) provided within your product?</li> <li>▪ Everyone should have their own password access, differentiated by job position.</li> <li>▪ Are there access restrictions by time-of-day, terminal, or other?</li> <li>▪ Who has permission to set up access and change access levels?</li> <li>▪ Does your product require every user to login with a password?</li> <li>▪ Does the system prompt users to change their password on a regular basis?</li> <li>▪ Does the product offer an automatic audit trail on transactions by user identity?</li> <li>▪ Would like to have audit trail capacity.</li> <li>▪ Does the product include a self-auditing program?</li> <li>▪ What firewall or other protection system is built in for the database(s)?</li> </ul>

Criteria	Rating	Comments
Security (cont.)		<ul style="list-style-type: none"> <li>▪ Is there any encryption of the database or passwords?</li> <li>▪ Does it automatically generate a system violation log?</li> <li>▪ Does the system automatically provide notification of file violations?</li> <li>▪ Does the product allow for offsite data storage of the database (records)?</li> </ul>
Backup and recovery		<ul style="list-style-type: none"> <li>▪ Are there built-in recovery mechanisms for automatic of end-of-day processing?</li> <li>▪ Would be good to have something like this built in, not optional.</li> <li>▪ Is a backup application provided with your product?</li> <li>▪ Does the system provide for (or require) full backups on a regular basis, such as weekly or monthly?</li> <li>▪ Does it allow for incremental and full backups?</li> <li>▪ Can the data be backed up separately from the software?</li> <li>▪ What length of time is required to back up the data?</li> <li>▪ How much space is generally required to perform the backup?</li> <li>▪ Does the system keep track of current status and activity of central processing and each user?</li> <li>▪ Not sure how important it is to have this capability.</li> <li>▪ What mechanisms are in place to avoid duplication of entries or lost data when restarting the system after it crashes or freezes?</li> <li>▪ Not sure how important it is to have this capability.</li> <li>▪ How difficult and timely is the recovery process?</li> <li>▪ Does your product have archival facilities for offloading old, unused data?</li> <li>▪ Sounds useful.</li> </ul>
Fault tolerance and robustness		<ul style="list-style-type: none"> <li>▪ If your product is being run across a network and the network crashes, what is the response of your product?</li> <li>▪ Does the product provide notification to a user when a transaction has not been completed?</li> <li>▪ If there are database or operating system errors, what is happens with your product?</li> <li>▪ Does your product regulate itself to detect major errors, and does it provide users with adequate time and information to react appropriately?</li> <li>▪ Should be very robust, as there will not be onsite tech support at each branch, and lots of new users, at least in the beginning. In most regions that we have branches, infrastructure, such as phones and electricity, are available in the main towns consistently. The few computers currently owned are fairly new and have not had problems.</li> </ul>

Criteria	Rating	Comments
<p>Technical support and maintenance</p>		<ul style="list-style-type: none"> <li>▪ What is the form and amount of technical assistance you provide for your product?</li> <li>▪ Would like a great deal, at least in the beginning, given limited previous experience.</li> <li>▪ Is this covered in the maintenance contract?</li> <li>▪ Where are your technical support offices located?</li> <li>▪ How many technical support people are at each location?</li> <li>▪ In what languages is the support provided, both written and verbal?</li> <li>▪ Describe the individual experience levels of the personnel currently being used to provide technical support.</li> <li>▪ Are these resource personnel your staff or are they provided through a third party or independent consulting firm?</li> <li>▪ Do the same employees that handle the conversion also provide the ongoing technical assistance?</li> <li>▪ What is the average response time and level of assistance for a problem or request?</li> <li>▪ Do you provide access to source code where appropriate or necessary?</li> <li>▪ If so, what impact does that have on your technical support for the product?</li> <li>▪ How many hours of software development time per year does your company provide for requested system changes that have not been approved through a users group or similar means?</li> <li>▪ What is the process for getting change requests or customization completed for your product?</li> <li>▪ Is there a users group?</li> <li>▪ If so, how is eligibility determined, how is it structured and how often does it meet?</li> <li>▪ How is the users group incorporated into your overall product development process?</li> <li>▪ A users group would be a big plus. It would be great to have other users to talk with about problems.</li> </ul>
<p>Installation and data conversion</p>		<ul style="list-style-type: none"> <li>▪ Describe how your company will support an implementation and conversion to the proposed system.</li> <li>▪ What resources and skill sets are required from both the buyer and your company to complete an implementation and conversion and for what duration? Include number of people and their functions.</li> <li>▪ How many conversions (implementations) do you generally do per month?</li> </ul>

Criteria	Rating	Comments
<p>Installation and data conversion (cont.)</p>		<ul style="list-style-type: none"> <li>▪ How many conversion (implementations) projects have you done in the past two years?</li> <li>▪ Within what time frame were these conversions completed?</li> <li>▪ If a conversion is not completed by the original timeline, will individuals assigned to the project remain on the project until it is completed?</li> <li>▪ What were the major issues and problems associated with these conversions?</li> <li>▪ If the loan portfolio only operates on accrual basis, how do you propose transferring old data on a cash basis to the accrual system?</li> <li>▪ Must be able to assist with a paper to computer application data conversion for loan portfolio and savings management, and Excel to other computer application for accounting.</li> </ul>
<p>Version control and upgrade strategy</p>		<ul style="list-style-type: none"> <li>▪ What is the product version currently for sale?</li> <li>▪ Identify the release date of this version and the scheduled release date of the next release.</li> <li>▪ Note any functionality that will not be supported for future versions.</li> <li>▪ How often are new releases developed and distributed?</li> <li>▪ What is your upgrade strategy for moving from one version to another?</li> <li>▪ Does the client have to upgrade sequentially?</li> <li>▪ How many upgrades have you completed in the last two years?</li> <li>▪ Within what time frame were these upgrades completed?</li> <li>▪ Does your company have a policy for the number of versions behind the most recent release a customer can use and still receive support on the application? Please explain.</li> <li>▪ Are product upgrades considered part of the maintenance contract?</li> <li>▪ Releases should only be a minimal number of times a year, if more than once; otherwise, skipping versions should be allowable.</li> </ul>

**TECHNICAL SPECIFICATIONS AND CORRECTNESS**

<b>Criteria</b>	<b>Rating</b>	<b>Comments</b>
Technology and architecture		<ul style="list-style-type: none"> <li>▪ What architecture environment is the product design to run in (i.e., client/server, LAN, WAN, standalone)?</li> <li>▪ What are the minimum and optimal hardware requirements to run your product?</li> <li>▪ What is the database, internal or external, with which your product works?</li> <li>▪ What operating systems does your product work with? Specify where necessary if there is a difference between your product versions.</li> <li>▪ What network platforms and/or communication protocols can your product be run across?</li> <li>▪ What programming language is the source code written in? Please specify if different for different versions of your product.</li> <li>▪ What, if any, external infrastructure is necessary to run your product?</li> <li>▪ What controls are built in to ensure the safety of the source code?</li> <li>▪ What access to source code is provided?</li> <li>▪ Database must be able to handle 65,000 plus clients, including historical information.</li> <li>▪ Otherwise, we are unsure of necessary specifics.</li> </ul>
Research and development		<ul style="list-style-type: none"> <li>▪ What is your general methodology and process for overall product development?</li> <li>▪ What is your process for upgrade development and beta testing? Which is your model site?</li> <li>▪ Not sure what this should include.</li> <li>▪ Provided a brief history of the development of this product since its origin and describe its evolution.</li> <li>▪ Discuss the strategic direction for the software you are proposing. If significant changes are planned or are in progress that will affect the software as it would be installed today, please disclose in detail.</li> <li>▪ Describe all of the planned enhancements and any development initiatives that affect the base system. Clearly state whether each enhancement is committed, staffed, funded, and when it is scheduled for availability.</li> <li>▪ If planned enhancement or development project is under way, describe its impact on the base system today and address the scope of effort or conversion necessary to migrate to future deliverables.</li> <li>▪ Good to have a product that has been around for a while and looks to be around for a good while to come.</li> </ul>

Criteria	Rating	Comments
Performance		<ul style="list-style-type: none"> <li>▪ At what record count in the database should a user anticipate some degradation in the speed and performance of the software?</li> <li>▪ What is the maximum limit of clients the software can handle (please be database specific)?</li> <li>▪ How much memory is needed to initially install the software, prior to any addition of client data?</li> <li>▪ On average how much space is required per client to store personal client data? What is recommended?</li> <li>▪ On average how much space is required per client to store client loan/product data, including historical data? What is recommended?</li> <li>▪ Reliable performance is very important.</li> </ul>
Number and date handling		<ul style="list-style-type: none"> <li>▪ What provisions have been made in the software to handle date related issues, especially for Y2K and the conversion of data from a legacy system?</li> <li>▪ Heard it must have good Y2K protection, even now.</li> <li>▪ What provisions have been made in the software to handle excessively large numbers due to inflated currencies or other issues?</li> <li>▪ Must be able to handle high inflationary numbers without hassles.</li> </ul>

**PRICING AND COSTS**

Criteria	Rating	Comments
Base price and pricing structure		<ul style="list-style-type: none"> <li>▪ While an initial amount of US\$30,000 has already been secured for the system, depending on the functionality offered and the number of users on the system over time, it could be possible to raise some additional funds to acquire the software plus hardware with the best fit for our needs.</li> <li>▪ We expect this system as selected to serve our needs for the next five to seven years, so the initial capital investment into the system will need to be realistically depreciated over that time span.</li> </ul>
Maintenance and technical support fees and charges Administrative costs (internal support) Installation and training costs		<ul style="list-style-type: none"> <li>▪ Initially, FairFund does not want the ongoing costs of the IS to exceed 5 percent of its operating budget.</li> </ul>





# Case Study

## Case Study Part 10: Determine What Is Feasible – Available Software Options

With agreement of all and signoff from the managing director, Chris, on the specifications memo, Jan and Felix began to research the computerized software applications that were commercially available. To learn about the options, Jan posted an inquiry on the DevFinance listserv about systems being used by similar types of institutions. Also thanks to a previous lead, Jan returned to the CGAP Information System Service Web site, which actually had completed evaluations on half-a-dozen microfinance software applications. Using the six main priorities outlined in the memo to Chris as a guide, Jan scanned the Web site to determine if any of the applications listed might fit FairFund's needs.

