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A Toolkit For

Process Mapping for MFIs

September 2008

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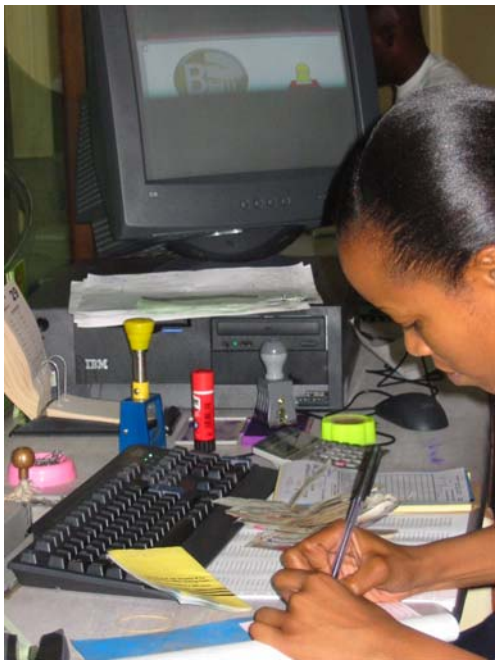

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OVERVIEW

Process mapping was introduced in the "Toolkit For Institutional and Product Development Risk Analysis for MFIs" as a method for assessing adequacy of internal controls in procedures developed to support new products, and, more significantly, as a tool for incorporating a risk management approach to internal controls into processes.

The technique of process mapping, however, was not developed or explained. This toolkit has been created to fill this gap by providing a foundation in process mapping itself and its broad applicability to many MFI processes, as well as addressing specifically the use of process mapping for implementing risk management strategies using *MicroSave's* integrated risk management process mapping technique.

Process mapping is a skill that can be learned fairly easily, given proper instruction and sufficient time. Deriving the full benefits of process mapping, however, is a discipline, in the same way that accounting, auditing, and lending are disciplines. Provided that MFI management is willing to implement the changes proposed, a process mapper's ability to analyse a properly constructed map and recommend institutional improvements can result in enormous gains in efficiency, customer satisfaction, market share and profitability. If process mapping can have such a profound effect on an organisation, it seems only logical that it should become an integral part of the organisation's methodologies.

One other compelling reason to use process mapping is because it can help create a **sustainable competitive advantage** for the MFI, on which the long term existence of an enterprise is dependent. Competitive advantages created from highly efficient and integrated processes are far more sustainable than those arising from discrete activities or "core" competencies.

Competitors have a much harder time competing against integrated processes because rivals must match the **whole system**, not just a part. Also, matching particular services or features can involve a high cost and building the system is difficult organisationally. Thus, in order to continue to compete and win, MFIs will need to continually integrate, improve and streamline processes. Hence, building in-house capabilities in process mapping is vital and it will help the organisation achieve continual process improvement.

However, for process mapping to succeed, it will need to have the following characteristics:

- It must focus on the needs of the customer
- All work must be treated as part of a process
- Continuous process improvement should be a standard/norm
- Processes should only be improved by gathering facts and data
- Everyone should be involved with continuous improvement of the process and committed to this philosophy in totality
- Senior management must lead through active management

WHAT CAN BE LEARNED FROM PROCESS MAPPING?

Process *mapping* is the first step of process management. It uses tools that enable an MFI to document, analyse, improve, streamline, and redesign the way it works. Armed with a thorough understanding of the *inputs*, *outputs*, and interrelationships within each *process*, an MFI can:

- Understand how processes interact in its business system.
- Locate process flaws that are creating systemic problems (such as a high incidence of teller fraud, long lines at many branches, or poor quality of customer service).
- Identify process flaws that subject the MFI to unnecessary risk that could be avoided at a reasonable cost.
- Identify internal controls within processes that serve as risk mitigating strategies.
- Determine which activities add value for the organization and which add value for the *customers.*
- Increase efficiency by streamlining and improving workflows.
- Identify processes that need to be reengineered.

There are many types of *process maps*, each with very specific characteristics and uses. For the purposes of this toolkit, "process map" will mean "flowchart." The toolkit will use modified standard flowchart symbols to depict the *process* as fundamentally and generically as possible. Words in *italics* are defined in the Glossary of Terms.

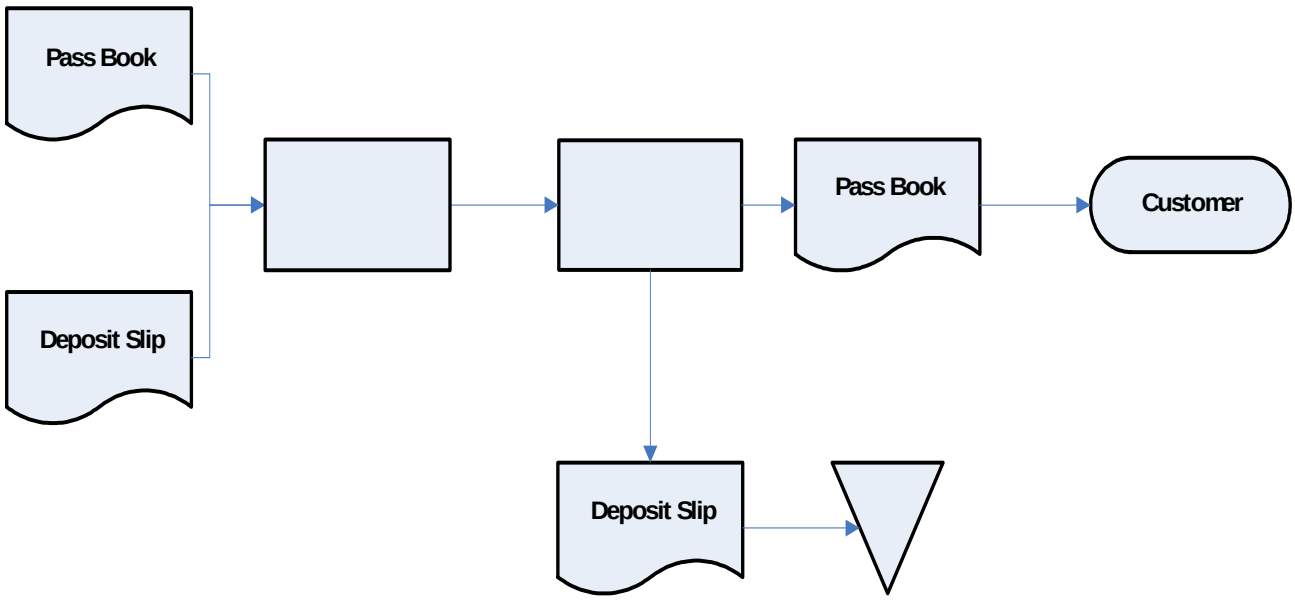
WHAT IS PROCESS MAPPING?

Process *mapping* is a simple yet powerful method of looking beyond functional activities, such as marketing or accounting, to reveal an organisation's core processes and discover how its different parts work together to serve customers. *Process maps* enable us to peel away the complexity of an institution's organisational structure (and internal politics) to focus on the processes that are truly the heart of a business.

Process mapping is thus a valuable communications tool, a strategic business planning tool, and an analytical management tool. A process map enables an MFI to compile data about the processes in place so that they can be analysed.

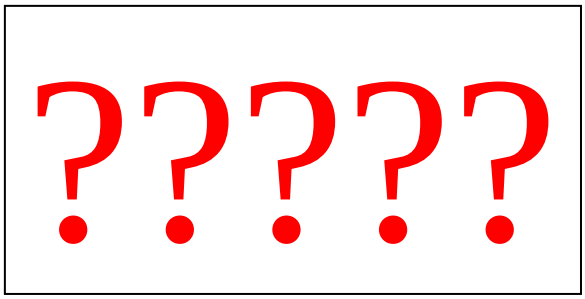
The ultimate objective of process mapping is to understand a *process* as it is currently performed, and to improve it. Process mapping gathers, organises, and displays facts about the processes, so that knowledgeable people can study and streamline them. It is also a very useful way for identifying areas of risk in any transaction or process.

A *process map* is a visual representation of a process, within specified *boundaries*, that uses symbols and arrows to display *inputs*, *outputs*, tasks performed, and task sequence.



For each step throughout the process, these lines and symbols are accompanied by concise wording that tells the reader:

- What is happening?
- When it is happening?
- Who is doing it?
- Where it is happening?
- How long does it take?
- How is it being done?
- Why is it being done?



The degree to which these questions are answered will vary depending on the type of process map that is chosen to be used (see **"Step 6, Constructing Various Types of Maps", Page 23)**.

WHERE CAN PROCESS MAPPING BE USED?

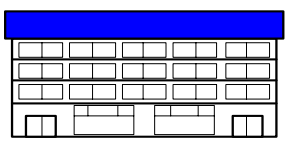
Process mapping is not restricted in its usage. In fact, it has broad applicability to many business functions. While the focus in this toolkit is on understanding, documenting, and analysing processes in an MFI, process maps can also be used as follows in specific areas:

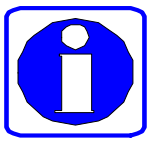
▪ Develop and document risk management strategies.	Risk management and reduction
▪ Create a detailed activity dictionary as the initial step for an activity-based costing system.	Costing and pricing exercise
▪ Orient and train new employees.	Training/HRD
▪ Evaluate or establish alternative ways to organise people to get the work done.	Specialisation and knowledge/HR
▪ Become knowledgeable quickly about what a group, team, or department provides to the rest of the organisation (and vice versa).	Work flow organisation
▪ Identify improvement opportunities.	Quality and improvement
▪ Evaluate, establish, and/or strengthen performance measures.	Performance/HR
▪ Establish and document best practices.	Best practices
▪ Identify "quick-win" opportunities.	Competitive strategies
▪ Create training and reference manuals.	Development of Training/Reference Manuals
▪ Create detailed and easy to follow policies and procedures manuals.	Systems, Policies and Procedure Manuals
▪ Gather process-related information and create a static model in preparation for simulation projects.	Model building and simulation
▪ Visualise future-state processes before changing current-state processes or making major capital investments.	Simulation and sensitivity analysis
▪ Ensure effective integration of business operations, including formation of common business practices and understanding of system platforms.	System integration
▪ Reduce many types of risk, including: reputation risk, fraud, operating errors, human-resource-related risk, and systems failure.	Institutional and product risk analysis
▪ New Product Development Cycle:	New Product Development
▪ Design "should be" procedures during pre-pilot phase	Pilot Testing
▪ At end of pilot test, map "as-is" to detect deviations from "should be".	Evaluation and assessment
▪ "As-is" as part of Continuous Assessment	Evaluation and assessment
▪ Staff training at rollout	Product Rollout
▪ Pre-pilot training	Pilot Testing
▪ Benchmark and standardise for staff incentive schemes, performance analysis etc.	Benchmarking and standardisation

Uses of Process Mapping at Equity Building Society

Equity Building Society in Nairobi, Kenya eagerly embraced the concept of process mapping as core to a massive undertaking to document all procedures within the organization, using MicroSave's risk management process mapping format. A cross-functional team of 14 staff members was trained in process mapping. Staff were drawn from head office as well as branches, and represented the Marketing, Internal Audit, Credit, Finance, Human Resource, IT departments. Staff levels represented encompassed a range from senior management (Credit, Finance, Internal Audit Managers), to Assistant Branch Manager, to line staff. In addition to the main procedures, project team members identified additional uses for process mapping within Equity:

- Costing
- Marketing: new product development cycle
- Training for new staff as well as trainer notes, and trainer of trainers
- Audit planning
- Standardization: uniformity of procedures
- Compliance tests in audit
- Communicating the advertising process
- Documenting all processes
- Problem-solving tool
- Communication tool, both internal and external (e.g., auditors)
- Performance evaluation tool





WHY USE PROCESS MAPPING?[1]

Process maps provide a common language or reference point when dealing with a project or *process*. By depicting a process visually, a *process map* can help to quickly identify bottlenecks and other points where a process can be streamlined or improved.

The purpose of process mapping is to achieve a better understanding of an organisation. An MFI is a collection of processes—the natural business activities that produce value, serve customers, and generate income. Managing these processes is the key to success. Process *mapping* is one of the fastest ways to lower errors, increase productivity, and improve customer service.

Process maps help make work visible. Increased visibility improves communication and understanding, and provides a common frame of reference for those involved with the work process. Maps are often used to reveal how work is currently done in an organisation, making it easy for front line staff (such as tellers and loan officers) to work with their supervisors to identify problem areas. A process map is a snapshot that shows the specific combination of functions, steps, *inputs*, and *outputs* that an organisation uses to provide value to its *customers*. For example, a manager wishing to decrease customer complaints about long lines could use a flowchart to document current customer service pathways and identify areas for improvement. Analysis of the processes depicted by process maps can help increase customer satisfaction by identifying actions that will reduce process *cycle time*, decrease defects, lower costs, establish customer-driven process performance measures, reduce non-value-added steps, and increase productivity.

Process maps can also be used to show how work is required to be done in an MFI. Examining a map of a current process in terms of customer requirements—while also taking into account data on sources of customer-perceived value—will help create an alternative map illustrating new pathways that will provide

[1] Damelio, pp 1-9

value to customers. Process mapping, therefore, is also a crucial prerequisite for successful organisation design, process reengineering, and project benchmarking.

By using maps to understand how a given process impacts another process downstream, a set of measures can be established that will help the entire organisation manage its operations in real time (rather than simply relying on a final output measure). Process maps can also help determine where to place in-process measures. Such measures will permit the ensuring of end-of-output quality by controlling key variables associated with specific steps in the process—while the process is operating. This enables the measurement system to prevent defects, rather than merely detecting their presence.

A well-prepared process map:

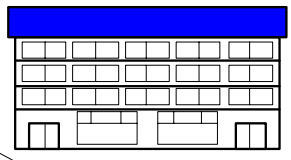
- Communicates process-related ideas, information, and data in an effective visual form.
- Identifies actual or ideal paths, revealing problem areas of risk and potential solutions.
- Breaks processes down into steps using consistent, easily understood symbols.
- Is inexpensive and quick to produce, and gives employees the opportunity to experience a shared
- view when they participate in constructing it.
- Shows intricate connections and sequences clearly.
- Aids in critical business communication, problem-solving, and decision-making processes.
- Permits immediate identification of any element of the process.

Promotes understanding of a process in a way that written procedures cannot. One good process map can replace pages of words.

Uganda Microfinance Union: Process Mapping and Product Development

Uganda Microfinance Union wanted to develop a savings product for its members . It carried out research to define the product and preparations continued to develop the detailed product . However, when a MicroSave team visited an UMU branch it quickly became clear that service time would be an issue . Process mapping was used to examine the cause of lengthy cycle time .

The resultant process mapping identified key back office processes , which included batch processing of transactions , identification of ledger cards and supervisor approvals added significantly to service time . Although approvals to the process were proposed , it was decided to delay the introduction of the Express Savings product until branch operations were computerised and a much quicker product could be offered to customers .



The Process: As Is, Should Be, and Could Be[2]

Process mapping provides a critical assessment of what really happens at an MFI. The goal is to define three process states: as-is, should be, and could be.

"AS IS"

The "as-is" state is how the work is currently being performed. In any journey, it is important to know where one is before attempting to head off in a new direction. Some reengineering efforts fail because managers and consultants reach for dramatic breakthroughs without understanding how (or why) current processes operate. Existing wisdom is an important foundation to build on. In addition, the most difficult part of transforming a *process* is persuading existing staff to recognise its latent inefficiencies and embrace the need for change. If the users of a process make this discovery while defining the "as-is" state, front-line staff will become the drivers of change, dramatically improving the prospects of successful implementation.

"SHOULD BE"

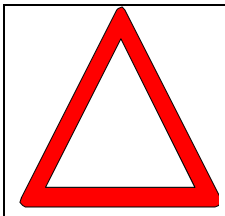
The "should be" is what Head Office usually thinks is happening at the frontline. In many (if not most) cases the "as is" at the front line in the branches will vary significantly from the "should be". **The "should be" state consists of the formally recommended state of performance.** Typically the "should be" is the documented in the Policies and Procedures manuals developed and distributed by the MFI's Head Office. To surpass this level of performance, a new "could be" process is required.

"COULD BE"

The "could be" state is a new level of performance that can be achieved via process redesign. In other words, if the existing process is streamlined and all rework, delays, bottlenecks, and assignable causes of variation removed, the "could be" state will be achieved. This state can be achieved over time with an effective Total Quality Management or continuous improvement programme. To get to this state, the MFI will need to examine opportunities to **C**ombine, **A**dapt, **R**un parallel, **E**liminate and **S**peed up processes. In the most extreme cases an enabler, such as new information technology, may be introduced to make the new process possible. For this reason, defining the "could be" state requires out-of-the-box thinking. **Achieving "could be" is what true reengineering is all about.**

Process maps are often used to record policies and procedures in procedures manuals. These process maps document what should happen, where it should happen, when it should happen, who should do it, how inputs and outputs should be handled, and represent the "should be" state. The "as is" state, on the other hand, documents what is really happening, how the procedures have in fact been implemented. The "as is" state may deviate from the "should be" state. By mapping an "as is" process and comparing the results to the "should be" procedures map, existing deviations can be identified. More significantly, once it is known as to what deviations exist, an attempt can be made to analyse why these deviations exist. Deviations could result in circumventions of internal controls intended to mitigate specific risks. The four-tiered *MicroSave* risk management process map will help to pinpoint the effect of these deviations in terms of risk exposure and compromised internal controls (see **"Step 6, Constructing Various Types of Maps", Page 23)**.

[2] Boehringer



A cautionary note: Change is always easy on paper. Creating a "should be" or "could be" process should have a significantly positive impact on an MFI's bottom line, but process is just one of five critical strategic areas that determine how an organisation functions. **The others are structure, leadership, people, and performance management**.[3] All of these elements are interdependent. If an attempt is made to improve a process but without considering personnel issues (such as training and culture) or performance-management issues (such as compensation), chances are that the efforts will eventually backfire.

The Benefits Of Process Mapping To Equity Bank

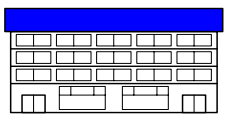
Equity decided to rework their policies and procedures for select processes through a process mapping exercise. The objective of process mapping was to standardise the application of policies and procedures, develop training guides and improve efficiency, effectiveness and internal control. With the assistance of a consultant Equity followed the participatory process outlined in ***MicroSave***'s process mapping toolkit to develop new procedures. The revised procedures were tested in two branches over the course of a month, and after modifications were rolled out to all branches.