Jan downloaded the latest reviews available and distributed them to all the members of the task force. Jan asked them to create a shortlist of two or three software applications they think might meet FairFund's requirements. When the shortlist is compiled, Jan will forward it to Chris and request that due diligence investigations be conducted on the preliminary selections.

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### ***MEMO***

To: All Task Force Members  
From: Jan  
Date: November 2001  
Re: IS Software Selection Shortlist

Greetings team! We are almost there. I am pleased to inform you that management has responded favorably to our IS priorities and Specifications document. We have been asked to move forward and identify software options that will fit our needs.

I have copied you on the posting I have made to the DevFinance listserv, and I am sure you will soon be seeing comments from our colleagues in the field. I have also managed to download software reviews from the CGAP Information Services Web Page for our use. If you have additional information, please let us all know.

Meanwhile, please review all documents compiled to date and come to Friday's meeting armed with a shortlist of two or three software options for our IS. I am sure one week will be more than enough time for you to complete this task. Let me know if there are any problems.

Many thanks.

*Attachments*

Case Study Part 10: Determine What Is Feasible – Available Software Options

**PRODUCT AND VENDOR SUMMARY**

<b>Product and Vendor Name</b>	<b>General Features</b>	<b>User Interface Languages</b>	<b>Number of Active Clients</b>	<b>Location of Client Installations</b>	<b>Client Institution Size</b>	<b>Base Software Price (US\$)</b>
SmartSol 1.0 ABC Corporation	Accounting, Loan Savings, Client Management	English French Spanish	100/5*	Africa	Small Medium Large	30,000–300,000+
MicroBank System MB 2000 Banking Inc.	Accounting, Loan Savings, Share, Client Management	English Only (see full report for other versions)	193/170* (Philippines Only)	Philippines (see full report for other versions)	Small Medium Large	1,350–1,850+
eLoan Tracker 5.30 EFG Corporation Ltd.	Accounting, Loan Savings, Share, Client Management	English	40	East Africa Europe NIS Region Caribbean	Small Medium	400–1,200+
MFI Manager 2.16 MIS Corporation	Accounting, Loan Savings, Share (optional), Client Management	English French Hungarian (others may be negotiated)	18/20* (others supported by parent company)	Kenya Rwanda India Hungary	Medium Large	15,000–45,000+
Micro 5.0 XYZ Corporation	Accounting, Loan Savings, Payroll, Client Management	Spanish English Russian User-defined	200/12*	North, Central, and South America; Africa	Small Medium Large	2,000–20,000+




\*Total number of active clients/number of clients using this version of the product.

**TECHNICAL SPECIFICATIONS AND SUPPORT**

<b>Product Name</b>	<b>Workstation Operating System</b>	<b>Network Operating System</b>	<b>Database</b>	<b>Programming Language</b>	<b>Support Location</b>	<b>Support Included in Maintenance Agreement</b>
SmartSol 1.0	Windows 95/98/2000	Windows NT, Windows 2000 Server	UniVerse JBase ( <i>included</i> )	UV Basic JBase	South Africa, 18 other countries (ABC Corporation)	E-mail, telephone, fax
MicroBank System MB 2000 Banking Inc.	DOS or Windows 95/98/2000	Windows NT 4.0, Novell Netware 5.0	XBase family (FoxPro, dBase, or FoxBase)	Clipper 5.3b	Philippines (four regional offices)	E-mail, telephone, fax, in Philippines
eLoan Tracker 5.30	Windows 95/98/2000	Windows NT, Novell Netware	FoxPro ( <i>included</i> )	Visual FoxPro 5.0A	Uganda, Azerbaijan, South Africa, Zimbabwe	Email, telephone, fax, with users group
MFI Manager 2.16 MIS Corporation	DOS or any Windows version	Windows NT, Novell Netware preferred	FoxPro	C+	Nairobi, Kenya (head office), Rwanda, Hungary, India	E-mail, telephone, fax (site visits at additional cost to cover expenses)
Micro 5.0	Windows 95/98/2000	Windows NT, Unix or IBS AS/400	FoxPro ( <i>included</i> ), Oracle, SQL Server	Visual Basic, Visual FoxPro, Satellite Form, and C++	Guatemala	E-mail, FTP, telephone, fax

Case Study Part 10: Determine What Is Feasible – Available Software Options

**CGAP CONSUMER REPORT RATINGS**

Product Name	Functionality and Scalability	Usability	Reporting	Financial Standards Compliance	System Administration and Technical Support	Technical Specifications
SmartSol 1.0						
Microbank System MB 2000						
MFI Manager 2.16						
eLoan Tracker 5.30						
Micro 5.0						

**Legend**



Poor



OK



Best

## PRODUCT OVERVIEWS

**SmartSol** is a Windows-based, scaled-down banking software application. The SmartSol product includes a full array of advanced features that can support a variety of financial institutions or lending models, such as small commercial banks, credit unions, NGOs, Village Banking, or Grameen Bank replication models.

SmartSol offers seamless portfolio management, savings, and accounting capabilities, and offers a great deal of functionality, which must be configured at the system level. Given this, it may require more technical competence on the part of the MFI to implement and maintain than some other information system software for MFIs. The depth of functionality, expandability, and relative cost make SmartSol most appropriate for medium- to large-sized institutions and institutional networks that need to support 15 or more concurrent users. SmartSol is distinctive because of its scaled-down banking core, the well-designed user interface, the user-defined overall flexibility in all modules, and depth of functionality.

Technical assistance is outsourced to resellers, who may or may not be familiar with this product given its new entrance to the market. Training and online help could be improved.

The **MicroBankE** version for Philippines Rural Banks (version MB 2000) is a full-featured product designed to meet the needs of a broad spectrum of the microfinance industry, including NGOs involved in peer lending, rural development banks, small retail banks, and credit unions.

The software is a DOS-based application with an integrated general ledger, customer information, savings, loan portfolio, time deposit, and share modules. The software supports realtime (such as teller) transaction processing with automatic general ledger updates and information retrieval. It is client-centric in its design and has ample security features. In addition, the software is compatible with other third-party applications, has features for consolidating data from different branches, and the software is designed to run either in standalone mode or over a local area network.

The MB 2000 version reviewed here is an extended version of the core function of the MicroBank system with additional features developed to meet the needs of various financial institutions in the Philippines. The basic core version of the software is called the SRTE version, which can be purchased directly from Banking, Inc. in Rome. There are alternative extended versions of the software available in other regions of the world, which share the same core functionality as the MB 2000 but may have somewhat different extended functions that reflect different market needs.

The core **ELoanTracker** software product includes loan portfolio, savings and share tracking, along with general accounting. The ELT software application was created to support individual, solidarity, and village banking methodologies.

Although it covers all the basic microfinance requirements, the features of the software are limited; however, the functionality provided does work quite well. Given its low cost and limited database size, this product is best suited for small and medium-sized (less than 15,000 clients per branch) microfinance organizations or lending programs. A medium-sized institution may need to operate the application at the branch or area level to keep the data decentralized to stay within the limits of the database capacity.

The ELT software is a Windows-based application with an icon-based/menu-driven user interface. This is a very stable software product due to its simple and compact design. A very useful online help feature is built into the system. As EFG Corporation is a very small company based in Uganda,

technical assistance is limited, especially outside East Africa and a few countries where local partners exist. The product offers a comprehensive list of standard reports, and allows for user-defined report generating. Overall, ELoanTracker lacks the number of features and flexibility offered by some of the more expensive packages reviewed, but it offers an excellent value for the money.

The **MICRO** software is a module application with an icon-based user interface. The core MICRO software product includes loan portfolio tracking, general accounting, and treasury functions. A deposit monitoring module, as well as several other auxiliary modules, can be purchased separately.

The MICRO software application was created to support individual, solidarity, and village banking methodologies. Given its cost and expandability, depending on the database and network infrastructure used, this product is best suited for small to medium-sized (less than 850,000 clients) microfinance organizations or lending programs.

This is a very solid software product due to its well-designed data structures and numerous functional features. The company seems better than most at providing timely technical assistance to the inhouse systems administrator.

**MFI Manager** is a scaled down version of MFI-2000, a commercial banking product offered by MIS Corporation, which includes a few additional reports and other features developed specifically for MFIs. Even with these adaptations, MFI Manager is still most appropriate for larger institutions (more than 20,000 clients).

All modules in MFI Manager are completely integrated. Most parameters in all modules can be user-defined, including savings and loan products. According to the vendor, the software can be configured at installation to meet with different accounting standards, including IAS, GAAP, and French Accounting.

During installation MFI Manager can be configured and reports created to meet central bank reporting standards; Software Strategies has implemented this in several countries. The software also supports multiple currencies. Many standard banking reports and some MFI-specific reports are included and others can be programmed, or configured by a third-party report-writing application. Data can be exported to an ASCII-format spreadsheet like Excel for greater analysis and reporting purposes.

MFI Manager can be used in a centralized or decentralized environment, and has a large number of security features. The interface, available in English, French, or Hungarian, is a modern DOS environment, which has many user-friendly Windows-like features, and a good help menu. MFI Manager also provides sufficient system error and other user-type messages.

Based on the experience of the MFI visited, the software is robust against faults and user errors. The MFI visited reported the quality of technical assistance to be good in Kenya, although the quality of technical support could not be verified for institutions in other countries. It is important to note that the MFI Manager version of MFI-2000 was developed specifically for the needs of a Grameen Bank-model MFI; currently, MIS Corporation has only two customers whose methodology is based on group lending practices.

Advanced technology modules in the full MFI-2000 package are optional in MFI Manager, and include credit-card processing, smart-card functionality, and an ATM interface.

# Case Study

## Case Study Part 11: Short-list Decision and Justifications

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### MEMO

To: Chris Castillo, Managing Director  
From: Jan Loub, IS Manager and the IS Task Team  
Date: December 2004  
Re: Shortlist of IS Software Recommendations

### RECOMMENDED SHORT-LIST PRODUCTS

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Company	Package/Product	Type
XYZ Corporation	MICRO	Microfinance, group lending focused, but handles individual lending, too
EFG Corporation	eLoanTracker	Microfinance, group lending focused, but handles individual lending, too
ABC Corporation	SmartSol	Microfinance/Banking, individual lending focused with sufficient group lending capability

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### OVERVIEW OF VENDORS

This review included looking at inhouse and Web-based software options from the global microfinance sector and the local banking sector. These vendors were identified through the DevFinance list serve, CGAP's IS Web site, and word-of-mouth referrals from members of the local banking community. The overall search yielded about 12 potential vendors and has been winnowed down to a shortlist of three vendors.

### VENDOR COMPARISON

#### Microfinance vs. Local Banking Applications

**Microfinance.** The microfinance applications seem to have improved in number and quality over the past few years. All of the applications selected for the shortlist can handle the multiborrower relationship with a single loan, offer a range of savings and loan product types with varying terms and conditions, the ability to track voluntary deposits and compulsory savings separate from the loan payment, and have a windows-friendly environment with which to work. Much of the other functionality FairFund requires is considered standard by these applications, such as varying interest calculations, general ledger entries, seamless posting from loan portfolio to the accounting system, ad hoc inquiries, exporting of information from the database, and a broad range of client data. All vendors provide training and extended hours of support and may include backup and external security services. The applications that depend on a FoxPro database either have the additional capacity to switch to a SQL or Oracle database as FairFund's client base grows or ways to archive old data to stay within the limits of the database. Consequently, the difference in the integrated microfinance applications is limited to base cost and number of specialty features in relationship to FairFund's needs.

**Local Banking Market.** As is typical for banking software, the two applications available locally were intended for a teller environment and predominately individual lending. While they could effectively provide the detail tracking necessary on the individual level, there was no way to track the general

group information. In addition, these applications had twice as many features as FairFund requires at this time, making the value not worth the expense. Of course, the easy accessibility of the local technical support staff and the local training made these applications initially quite attractive.

### **Inhouse vs. Web-Based Information Systems**

***Inhouse System.*** Inhouse solutions enable an organization to achieve efficiency of cost for technology if there is a significant level of volume. Most systems typically have a break point to justify the expense of investing in the system. Also, an inhouse system allows an organization to have direct control of its data, which enables unlimited ad hoc reporting and data mining critical for responsive business operations. An organization is less restricted in its choice of other systems to integrate with its core system as well. However, an inhouse system requires having internal staff to manage the system, deal with security issues, data protection, disaster recovery, and manage upgrades.

***Web-based System.*** A Web-based solution offers the option of not having to make large upfront capital expenditures to obtain the most leading technology today as well as tomorrow. Using a Web-based service also enables an organization to focus on its core business—lending—instead of using limited staff resources to maintain the necessary information system. As well, through a Web-based application an organization can generally get access to a greater array of features than they typically can afford to buy. Most important, an organization's IS staff requirements are minimized because all security issues, data protection, disaster recovery, and software upgrades are managed by the vendor at the remote site. In addition, through a Web-based service an organization can more readily take advantage of the latest technology without being restrained by previous capital expenses in information systems. Pricing is usually based on volume and features used, meaning an organization increases its information system costs only as the institution grows. There is usually an initial setup fee, with the bulk of the cost being attributed to a monthly per-account fee, based on volume. The pricing is dependent on all of these factors and can be negotiated. The downside to this type of system is the need for constant, reliable, and affordable Internet access during working hours.

At this time the IS Task Force has determined that a Web-based option is not yet feasible because of the lack of constant and reliable Internet access for all our offices, and it is unclear how long it may take before this type of infrastructure is readily available.

### **CONSIDERATIONS**

Note that all the applications selected for the shortlist can be run either in a realtime network environment or offline, with batch updating to various degrees. This gives FairFund the flexibility to decide later in the process what is really more appropriate for the organization at this time. This is crucial because the cost implications are quite significant for installing and supporting a network(s).

### **SOFTWARE AND VENDOR EVALUATION CRITERIA**

The criteria used to evaluate the different vendors and their software products for the shortlist of recommendations is taken directly from the agreed priorities outlined in FairFund's specifications document. They are as follows:



Criteria	Requirement
<i>Accounting System</i>	An accounting system that can readily produce financial reports, not only for the entire organization but broken down for each branch (cost center) as well.
<i>Product Types</i>	Must be able to track both individual and group loans with a moderate to high degree of detail. Able to track savings. This implies the necessity for an automated loan-tracking tool that is more flexible and accurate than a handwritten system.
<i>Data Entry and Reporting</i>	Many of the routine tasks must be automated as much as possible to ensure timeliness in reporting and good customer service.
<i>Number Handling</i>	It is critical that the system can manage large numbers without creating errors or time-consuming work around solutions.
<i>Cost</i>	Must be in a reasonable range of US\$30,000–US\$50,000, including training and conversion costs.
<i>Multicurrency</i>	If possible, should be able to help enforce a standard currency rate across the organization and handle payments in a second currency.

### STRENGTHS OF SOFTWARE SELECTED

Each of the following programs met the basic product tracking needs and integration requirements. Additional factors that resulted in their inclusion in the RFP vendor pool are listed below.

***MICRO – Loan Management and Accounting.*** Operates offline and realtime, with two-way hot-syncing of databases versus one-way updating, and is relatively inexpensive.

***ELoanTracker – Loan Management and Basic Accounting.*** Very user-friendly, good standard reports, and the application is quite inexpensive.

***SmartSol – Loan Management and Accounting.*** Very easy-to-learn interface, designed to handle high volume, and has great flexibility for the individual loan product. Price ranges from expensive to very expensive depending on options selected.

### WEAKNESSES OF SOFTWARE NOT SELECTED

Reasons for eliminating the other software applications included software still being in beta testing, or DOS-based software, or the inability of the database or software to accommodate more than 50,000 clients. Also, some applications were meant for rural banks or credit unions, which have very different operations than FairFund. Other applications were only one piece of the system, either accounting or loan portfolio management.

Finally, there were a few applications developed for use by MFIs in other countries, but these applications didn't provide scale or lacked sufficient technical and infrastructure support and training capacity. In two cases, English was not a language that the system supported. Some of these microfinance applications were also only being used on a single PC and were not designed to operate over a LAN environment. Only two were Web-based or moving that direction.

### BUYING VS. BUILDING AN IS SYSTEM

Consideration was given to building rather than purchasing a loan management system. Building a new software system to meet FairFund's operational needs is a costly and very time-intensive endeavor

## Case Study Part 11: Short-list Decision and Justifications

resulting in no greater functionality or significant time or cost savings over existing off-the-shelf software systems.

The generic system development lifecycle involves identifying system requirements and overall architecture, both at the workstation level and the macro-level across remote sites. This is followed by the designing and building of 100-plus screen layouts and the database, as well as the writing of thousands of lines of code. The next step in the cycle involves testing the system piece by piece as it is built and testing it again as it is integrated, along with documenting every step of the process, plus managing the version control. When the system is completed, it must be beta-tested, which generally lasts no less than six months at more than one site. To even initiate the beta testing requires the conversion process to begin and may even require running parallel systems until the bugs are taken out of the system. When the system has been implemented and tested, the remainder of the organization needs to be converted to the new system. Prior to this, training manuals must be developed and trainers trained on the use of the system. After the system is built, there needs to be ongoing support for its maintenance and upgrades, which will take FairFund back through the system development cycle again, just on a smaller scale. In general, it is felt that such an endeavor could drain FairFund's resources and divert focus away from its operations and goals of achieving scale.

FairFund could consider hiring a software development firm to build for it a customized system, but the cost of the system—and more importantly the time required to build a functional system—would be 5 to 10 times as great as selecting an existing software application. Generally, a business chooses to custom-build its own software if an existing software option does not exist, or those that do exist do not meet a sufficient amount (more than 75 percent) of the organization's operational needs.