Procedures were updated in all areas, and have led to improvements in cycle time in various activities as indicated in the following table. Cash transaction time increased slightly due to an extra procedure being introduced to improve internal control.

Activity	Pre-pilot	Post-pilot
Account opening	12.6 minutes	9.78 minutes
Cash transaction (time with cashier)	1.96 minutes	2.17 minutes
Cash transactions (total cycle time)	7.14 minutes	4.96 minutes
Magnetic cards	1 month	2 weeks

Standardisation and improvement of policies led to significant benefits to Equity, which included better risk management, better understanding and consistent application of policies and increased capacity to handle more business.

More efficient process flows resulted from user-friendly customer transaction forms and optimising the use of IT, human and other resources. The participatory nature of the process led to the identification and exploitation of 'quick win' opportunities, improvements in branch layout and enhanced customer service. Equity also took advantage of the mapping of processes to develop and improve staff induction, and training and reference manuals, which have increased staff knowledge, confidence and motivation.

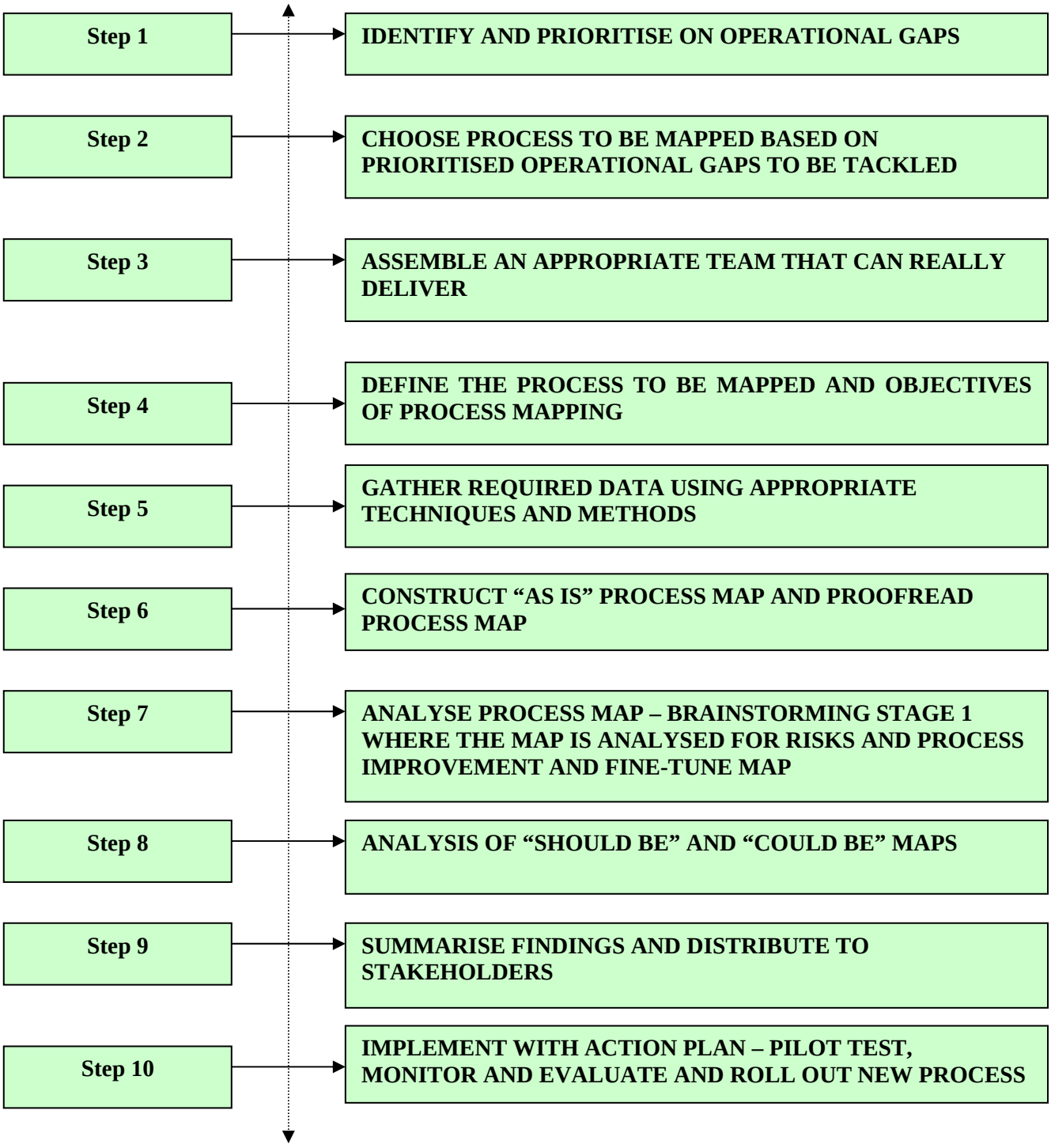


TP[3]PT For further discussion, see "Implementing Organizational Change, The Role of the Change Agent", by Robert Boehringer, HTUwww.odgroup.comTUH.

FORMULATING PROCESS MAPS

Properly used, *process maps* can change the entire approach to process improvement and business management. They will also greatly reduce the cost of operations by eliminating steps and identifying the root causes of systemic quality problems. The following steps (figure 1, below) outline how to use process mapping when a process is to be improved, including optimising it, mitigating uncovered risks and solving implementation problems. Figure 2, next page outlines these steps in detail.

FIGURE 1 - PROCESS MAPPING, SUGGESTED STEPS & DESCRIPTIONS



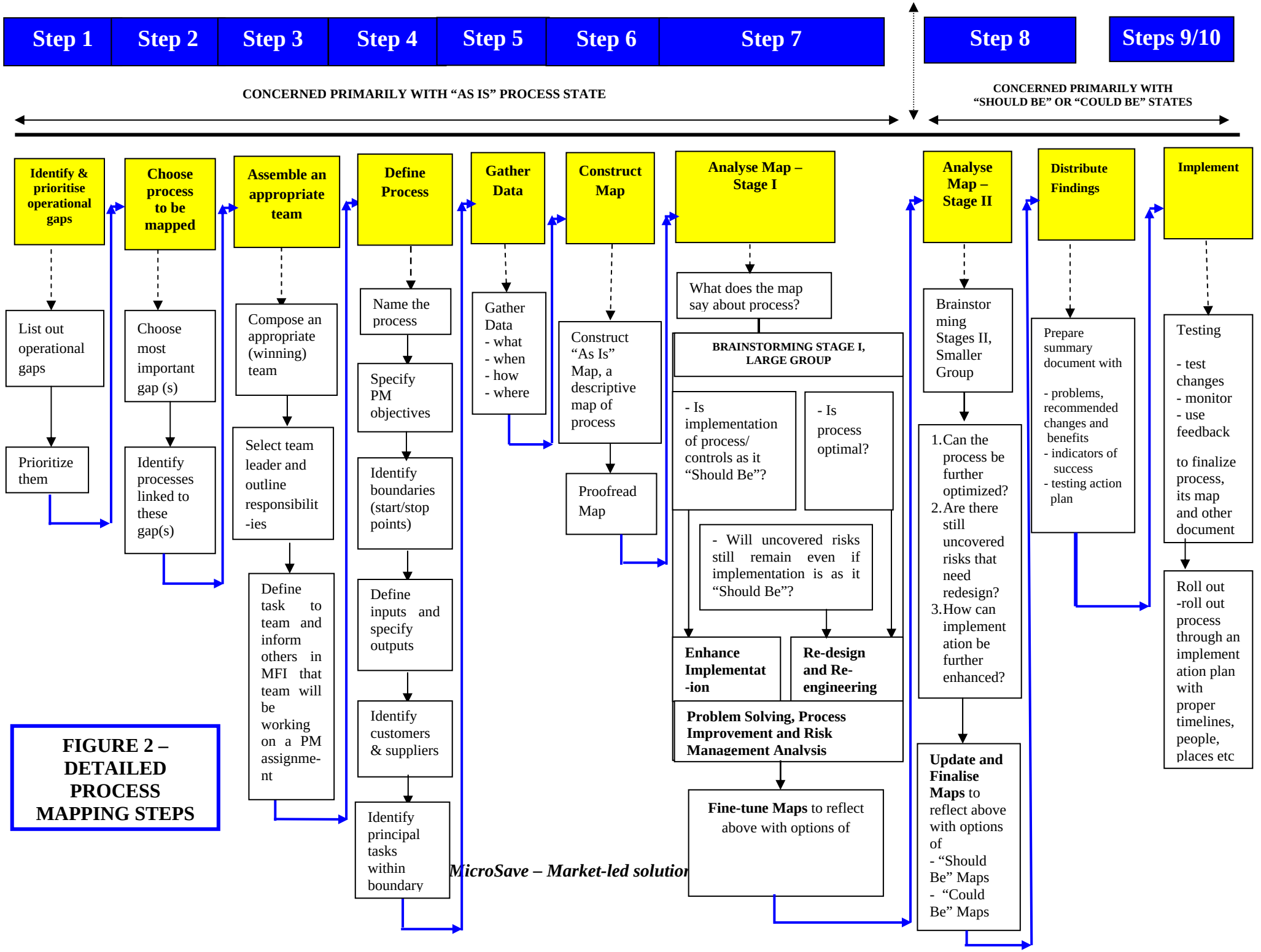


FIGURE 2 – DETAILED PROCESS MAPPING STEPS

WHAT IS THE TYPICAL TIME TAKEN FOR PROCESS MAPPING?

The time taken to document a process, and to produce a four level map naturally varies depending upon several factors:

- *Experience*: The level of experience of the process mapping team. A more experienced team will be quicker than a less experienced team. However, in most cases it is best to use any time saved to produce a better

- *Nature of the process being documented: Unsurprisingly* more complex processes take longer, as do processes that require extensive reengineering or enhancement of controls.

- *The level of detail produced in the maps*: Maps need to be sufficiently detailed to allow processes to be re-engineered, risks to be analyzed and risk mitigation strategies developed.

However, mapping a process will typically take between five and seven days.

Day	Stage	Tasks
Day 1 & 2	Information gathering interviews and observation	Interview with management staff to obtain overview and identify sub-processes Interviews / observation of operational staff to obtain detail
Day 2& 3	Construction of basic maps with description and consideration of process improvement	Interviews / observation of direct operational staff to obtain detail
Day 3 & 4	Validation of maps through validation interviews and reviews	Other operational management staff Review of files Possible external review at this stage
Day 3 & 4	Construction of "should be" maps	Review of policy and procedure manuals
Day 4 & 5	Risk Analysis and mitigation	Discussions with team and internal audit
Day 5 & 6	Validation of risk analysis and mitigation	Discussions with senior management
Day 5 & 6	External review of process maps	
Day 6 & 7	Construction of could be maps	Team, with input from operational management and audit
Day 7	Finalisation of report and presentation to Directors	Team and Directors

STEP 1 →	**BEGIN BY IDENTIFYING AND PRIORITISING OPERATIONAL GAPS**	OPERATIONAL GAPS

In order to identify and prioritise operational gaps, institutions should look to the broader context in which they operate, especially with regard to the following:

- **Evaluate client satisfaction**
  - Consult market research data - satisfaction surveys and market research
  - Use in-house client data - retention rates, drop out analysis etc.
- **Determine the institution's competitive position**
  - How does the institution compare with its competitors on financial metrics – growth, profit, prices, etc.?
  - How does the institution compare with its competitors on operational metrics – time to disburse loans? Wait time in branch? etc.
- **Benchmark against international standards**
  - Employ benchmarks from MBB, MicroRate and other relevant sources as may be appropriate

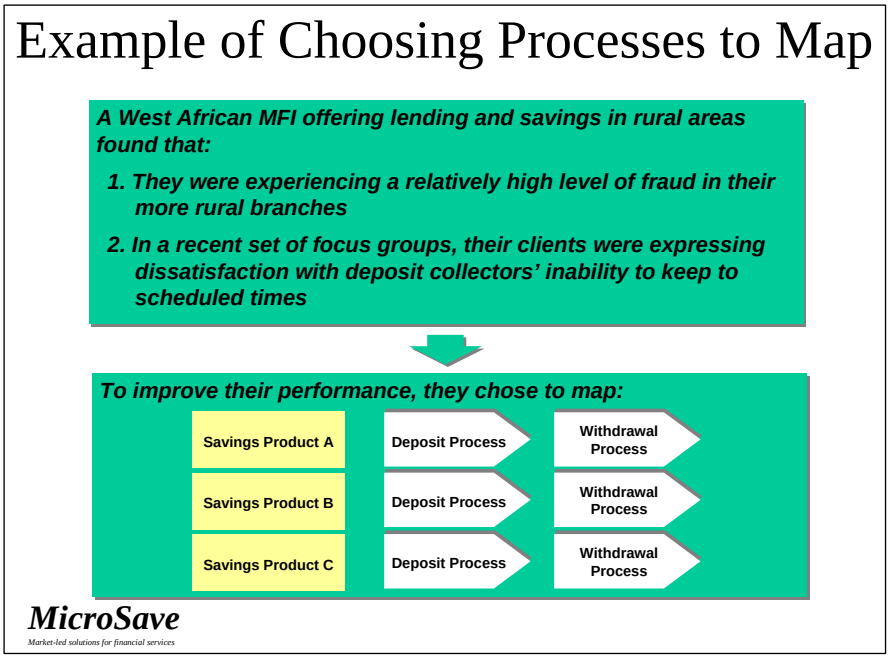
Microsave's market research for micro-finance toolkit could assist institutions in this process.

Client related data can be a very good source for identifying operational gaps.

Please refer to Market Research for MicroFinance, *MicroSave* Toolkit for further details on how to understand and measure client needs and satisfaction

STEP 2 →	CHOOSE PROCESS TO BE MAPPED	PROCESS

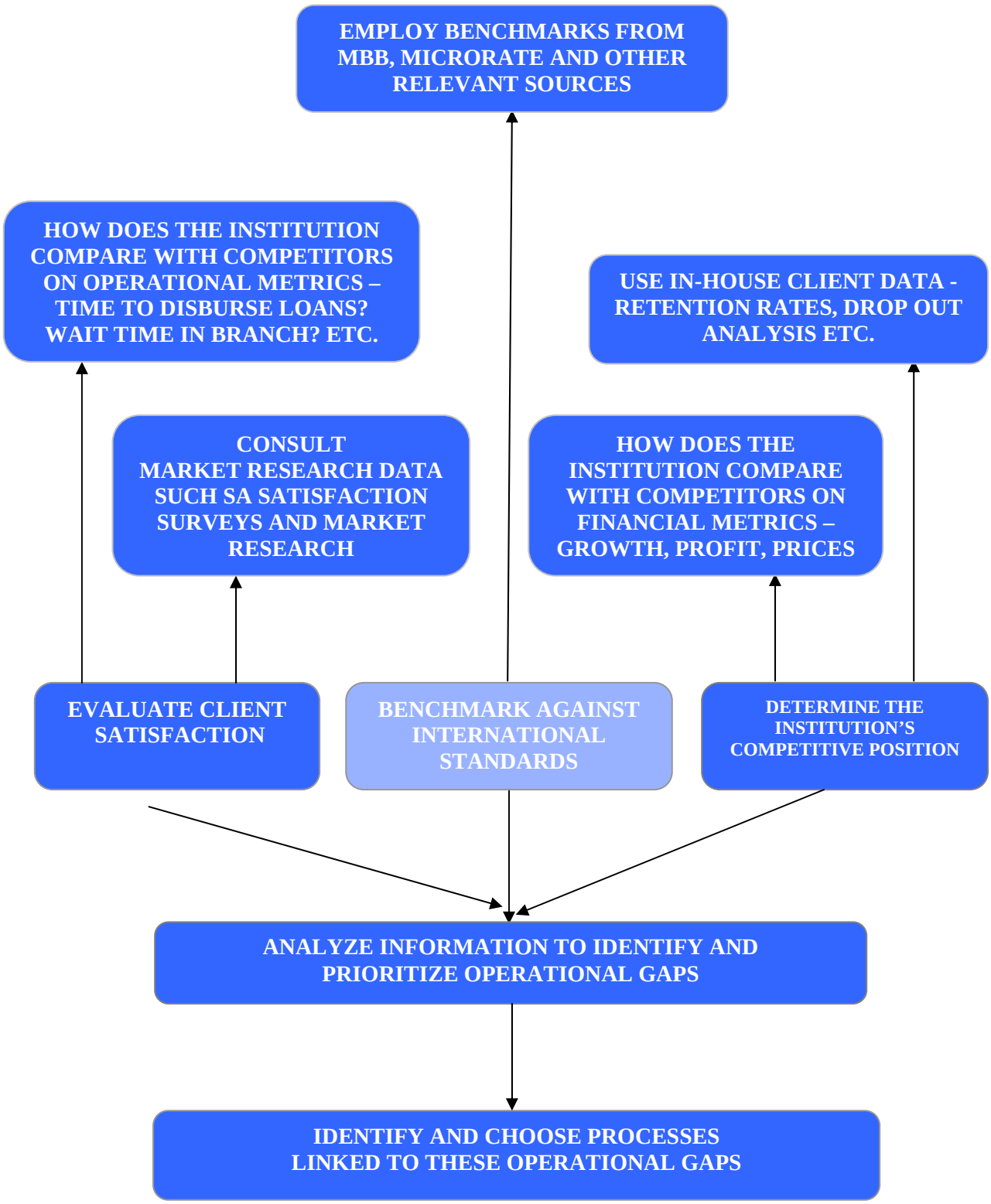
Isolate the most important operational gaps and identify process directly linked with these prioritised operational gaps. From these, choose the process that needs to be mapped on a priority basis. An example of choosing processes to map is given below



While several operational gaps may be actually identified, in real terms, they need to be prioritised. This would involve categorising the operational gaps in clusters, prioritising them and identifying common processes that impact these gaps. This methodology however need not be adopted if only one operational gap and associated processes are identified.

The above two steps have been diagrammed in Figure 3 (next page).

FIGURE 3 – HOW TO IDENTIFY AND CHOOSE PROCESSES LINKED TO PRIORITISED OPERATIONAL GAPS



STEP 3 →	**TEAM SELECTION AND PREPARING FOR PROCESS MAPPING**	

Team Selection: Select the right people to create the map. Include personnel who can provide cross-functional perspectives. Generally speaking, the right people are those who are:

1. Knowledgeable about the process.
2. Provide cross-functional perspectives
3. Interested in improving the process.
4. Available and motivated to stay with the project until completion.
5. Influential enough to facilitate implementation of the agreed-upon process changes.

Careful composition of the team is important – they must have skills, knowledge, experience, willingness, time and positions to positively influence the entire exercise. The team should include people directly involved in the operation at both the lowest and highest levels of the organisation (for example, the operations manager, branch manager, branch supervisor, and teller). The team must be empowered to make significant changes in work flow; it must be given not only responsibility, but also authority and flexibility. If front-line workers have not typically been included in decision-making, they may exhibit some scepticism or reluctance. In such a case, the manager should appoint someone trusted by both management and workers to lead the team, while assuring team members that their contributions will be rewarded and taken very seriously.

Other key tasks in this step include:

Hold initial team briefing: Discuss the selection of team members, communicate the objective of the process mapping exercise and indicate the amount of time the exercise will take. During this meeting everyone should agree on the level of commitment for the exercise by each team member (and others in the institution who will provide information or review the maps and identify risks). Select site(s) for information collection and observation of processes.

Brief senior management in operations, finance and audit: on the nature and objectives of the process mapping exercise. This allows senior management who may not have been involved in the preparation of the process mapping exercise to agree on the process mapping objectives and to assign key staff.

Obtain background information: This step is important for an external consultant coming to perform process mapping. Useful background information includes:

- *Product range*: Useful in determining coverage of common processes and procedures, i.e. withdrawal from different types of savings accounts, and where processes may differ slightly… for example withdrawal from fixed deposits.
- *Product size and trends*: This helps to establish which products and their associated processes are more important to the bank.
- *Computer systems used and whether the system is networked*: External team members may have knowledge of generic strengths and weaknesses with a particular computer system. If the system is branch based may be important to consider how inter-branch transactions for the chosen process are handled.
- *Branch network*: The number and location of branches, which is useful for selecting an appropriate site for follow up observations.

Prepare other staff to provide input: It is vital to ensure involvement of key people at different stages of the process mapping process, whether to provide information for drawing maps, or feedback on risks and other outputs. Be sure to alert them to meetings and key input opportunities in advance so they can plan their schedule to be available for discussions.

Managing Teams at Equity Bank

When Equity Bank decided to process map the entire institution, it quickly realised that this was a much more involving exercise than mapping an individual process. Establishing appropriate teams was key to the success. Teams were established with different responsibilities.

Functional Teams: End users of the process for example cashiers, or account opening clerks, who were required to create the "As Is" maps.

Working Teams: These teams composed of Branch Supervisors and Managers were established to critique the process maps developed by the various functional teams and come up with the final process maps of the procedures.

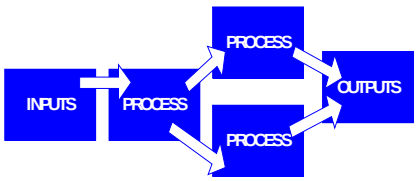
Management Process Mapping Team: Senior representatives from the major departments reviewed the maps and considered risks and potential process improvements.

External Consultants and Experts: External consultants with experience and expertise in banking, risk management and law reviewed the final maps to ensure appropriate compliance and risk management.

Steering Committee: Senior Management performed final review and approval

STEP 4

DEFINE THE PROCESS[4] ALONG PROCESS MAPPING OBJECTIVES



Process maps can be used to document both broad organisational processes and the minutest details of work. An MFI could literally spend hundreds of person-hours mapping processes. What level of detail is appropriate depends on the objectives. **Objectives**, for example, could include, any of the Following:

- Problem solving for specific bottlenecks,
- Identify process improvement opportunities
- General understanding of work flow
- Evaluate, establish or strengthen performance measures
- Create activity dictionary for ABC analysis
- Orient and train new employees
- Establish and document best practices
- Create detailed and easy to follow policies and procedures manuals
- Identify "quick-win" opportunities
- Development and document risks and risk management strategies - risk analysis/mitigation
- Reduce specific types of risk, including: reputation risk, fraud, operating errors, human-resource-related risk, and system failure etc.

In general, there are three levels of *mapping* possible: system (institutional level), macro-processing (core processes, such as lending activities or deposit-taking), and micro-processing (for instance, processing a savings withdrawal). Maps at these three levels resemble each other in format, but provide information at different levels.

TP[4]PT Boehringer

"SYSTEM MAP"

Creating a **system map** is the first step needed to give direction and focus to any quality improvement effort. A system map builds outward from the processes to identify suppliers, inputs, outputs, customers, expectations, performance gaps, and feedback loops. Just as departments are often managed in a vacuum, processes can be designed and managed without emphasis on the customer and the results produced. The system map integrates the core processes with each other within the organisation, and links those processes to the MFI's objectives (outputs), as well as the inputs needed in order to generate the desired outputs. An MFI's core processes may consist of lending, deposit-taking, treasury (investing), and reporting. Other functions, such as purchasing and requisitioning, while important within the organisation, are sub- or micro-processes, and may not show up on a system map. In developing a system map, start with core processes. Then the customers and inputs (such as donors) intended to drive those processes should be defined, and the outputs, such as profitability and providing value for the stakeholders, are added. Finally, the linkages should be shown in the form of a process map.

"MACRO PROCESSES MAP"

Maps of *macro-processes* are the starting point for most engineering efforts that cut across departmental boundaries. (See "Constructing Process Maps, Cross-Functional Maps").

The macro processes are the core processes in an MFI. An example is the lending function, which affects the Credit Department, Operations, Accounting, Treasury, Human Resources, and perhaps others.

In order for an MFI to support a lending function, Human Resources must supply qualified personnel; the Treasury Department, customer deposits, or donors must supply the funds that will be loaned. These, then, are the suppliers.

The lending function will also require that the Credit Department deliver lending products and methodologies to customers as inputs, that the Operations Department process customer credit transactions, and that Accounting record and report on lending activities.

The profitability of the lending function and the accomplishment of the MFI's mission will be the outputs. By optimising performance across the entire process, it is possible to realise huge gains in efficiency, resulting in both cost savings and customer satisfaction.[5]

[5] Boehringer

"MICRO-PROCESSES MAP"

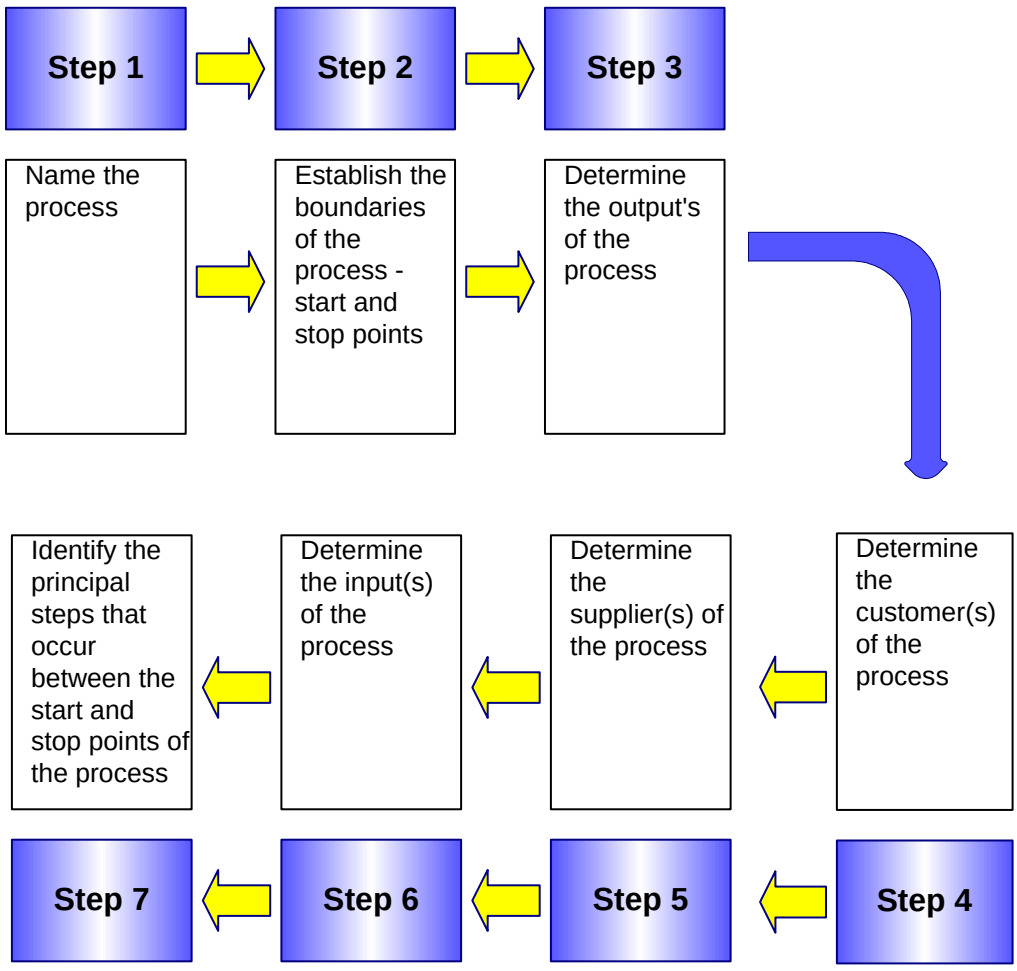
Maps of *micro-processes* are useful for any quality improvement. Numerous inefficiencies can be found in small processes.

An example might be a portion of the credit function, such as the loan-application process. In such a case, it is often useful to map the process from the point of view of the customer (rather than that of the employee).

Though the procedures involved may seem very reasonable to the MFI, tracing the steps that the customer must follow will provide a different perspective—and possibly a better understanding of customer complaints.

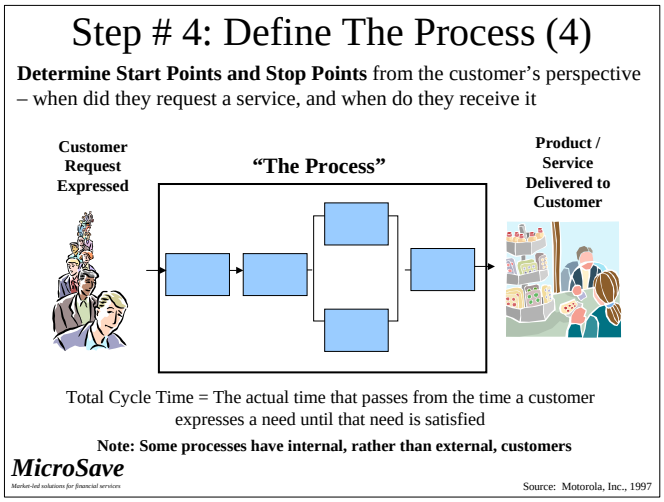
Once the objective has been established, the process must be **defined**. A process should be defined by the person who creates the output.

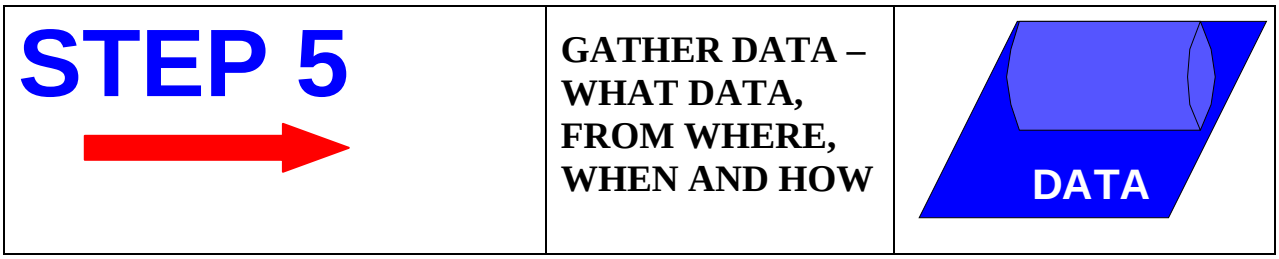
FIGURE 4 - KEY STEPS TO DEFINE THE PROCESS



If a particular group or individual has responsibility for the process—from **start to finish**—it can be considered self-contained, regardless of its magnitude.[6]

[6] Galloway, pg.10.





During the mapping process, data will be gathered in two stages: at the beginning of the process, and during the analysis stage, prior to modifying the process map. Each *input* and *output* has a set of associated requirements. Once it is determined what these requirements are, this information can be used to construct a set of measures to determine output quality and customer satisfaction. To measure output quality, focus on the characteristics that cause the customers to value a particular output. To measure customer satisfaction, customer perception data should be collected and compared to the expectations data used to establish *input*, *output*, and process requirements.[7] At this point, the focus will be on the initial stages of gathering data for a map. There are three basic methods of collecting the process information necessary to create a map:[8]

Self-generation.
One-on-one interviews, Group interviews
Observation

"METHOD 1: SELF-GENERATION"

If the work process is already clear, a map can be drawn by the person initiating the mapping process and then others who perform or interact with the process can be asked to review this. This method produces a map more quickly than the other two techniques, but its usefulness is limited by the amount of work-process knowledge the initiator possesses. This knowledge can be supplemented through observation[9] of the actual process as it is being performed, and reviewing procedures manuals to confirm how it should be performed.

[7] Damelio, pg 9
[8] Damelio, pg 18
[9] This is an important complement to informational interviews

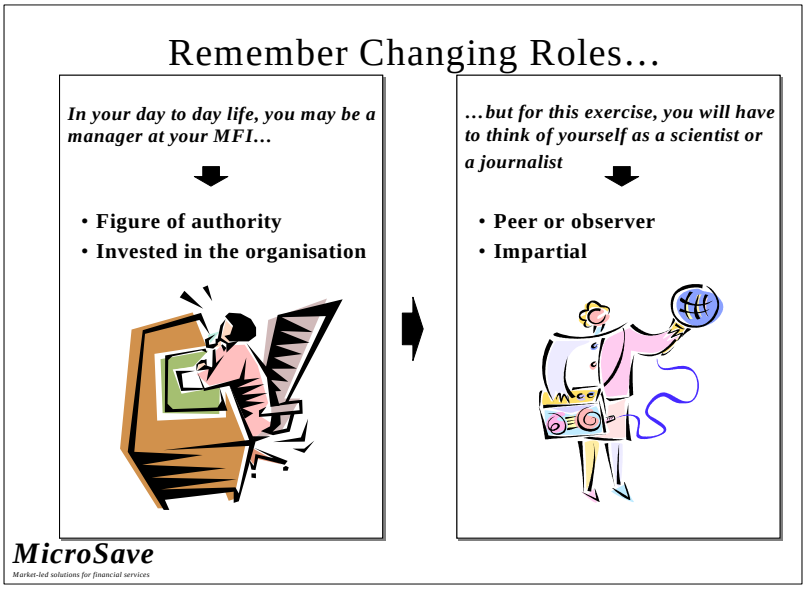
"METHOD 2: ONE-TO-ONE AND GROUP INTERVIEWS"

A series of one-on-one interviews with suppliers, performers, and customers of the work process will enable the creation of a rough draft of the process map. This map can then be routed to those who have been interviewed and to others who are knowledgeable about the process, asking them to review it for completeness and accuracy. One-on-one interviews work best when the interviewer has good questioning and listening skills, and is able to synthesise information rapidly. The interviewer should be familiar with the part of the business being mapped before starting the interviews. In the group interview method, the relevant individuals are invited to work together as a group to generate the map. This method works best when a skilled facilitator helps the group to identify and lay out the *inputs*, *outputs*, and steps of the process.

"METHOD 3: OBSERVATION"

The observation of the process can also be used to confirm the understanding of the data gathered in the interview(s). By observing processes in action the map can be corrected to better reflect the "as is" reality.

POTENTIAL DATA SOURCES AND THEIR UTILITY	
Data Sources	**Utility**
Manuals	1. Review manuals on credit methodology and internal operational processes 2. Create draft process maps, interview guides based on documentation
Management Team	3. Interview key management team members. Review draft process maps and revise. Identify their hypotheses on areas of inefficiency.
Branch Managers	4. Interview branch managers. Review draft process maps and revise. Identify their hypotheses on areas of inefficiency 5. Shadow BMs. Observe how closely their activities match manuals, description, note timing
Loan Officers	6. Interview loan officers. Review draft process maps and revise. Identify their hypotheses on areas of inefficiency. 7. Shadow LOs on all major activities (new client applications, monitoring, etc.). Observe how closely their activities match manuals, description, note timing.
Clients	8. Interview clients to verify that processes match those described.
MIS	9. Verify any figures, timings or ratios that can be matched with data in the MIS
Multiple sources generate reliable/valid data because of extensive cross checking.	



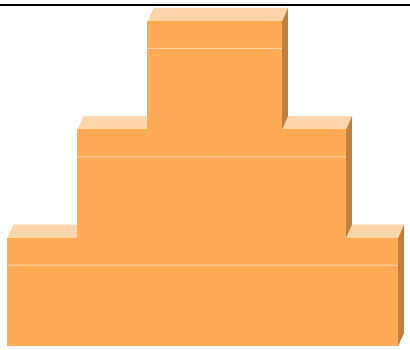
As the staff members associated with the tasks involved in the process are interviewed, most will give either too much or too little detail. To help focus the data-gathering process, the following interview tips may be used.

INTERVIEW TIPS

1. Follow *the flow of documents or other inputs*. If the source of the inputs is known, what they look like, how many copies there are, what is done to them, how exceptions are processed, and what the output looks like, a reasonably comprehensive idea of the departments and individuals involved in the process can be obtained. This will help determine who else should be interviewed.
2. If the input or output is a form, *obtain a copy of the at form.* Paperwork is necessary, but it can also produce redundancies and inefficiencies; examining the content and distribution of forms can help identify these.
3. To ensure accuracy, *don't make assumptions.* While there may be familiarity with the process either in concept or in practice, the mission at this point is to find out exactly what is being done. Ask open-ended questions in order to elicit the most accurate detail. For example, the question may be, "The customer brings the completed deposit slip to the teller, right?" The response to this could well be an affirmative. If the query is, "Who completes the deposit slip?" it may be found that on occasion the teller must fill it out for a customer who is illiterate, or that the customer may be diverted to a customer service representative for assistance. This indicates that there is room for improvement in the process- a conclusion that may not have been reached if an answer had been suggested even while asking a question.
4. *Take notes* as the interviews are conducted. Using process-mapping symbols in note-taking may help to focus the questions. The likelihood of overlooking a portion of a flow will also be less

STEP 6

CONSTRUCT "AS IS" MAP



Always a beginning should be made with a rough draft and first, the level of process map to be constructed should be determined and an appropriate chart chosen. The boundaries should be defined and there should be focus on the following key elements of process: suppliers, inputs, tasks, outputs, and customers. There should be concentration on including the widest possible breadth of information and then fine-tuning of the map should be reverted to, adding the required depth.