Given the diverse array of applications reviewed that offer a high volume of functionality, with a quality, user-friendly interface and a scalable database for a reasonable price, FairFund is not short on off-the-shelf software options. *It is therefore the recommendation of the IS Task Force that FairFund **not** build its own custom system, but pursue further due diligence on the existing commercial microfinance software applications noted at the onset of this paper.*

# Case Study

## **CASE STUDY PART 12: EVALUATING THE SOFTWARE – APPLYING THE FRAMEWORK**

After reviewing Jan’s memo and considering what was being proposed, Chris felt that it would further strain the organization’s resources to look at three applications in greater detail. Chris requested that Jan and her team do some further research to narrow the list down to two from which to make the final selection.

Jan agreed, but thought it would be too short-sighted to not really explore all three options. So Jan let Chris know that they were using a framework tool to help the team efficiently review three applications—and had used this same tool to help document their needs. (Jan had originally found the IS Evaluation Framework on the CGAP Microfinance Gateway. Having looked it over rather thoroughly, Jan thought it would be a great tool to help the team document their IS needs and evaluate the different alternatives. It included an amazing amount of detail and many things the team might not have thought to ask the vendors.)

Jan and Chris compromised on researching the three applications to provide a recommendation on the top two options.

Juanita, Felix, and Jan set about doing the initial data gathering on each of the products selected, including contacting the vendor. A great deal of detailed information was downloaded from the CGAP/Microfinance Web site, including the software ratings and the full reports, which FairFund used to jump-start the evaluation process.

Information on each product follows.

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### **SmartSol**

#### **SUMMARY**

##### *Pros*

- User interface design and navigational architecture are extremely good with handy drill-down capability for detailed information at the click of a button.
- Core engine of the software is a tried-and-true, scaled-down banking package with a high level of functionality.
- High degree of flexibility for user-defined accounting, financial products, and client information tracking.
- Database is SQL and ODBC compatible for integration and expandability.
- Full security features are built in, including audit trail.

##### *Cons*

- The software is intended for use in a networked environment, requiring a stable communications and power infrastructure.
- Complexity of software implementation and maintenance requires having strong inhouse IT support capabilities.

## *Case Study Part 12: Evaluating the Software – Applying the Framework*

- While ad hoc queries can be done on the data in database and exported, customization of the report format requires the use of a special report writer, which is a separate expense.
- Vendor uses partners outside of South Africa to provide technical support, and the quality of the services is unknown.
- Price warrants having 15 or more concurrent users, although it is available for 5 or more users.

### FUNCTIONALITY AND SCALABILITY

- A seamless software package (from the user perspective) that includes functionality for portfolio management, accounting, general ledger, treasury, and client information.
- The software can be configured to track financial information by group, institution or individual, according to the lending methodology.
- Information entered into the system can be updated directly online (realtime) or offline. Offline updates can occur as part of the end-of-day processing for interest accruals, and so forth.
- SmartSol predefines a standard code scheme for the chart of accounts. User-added or defined account codes must fit within the confines of the software.
- Revenue and expenses can be tracked, and additional analysis conducted, by profit/cost centers (for example, branch) product, donor, or other user-defined accounting group.
- The software offers excellent flexibility in cash/accrual accounting, definition and modification of financial products, setting and overriding fees, interest and delinquency calculations, and compulsory savings and collateral.
- SmartSol can also track and manage client nonfinancial information entered in predefined or user-created fields.
- SmartSol has excellent scalability; it runs on a Windows NT or Unix platform and offers great flexibility in creating financial products.

### *Management Considerations*

- **New Product** – This version of SmartSol is new to the market and the performance has yet to be tested by an institution with large data demands, which may or may not be a problem.
- **Hardware Requirements** – Given SmartSol's relative size and complexity, a larger investment in computer and network hardware and operating systems will need to be made, more than would be necessary for a simpler software package.
- **Functionality and Price** – Given its large menu of functions and features, its expandability, and its relative high cost, SmartSol is most appropriate for medium- to large-sized institutions and institutional networks that have 15 or more concurrent users on the system.

### USABILITY

- SmartSol's user interface is very easy to navigate, with good drill-down capability for detailed information at the click of a button, well-liked by all level of users (teller, accounting, IT, and managerial staff) surveyed.
- Users found the software easy to learn for front-office operations and the built-in standard reports easy to generate.
- SmartSol does not automatically list client names and account numbers on one screen. The ability to search by one to find the other would be a time-saving feature.
- End-of-day processing is very easy, requiring only a few clicks to authorize and process and a few minutes to complete.
- Creating new reports that are not built in seems more difficult, and may require technical support from vendor. Exporting accounting data to Excel for analysis is easily handled.

- Training for SmartSol fell short of expectations for the MFI visited; trainers lacked experience with (an admittedly new) software and training was in some ways not appropriate for the level of experience of the training participants.

#### *Management Considerations*

- User Materials – At the time of the initial site visit, limited resources were available to guide users in using the product. While the product is rather intuitive for someone already experienced in using windows-based products, for a computer neophyte this is a serious learning challenge. Fortunately, now the vendor offers a useful training manual and has revised the language of the online help menu. Even with these resources, given the sophistication of this product an MFI should not cut corners on training. To cost-effectively leverage the most from a system, users must be sufficiently trained and feel confident using the system.
- Training – MFI managers should communicate their training needs and participants' competencies to vendor's trainers as part of the purchasing negotiations to ensure that the best possible training is provided. Given the complexity and depth of this product, at least one week of training should be planned and budgeted for front-office users, and two to four weeks by back-office (for example, accounting) and information technology staff. Also, it would be prudent to budget an additional few days for vendor's trainers to remain onsite for answering questions immediately following the training period, presuming the data conversion will be commenced at that time. This may prove cost-effective in avoiding data entry errors and speed the conversion process.

#### REPORTING

- Built on a scaled-down full banking package, there is a very large menu of included standard reports, such as trial balance, general ledger, audit trail, delinquency, portfolio quality, and financial statements. Reports can be run over any user-defined period.
- Additional customized reports are not as easy to create and may even require technical assistance from vendor.
- At the time of the review, the one key report missing was the client profile, showing all client loan and savings information together.
- Reports contain all information in a similar format to CGAP and Microbanking Bulletin standard reports.
- Reports can be consolidated or disaggregated by branch, program, account, product, or loan officer.
- Report information can be exported into Excel for further trend analysis.

#### *Management Considerations*

- Reports – The MFI we visited had to request assistance in creating a new report listing complete account information for a given client on a single report. A new customer should specifically request this report, if has not already been added to the system.
- Exporting – The data in reports can be saved and exported to other applications, such as MS Excel, for manipulation or presentation of the information, but it is not known what the process requires. If this is a major requirement of an MFI, request export of the information needed as part of a live demonstration.

#### FINANCIAL STANDARDS AND COMPLIANCE

- No governmental agency or third party has reviewed or certified this product. Based on the reports it appears to follow GAAP principles. The software does not support French accounting standards.

- According to the vendor, there have been no issues to date with the product preventing an organization from producing information necessary to comply with regulations in the countries where it is currently installed. This was confirmed at least in the case of the MFI visited. SmartSol's flexibility in defining interest calculations and ratios (such as interest rates, portfolio aging, delinquency) should make it easy to configure the reporting to comply with government regulations.

#### *Management Considerations*

- Cash to Accrual – If switching from cash to accrual accounting basis, an MFI should strongly consider scheduling conversion from the old system to SmartSol in accordance with its fiscal year to simplify reconciliation and ensure accuracy of reports.
- Auditor Review – While there are no apparent problems with the accounting features of this product, as a proactive step before purchasing the software it is generally advised that an MFI have its external auditors review the application, and the reports generated by it, for approval.
- Regulatory Requirements – Depending on a country's regulatory requirements or banking system, the SmartSol product may not be sufficient as is, and could require customization before installing. Customization can be costly, so it is important for a manager to determine ahead of time what if any customization may be needed as part of the software selection due diligence process.

#### SYSTEM ADMINISTRATION AND TECHNICAL SUPPORT

- SmartSol has a very good security system, with various password levels. Transactions require a second user to authorize before posting. Breach of security would require password sharing or user collusion.
- While the new Windows version has not been in use by any client for more than a few months, SmartSol should prove to be robust and fault tolerant, as the product has been scaled down from a proven full banking system that has been deployed in many large installations for some time.
- User groups do not yet exist, but vendor plans to initiate this in the near future.
- Vendor has established partnerships with resellers in approximately 70 countries to provide technical assistance to clients, although these individuals have little experience with the new SmartSol product. No reseller existed for the MFI surveyed for this report, so the quality of the support is unknown.
- Where no reseller exists, user-level support can be sought directly from a vendor in Cape Town via e-mail or telephone. Technical system-level support may need to come from SmartSol programmers in the United Kingdom.