It should be **remembered that the map being constructed is an "As Is" Process Map**, which is a descriptive map of the process, as it really happens on the ground, not the ideal "Should Be" map.

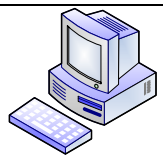
o

The "As Is" Process Map should Clearly state:

- **What** is being done?
- **When** is it being done?
- **Who** is doing it?
- **Where** is it being done?
- **How** long does it take? **(Cycle Time)**
- **How** is it being done? and…
- **Why** is it being done?

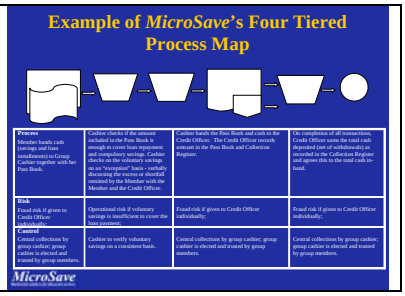
For example, this could include:

- What steps are required to produce a particular output?
- What is the order in which the steps are performed?
- Who (which function) performs each step?
- What are the handovers or interfaces between functions?
- Where in the process do the handovers occur?
- What are the inputs required and the outputs produced at each step of the process?

STEP 6 Continued →	**SOFTWARE FOR CONSTRUCTING "AS IS" MAP**	

Most flowchart symbols are available in Microsoft Word, as are a variety of lines and arrows. Word, however, does not allow moving all related lines, arrows, and symbols at once when making changes to a portion of the flowchart. This problem is overcome in many flowchart-specific software applications; a number of inexpensive flowcharting software CDs are available in the market. *MicroSave* uses Microsoft's Visio.

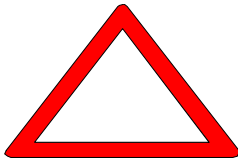
If a computer-based map is not a possibility for an MFI, it can always be created using pencil and paper. Graph paper is best for aligning and spacing symbols, but plain paper can also be used. Some business stationery stores sell flowchart templates that allow the drawing of consistently sized symbols. A personalised template can also be made from stiff paper or cardboard, using a copy of the symbols shown at the end of this toolkit.

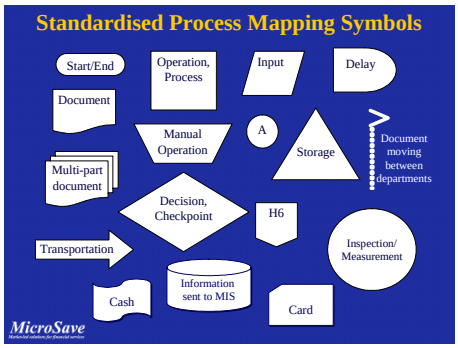
STEP 6 Continued →	**CONVENTIONS FOR CONSTRUCTING "AS IS" MAP**	

It is important that standard map-creation methods and conventions are established within an MFI. When process mapping is first begun, there may be a need to experiment with different styles to find the one that best meets the needs. As quickly as possible, however, the MFI should develop its own process-map norms. Establishing and following mapping conventions will prevent unnecessary rework, and will ensure that the MFI's process maps are understood by everyone within and outside of the organisation, including regulators, external auditors, and donors.

The following are industry standards and they should be adhered to if at all possible:

1) The flow of the process should be kept from left to right and from top to bottom.
2) Intelligence should be built into the flowcharts; all applicable symbols should be made use of.
3) The symbols should be kept about equidistant from one another for ease of interpretation.
4) Ensure that inputs and outputs pass over and under one another, rather than intersecting.
5) It is important to label the outputs of the decision symbols.
6) All inputs and outputs should be labelled.
7) The map should be titled with the name of the process, whether it is an "as-is," "should be," or "could be" map, and a reference number must be assigned.
8) The preparer's name and the preparation date should be placed in the upper left-hand corner, below the title line.





USE OF SYMBOLS: A CAUTIONARY NOTE

A process map is a graphic representation of the sequential steps that make up a process. This flowchart will be most useful if it employs sufficient symbols to truly reflect the process it depicts, revealing the places where waste, delays, and rework occur.

The use of too many symbols, on the other hand, will make the map confusing; it is important to remember that the objective of the process map is to make the process more understandable, not less.

While there is freedom to devise any symbols of choice (as long as they are used consistently throughout the MFI), selecting the symbols from the standard set shown at the end of this toolkit will ensure using widely accepted symbols understandable by the majority of readers.

Tips for Constructing a Process Map

- Define the *boundaries* (the first step and the last step of the process) clearly.
- Use the simplest symbols possible.
- Make sure every feedback loop has an escape to the next process so that it does not loop endlessly.
- Use only one output arrow with each process box (dual output arrows would be used with a decision diamond—one for the "Yes" action and one for the "No" action).
- Develop draft maps early and revise often. Post-it Notes may be useful in the first iteration.
- Beware of confusing the "ideal" process, as detailed in manuals, with the "real" process, as found in the field. Expect processes to vary on the ground.
- Time to construct maps will depend primarily on:
  1) the number of processes to be mapped,
  2) the degree of variation in processes in the institution, and
  3) the strength of secondary materials such as MIS data and manuals
- Ultimately, process maps are most useful when it is possible to benchmark the concerned processes against those of competitors or international best practice. Investigate ways to use network relationships to benchmark processes.

Constructing Process Maps – What to Look Out for?

Challenges	Checklist
• Lack of balance – too much detail in some areas and little information in others	❑ Ensure that all steps of the project are included ❑ All steps are labeled

STEP 6 Continued	**CONSTRUCTING VARIOUS TYPES OF MAPS**	**Constructing Cross Functional and Other Types of Maps**
		• Optional Features
		  • Cross Functional Map
		  • Tiered Maps
		  • Time Analysis Maps
		  • Risk Analysis Map
		MicroSave

CROSS-FUNCTIONAL MAPS[10]:

Cross Functional Maps are used to show the flows of inputs and outputs between different departments. A sample cross functional process map is shown in Annex 4.

Cross Functional Process Maps Answer the Questions:[11]

- What steps are required to produce a particular output?
- What is the order in which the steps are performed?
- Who (which function) performs each step?
- What are the handovers or interfaces between functions?
- Where in the process do the handovers occur?
- What are the *inputs* required and the *outputs* produced at each step of the process?

An easy way to construct a cross functional map is to:

1) List all departments or individuals involved down the left side of a sheet of paper (information such as staff-member titles, the number of people in the department, or the name of the specific person involved may also be included).

2) Separate these people and departments with horizontal lines. The line at the bottom of the paper is the time line, progressing from left to right.

3) Write the first process step next to the name of the person or department performing that task, and enclose it in the proper symbol.

4) Moving from left to right as time elapses, write the second process step in the appropriate row, and enclose it in the proper symbol.

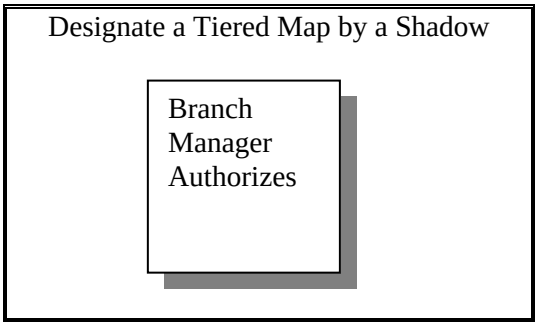
5) Connect the two steps with the "Transportation" symbol to show movement of inputs.

6) Continuing to the right, document each activity on the appropriate row. Any concurrent (parallel) activities should be aligned vertically.

[10] Boehringer

TIERED MAPS:

A shadowed box may be used to indicate that a map exists for a sub-process. For example, a process may call for a branch manager to authorise a savings withdrawal. The corresponding process map would show an operation labelled "Branch Manager Authorises." If a process map of the authorisation process itself (describing the various sources the branch manager must refer to, the steps he must take, and the decisions he must make) has also been created, the "Branch Manager Authorises" symbol would require a shadow.

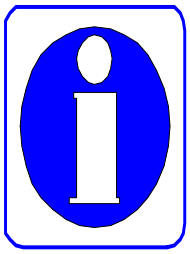


TIME ANALYSIS:

Because process-mapping convention is to move from left to right, it is easy to show the time elapsed both for the entire process and for the component elements of the process (as demonstrated in the discussion of cross-functional mapping). A sample cycle time process map is shown in Annex 6.

It must be noted that there are two time components to consider: the total cycle time from Start to End, and the theoretical cycle time from Start to End. The theoretical cycle time represents the sum of the processing times of all distinct activities within the process. The theoretical time may differ from the total time, indicating bottlenecks or delays that represent opportunities to increase efficiency.

If, for example, an MFI receives many customer complaints about how long it takes to make a savings deposit, the individual steps in the process must be tracked. It may, for example, be discovered that the sum of their processing times (theoretical cycle time) is five minutes. Yet, when customer time from Start to End (total cycle time) is tracked, it may be found that customers making deposits are in the banking hall for thirty minutes. Discovering this discrepancy gives a clear indication of where attention is to be focused to improve customer service.



TOTAL CYCLE TIME

–

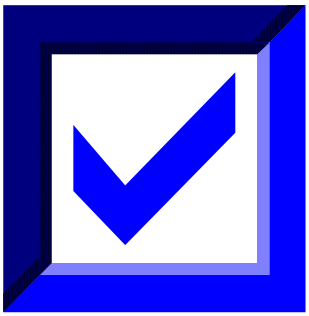
THEORETICAL CYCLE TIME

=

OPPORTUNITY FOR PROCESS IMPROVEMENT

STEP 6 Continued

PROOFREAD MAPS



After the process map has been completed—and before requesting anyone else for comments—it must first be proofread to ensure completeness and clarity. An attempt must be made to stand back and be objective while moving through the flowchart, evaluating each step for logic and consistency. It must be ensured that all symbols are integrated into the map through the proper use of movement arrows and that all symbols are clearly and concisely labelled. As a final test, the question must be asked whether the process map would be understood by a reader who is not familiar with the process.

Process Mapping Pitfalls

- Lack of balance (too much detail in some areas, not enough in others).
- Gaps (missing or unclear steps).
- Excessive detail (the map is too "busy").
- Excessive length.
- Unclear terminology.

Since the preparer, understandably, cannot be completely objective, there is a need to have the process map validated by others. The primary reviewers should be the people who perform the actual work that goes into the process. They can help ensure that the map correctly interprets the results of the interviews that were conducted and—most importantly—correctly depicts the process itself. A second source of validation might be another knowledgeable person within the MFI who does not directly perform the work, but who does have supervisory responsibility for the process (such as the Operations Manager).

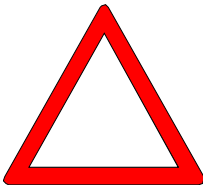
It is wise to go through the map with the reviewers, rather than expecting them to interpret it on their own. This reduces the chance of missing corrections due to a lack of expertise in reading process maps. It also gives an opportunity to review the map from a different perspective, allowing the catching up on additional inaccuracies.

It is best to conduct the review away from the work area. Busy reviewers distracted by their other tasks may nod in agreement as the various steps are read out, without pausing to reflect on their accuracy.

Process Map Checklist

- All major elements of the project are indicated.
- All elements are clearly labelled.
- Sequence of elements is clear; there are no gaps or dead ends.
- Sequence of elements is logical from the user's point of view.
- Flowchart symbols are used correctly.

PROOFREADING: A CAUTIONARY NOTE



One of the most difficult proofreading tasks is identifying what has been left out. Even when constructing an "as-is" process map, it is very easy to record processes as they should happen. For example, a step in the savings-deposit process may require the cashier to determine whether the deposit slip includes all required data. It is very tempting to assume that the deposit slip is correct, and to proceed to the next activity. As a result, the decision process and the steps for handling an incomplete deposit slip will be omitted. The goal of the proofreading and review is to make the necessary modifications to the process map. To avoid confusion among different versions, a version number should be entered (or the date and time) under the Preparer's Name every time a revision is completed. Remember: each time modifications are made, the map must be proofread again to make sure that new errors are not introduced.

VALIDATE YOUR PROCESS MAPS

It is vital that process maps are validated as complete and correct once they have been drawn.

Don't draw the map too early: Ask two respondents about the process involved… before drawing the process map, asking questions to get the process right is far quicker than drawing and redrawing the process map.

Note down in full what is being said: It is difficult to know what information is going to be useful when the interviewing and observation starts so be sure to take comprehensive notes. Mark anything that is skipped over possibly due to the limited knowledge of the individual for further investigation.

Obtain a list of documentation used during the process: Ask at least two people to provide a comprehensive list of documentation used / produced during the chosen process. Keep this list and check it against the documents used within the process map and resolve any differences.

Ask the same question in a different way to the same people: A very useful way to validate information is to ask the same question to the same people in a variety of different ways.

Focus on quality of map rather than quantity of coverage: Whether adopting process mapping for efficiency improvement or risk management, process maps take time to develop. Quality of analysis comes from spending time analysing correct maps. Allow sufficient time and resources to develop quality process maps.

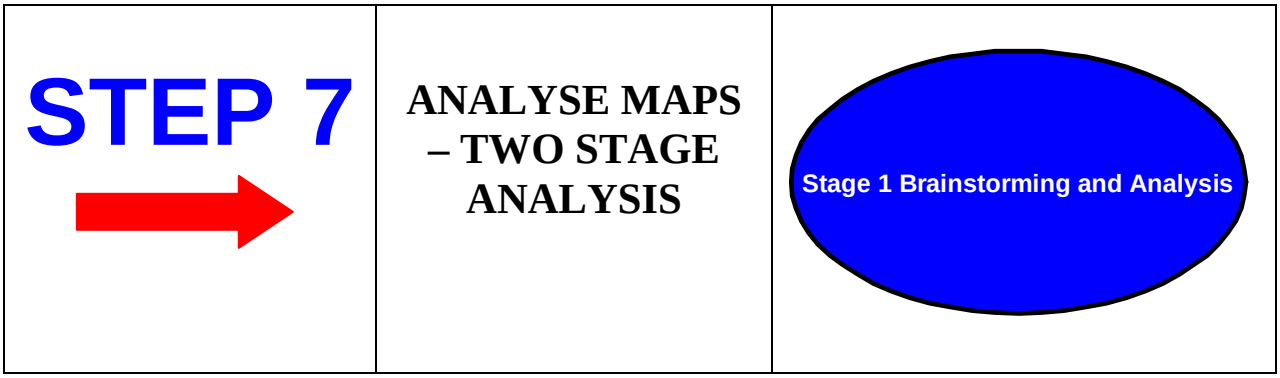
Consider total process time against the sum of the time for individual components: Validate the time of individual components by comparing the total of individual process times against the time for individual components. Note that process times may differ according to the specific nature of the transaction or the time of the month, or year.

Perform observation at two sites: Perform observations / discussions at two representative branch sites where possible. This helps to establish where processes are likely to differ and/or ensures that the process being documented has been fully captured.

Ensure external review: An external review should be carried out when the maps have been drawn, but before they have been finalized. The review does not have to be conducted by someone who knows the individual process, but ideally someone who is used to reading process maps should review it.

Ask to see documentation: For some processes, such as loan applications, reviewing documentation such as loan files is especially important. This review can quickly enable you to see the extent to which the process has been applied as described.

Review within the institution: Once the process map has been defined, internal audit can and should use it in their auditing, to ensure that the process are adhered to or amended as appropriate.

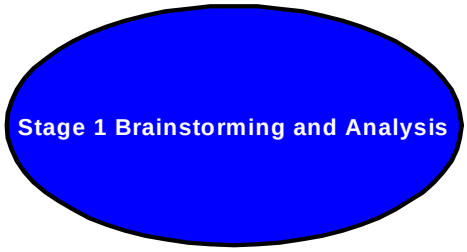


Constructing a process map is a learning experience, but getting bogged down in the construction could well result in losing sight of the chief purpose of mapping: analysis. Once a process map has been completed, it should be determined as to what the map is indicating about how to meet the goals of the project. (Refer to Annex 8 for guidelines in analysing maps according to mapping objective).

The analysis, however, should not be constrained by the stated objectives. The map may reveal other conditions—not apparent when the objectives were formulated—that the MFI needs to address. Advantage must be taken of any secondary benefits of the mapping process. Suppose, for example, the mapping objective is to understand the savings-deposit process in order to train new cashiers. If the resulting map also identifies a delay in the savings-deposit process, bringing the problem to the attention of a supervisor may result in an unanticipated improvement of customer service, as well as a better training program.

Mapping a process can be an enlightening experience. Processes typically evolve over time as staff, the MFI, and environmental conditions change. The result is often unneeded layers of complexity and inspection. The initial reaction may well be, “Is that really what we do?” The second reaction should however be to start fixing the process by creating “should be” and/or “could be” process maps, then comparing the actual flow with the best possible flow.

To facilitate a structured analysis of the kinds mentioned above, a two stage process to analyse process maps is suggested: (1) **Stage 1 Analysis and Brainstorming around Process Improvement** and **(2). Analysis and Brainstorming around Risk Control.** Each of these stages are dealt with sequentially.

STEP 7-1	ANALYSE MAPS – 1ST STAGE ANALYSIS	

WHOM TO INVOLVE?

In Stage 1 Analysis and Brainstorming, more experts and some novices should be involved, as experts will be able to spot regular risks and also suggest control mechanisms. Novices may be required as they may come up with totally unanticipated steps/risks/control mechanisms. Feedback should be obtained from a wide range of stakeholders including suppliers, customers, management and other stakeholders involved in/impacted by the process.

Special and Important Tip

- **Involve senior people from operations and other key departments**
- **Let them analyse the risks and look for opportunities to improve efficiency**
- **Ensure that the process is participatory!**
- **If you arrive with the "could be" ready to implement you are unlikely to secure the buy-in you will need**

WHAT TO DO?

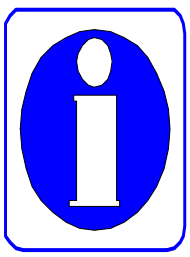
It should be determined what the map has to say about the process and then the following three basic questions should be asked for analysis

- Is implementation of process/controls as it "Should Be"?
- Is process "optimal"?
- Will uncovered risks still remain even if implementation is as it "Should Be"?

In fact, as shown in table next page, it is possible to have eight generic situations that process mapping analysis could generate and may need to address. The characteristics of these eight generic situations along with the associated recommendations are outlined in the table.

These eight situations arise from different permutations and combinations of the three basic variables:
(1) Whether implementation of process/controls/risk mitigating mechanisms is excellent or poor
(2) Whether the process is optimised or not
(3) Whether risk coverage is complete or some risks are uncovered.

Hence, we have a 3 dimensional (3 D) interaction between these variables to produce the eight generic situations as shown below.

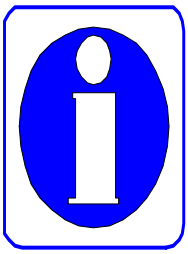


While analysing, focus on…

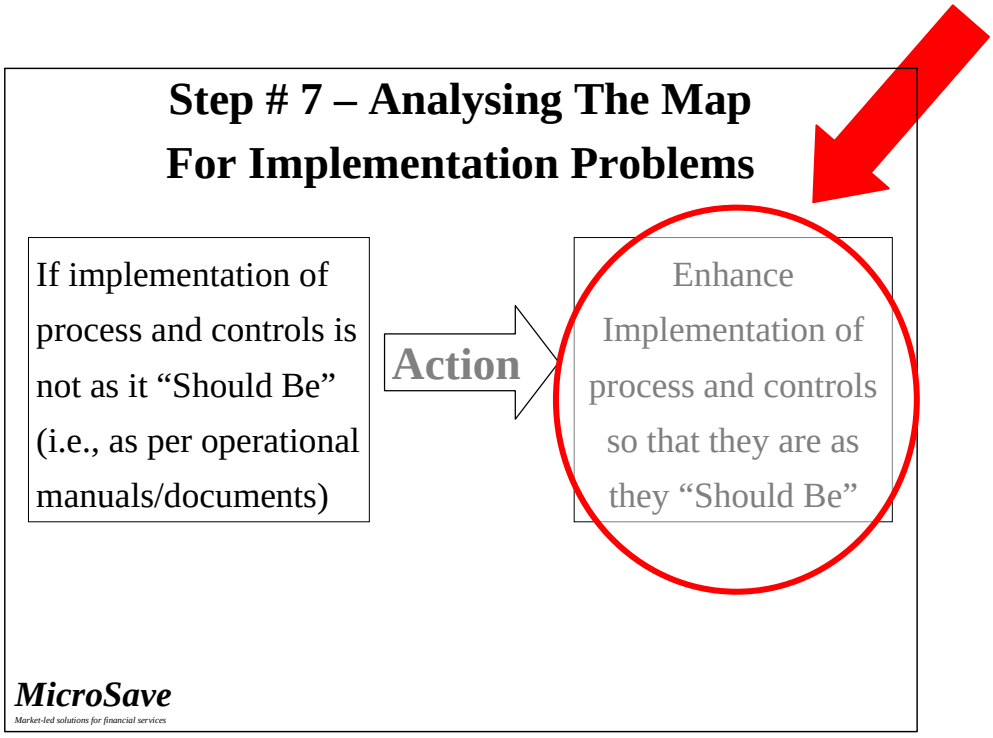
- Implementation of process/controls/risk mitigating mechanisms – check to see whether or not implementation is taking place as it "should be"
- Process optimisation – ascertain whether or not the process is optimal in terms of speed, simplicity and other aspects
- Risk coverage and management – determine whether all risks are covered or not and make sure that risks that will still remain uncovered, even after proper implementation (i.e., implementation as it should be), are identified.

				RISK COVERAGE	
				NONE OF THE RISKS ARE UNCOVERED	**SOME RISKS ARE UNCOVERED**
IMPLEMENTATION OF PROCESS/CONTROL/RISK MITIGATING MECHANISMS	**EXCELLENT**	**NATURE OF PROCESSES**	**SIMPLE AND SPEEDY**	Situation # 1 **HIGH PERFORMANCE** All risks are covered, process is optimal and implementation of process/controls/risk mitigating mechanisms is excellent **Do nothing!!!**	Situation # 2 **OPTIMAL PERFORMANCE** Process is optimal and implementation of process/controls/risk mitigating mechanisms is excellent but there are still some uncovered risks **Re-engineering/re-design/re-structuring of process to ensure coverage of uncovered risks**
			COMPLEX AND LONG	Situation # 3 **LESS THAN OPTIMAL PERFORMANCE** All risks are covered and implementation of process/controls/risk mitigating mechanisms is excellent but processes are not simple and speedy (not optimised) **Re-engineering/re-design/re-structuring of process to optimise it**	Situation # 4 **LOW PERFORMANCE** While implementation of process/controls/risk mitigating mechanisms is excellent, there are still some uncovered risks and processes are also not simple/speedy (not optimised) **Re-engineering/re-design/re-structuring of process to optimise process as well as cover uncovered risks**
	POOR	**NATURE OF PROCESSES**	**SIMPLE AND SPEEDY**	Situation # 5 **LESS THAN OPTIMAL PERFORMANCE** All risks are covered and processes are simple and speedy (optimised) but implementation of process/controls/risk mitigating mechanisms is poor **Enhance implementation**	Situation # 6 **LOW PERFORMANCE** Processes are simple and speedy (optimised) but implementation of process/controls/risk mitigating mechanisms is poor and some risks are uncovered **Enhance implementation and also re-engineer/re-design/re-structure process to cover uncovered risks**
			COMPLEX AND LONG	Situation # 7 **LOW PERFORMANCE** All risks are covered but processes are not simple and speedy (not optimised). Also, implementation of process/controls/risk mitigating mechanisms is poor **Enhance implementation and also re-engineer/re-design/re-structure process to make it optimal**	Situation # 8 **VERY LOW PERFORMANCE** Neither are all the risks covered but also processes are not simple and speedy (not optimised). Further, implementation of process/controls/risk mitigating mechanisms is poor **Requires complete re-engineering/re-design/re-structuring**

While situation # 1 is ideal and would require no action, all the other situations require concrete action strategies - either for enhancing implementation or improving process and/or managing risk. The methodology and techniques for dealing with each of these action strategies is sequentially outlined below:

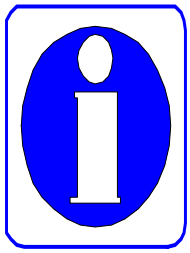


Analysing the Map for Implementation Problems

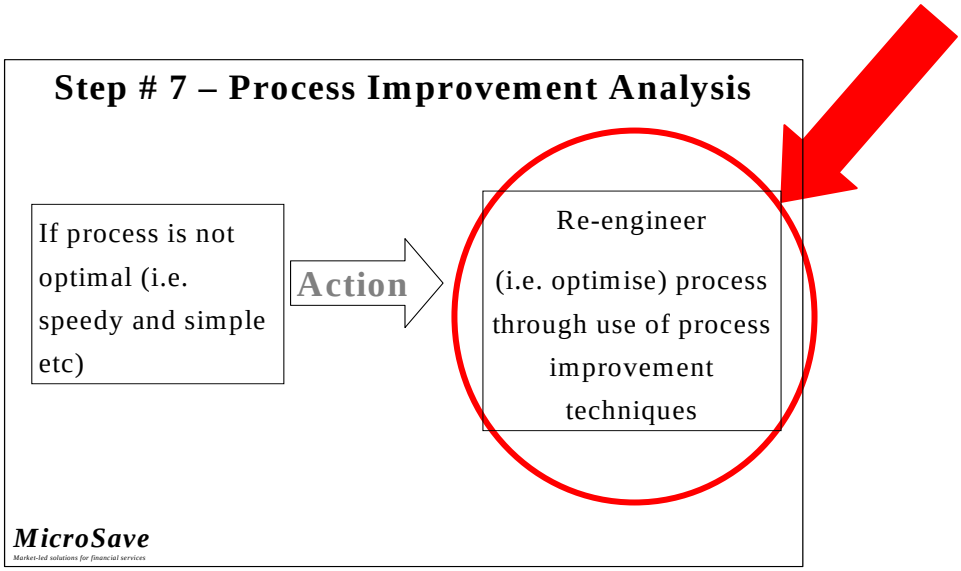


KEY STEPS IN ANALYSING FOR IMPLEMENTATION PROBLEMS

1) It should be determined what map is indicating with regard to the processes and with regard to obvious bottlenecks and problems
2) The "As Is" Process Map should be compared with the "Should be" Process Map (if available) to isolate what else is different in these two states in terms of the processes and controls used etc
3) If available, industry best practices could also be used here
4) Comparison of actual time cycle with theoretical time cycle
5) Comparison of actual path and flow of tasks with "should be" path and flow of tasks
6) Isolation of problem areas/bottlenecks and identifying solutions to these
7) Implementing the necessary changes so that the "As Is" Process is the same as the "Should Be" Process



Analysing the Map for Sub-Optimal Process



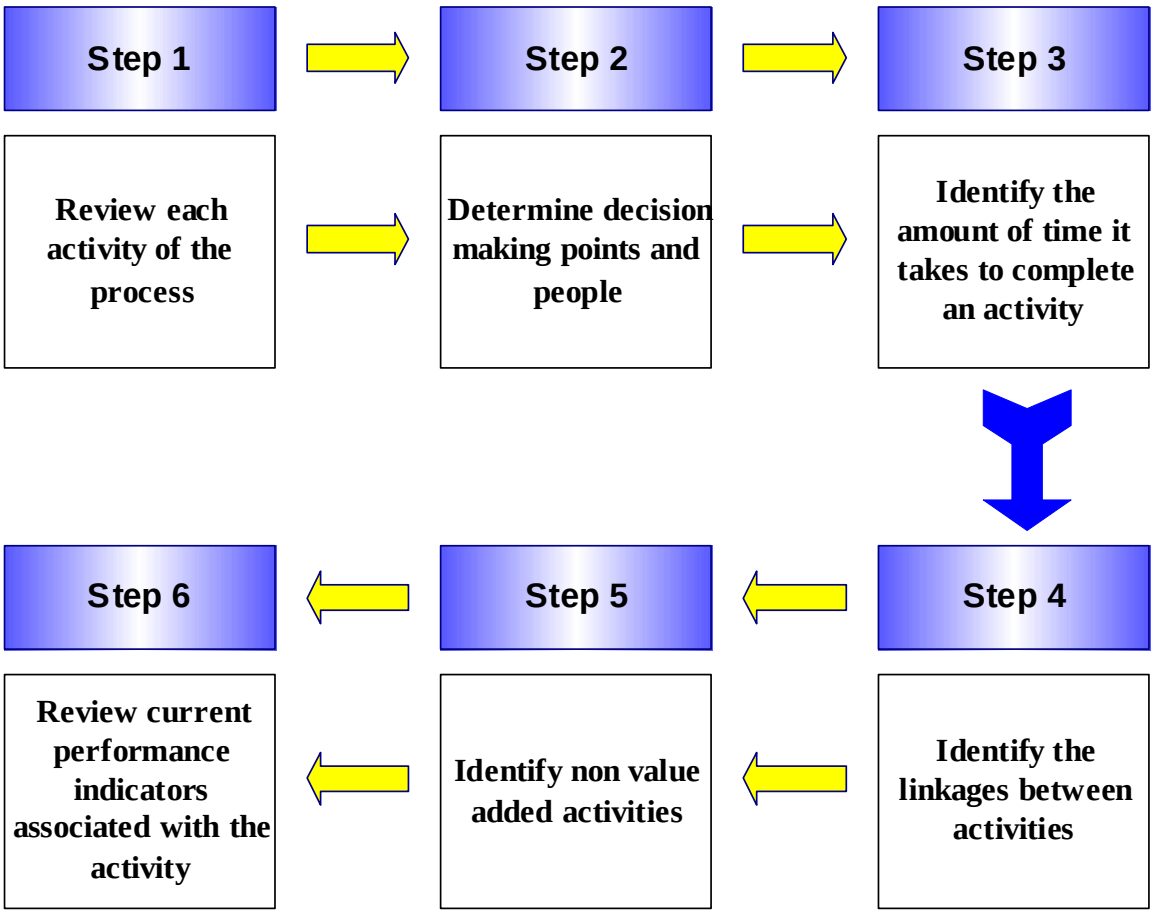
Process improvement is to optimise on cycle time/cost and enhance productivity through use of simple and speedy processes. The first step in this regard is to **analyse activities** and classify the sub-activities as value added/non-value added and redundant/non-redundant, since elimination of non-value-added/redundant steps always reduces cycle time and cost, and increases productivity. Once this categorisation is available, many options could be used including:

(1) eliminating redundant non-value added non-essential steps;
(2) moving certain of these steps into another process;
(3) automating/mechanising hitherto manuals steps etc.

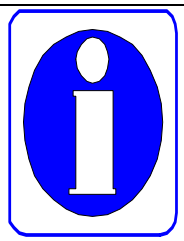
A suggested methodology for analysing activities is given hereafter and Annex 10 contains a tool for analysing activities

ACTIVITY ANALYSIS – SUGGESTED STEPS AND UTILITY	
Step in Activity Analysis	**What is the Utility?**
• Review each activity of the process	• Provides information on which activities are being done by who, at what point in the process, for how long etc.
• Determine decision making points and people	• Provides information on how many decision points there are in a process as well as who the decision maker is
• Identify the amount of time it takes to complete an activity	• Provides information on how long it is taking to complete each activity
• Identify the linkages between activities	• Provides information on whether there are handovers from one person to another, one department to another etc.
• Identify non value added activities	• Provides information on whether there are activities in the process that are repeated, can be combined, eliminated or run in parallel
• Review current performance indicators associated with the activity	• Provides information on what the baseline data is which provides a useful comparison to performance once the new process has been implemented

FIGURE 5 – ACTIVITY ANALYSIS STEPS



Together, through steps 1, 2, 3, 4, 5 and 6, it is possible to see how many activities there are in the process, what type of activities take place and how long it takes for each activity and the like. This should also help identify and eliminate non-value added activities that add to increased inefficiencies and costs, both from the perspective of the customer and the institution.



A value-added step usually has three characteristics:

- It accomplishes something the customer cares about.
- It transforms (physically changes) an input (for example, the actual cash a customer deposits is changed into a credit to an account).
- It is important to do it right the first time.[11]

ASKING QUESTIONS TO IMPROVE PROCESSES

The following questions can be used to gather opinions on where processes can be further improved.

Key Questions:

- What problems do you experience with this process?
- Where can the process be improved?
- Describe the ways that people do this process differently?
- Does the process always work this way are there exceptions?
- What happens when things get really busy, do people do things differently?

[11] Damelio, pg. 54

- What happens when people go on leave, is it a problem to get everything done?
- What are all the documents that can be used in this process?
- What reports does this process produce and how are they used?
- Are there branches that operate better or worse than normal?
- At what stages are documents handed over to others?
- Are there any redundant processes? If so why do you think they are not necessary?
- What other responsibilities do people have that cause a delay in this process?

TO IMPROVE A PROCESS, THESE CONDITIONS NEED TO BE LOOKED FOR:[12]

- **NON-VALUE ADDED STEPS.** It is required to challenge each process step. The question needs to be asked is, "What value does this activity add? Does our customer care?" Activities that do not contribute value need to be combined, simplified or eliminated.
- **EXCESSIVE CONTROL POINTS**. Inspections and supervisor approvals do not always add value. They evolve because of a lack of confidence in the process. Control steps that are not critical for quality outcomes should be eliminated. For example, specified transactions may be subject to supervisory approval according to amounts. Requiring large transactions to be approved at each level of authority (cash officer, branch supervisor, assistant manager) prior to the final authority, the branch manager is an example of excessive control points. By directing transactions only to those levels that have the appropriate authorisation limit, intermediary approvals that do not add value are being eliminated.
- **EXCESSIVE HANDOVERS**. Every time process activities move from one person to the next, there is potential for delay or miscommunication. Work should be organised in such a way that each person becomes more of a generalist and less of a specialist. This will reduce the need for multiple handovers.
- **TASK SPECIALISATION.** Assembly-line (sequential) processing is giving way to cellular models for organising work groups and teams, both on the front line and in administrative offices. This structure allows information to flow faster with less distortion, improving both the quality and speed of work. Tasks should be consolidated wherever possible. For example, a credit committee at an MFI branch, empowered to made credit decisions for all loans within the branch limit, may improve consistency, accuracy, quality and timeliness of credit decisions, rather than an assembly line approach, where individual loan officers submit credit applications "up the line" for approval. Feedback to loan officers may or may not occur with regard to capacity building and process improvement in a sequential processing environment.

Eliminating handovers (inputs and outputs that cross functional boundaries) is one way of improving a process. Reducing the clutter depicted on the map by simplifying a process, eliminating redundancies, or getting rid of non-value-added steps will also improve the work flow.[12]

Minimising do-over and rework loops (which result from failed inspections, adding to cycle time and cost) represents another opportunity for improvement.

For example, in the box next page, Equity Bank's new account practice was for branch managers to approve new accounts at the end of the day. If the account had insufficient or incomplete documentation, the branch manager flagged the account on the system and returned the form to the account opening officer, who in turn had to contact the customer to come in and rectify the error or condition. This entailed either re-doing the documentation (a "do-over"), or fixing a specific problem ("rework"). The documentation was then resubmitted to the branch manager for approval. As noted below, one branch had an almost 100% error rate in completing new account documentation; obviously an unacceptable condition.

[12] Damelio, pg. 7

ELIMINATING EXCESSIVE HANDOVERS AT EQUITY BANK

- The account opening function was mapped as part of Equity's pilot testing of standardised procedures. The process clearly showed inefficiencies in customer flow, supplying justification to customer complaints that the process "took long".
- The "as is" process required customers to fill out an account opening form at a customer counter with the assistance of a staff member who entered the data to the computer system. This staff member was also required to assist other customers with applications for bankers' cheques, balance inquiries, and acceptance of cheque deposits. A sampling conducted by the Internal Audit department of account opening forms for completeness showed a 99.5% error rate in properly completing these forms. After completing the form, the customer was then required to queue in order to process the initial minimum deposit. The customer then took the deposit receipt back to the account opening desk in order to have their photograph taken and signature scanned, thus completing the process. In theory, the process required the approval of the branch manager before an account was allowed to operate, but in actual fact the control was ineffective because the computer system required the account to be activated before the initial deposit could be processed, and all account approvals were done by the branch manager at end of day.
- The process was redesigned to provide a one-stop process for the customer, eliminating the handovers to other staff members. The bank no longer required a minimum deposit in order to open a personal account. The branch layout was redesigned to remove account opening from all other banking activities. The photograph was taken at the same time as the form was filled out. An Operations Manager was appointed to provide real-time approval of new accounts on the computer system. New account opening forms, more understandable to customers, were introduced. While the results of the pilot are not yet measured and compiled, it is certainly reasonable to expect improved customer service, improved opportunity to cross-sell services to customers, that customers will be provided with appropriate financial services, and improved accuracy in new account data capture.