#### *Management Considerations*

- Local Technical Support – The vendor's local reseller partners have worked with the core Globus product only and have no history of supporting the SmartSol product. Furthermore, the MFI visited for this report having no in-country reseller, so it was not possible to judge the quality of this technical assistance of the network. Instead, installation, training, and support were provided directly from a vendor in South Africa. While it is possible that training and technical competencies are as good as or better than the vendor's, a prospective customer should make some effort to evaluate the local representatives before making a decision to use SmartSol.
- Data Conversion – Typically the most challenging aspect of installing a new information system is the conversion of the old data to the new system and being able to reconcile the information. An institution should run its old MIS in parallel with SmartSol for several months to ensure a smooth transition and prevent the loss of data from user errors. An ideal time to implement any

new MIS system would be to coincide with the beginning of the institution's fiscal year. In this way, end-of-year reports and audits can be run on one system, reducing the inevitable problems of reconciliation of data between the old and new systems. Because of SmartSol's many features, including tracking of nonfinancial client information, collateral tracking, and similar operations, complete optimization of the software may take longer than some simpler packages. Also, the MFI should consider creating a mini database file separate from the actual data files for testing and training.

- Installation – Installation can often go longer than planned due to unforeseen problems. Because the same vendor's staff typically conducts the installation and the training, management should consider negotiating a contingency plan as part of the software license to ensure additional installation time does not consume designated training time.

#### TECHNICAL SPECIFICATIONS

- SmartSol is designed to run across a Windows NT or Unix platform but can operate on a single personal computer. The software is recommended for high numbers of concurrent users.
- SmartSol uses a UniVerse Database which is SQL- and ODBC-compliant and can be merged with Oracle or other industry-standard databases.
- Data can be exported and viewed on Windows DDE/OLE-compliant software, such as Microsoft Excel.
- Further product research and development is based on market demand.
- SmartSol can manage accounting using up to 15 digits.
- Dates are in standard day/month/year format.

#### *Management Considerations*

- Product Design – Given that the core component of the software is defined by a previous product designed for the banking industry, which is much more standardized than the microfinance sector, certain types of changes may be more difficult to incorporate, thus requiring the MFI to be more flexible in aligning its processes and procedures with the software.
- Product Development – ABC Corporation (vendor) is the marketing side of the company, while ABC Technology Ltd. is the software development side of the partnership. ABC Corporation is therefore reliant on ABC Technology to resolve any product issues, which may or may not translate into a delayed response time between customer requests for modifications or major fixes and ABC Corporation's ability to respond.
- Number Rounding – For most MFIs, 15 digits for numbers is more than sufficient. If an MFI sees rounding as a potential problem—if not in the financial reporting then for the clients with very small loan and saving amounts—they should discuss with the developer possible customization.

## MICRO

### SUMMARY

#### *Pros*

- Breadth and depth of features are very high, including deposit/savings management, payroll management, an existing personal digital assistants (PDA) application, and more.
- The software design enables consolidation of information either by program, fund (donor), or branch (cost center).
- Offers a high degree of flexibility in defining financial products.
- The user interface is available in multiple languages—Spanish, English, Russian—and allows for user-defined entry, including Chinese characters.
- Software can be run as a standalone system, decentralized system, or across a centralized network. Plus it allows for two-way synchronization of databases running offline.
- The software includes a FoxPro database, but is already written to work with Oracle or an SQL server, allowing for unlimited scalability.
- With the proper communication connection, direct system support can be provided remotely via FTP, eliminating the need to send large database files back and forth, and reducing the need for site visits.
- Technical assistance via e-mail, fax, and phone is quite good, and generally very timely (factoring in time zone differences).

#### *Cons*

- The icon-based interface and sub-menus are not always consistent, making navigation somewhat challenging for a new user to learn. Drill-down capacity is limited or nonexistent.
- Online help and error messages were not yet translated from Spanish into English, making installation and conversion to the system difficult.
- User manuals are geared more to a technology person than general MFI staff.
- Training is provided in an informal manner as part of the software setup phase, and as of the time of this review, the trainer was not sufficiently fluent in English.
- The truly modular design of the software, while completely integrated in the system, requires users to actually launch a different application to work with each separate module.
- Technical support currently only comes from Guatemala, making site visits, if necessary, expensive outside of Central America.
- Allows for a limited number of digit places (11) requiring rounded accounting/portfolio for currencies that have lots of zeros.

### FUNCTIONALITY AND SCALABILITY

- Integrated package that includes portfolio, deposit, accounting, and treasury modules as core components.
- All items flow very easily to the accounting side of the software; however, making changes, even audited changes, can be painful.
- The strongest feature of this package is the system architecture that enables an MFI to track, report, consolidate, and view information either by program, fund (donor), or branch (cost center).



- The software application has a built-in database (Visual Foxpro), but works with SQL Server, Informix, or Oracle databases, allowing for significant growth in number of transactions and historical client data.
- Is an account-centric system, therefore supporting most lending methodologies, village banking groups, solidarity groups, and individual lending.
- The interface has more of a back-office orientation versus a teller-type interface, making it better suited for MFIs that are not collecting or disbursing deposits. However, an auxiliary module can be purchased for a teller environment.
- Has immense flexibility in loan and savings product types, terms, interest calculations, and payment frequencies.
- Can be run as a standalone system or across a network, and enables a branch setup either in realtime or batch mode.
- The Windows version is currently available in Spanish and English. However, as of December 2000, the English version is still missing the online help, has some error messages still in Spanish, and all code and data file names are in Spanish without a reference index.

### *Management Considerations*

- **New Product** – This product offers great diversity and flexibility in its features. However, because the Windows version of the product is so new to the marketplace, it is not a tried-and-true software application. MFI managers must be willing to work out any bugs that may arise given the software’s potential implementation into a new and different organizational context.
- **Client Account Information** – Depending on the organization’s processes, not being able to see both the client loan and savings history together in the same window or report could be a problem. In a teller situation, this is a significant issue. For an organization using the software in more of a back-office manner, this probably does not matter because the person handling loan payments probably is not the person looking at saving transactions, at least in the same step.
- **Auxiliary Modules** – The MFI visited for the review was not using any of the auxiliary modules, so their performance is unknown. Moreover, because this is the first Windows version of this product with these additional modules, and the MFI visited was the first real user of the English version, it can be presumed that each module has a few glitches that probably still need to be flushed out and fixed.

### **USABILITY**

- Windows-based product with the familiarity of this type of screen layout. However, being the first version of the product, some of the windows still have glitches, such as not allowing the user to resize the screen—thereby hiding necessary buttons.
- Lacks quick and easy drill-down capacity when searching for a loan number or client number.
- An icon-based main menu makes the program less intimidating to new users, but discrepancies in the icon placement and some variance in activities under each icon across the different modules are a little confusing. Also, it is not always obvious which icon or tool is used to perform certain activities.
- End-of-day processing was somewhat cumbersome for the MFI visited for the review, but it appears to more dependent on how an MFI integrates its processes with the software than the software itself.
- Currently, training is not provided in a structured environment, but in a shadowing capacity as part of the implementation and conversion of the system. Also, the current trainers are not necessarily as fluent in English as needed to maximize the learning opportunity.

- Manuals exist in English and Spanish, but they are more for guiding operational assistance and then assisting a user to troubleshoot a problem, stepping the user through transactions, or helping the user better understand the underlying system design.

### *Management Considerations*

- User Interface – The slightly confusing interface when a user is one or two window levels into a specific module makes navigation challenging. Staff with a low level of technology or windows-style navigation experience may take longer to learn their way around the software application. This can translate into higher training costs or a longer period of lower productivity for the institution.
- EOP Processing – Automation in end-of-period processing is fundamental to really optimizing an information system and lowering labor costs. If the MICRO product is not able to provide a batch means of viewing and posting the journal entries to the ledger, it doesn't make sense for a high volume microfinance program to use this product.
- Training – It is critical for the successful implementation of any information system software that the users receive sufficient training on the product. If the designated trainer is not completely comfortable operating in the common business language of the microfinance organization, management should request a different trainer or consider using a translator. However, keep in mind that using a translator will lengthen the time of the training session and its expense. While it is tempting to take shortcuts with training because of the high up-front costs, it is never a wise choice. In the end the institution will pay more due to lower staff productivity. For larger institutions, in general, it may be necessary to develop inhouse user training materials, which could be expensive.
- Online Help – At the time of this report, the online help for the English version of the software was not completed, and error messages were still being displayed in Spanish. This created confusion for the MFI user, delayed appropriate response to the messages, and complicated the implementation process. The software vendor is in the process of cleaning up the English version, but managers should thoroughly review the product to ensure that these items have been sufficiently corrected.

### REPORTING

- High marks are given to the ease of reporting with this system. An internal report writer generates most of the standard reports recommended by CGAP and does allow for custom queries of data in the database.
- Additional reports that an MFI generates routinely can be generated requested as part of the installation, via the maintenance contract or with a report writer.

### *Management Considerations*

- Customized Reports – Printing may be an issue depending on the MFI's need for special reports, documents, or form formats—and with what frequency. If an MFI is not flexible enough to adjust to the standard reports provided, it is possible to use the two hours of programming time per month available through the maintenance contract to get customized reports or documents built in as standard formats.
- Exporting – The data in reports can be saved and exported to other applications, such as MS Word or MS excel, for manipulation or presentation of the information, but it is not known what the process requires. If this is a major requirement of an MFI, request export of the information needed as part of a live demonstration.

## FINANCIAL STANDARDS AND COMPLIANCE

- While no governmental agency or third party has reviewed or certified this product, the vendor certifies that the accounting module complies with international accounting standards. The accounting module has been successfully installed in numerous institutions in 10 different countries, but does not handle the French accounting format at this stage.
- The vendor also certifies that there have been no issues to date with the product preventing an institution from complying with local regulations in the countries in which has been installed—the United States, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Ecuador, Haiti, Uganda, and South Africa. This was confirmed at least in the case of the MFI visited as part of the evaluation.