This does not mean that there should be elimination of inspection points, which are internal controls intended to find errors before they affect the customer. Inspection points represent standards; they should be measurable, objective, and specific. If they do not have these characteristics, they should be modified. Furthermore, an excessive use of inspection points suggests a fundamental distrust of the entire process, indicating that it should be completely re-evaluated.

The computer system may provide many inspection points, such as detecting an invalid account number, allowing an operator to detect an inconsistency between name and account number at the time of transaction, detecting an interest rate outside of an acceptable range- these are just a few examples. The approval of a loan application recommended by a loan officer is an inspection point: have the required steps been performed and do the results of these steps conform to the MFI's credit worthiness standards?

Requiring the approval of the head office credit manager on all loans, for example, indicates that the MFI has insufficient credit methodologies and/or staff recruitment/training practices to support the introduction of loan limits at various levels within the organisation.

Once the problem areas have been identified, they should be documented by inserting them in the "control" fourth tier of the "As Is" process map (or if there are many on a separate schedule that is clearly cross-referenced to the "As Is" process map). This will assist the smaller brainstorming and analysis team as they develop the "should be" and "could be" maps in Step 8. Examples of problem areas could be poor customer satisfaction, large expenses, or significant delays. Brainstorming is a useful technique in which all possible action steps are identified for each problem area, without evaluating them. Here are some techniques that can be used to improve the process and Annex 12 provides a checklist of these for use:[13]

[13] Galloway pg. 61-81.

KEY TECHNIQUES TO IMPROVE A PROCESS

1) Elimination or minimizing non-value-added steps.
2) Development and application of standards. These do not need to be recorded on the process map itself, but there should be a supporting document referenced to the various *inspection points.*
3) Moving inspection points forward, so that they are as close as possible to the steps where errors occur. This is a key method of preventing errors while avoiding *do-over* and *rework loops*.
4) Eliminating the need for inspection points altogether. Now that it is known where the process errors tend to occur, ways to eliminate the possibility of error should be evolved.
5) Charting and evaluating *inputs* and suppliers. This is based on the principle of "garbage in, garbage out." The quality of inputs has a substantial impact on the outputs.
6) Doing a cycle-time study.
   a. Deciding how to measure (time) the steps in the process. For example, measuring in minutes and seconds how long it takes to process a savings deposit.
   b. Measuring the process at least a half-dozen times, keeping other variables constant (same banking hall, same day of the week, same cashier) to reduce the number of possible causes of the variation in time.
   c. Calculating *total and theoretical cycle times* for each process, and calculating the difference.
   d. Looking for bottlenecks and other inefficiencies that contribute to the *total cycle time*. Developing solutions and trying them out, taking cycle-time measurements of the changed process.
7) Moving steps into another process. Any kind of preparation serves to shorten the main process. It is important to look for anything that can be done ahead of time.
8) Designing a *parallel process*. This is a process that occurs at the same time as the *primary process*. For example, at a grocery store, the cashier enters the price of the items, while a second person bags the groceries. Parallel processes save time, but usually require some additional resource (such as a person or machine). When evaluating a parallel processing proposal, consider its:
   a. Effect on quality of the output (customer satisfaction).
   b. Cost.
   c. Feasibility.
   d. Unintended consequences (ripple effect on other processes).
9) Automating or mechanizing step(s) in the process. It is important to use the same criteria listed above for parallel processing to evaluate a proposed change.
10) Mapping sub-processes when:
   a. A primary step has been identified as a potential problem area.
   b. No opportunity for further improvement at the primary level can be identified.
   c. It is realised that that no one understands how a particular step is actually performed, and it is required to better understand the process.
11) Using a map to train or retrain staff involved in the process.
12) Getting feedback on the map from customers, suppliers, managers, stakeholders, and any others involved in the process.
13) Using the map as a benchmarking tool. (Benchmarking is the comparison of best practices and techniques to those actually in use. To benchmark, it is possible to compare best practices as defined by CGAP, ACCION and *MicroSave* to those used in the MFI).

SUMMARY OF KEY STEPS IN ANALYSING FOR PROCESS IMPROVEMENT

1. Look for:
- Non-value added steps, excessive handovers and task specialization
- Process inefficiencies such as delays, rework, rejects, etc.
- Wide separation of decisions from work activity
- Frequently repeated steps
- Shared responsibility among several people and excessive control points such as numerous layers of approval

2. Question:
- "What value does this activity add?"
- "Which stakeholder benefits?"
- "Does the client care enough to pay for it?"

3. Take Action to:
- Combine activities
- Run them in parallel rather than serial
- Complete them faster or with reduced labor costs through automation
- Eliminate activities that are not required

REMEMBER: Staff do what they do for a reason!

When staff members are not following a policy – it is easy to simply respond … please follow the policy. However, it is important to understand why the policy is not being followed as there could be good reasons…

- The policy does not fit in with the reality of their work;
- The staff concerned have other tasks and responsibilities to perform;
- There is inadequate supervision and monitoring of the work;
- Staff were insufficiently trained on how to implement the policy;
- The number of staff at the branch is below quota;
- Transaction volumes are higher than the policy was designed for.

Understanding why the policy has not been followed is key in determining the actual actions that should be taken by the financial institution.

CAPTURING NON PROCESS RELATED BENEFITS

Process mapping focuses on achieving positive benefits through introducing more efficient, less risky processes. However, because the process mapping is an intensive, invasive exercise, the process mapping team will observe other areas in which improvements can be made. It makes sense to capture these non-process related benefits in a separate report – which can then be reviewed and actioned by management.

Capturing Non Process Related Benefits: Commercial Micro Finance Limited

Commercial Micro Finance (CMF) found that they were experiencing weaknesses in risk management and disaster recovery after years operating on the same lending procedures. CMF decided to use process mapping to strengthen risk management and disaster recovery, to develop training manuals and to document system weaknesses prior to the introduction of a new banking system.

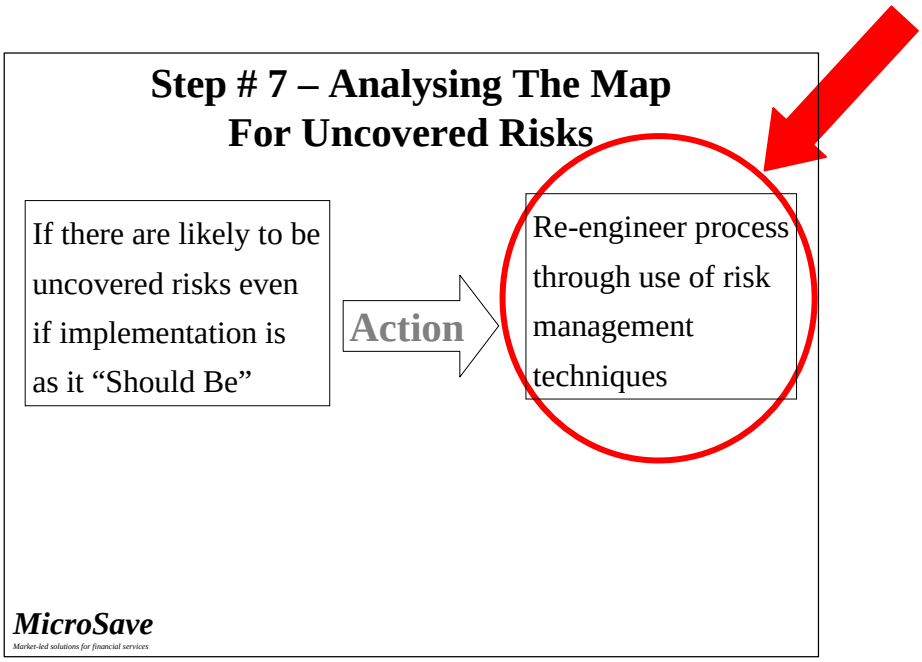
Through process mapping CMF determined that they could significantly rationalize loan documentation and procedures, but that this should be done in stages to allow changes to be tested and to allow staff time to get used to the new processes. A reduction in loan documentation requirements and a change in appraisal procedures increased speed of appraisal and improved customer service.

Whilst CMF benefited directly from process mapping lending procedures, during process mapping, the team made observations, which indirectly related to the processes being mapped. Whilst these were not the focus of the exercise, the observations were documented and recommendations made. These observations led to the introduction of improved signage for customers and customer notice boards, digital cameras being used to take client photographs and the introduction of queue management systems.

PROCESS MAPPING ANALYSIS TOOLS AND METHODS					
Analysis Focus	**Typical Analysis Questions**	**Additional Data Required**	**Tool Used**	**Map Portion Used**	**Analysis Method**
Cost Reduction	1. What does it cost to operate the process? 2. Which steps cost the most? Why? 3. Which steps add value and which do not? 4. What are the causes of cost in this process?	• Cost for each input, output, and step • Determination of whether the step is value-added or non-value added	Cross-functional process map, flowchart	Inputs, outputs, steps	Pareto charts, Activity-based costing, and Activity-based management
Cycle Time Reduction	1. Which steps consume the most time? Why? 2. Which steps add value and which do not? 3. Which steps are redundant, bottlenecks, or add complexity? 4. Which steps result in delays, storage, or unnecessary movement?	For each step, determine: • Elapsed time • Whether the step is value-added or non-value added • Complexity • Redundancy • Bottleneck • Delays • Storage • Transportation	Cross-functional Process map, flowchart	Steps	Pareto chart and work simplification
Quality Improvement (Defect reduction) This can be related to types of transaction errors encountered, such as postings to a wrong account, postings for a wrong amount, cash differences, transacting with a wrongly identified customer.	1. Is variation due to common or special causes? 2. What are the causes of the defects? 3. Which variables must be managed to have the desired effect on the relevant quality characteristics? 4. How should the process be changed to reduce or eliminate variation?	• Process requirements • Common or special causes of variation • Desired quality characteristics • Defect categories and descriptions	Cross-functional process map, flowchart	Inputs, Outputs, Steps	Statistical methods, Pareto charts, Cause and effect diagrams and Root cause analysis

PROCESS MAPPING ANALYSIS TOOLS AND METHODS					
Analysis Focus	**Typical Analysis Questions**	**Additional Data Required**	**Tool Used**	**Map Portion Used**	**Analysis Method**
Customer Satisfaction Measurement	1. How does process performance data compare to customer expectations and perceptions data?	• Customer expectations data • Customer perceptions data • Process performance data	Cross-functional process map, flowchart	Inputs, Outputs	Market research, Stratification: grouping data by categories and looking for patterns in the data and comparative analysis
Benchmarking	1. What are the best-in-class practices, measures, and enablers? 2. What are the root causes of superior process performance? 3. What makes a given practice so effective? 4. Why is one measure (metric) preferable to another? 5. Why is the process configured (designed) to operate this way?	The following should be determined for the MFI's own process plus those of the benchmark partners: • Practices • Measures • Enablers	Cross functional process map; flow chart	Inputs, outputs, steps	Comparative analysis
Reengineering	1. How can the function of this process be performed differently? 2. How can we make the process more effective, efficient, and adaptable? 3. How can we add value while reducing cost? 4. What will the jobs in the new process consist of? 5. How can we use information technology to empower job performers?	• Cost of each input, output, and step • Elapsed time • Customer satisfaction • Number of persons operating process • Information systems • Process requirements • New job tasks	Cross-functional process map; flowchart	Inputs, outputs, steps	Any or all of the preceding

Analysing the Map for Uncovered Risks



Mitigatable risks and their likely frequency and impact of occurrence should be identified. The associated control mechanisms should be looked at and their effectiveness and suitability assessed. Enhancement of and changes to control mechanisms (if required) should be proposed. This could help address gaps between "As Is" State and "Should Be" Process States.

Unmitigatable risks and their possible frequency and impact of occurrence should be isolated. Possible solutions including newer control mechanisms and/or change in process as required – i.e., re-design/re-engineering of the process including designing a parallel process with different sub-processes etc should be evolved/suggested. This should help move towards the "Could Be" State of newer level of performance. Using risk analysis tools described below and those given in the Annexes – including **Product Operational Risk Assessment, Product Operational Risk Assessment Summary** – could help in isolating, analysing and devising practical strategies to mitigate these risks

STEP 7- 1	**RISK MANAGEMENT PROCESS MAPPING, THE FOUR-TIERED FORMAT**	**Stage 1 Brainstorming and Analysis**

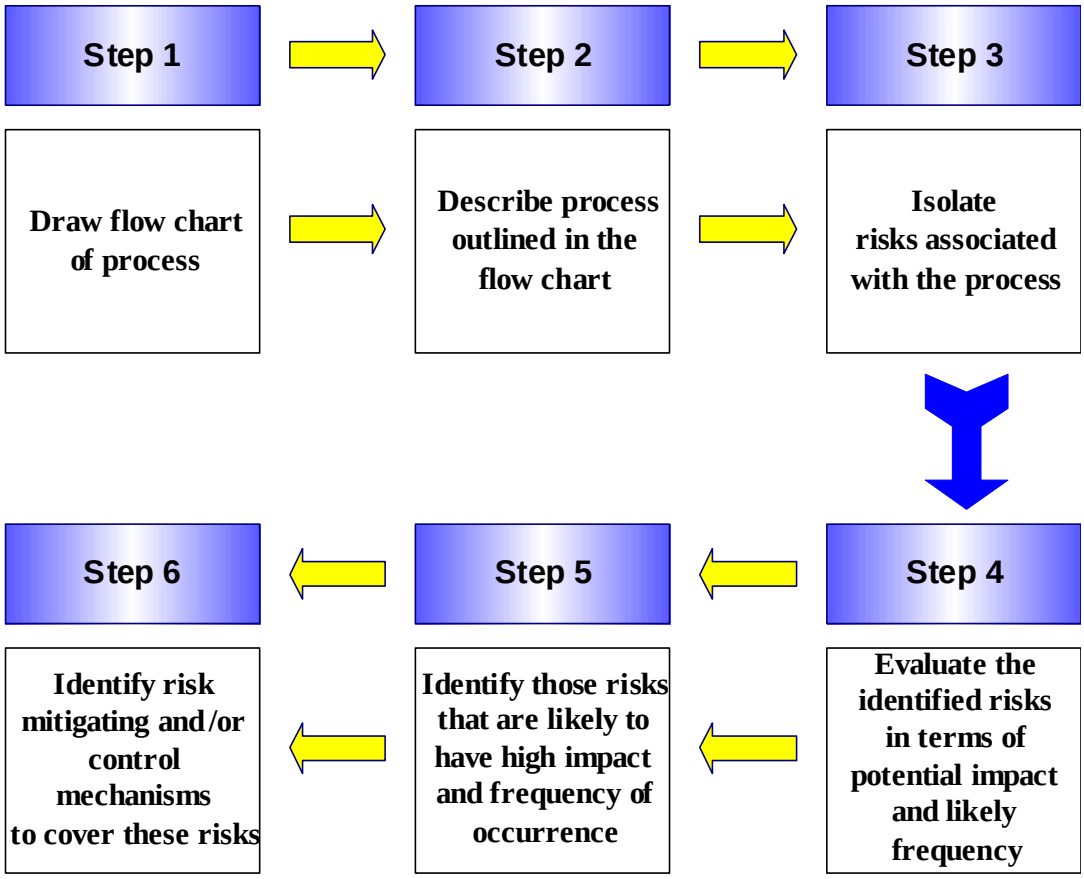
Process mapping helps MFIs manage their institutional risk (including both risks related to core processes and risks related to day-to-day staff activities). *MicroSave* has adopted a standard four-tiered form for Risk-Management Process Mapping. A sample Risk Management Process Map is shown in Annex 3. The format for integrated risk-management process mapping uses a landscape orientation, with the following components:

- Flow Chart – Tier I
- Description of Process Outlined in Flow Chart (Tier II, Below Flow Chart)
- Risks Associated with Process (Tier III, Below Description)
- Internal Control/Risk Management (Tier IV, Below Risks)

Tip: *However, many have found it useful to add a fifth tier to collect all proposals for process improvement as they produce the "AS IS" map.*

The key steps are as follows:

FIGURE 6 – RISK MANAGEMENT, BASIC STEPS



The top two lines are for general use by all staff, and serve to document procedures. These two tiers then serve as the basis for training manuals for front-line staff, for example, as well as for other activities suggested in "When to Use Process Mapping?" All four lines would be used by senior management and others directly involved in the MFI's risk management programme, such as Internal Audit for risk analysis and procedures-compliance analysis, as well as for training senior management.

Management can clearly see the impact of a new directive on a process, or understand why a certain step in a process is being done, from a risk perspective. At TEBA Bank, for example, Internal Audit uses process mapping as a technique for evaluating controls built into procedures designed to implement delivery of new products.

Risk analysis tools and tactics are described in *MicroSave*'s "Toolkit for Institutional and Product Development Risk Analysis for MFIs". While this toolkit focuses on institutional risk analysis, and specifically on risk mitigating tactics during the new product development cycle, these tools and techniques can be applied to any process within the MFI. By adding the Risk and Control tiers to the process maps, there is a compelling need to regard the processes in a new perspective by asking, "What can go wrong?" Once the risks that are associated with the process are clearly identified, the extent to which the MFI wants to mitigate these risks can be assessed.

The control activities, then, should be commensurate with risk tolerance, and answer the questions, "What do we do about this risk?" The steps in the process can be viewed to examine why each step is being performed and then evaluating from a risk perspective, the value of that step in terms of customer service, efficiency, and

economy.

When developing or evaluating a process from a risk perspective, it is helpful to brainstorm at all levels the types of risks inherent in that process. Tool 3a, Product Operational Risk Assessment (see Annex 1), provides a methodology for capturing the risks that are identified, then asks for the evaluation of the impact of that risk on the MFI, what events could cause the risk to occur, then what action steps might be taken in response to that risk event. The same team of people selected to conduct the mapping process ideally performs the brainstorming activity.

After risks have been identified in Tool 3a, the team needs to sit back and assess priorities. It is not always cost effective or desirable from many perspectives, not the least of which is customer service, to completely remove all risk possibilities from the processes.