### *Management Considerations*

- Cash to Accrual – If switching from a cash to accrual accounting basis, an MFI should strongly consider scheduling conversion from the old system to MICRO in accordance with its fiscal year to simplify reconciliation and ensure accuracy of reports.
- Auditors – While there are no apparent problems with the accounting features of this product, as a proactive step before purchasing the software, it is generally advised that an MFI have its external auditors review the application, and the reports generated by it, for approval.
- Regulatory Requirements – Depending on a country’s regulatory requirements or banking system, the MICRO product might not be sufficient as is and so would require customization before installing. Customization can be costly, so it is important for a manager to determine ahead of time what, if any, customization may be needed as part of the software selection due diligence process.

## SYSTEM ADMINISTRATION AND TECHNICAL SUPPORT

- Responsive technical support system. According to the vendor, if an institution is in a similar time zone, the average response time to a request is one hour; otherwise, a response is provided within 24 hours. The MFI visited for this review was in a time zone eight hours ahead of the vendor and was sufficiently satisfied with the XYZ Corporation’s response time. Depending on the nature of the problem, most issues can be resolved in one to three days.
- Technical assistance (TA) is based in Guatemala; if you are in a similar time zone, feedback to an e-mail or voicemail request is provided within approximately an hour. If you are not in a relatively similar time zone (such as Africa or Asia to Central America), a response is generally returned to a request within 24 hours.
- If you have the communication capabilities, the vendor can log directly into your system to make changes or updates to the software application or database, eliminating the need for a site visit.
- Training for IT staff is basically on the job as part of the installation process. A more in-depth course would help the IT manager maintain the product over time. An organization using this software should have a system administrator inhouse, preferably one who has some accounting knowledge.
- Security in the software is quite good. The software requires every user to have a unique login ID and password, and creates an audit log trail on all actions taken with the system. As long as the company has a strong policy of users not sharing their passwords, this provides a powerful antifraud tool for the MFI. It also makes tracking problems or errors to a particular individual or center much easier.

- The system appears to be very robust and have a high fault tolerance. In the case of power loss or network crashes, depending on the database engine used, incomplete transactions can be captured.

### *Management Considerations*

- Technical Support – The only technical assistance office is in Central America. However, XYZ Corporation is currently supporting clients in Africa and has signed contracts to install in the Russian Federation in this calendar year. Despite the distance, the TA team seems to be very responsive through e-mail. If the MFI has Internet access and FTP capability, the vendor can provide the same level of support as being onsite at no extra cost. If not, the MFI may need to send the database back and forth, which can be a hassle and problematic.
- System Administrator – If an MFI intends to use the network version of the MICRO software, then, given the complexity of the software and installation, the MFI is strongly encouraged to have a dependable IT resource easily accessible, either on staff or contracted. It is the responsibility of the system administrator to track and troubleshoot any problems that may arise with the software, database, or the network.
- Data Conversion – Typically the most challenging aspect of installing a new information system is the conversion of the old data to the new system and being able to reconcile the information. Management cannot ask too many questions in this area. As part of configuration process, XYZ Corporation sends a questionnaire to the MFI that is very detailed regarding the MFI's current information system, organizational policies, and procedures. Failure to give this document its due time and attention can cost the MFI greatly in terms of staff time and adoption of the new system. To ensure the organization is fully prepared on time for the installation and conversion, it is recommended that the MFI maximize the two days of diagnostic evaluation and implementation planning offered by the vendor as part of the license agreement to flush out all the potential issues.
- Installation – Installation can often go longer than planned as a result of unforeseen problems. Because the same person typically does the installation and the training, management should negotiate a contingency plan as part of the contract to ensure additional installation time does not consume designated training time.
- Backup Procedures – The software does not come with any automatic backup utilities, so the MFI needs to put in place its own backup procedures for the database. If one of the transactional databases is used with the application, some of this functionality is typically included with the database.

### TECHNICAL SPECIFICATIONS

- Is developed with a very flexible development tool, Genexus, which enables easy translation into other software languages and the development of additional modules. This enables the vendor to stay on the edge as new technology is developed.
- The core system structure is designed to allow for organizing information according to branch, fund, or program.
- Performance of system is quite good as long as the correct hardware, network, and database requirements are met for the given number of concurrent users.
- Future development of the product includes expansion of functionality, improvement of current features, and conversion to other languages, such as Russian.
- Currently, the system only supports 11 digits and then rounds up, which is not necessarily a problem, just an inconvenience for an MFI operating in a country with highly inflationary currency.

### *Management Considerations*

- Database – The database chosen will greatly impact the scalability and performance of the system. Managers should discuss with the XYZ Corporation the number of active loans and historical loans that will need to be converted to the new system, and what volume of loans they expect to handle in the upcoming three to five years to determine which database is most appropriate.
- Product Development – The Genexus-type of intelligent development tool enables the vendor to stay current with new technologies, which makes it easier for microfinance institutions to incorporate new technology into their businesses with minimal costs. This also helps to ensure that the product that has been purchased will not become obsolete before an institution has fully depreciated the asset. The advantages of using this type of development tool and process cannot be underscored enough. This product’s flexibility enables it to be run on different platforms, according to the requirements and resources of each institution. Furthermore, the same software can be used in a large or small institution, with the capacity for growth and easy adaptation to new technologies as they evolve.
- Number Rounding – The rounding can be a potential problem for some organizations—if not in the financial reporting, for the clients with the very small loan and saving amounts. If need be, XYZ Corporation said it could make changes to accommodate more than 11 digits.

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## **ELOAN TRACKER**

### **SUMMARY**

#### *Pros*

- Very user-friendly application, including interface and navigation, configuration, backup/recovery, and online help menu.
- Requires a very low level of inhouse IT capacity to install and maintain.
- Decentralized database design for MFIs working with poor communications and power infrastructure.
- High degree of compatibility with third-party applications, such as other accounting programs, MS Excel, and Adobe.
- Comprehensive list of 100 built-in reports.
- Very responsive development team if bugs are found or additional features are requested through the online users group.
- Inexpensive price is difficult to beat.

#### *Cons*

- No accrual accounting.
- User interface is only available in English.
- Limited scalability of the database and limited flexibility in defining financial products minimize its expandability with institutional growth.
- The accounting module does not provide any automatic adjustment for inflation or subsidies.
- Outside of Uganda, limited technical support is available. Users are more dependent on the online users group and their own IT resources.

- Training is available in a classroom environment with a standard agenda, but only copies of the online help menu are provided for the participants, and the quality of the trainer(s) is unknown.

#### FUNCTIONALITY AND SCALABILITY

##### **Accounting**

- Includes general ledger and nonportfolio accounting functionality that is seamlessly integrated with portfolio and client information modules.
- Cash-basis accounting only.
- Chart of accounts structure defined by system; accounts can be user defined within framework or mapped if necessary to conform to a different framework for reporting.
- Cost/profitability analysis is available by period, branch, product, or fund.

##### **Loan Portfolio Management**

- Suitable for individual and village banking or solidarity group lending, usable also for Grameen lending model where individual group members have staggered disbursements.
- User-defined parameters for delinquency, aging, and loss provisioning.
- User-defined loan product conditions.
- User-defined interest calculations for both savings and loan products.
- Tracks individual, group, and business information for loans and saving products.
- Tracks cash and noncash collateral.
- Tracks portfolio by client type, credit officers, fund, branches, products, location, business type.
- Authorization levels can be set for loan disbursal.
- Lacks credit-scoring or actuarial functionality.
- Automatic audit trail created for transactions deleted or edited.

##### **Savings/Deposit Management**

- Tracks voluntary savings separately from compulsory savings and loan guarantee deposits.
- Term deposits cannot be tracked.

##### **Client Relationship Management**

- Does not have built-in functionality for marketing, and only a couple of user-definable fields for client impact information tracking.
- Contains a client share-tracking functionality for cooperatives and credit unions.
- Application is available in English, or with French translation of help menu.
- No multicurrency capabilities.

#### *Management Considerations*

- Accounting Features – eLoan Tracker’s accounting module performs basic functions including general ledger and nonportfolio income and expenses. However, it does not automatically track overhead, provide asset and liability management facilities, or manage payroll. A user may wish to augment eLoan Tracker’s functionality in these areas using Excel and/or an inexpensive third-party accounting package.
- Accrual, Inflation, and Subsidies – eLoan Tracker’s built-in chart of accounts does not already include predefined accounts for these. MFIs currently accounting on an accrual basis, or wishing to move toward standard banking practices, may find this to be a serious limitation. The software will not automatically adjust for inflation, so it must be done manually through journal entries as often as is prudent. MFIs receiving donor subsidies should have accounts for these adjustments added as part of the configuration and installation process.

- Loan Products – eLoan Tracker can only support one group lending model per installation; therefore, an MFI may need to purchase additional installations if it operates with multiple group lending methodologies.
- Savings Products – eLoan Tracker cannot manage term deposits at present. MFIs that offer these products will need to track them in a separate application.
- Data Entry – Transactions are posted directly to the accounting side of the software, providing no opportunity to catch simple data entry errors prior to posting. Therefore, management must exercise due diligence and regularly review transactions for accuracy.
- Compatibility with other Applications – As eLoan Tracker can be exported into other third-party accounting packages, an MFI may be able to take advantage of eLoan Tracker’s portfolio features without the necessity of changing accounting software. eLoan Tracker’s ability to export reports to, and import limited portfolio information from Excel, may make the process of data conversion one that can be phased in gradually. The additional purchase of the Foxfire report writing application allows an MFI to easily respond to various stakeholders’ needs for different reporting formats.