However, by creating a profile of the impact and likely frequency of the various risk events, the MFI's attention and resources can be focused on those areas that are of greatest importance to the organisation. Tool 3b, Product Operational Risk Assessment Summary (see Annex 2), is designed to profile all the risks identified in Tool 3a on a scale of high, medium, or low impact and frequency. Those risk events appearing in the high frequency, high impact box would more than likely be the activities the MFI intends to control.

Process maps can be derived either before or after the risk analysis. If there are existing maps, the results of the brainstorming session and risk analysis can be added to the process maps, thus illuminating opportunities to improve the process, either by fixing loopholes, or eliminating redundant or non-essential steps. If a new process is being evolved, it is desirable to conduct the risk analysis before generating the process map. In order to develop procedures for a new savings product, for example, it is important to identify not only what the risks are, but also what is to be done about them. The intended actions to control the risks become steps within the process.

In this manner, controls are being built into the process, rather than tacking them onto a process. Building controls into a process integrates controls within the process, and is proven to be far more effective and efficient than adding controls onto an existing process. When controls are added at a later time, they are often susceptible to erosion, or are "peeled" off, when a process becomes subjected to performance pressures, such as customer waiting time. To assist with identifying control activities for incorporation into the processes, refer to Annex 9 for internal control questionnaires covering several core MFI activities.

Analysing Risk In Practice

"Several Action Research Partners reported difficulties in analysing operational risks. These difficulties resulted from several causes. Firstly, the fact that team members often lacked experience in identifying risks. Secondly, some institutions found it difficult to obtain sufficient input from internal audit. Thirdly, while risks could be identified it was particularly challenging to obtain information on the incidence of that risk occurring – this was needed to determine whether the risk was a theoretical risk, or an actual risk. In the words of one respondent "The determination of whether we could live with a particular risk is very difficult if we can not easily determine the incidence of the risk."

Process Mapping in Practice (Sempangi et. al., 2005)

Summary Points to Consider in Making Risk Analysis Work

Balance risk and control: it is important to balance risk and control, especially where adding additional controls affects the banking experience of the customer or significantly increases work in the back office.

Include only the top four or five risks: it is easy to brainstorm risks during the process mapping exercise and develop a long list of potential errors. However, this is the moment for a reality check. Are all the risks that have been identified equal either in magnitude or frequency? Wherever possible include only the top four or five risks associated with a process.

Prioritise risks: once risks have been identified try to prioritise risks by level of importance to the institution, thinking through magnitude and frequency of the risk occurring will help to rank risk in order of importance.

Make risks relevant to the sub- process: ensure the risk being considered is relevant to the sub-process in question. Try to be as specific as possible. While there are risks associated with a process as a whole, such as liquidity management in deposit taking this is unlikely to be a factor at every stage of the process.

Review history of risk associated with that process: A good internal audit department will be able to identify the sub-processes within a process that have resulted in the most fraud or error being discovered. The internal audit and operations departments should identify where changes have previously been made to processes or procedures. Review areas of concern carefully for evidence that risk has been covered and for variance in operation of procedures.

Bring internal audit to this part of the process: Whilst process mapping is a skill that can be learned by many, it takes time, training, experience and knowledge of internal control to properly consider risk. A senior representative from internal audit should be made part of the team when considering risk within a process. This will help to prioritise risks and in reviewing the history of risk associated with a particular process.

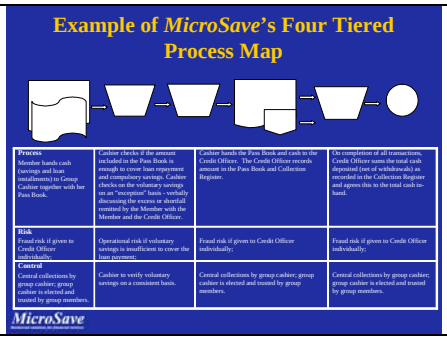
Ensure the right people are trained in process mapping: Train people with in depth knowledge of the institution and its operations, ideally choose people who have been working with the institution for some time.

Key questions to consider when thinking about risk:

- What risks have *actually* been experienced in a particular process
  - How often is this risk experienced?
  - How serious was the risk being experienced?

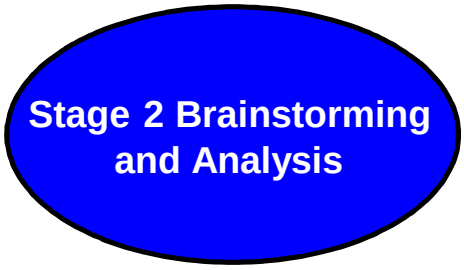
- What has been done in the past to strengthen internal control and why?
- How has this process evolved and changed over time and why?
- What happens to the process when the computer system goes down?

To delve deeper into a particular risk consider using an Internal Control Questionnaire.

STEP 7	**Fine-Tune Process Maps**	**Example of *MicroSave*'s Four Tiered Process Map** 

The process map should be fine-tuned on the basis of the above analysis and everything should be rechecked meticulously. This should be done whenever a modification is made to the map. The 'substantive' modifications

made should be clearly highlighted. The date and time of modification to the map should always be noted. Also, the team that worked on the proof reading and modifications should be clearly identified.

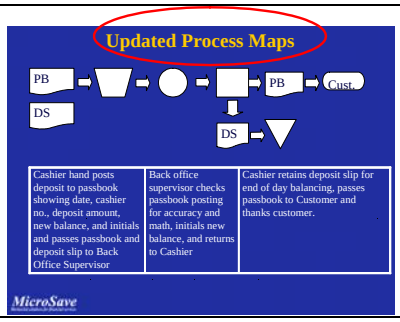
STEP 8 	**ANALYSE MAPS – 2ST STAGE ANALYSIS**	

A closer re-look needs to be taken at the fine-tuned process map. Use a smaller group of stakeholders - comprising primarily of process experts from within the organization – for the 2nd stage of brainstorming. The required analysis should be repeated from step # 7, as before.

- Can the process be further optimized?
- Are there still uncovered risks that need redesign?
- How can implementation be further enhanced?

Then, the map should be updated using feedback from analysis to reflect above with options of "Should Be" Map and "Could Be" Map and everything should be rechecked meticulously. This should be done whenever a modification is made to the map. The 'substantive' modifications made should be clearly highlighted. The date and time of modification to the map should always be noted. The team that worked on the proof reading and modifications should be clearly identified.

After all possible actions have been identified, the group should agree on a set of "final" action steps. A map should be prepared on how the process could look. Some of the solutions identified during the brainstorming session, while not feasible given current constraints, may become possible if those constraints are modified or removed.

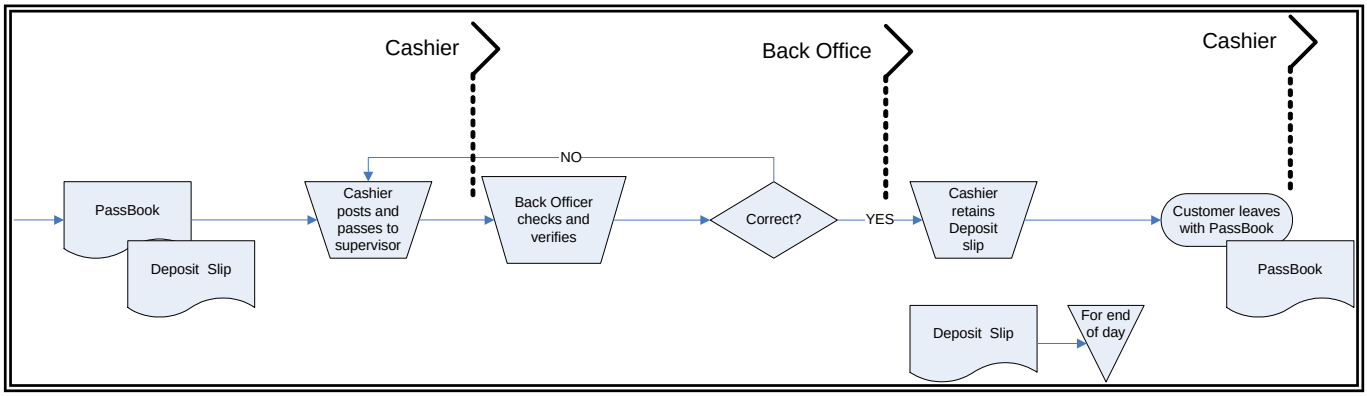
STEP 8 - 1	**UPDATING PROCESS MAPS**	

Procedures and processes within an organisation are dynamic, and subject to change as improved methods and technologies are introduced. Process maps of procedures need to be reviewed at least annually to reflect any changes not yet captured in the maps. Ideally, process maps will be used in the MFI to help understand the impact of changes on procedures, risks, and controls before implementing these changes. After implementation, processes changed should again be mapped to insure that the new "as is" state conforms with the "should be" state as originally envisioned. The process of updating a map at the surface would appear to be a relatively simple and less time-consuming process than formulating the map in the first place. However, the same seven key elements for formulating a map should be applied to the process of updating a map, with extra emphasis on proofreading and analyzing the changed map.

When a map is updated, the revision date and the name of the person doing the revisions should be noted in the upper left hand corner, in the "Prepared By" and "Date Prepared" blocks. When changing process symbols and process flows, it is easy to introduce errors into the map, by failing to remove gratuitous or redundant processes, failing to properly redirect process movement arrows, or failing to redesign the process to compensate for a change in controls or risks resulting from the alteration of a previously controlled process.

The process of posting a customer's deposit to a savings passbook, which is presently a manual operation in the MF, should be looked into. It might look similar to the process below:

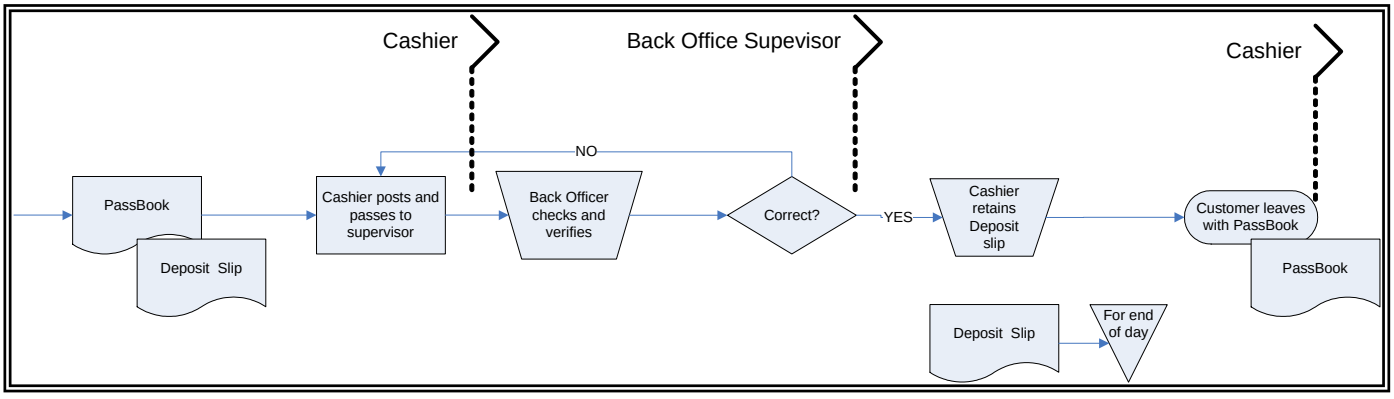
PROCESS MAP TO BE UPDATED



Cashier hand posts deposit to passbook showing date, cashier no., deposit amount, new balance, and initials and passes passbook and deposit slip to Back Office Supervisor	Back office supervisor checks passbook posting for accuracy and math, initials new balance, and returns to Cashier	Cashier retains deposit slip for end of day balancing, passes passbook to Customer and thanks customer.

To improve speed of customer service and efficiency of MFI operations, an MFI's Finance Director decides to invest in printers that can enable the computer system's ability to post passbooks. In updating the map, it is seen here the cashier is posting the passbook by hand and it is replaced with the revised process where the cashier inserts the passbook into the printer for the recording of the deposit, date, cashier number, and new balance. The manual process symbol is changed to the new process symbol, and the revised map might look like this:

INCORRECTLY UPDATED PROCESS MAP

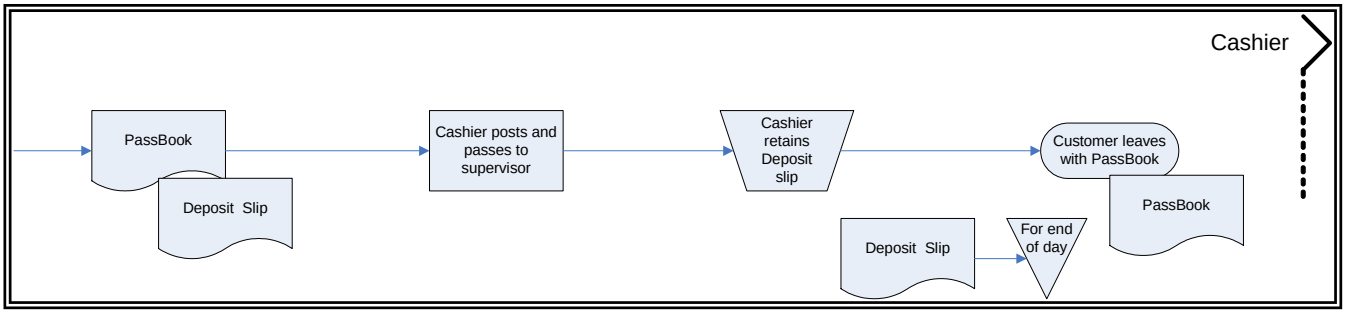


Cashier places passbook in printer, prompts system to post transaction to passbook, then passes passbook and deposit slip to Back Office Supervisor	Back office supervisor checks passbook posting for accuracy and math, initials new balance, and returns to Cashier	Cashier retains deposit slip for end of day balancing, passes passbook to Customer and thanks customer.

This process does not look very different from the initial process. In fact, it does not make sense as amended. Why would the Back Office Supervisor need to check the accuracy of the posting and whether the new balance is correctly calculated? Having this step does not improve speed and efficiency of operations as the Finance Director anticipated. In actual fact, the back office confirmation process was a bottleneck and was meant to be

removed all together by the Finance Director. The amended map in fact needs to have the inspection point removed, and the process map would most likely resemble the one below:

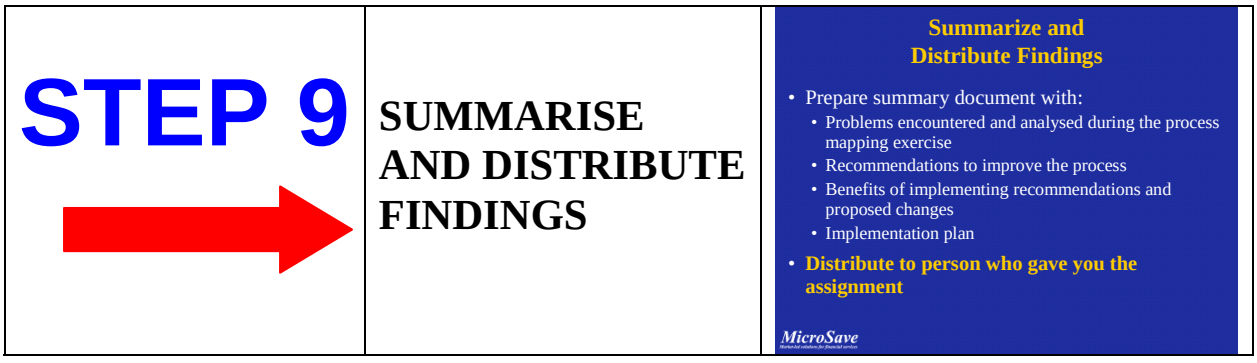
CORRECTLY UPDATED PROCESS MAP



- Cashier places passbook in printer, prompts system to post transaction to passbook
- Cashier retains deposit slip for end of day balancing, passes passbook to Customer and thanks customer.

After updating a process map, it must be proofread and analysed as carefully as when it was first created, to insure that new errors have not been introduced by failing to fully update all process descriptions and procedures. In this case, the passbook and deposit slip are no longer passed to a Back Office Supervisor, who no longer inspects the passbook posting. If the map included a theoretical and total time line, these must also be updated to reflect the dramatic improvement in processing time as a result of the innovation introduced. To ensure the accuracy of changes, a knowledgeable person should be asked to proofread the process, or they should be verbally walked through the process, so that errors are more easily detected.

The "As Is" Map should be finalized with options of "Should Be" Maps and "Could Be" Maps. The date/time should be marked on the final version and the names of people/position who worked on it and are in many ways responsible for the final output should be appended to it.



To ensure that maximum benefits are derived from the work, it is required to distribute the findings in a clear, well-organized form. The work will have no organisational impact if a summary of the findings and recommendations is not presented to the superior officers.

The "as-is" and "should/could be" maps should be finalised and a summary of the problems noted and the recommendations to improve the process should be prepared. The summary should present, as clearly as possible, the benefits of implementing the recommendations. The inclusion of excessive detail about the process should be avoided in the summary; that information is provided in the maps.

The "as-is" map and the "should be/could be" maps should be presented to the MFI's decision-makers, showing them the impact the proposed solutions could have on the process, along with the completed summary.

This is the culmination of the considerable work that has gone into the entire mapping process; if it is not communicated, or not well-communicated, either process change will not occur, or will not occur to the degree required to bring about the desired outcomes. It has to be remembered that process mapping is a process in and of itself. It begins with a problem (input) and ends with the report (output).

Thus, the key tasks in this step include the following:

Task 1 – *Preparation of a summary process mapping document which:*

- Highlights problems noted in the process along with other possible outputs (depending on the original process mapping objectives)
- Outlines recommendations to improve process and/or address other original process mapping objectives and analyse the implications of these recommendations (annex 10)
- Identifies measures of success - indicators that can be used to examine the effectiveness of the process mapping recommendations (annex 11)
- Translates generic recommendations into specific action steps
- Highlights the benefits of implementing the recommendations

Task 2 – *Identifying and addressing challenges:*

Sometimes, action proposed may be outside scope of process/department boundaries. Therefore, evaluation of proposed action steps including identification of stakeholders who have control over change is very crucial. This needs to be highlighted in the summary document. Also, gaps identified may be outside the process or departmental boundaries. In this case, control over change may be limited. Where change is within our domain of control, it is often a challenge to implement and requires buy in from the stakeholders. It is tempting to initiate temporary solutions – sometimes they can become institutionalised and sometimes they can slow institutional growth.