#### USABILITY

- Excellent user interface based on menu bar with text boxes that is found on top of every screen.
- Easy navigation with direct (single click) links between most screens/modules.
- Good drill-down retrieval of additional information with a minimum of clicks.
- Excellent comprehensive help menu written in nontechnical language (help menu only also in French).
- Easy to add products and set up parameters.
- Online users group for informational messages, customer feedback, and new release information.
- EFG Corporation’s user training needs some “sensitization” to users’ needs and learning styles.

#### *Management Considerations*

- User Training – eLoan Tracker is a relatively simple software application to learn for someone already familiar with using a computer, the windows style environment, and database or spreadsheets. However, for many smaller MFIs with a staff that has probably had minimal or no previous computer experience, there will be a slightly steeper learning curve. Implementation may take longer, but it is a good opportunity to build professional capacity across the organization. It is always a good idea for an MFI implementing new software to dedicate an in-house training person to work closely with the vendor to develop a detailed training plan that is appropriate for the specific needs of the MFI.
- Online Help – Issues with inadequate training are somewhat mitigated by eLoan Tracker’s good online help menu. Users who are comfortable with computers and accounting should be able to learn to use the software application with little training through the help menu.

#### REPORTING

- CGAP Standard financial reports built in; others can be user-configured, changed, or deactivated.
- Consolidated reports for multiple branches require purchase of additional “corporate” application installation.
- Reports can be user-generated by exporting data as PDF (Adobe), DBF (FoxPro), Excel, or text files.

- Real customization, using the advanced query utilities of the database, is only possible with Foxfire report generator, at extra cost.

#### *Management Considerations*

- Reports – eLoan Tracker has more than 100 built-in reports that are quite easy to produce in several formats. The software provides a variety of report parameters from which to choose. Still, modifications may be needed in some cases. An MFI can purchase the additional Foxfire report writer for this purpose or easily export the information to another application.
- Report Accuracy – While there are no known problems with the accuracy of eLoan Tracker's reports, these have never been verified in an exhaustive fashion.

#### FINANCIAL STANDARDS AND COMPLIANCE

- No governmental agency or third party has reviewed or certified this product. However, the vendor certifies that the accounting module complies with international accounting standards. The accounting module has been successfully installed in 40 institutions in different countries in East Africa, Eastern Europe, newly independent states (NIS), and the Caribbean, but does not handle some accounting standard formats (such as a specific accounts coding system) used in Francophone countries.
- The vendor also certifies that there have been no issues to date with the product preventing an institution from complying with local regulations in the countries in which it is installed.
- Cash-basis accounting only.
- Flexibility in defining financial ratios and configuring reports.
- Complies with CGAP's suggested reports and accounting guidelines.

#### *Management Considerations*

- Accounting – The accounting module does not handle accrual accounting, nor does it automatically track overhead, provide asset and liability management facilities, or manage payroll. If an MFI needs to report to a government authority or requires additional accounting features such as these, it is recommended that the MFI use a third-party accounting package.
- Auditors – Since eLoan Tracker reports have not been previously audited, an MFI interested in purchasing the software should exercise due diligence in looking at the package themselves with detailed knowledge of their own specific accounting needs and asking detailed questions of the vendor as part of the due diligence process. Additionally, it is generally advised that an MFI have its external auditors review the application, and the reports generated by it, for approval prior to purchasing the software.

#### SYSTEM ADMINISTRATION AND TECHNICAL SUPPORT

- Security levels can be set for loan product modification.
- Seven levels of user authority based on passwords.
- Menu items can be deactivated for any user level.
- Audit trail available if the accounting module is activated.
- Optional encryption tool available to protect database files from unauthorized access.
- Tracks deleted transactions.
- Can be set up to make backups compulsory when exiting program.
- Built-in backups for data files only. Full application backup requires reinstallation. Backup and recovery is simple and fast.
- No archival features.



- Logs errors in case of crash.
- Warns user when transactions not completed.
- Database validated by system at startup.
- No batch processing, transactions immediately posted.
- Day closure function reports day's transactions.
- Limited partnerships with third parties outside East Africa.
- EFG Corporation has only six staff members; most qualified support staff are often traveling.
- Rapid response to bug fixes and modifications, good communications of these through internet users support site.

#### *Management Considerations*

- Security – eLoan Tracker has pretty good security features. However, an MFI using eLoan Tracker should strongly consider using the optional database encryption tool, especially those who do not perform backups on a regular basis. Without this tool, the database is at significant risk of being copied, moved, or deleted through the Windows Explorer application. Also, there is no audit trail if an MFI has not activated the accounting module. Therefore, the module should be activated even if it is not used as the MFI's primary accounting tool.
- Backup – Crashes and other errors can be an inconvenience, rather than a catastrophe if eLoan Tracker is backed up properly on a daily basis. An MFI is advised to use optical media, such as a CD-R or CD-RW drive, for backing up the data because it holds large quantities of data, is reliable, relatively tolerant to heat and dust, and cost effective. Reusable CD-RW disks allow a generational backup; a different disk can be made for every day of the week.
- Version Control – EFG Corporation is quick to make needed software fixes soon after the problems are brought to the attention of the vendor. Patches can be downloaded through the users site. EFG Corporation also seems to create a new release with every new or minor modification that licensed users can obtain through the Internet. Frequent new versions could potentially cause confusion for an MFI with multiple installations (including use of the consolidated "corporate" version), as they would need to be concurrently updated. Scheduled or timed releases (once a quarter or every six months) with new core functionality could mitigate this problem and is a more standard method of software development. Where the MFI has no Internet access, or has a slow connection speed, arrangements can be made with EFG Corporation to ship the latest version via zip disk or CD.
- Technical Support – Limited technical support is provided by EFG Corporation because of its small staff size, especially outside East Africa. However, the stability of the product and active user site make it conceivable for an MFI with moderate to high internal IT support to use the software without much difficulty.

#### TECHNICAL SPECIFICATIONS

- Designed to operate either across a LAN network, peer-to-peer network or standalone.
- According to EFG Corporation, the system can manage up to approximately 15,000 active clients per branch, depending on data tracked.
- Minimal workstation hardware requirements.
- FoxPro database is a quality, industry-standard database for smaller applications.
- Handles 13 + 2 digits for currencies with lots of zeros.

#### *Management Considerations*

- Database – eLoan Tracker runs with a FoxPro database, which is recognized as a common and quality database program in the industry. However as a result of the entrance into the market of

a number of other databases with expanded size and functionality, FoxPro is becoming less common, particularly in the Web-based technology environment. Subsequently, it may be more difficult five years from now to find people willing to support the product. As long as EFG Corporation continues to upgrade its product in alignment with emerging technology, however, there should not be a problem.

- **Hardware Requirements** – eLoan Tracker runs on an inexpensive hardware platform, making it a preferred choice for institutions that have older or limited hardware currently and lack the resources to upgrade their hardware.

# Case Study

## Case Study Part 13: Developing an RFP/RFQ

Jan is unaware that Ms. Board Member has awarded a contract to a vendor, Legacy. She therefore proceeds with the next task—developing an RFP. She prepares a draft RFP for review by the task force. Each RFP, while slightly customized to a specific vendor (based on the information that was not clear or not available through the CGAP Consumer Report), contains questions in the following areas:

- General functionality (accounting, loan portfolio, savings)
- User resources and training
- Reporting
- Technical support and maintenance
- Installation and conversion process
- Technical specifications
- Product development history
- Company history and client referrals
- Cost of software, implementation, data conversion, consulting services, and maintenance contract

Jan attached a copy of FairFund's completed framework as a basis for the Terms of Reference (TOR) and to guide the vendors' responses.

Each RFP also requests that the vendor send a demo version of the software for FairFund's use, if they have not done so already.

As Jan is preparing this document, Chris and Ms. Board Member walk into her office with news of the commitment Ms. Board Member made to the Legacy representative. After some patient discussion, Jan, with the support of Chris, manages to convince Ms. Board Member to send the same questions to Legacy as they had sent to the other vendors. Based on the vendors' responses, they will make the final decision.



# Case Study

## Case Study Part 14: Final IS Software Recommendations

After reviewing the completed RFPs, the available software demos, conducting client interviews, and viewing live presentations conducted by the vendors in the FairFund offices, the task force discussed what it had learned. Following is a memo from the task force to the managing director summarizing the information it had gathered and the most important points used in evaluation. To Jan’s great relief, Legacy never followed through with an RFP or contacted them again.

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**MEMO**

To: Chris Castillo, Managing Director  
 From: Jan Loub, IS Manager, and the IS Task Force Leader  
 Date: January 2004  
 Re: Final IS Software Recommendations

All three vendors, XYZ Corporation, ABC Corporation, EFG Corporation, along with Legacy were sent an RFP to complete. The initial three vendors returned their responses within the time specified, and Legacy failed to return anything. The quality of the responses was quite good for ABC Corporation, a testament to their large marketing staff. XYZ Corporation’s responses were thorough, but the English was sometimes a little difficult to read, drawing concerns about the language skills of the technical support and training staff. EFG Corporation left some questions incomplete or vague. ABC Corporation and EFG Corporation had demos that could be downloaded from the web, but MICRO had only a PowerPoint description of the software to send. All vendors were able to provide a live, onsite demonstration of the software with a small trial database. And at least one client using each of the products was contacted regarding their usage of the product. In general, all references had favorable reviews for the software. Some of the discussions however did highlight some problems/challenges encountered with the software or the vendor.

A high-level summary of the responses to the RFP, discussions with other users, and the viewing of a demo and/or a live presentation are compiled in the following matrix.

FairFund Criteria	SmartSol	ELoanTracker	MICRO
Accounting system	Very strong and flexible	Not sophisticated enough to produce reports by cost center	Flexible and complete; posting from loan portfolio to accounting module requires a specific user action, not automatic
Loan types	Can easily handle either, but really good at the individual lending	Can track individual and group loans, but not at the same time in the same version, creating a great deal of effort for consolidation and other work-around solutions	Can easily handle either, but really good at the group lending

Case Study Part 14: Final IS Software Recommendations

FairFund Criteria	SmartSol	ELoanTracker	MICRO
Data entry	Extremely intuitive interface, very easy for data entry work, but intended for teller environment and individual loan payments	Very simple and easy to learn, good for back-office batch entering of data	Good interface for batch inputting group/center information, more back-office type interface than teller, but overall interface can be confusing or a bit clunky
Reporting	Good standard reports, allows for quite a bit of ad hoc queries, creation of new standard reports requires vendor action	Lots of good standard reports, and exports easily enough to excel for custom reports	Has good array of standard reports, requires users to go into the appropriate module to select a report as they are not all in the same menu interface
Number handling	Not a problem	Not a problem	Not a problem
Cost	Somewhat higher than was budgeted	Much lower than budgeted	About what was budgeted
Multicurrency	Handles fine	Doesn't handle multicurrency	Can handle, but not straightforward
Future Products	Includes savings and deposit monitoring functionality, a feature not needed for three or four years	Limited flexibility for diverse types of loan products, and offers no serious savings/deposit system	Offers additional savings/deposit module
Training	Training adequate, but paid for separately; could reduce costs with TOT system	Training not provided, manual only	Mixed reviews, excellent to average, at times difficult to understand trainer
Location of TA	TA office very nearby, but not in-country	Minimal TA provided, long distance away	Excellent TA with FTP capacity, and close distance to local TA office
Other	Can store client signatures and photo ID in digital form	Very short conversion process	Can store client signatures and photo ID in digital form; offers a payroll module that can be purchased when necessary, as well as a palm pilot application

Although other factors were taken into consideration during the evaluation process, the bulk of the task force's decision making focused on the core issues articulated in this memo.

# Case Study

## Case Study Part 15: FairFund Begins Implementation

With Chris's OK, and the full support of the senior management team, Jan proceeded to purchase the MICRO software from XYZ Corporation. In the end, FairFund purchased the MICRO product because of the price, its easy tracking of group information as well as individual information, and the ability to add modules on over time as they became important for FairFund. It was hard choice compared to the SmartSol product, but the SmartSol price seemed too expensive for the percentage of the features that FairFund would actually use in the next three to five years. On a sufficient number of the requirements, the MICRO product matched SmartSol's capabilities, and in a few cases it even provided an important future option not available with SmartSol.

To determine the final price to implement the system, FairFund had to create a high-level plan for the installing the hardware and software, converting the data, establishing controls, and training employees. Luckily, MICRO provided them with a rather detailed list of questions to help guide them in the creation of the plan and making key decisions.

Among the team members, it was decided that the hardware and software would first be installed in the central office and the branch office closest to the central office. Felix would be responsible for ordering all the necessary hardware and software and getting everything set up. After hardware was set up, software installed, and configuration complete in those two locations, they could test the system to ensure that the chart of accounts had been set up accurately and the accounting system was properly generating financial statements. Subsequently, they could begin entering data for an entire branch into the system to test their data conversion assumptions and to perfect the best method of conducting the data conversion. Training for the staff of these two offices would be the first priority, and they would do it onsite at the central office.

Upon successful installation and testing, FairFund would roll out the software to three additional branches, and two months after that to the remaining three branches. FairFund could then use the initial branch staff along with the main trainer to deliver training to the rest of the six branches. This would mean that the later a branch was to come online, the more historical data it would have to enter to have the complete fiscal year in the system. However, it was expected that they would become adept with the process and be able to do it faster as time went on.

Two months later...

Jan is exhausted from coming to work early and staying late for weeks now. While there haven't been any catastrophic problems in the implementation process, there have been constant little fires to put out, and the scheduled timeline has slipped almost two weeks. For example, the network Felix set up wasn't sufficiently stable before the new software was loaded. When the MICRO software was first installed, the system kept crashing, and the engineers could not figure out if it was the software or the network.

The data conversion seemed to be going OK and on schedule, but then it turned out they had not been entering the individual loan accounts—only the group accounts. In addition, the balances being reported were significantly off from those calculated using the paper system. A month after the branch started the process, Jan heard from the branch staff that they were not at all confident about how to use the software and shy about asking. In addition, they were unclear about how long they should keep both the old and new tracking systems going, when to begin putting the new loan payments and so forth in the system versus the historical information. While running both systems in parallel was more

## *Case Study Part 15: FairFund Begins Implementation*

than a full-time effort for the staff of the two offices, some individuals were beginning to get worried that they would be laid off when the conversion was complete; consequently, they were dragging the process out to keep their jobs longer.

Jan relayed her frustrations to the vendor, but he indicated that FairFund's implementation was going better than most, and that all implementations fell off schedule to some degree because "something always goes wrong. You just have to plan as best you can and roll with the waves," he said. While Jan found this somewhat comforting, she still thought like there were lessons to be learned from the experience of others in this process. And it didn't help her resolve the issue of rescheduling the vendor followup visits and the training for the other branches. At least most of the staff were still very excited about the system, and many were glad to get the opportunity to learn computer skills. The accounting staff were already thinking of new reports they could develop with the new system, ones that had not been thought of previously. Clients were even commenting about the office being more professional with the computer system. The major challenge still lay ahead—getting all other six branches successfully trained and online. At least they were working out the kinks at just one branch, instead of multiple branches. Jan knew she couldn't handle that type of process.



# Case Study

## Case Study Part 16: Implementation Continues

Throughout this entire project, Jan had been taking notes in a journal in order to remember the challenging aspects of the process. As she began to revise the plan for rolling out to the other six branches, she was reviewing her notes to see how they might better move forward.

The type and amount of training seemed to be an issue for some employees, and to correspond with certain jobs. Perhaps conducting a short employee survey to determine previous experience with computers, accounting principles, and FairFund's loan process would help.

Also, it seemed important to inform staff of how their jobs would change during and after the conversion period to alleviate their fears and increase their excitement about the new system.

She would need to work with the branch managers to redefine the roles at the branch level. It was clearly better to train in smaller groups, job-specific, if possible, and provide followup training a week later to see what had been learned and what had been missed.

Entering historical information from the written ledgers into Excel spreadsheets first and then importing into the new system seemed a much safer and easier means of conducting the data conversion. All the balances could be electronically calculated and checked, to ensure that only correct data were getting put into the new system. Plus, it gave more employees the opportunity to learn how to use the Excel tool.

Felix was overwhelmed with ordering, setting up, and transferring the new computers to each branch. Jan would need to develop a better way to balance Felix's work and timing for hardware setup. In addition, neither the central office nor the branch had really begun following the rigorous backup procedures that had been developed. More emphasis would be needed on this in the training sessions, along with periodic surprise checks to ensure proper backup was being done. She would talk to the internal auditor to see about how to incorporate that into FairFund's existing quality control methods.



# Case Study

## **Case Study Part 17: Identifying Ways to Optimize and Maintain the System**

Following the successful completion of FairFund's implementation process, the organization seems to be benefiting from the new system.

However, two months after the implementation was completed, during a branch site visit the internal auditor noticed Asha, a branch employee, sitting at her desk sketching. When asked why she wasn't working, Asha responded that the new information system enabled her to complete her daily tasks in two-thirds the time. Because she would not receive any more papers to process until the next day, she wanted to make use of the time until she went home.

Later that week at another branch, the same internal auditor noticed an employee writing a report by hand, and cross-checking information on an old report format. When asked why he was still working under the old system, he replied that he had enough time to do both and that he wasn't confident in the new system. It was still too early to tell if the information would be accurate.

Six months after the implementation was completed with all seven branches, Jan, now the director of the IS department, sent a memo to all senior managers reminding them of some of the functionality that MICRO offered, but which to date was not being utilized. She offered her services to help evaluate how the branches or departments might use these features.

Nine months later, the loan supervisor approached Jan about creating an alternative individual loan product, one with slightly different conditions and requirements. She wanted to pilot the new product in three select branches and cross-compare the performance of the product with the existing product in those same regions. The new product was created based on feedback received from clients during focus group sessions. She wanted to discuss with Jan the best way to use the new system to ensure they were able to track all the necessary information correctly.

One year later, per the plan set up by the task force, Jan and Felix conducted an evaluation of the entire system to see how well it was meeting the objectives outlined in the initial phase of the project. While some of these had been monitored monthly from the beginning, other indicators were only being looked at every six months to allow time for relevant improvement. It was also time to renew the annual maintenance contract with the vendor, so Jan wanted to hear from the employees on the quality of the support they had been receiving. For the most part, Felix seemed very satisfied with their responses to issues.