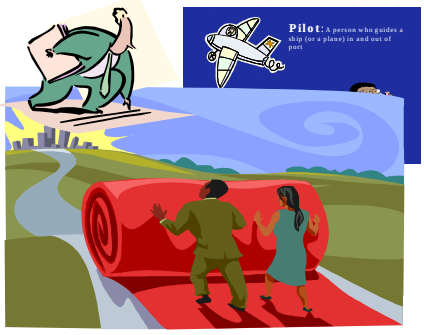
Task 3 – *Distribution to stakeholders:*

The finalized process map and summary document must be distributed to person (s) who commissioned the process mapping. Their feedback and those from other important organisational stakeholders should be obtained and their suggestions (where feasible) should be incorporated into the process mapping document to have institutional buy-in to implement process mapping recommendations.

Findings From Process Mapping – What to Expect?

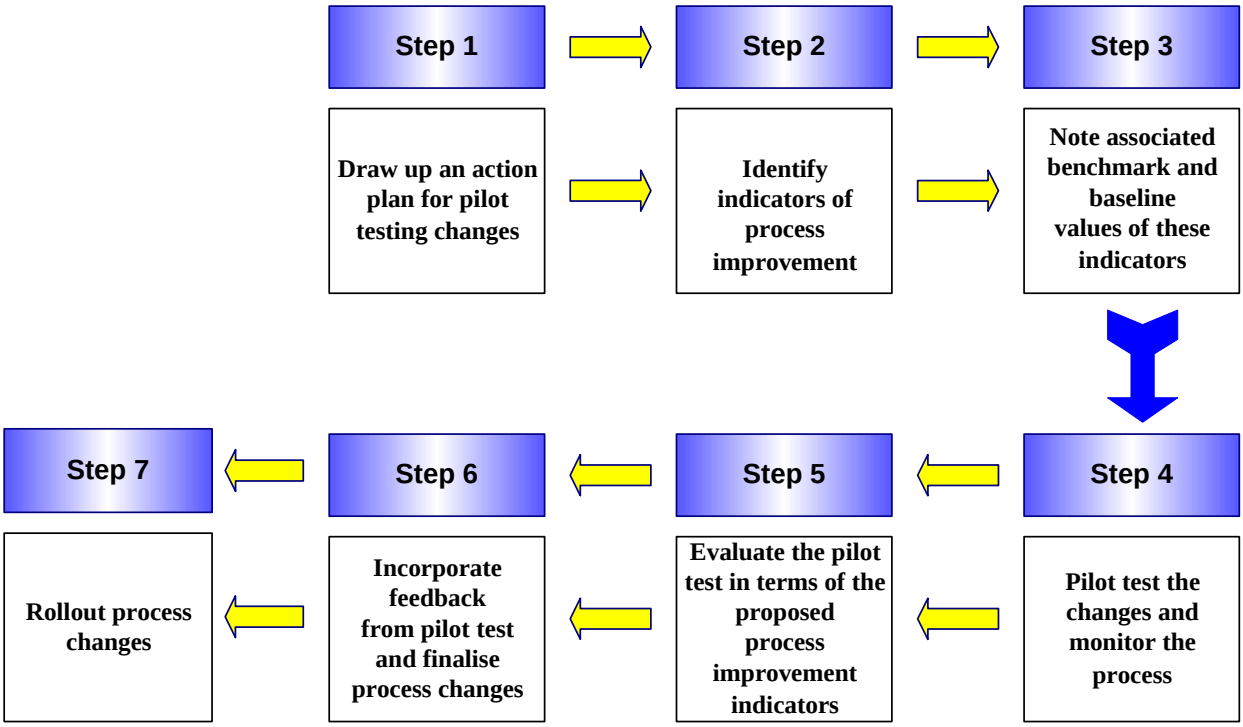
For example, depending on the process mapping objectives, findings from the process mapping exercise could typically include:

1) Understanding of how processes interact in the business system
2) Location of process flaws that are creating systemic problems (such as a high incidence of teller fraud, long lines, or poor quality of customer service etc)
3) Identification of process flaws that subject MFI to unnecessary risks that could be avoided at a reasonable cost; frequency and impact of occurrence of these risks etc; their drivers or causes etc
4) Effectiveness of internal controls (including redundant/missing controls etc) within processes that serve as risk mitigating strategies
5) Determination of which activities add value for the organization and which add value for the customers
6) Identification of risk mitigation strategies including specific changes/control activities to build into the process to mitigate the various risks
7) Identification of processes that need to be re-designed/re-engineered

STEP 10	**GETTING INTO ACTION – TESTING OUT THE NEW PROCESSES!**	

It is important to finalise action steps with specific timelines including test period for implementing changes and monitoring/feedback from testing. Persons (names) responsible for test implementation should be identified. The process map should be updated, as and when required, using test implementation results. The pilot test changes should be monitored and evaluated and the feedback should be integrated to finalise process, its map and other documentation. After this, the process can be rolled out through an implementation plan that has specific timelines, people (specific names) and locations identified. This is diagrammed in the figure below:

FIGURE 7 – IMPLEMENTING THE CHANGES



Pilot Testing the New Processes

Having completed the "could be" do ***not*** just roll it out!!

It is important to **pilot test the new procedures**. This should be done in a systematic manner using:

1. **Compose the Pilot Test Team:** A pilot test team with a clear mandate and Terms of Reference giving the team the responsibility and resources for conducting the pilot test.
    a. Identify persons (names) responsible for test implementation
    b. Define their terms of reference
    c. Ensure that they are given the time to prepare, con duct and assess the pilot test adequately
2. **Define the Objectives:** Benchmark process times before the pilot test with targets for after revised procedures are implemented
3. **Develop the Protocol**:
    a. Identify the branch(es) where the pilot test will be run
    b. Finalize action steps with specific timelines including:
        i. Test period for implementing changes;
        ii. Monitoring plan and
        iii. How the feedback from testing from will be used to further optimise the procedures
4. **Training the Relevant Staff**:
    a. Ensure that the staff in the pilot test branches are
        i. Appropriately trained both in the new procedures (the process maps are a great basis for this training!)
        ii. Prepared to document the lessons learned
5. **Monitor the Pilot Test**:
    a. Review the implementation of the new procedures
    b. Time the revised processes and compare the timings with the benchmarks
    c. Examine opportunities to further improve the processes
6. **Update Process Maps**, as required (using test implementation results).

INSTITUTIONALISING PROCESS MAPPING IN THE MFI

> "Most of *MicroSave*'s Action Research Partners started by mapping one or two processes, but have gone on to map much of their institution. For example, Commercial Microfinance Limited started by mapping their Duka Loan process. After seeing quick wins, they immediately started to process map their savings processes, treasury management and management reporting. After FINCA Uganda was exposed to process mapping it approached a donor to fund a *MicroSave* certified service provider in process mapping to provide quality control as they proceeded to process map their entire institution. Equity, which had earlier developed process maps to improve processes decided to reexamine all their process maps to improve risk management."
>
> Process Mapping in Practice (Sempangi et al. 2005)

Once an MFI has management buy-in for the advantages and applications of process mapping within the organisation, how does an MFI go about ensuring that process mapping becomes an integral part of the organisation's methodologies? Who within the organisation should be taught process mapping? How will process mapping be used within the MFI? Who within the organisation will use the process maps prepared? How frequently should process maps be reviewed or updated? Who will be responsible for ensuring process maps are properly used and updated? Answers to these questions will help guide the MFI in institutionalising process mapping.

What steps can an MFI take to institutionalise process mapping? First, the MFI must demonstrate commitment to the discipline at its highest levels. It is crucial that the MFI's board and top management support the use of this important discipline, and issue the appropriate directives for its implementation. A number of actions can help ensure compliance:

- Naming a responsible person or department.
- Including process mapping in job descriptions.
- Including process mapping in performance appraisals.
- Requiring that process mapping techniques be used in new product development.
- Requiring that procedures manuals include process maps.
- Using maps in employee training sessions.
- Identifying staff to train in process mapping, and provide the training
- Requiring an annual review and update of existing maps.
- Including a review of the process mapping function in the internal audit program.

Because of the varied reasons for process mapping, vesting responsibility for process maps varies with the purpose and intent of the mapping exercises. If *MicroSave*'s four-tiered approach to process mapping is to be used as a risk-analysis tool, it might seem best that the discipline be included in the skills required of risk management staff. Arguments can be made, however, for assigning process-mapping responsibilities to a number of different departments.

Process mapping incorporates analysis of internal controls; can be used to study operations and new product development; and serves as an effective training tool. It could logically be assigned, therefore, to the internal audit staff, to Operations, or to the Human Resources Department. Because process mapping has such broad applicability in scope, in both linking customers with MFI processes and outputs, as well as in breadth of MFI activities, in an ideal world it would be institutionalised cross-functionally. After all, process mapping is a tool, much in the same way that data entry is a tool used by all computerised departments. For practical purposes, however, each MFI must use this skill where it seems most needed, assigning functional responsibility accordingly.

The most likely candidates would be Operations or Internal Audit; risk management and procedural (proscribing as well as compliance) responsibilities often lie within these departments as well. Depending on the reason for

creating a process map, the responsible departments/individuals would assemble a cross-functional team (refer to "Formulating Process Maps-Select People).

The frequency with which process maps are reviewed and updated is also dependent on the objective for creating the process maps initially. Process maps generated to document procedures must be updated fairly frequently, since it is likely that procedures, responding to the dynamic nature of the organisation, change in response to the various change drivers.

Process maps generated as an occasional exercise to improve efficiency are probably not updated after the exercise is completed; the recommended "should be" or "could be" maps are adopted, modified, or tabled. Processes are again subjected to a process improvement exercise when certain trigger points within the MFI, such as customer dissatisfaction, lack of market share, excessive costs, are reached. Process maps used by internal audit, for example, to ensure consistency of application of policies and procedures, are updated as part of the regular annual audit program.

The Relationship Between ISO 9001 and Process Mapping[14]

It is worth a short aside to explore the relationship between ISO 9001, an internationally recognised international quality standard and process mapping, because the relationship is so strong. According to Hoyle[15] if ISO 9001 were to be resolved into a single requirement it would be

"The organisation shall determine what it needs to do to satisfy its customers, establish a system to accomplish its objectives and measure, review and continually improve its performance."

Hoyle 2002

Process mapping is a core element in designing efficient and effective systems, and can be used to identify key performance indicators. Again according to Hoyle the generic requirements of ISO 9001 can be condensed into the following five simple requirements. The organisation shall

- Determine the needs and expectations of its customers and other interested parties
- Establish policies, objectives and a work environment necessary to motivate the organisation to satisfy these needs
- Design, resource and manage a system of interconnected processes necessary to implement the policy and attain these objectives
- Measure and analyse the adequacy, efficiency, and effectiveness of each process in fulfilling its purpose and objectives and;
- Pursue the continual improvement of the system from an objective evaluation of its performance.

Hoyle 2002

The primae facie differences, between ISO 9001 and process mapping, therefore, appears to be a) an explicit focus on the customer in ISO 9001… which was an explicit objective of many of *MicroSave*'s Action Research Partners, b) continuing to measure the effectiveness of each process, and c) a commitment to continually assessing and improving the system as a whole.

It would appear therefore, that effective institutionalisation of a process mapping function within a financial institution can be a key step towards an international performance standard. Where process mapping develops and maintains well-documented procedures produces key performance measurements and is part of a focus on continuous improvement.

[14] This section was extracted from Sempangi ibid
[15] This section was extracted from Hoyle, David "ISO 9000 Quality Systems Handbook", Butterworth Heinemann 2002

Twenty Questions as Mapping Process Summary Checklist!!!		
Have you:	**☑ Yes**	**☒ No**
1. Identified all major elements of the project?		
2. Labelled all elements clearly?		
3. Sequenced the elements in a clear and logical manner, especially from a user's point of view? Are there are no gaps or dead ends?		
4. Used flowchart symbols correctly		
5. Selected the right people to do the maps?		
6. Defined the process, objectives and boundaries?		
7. Gathered pertinent data?		
8. Standardised mapping conventions and symbols?		
9. Created the "as-is" map?		
10. Labelled the map?		
11. Proofread the map and made necessary modifications?		
12. Analysed the "as-is" map for implementation problems, sub-optimal process and unmitigated/uncovered risks?		
13. Updated the maps, based on the two stage analysis (brainstorming)?		
14. Gathered further data to support recommendations for a "should be" or "could be" process?		
15. Constructed the "should be" and/or "could be" process maps?		
16. Compared the "as-is" map to the "should be" map to identify improvements?		
17. Distributed your process maps ("as-is" and "should be/could be"), accompanied by your analysis and recommendations, to management?		
18. Received feedback and incorporated this prior to pilot testing the changes/processes		
19. Pilot tested the proposed changes and monitored and evaluated the pilot testing		
20. Incorporated feedback from pilot testing prior to roll out		

PRACTICAL EXAMPLE

The task is now to put all the theory into practice. How does it work to start with a blank piece of paper and actually begin the mapping process? This section shows a completed process map for a savings deposit, shown below, using the first two tiers of *MicroSave*'s four-tiered format. (The first tier is the set of symbols used to show the process; the second tier is the process description in text form). If the steps in this map are read and followed, the use of many of the symbols described in the next section, Process Map Symbols, will be understood. The method of actually linking the symbols to form a process map is also explained. When a reference number in bold is encountered (e.g. **Ref-1**) on the sample map, it should be referred to the main teaching points discussed below. The map in this sample is representative of how the micro-process maps in an organisation are designed. They are used to document precise tasks and procedures that individuals are held accountable for.

Standard Beginning

Regardless of the mapping objective (to describe a new process or an existing process), type of map selected (flow chart, risk management, cross-functional, time elapsed), and state (as-is, should be, could be) selected, all process maps will have the same common beginning steps.

1. To start with, the objective and the process boundaries should be defined. The objective in this case is to map the existing savings-deposit process for the purpose of training new cashiers. The process boundaries will begin with the customer's bringing a deposit into the MFI (the input) and end with the last step in the cashier's handling of the transaction: issuing a receipt to the customer (the output).

2. The basic steps that produce the output should be listed, using as brief a description as possible, such as a verb followed by a noun. These may include: complete deposit slip, greet customer, count cash, inspect deposit slip, post deposit, post passbook, authenticate passbook posting, store cash, store deposit slip, thank customer. These processes should be arranged in the sequence in which they occur; this will help to construct the map logically and easily.

3. The map title and reference number should be recorded at the top and centre of a landscape-formatted sheet. In the sample below, "B1" is used as the reference number, where "B" refers to a series of savings-related process maps, and "1" is the first map in the series. **(Ref-1)**

4. The name of the process initiator and the date prepared should be recorded below the map title line, at the left hand margin. **(Ref-2, Ref-3)**

Constructing the Map: What Symbols Should Be Used?

5. The starting point for this process is the customer. The "Start" symbol should be placed in the upper left hand corner of the paper. In this case, the start point is a customer who is walking in to a banking hall with documents. The documents should be attached to the 'start' symbol so as to show that the customer is walking in with them. **(Ref-4).**

6. Symbols must be connected by arrows to show flow, which may represent either the sequence of the processes, or the movement (transportation) of the inputs from process to process. An arrow should be entered automatically after posting a process, inspection, document/input, or decision symbol to the map. By convention, movement is from left to right, and from top to bottom; both directions are shown in the sample below. Alternating the vertical and horizontal flows can help to show activities that occur almost simultaneously, and can also save space on the sheet. For example, a down arrow is used to connect the Start Process (customer) with the first two inputs (passbook and cash). A horizontal arrow could have just as well been used and the two inputs placed to the right of the Start Process symbol. The choice is let to the drawer of the process map. The objective is to present as clear and understandable a map as possible. **(Ref-5)**

7. The customer's deposit has three component inputs: the cash, the deposit slip (the MFI's voucher), and the passbook (the customer's receipt). These three inputs have different processes performed on them, and are stored in different places at the end of the process, so they need to be identified by distinct symbols. It must be noted that the passbook and deposit slip use the "Document" symbol, while the "Cash" symbol is used to represent the cash. For the sake of clarity, the document name should be inserted into the centre of the symbol. From this point forward it must be assumed that these documents flow with the arrows until

otherwise indicated. At this point in the process, there are only two inputs: the passbook and the cash. These should be placed next to each other, with one arrow to the right, indicating that they flow together. The documents should flow along the horizontal 'transportation' symbol. This shows that they are moving along the process. **(Ref-6)**

8. An option for this step is to use either the "Process" or "Manual Operation" symbol. Because the customer must hand-write the document (rather than it being computer-generated, for example), the better option is to select the "Manual Operation" symbol.**(Ref-7)**

9. In this step, **(Ref-8)** the cashier counted the cash and found it to be either correct or incorrect. This results in two possible courses of action that must be shown in the process. The decision symbol should be used. A word or two should be inserted inside the symbol to reflect what condition is being decided; in this case, the question being answered is: "Amount correct?" The question has to be phrased so that it can be answered either as "Yes" or "No." Both courses of action are mapped. The decision symbol, therefore, has two arrows attached to it, one representing the "Yes" course of action, and the other, the "No" course of action.

a. NO: This course of action represents a *rework loop*. **(Ref-9)** The customer has to either make the correction to the deposit slip and initial the change, or make up/receive the difference in the amount of cash deposited so that it will equal the amount shown on the deposit slip. After the correction process, the arrow points back to the decision diamond because the cashier now decides again whether the actual cash counted agrees with the amount reflected on the deposit slip. If it does, then the process resumes the flow from the "Yes" arrow leaving the decision diamond.

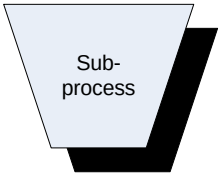
b. YES: The cashier has answered "Yes" to the question, "Does the amount of cash received agree with the amount shown on the deposit slip?" The process continues to the next step. **(Ref-10)**

10. There is not sufficient space left on the sheet to post the next step, even though there is space below the existing line of symbols. **(Ref-11)**. Since arrows move from left to right and top to bottom, by convention, it is not possible to draw an arrow that will connect to the next page. This means that it has to be continued on another page. The "Off Page Linear Connector" symbol should be selected from the list. This symbol is used twice: first on the page that the map ends and at the beginning of the next page where the map continues. To let the reader know which connectors go together (form a pair), a number (the number of the page) should be inserted, assigned sequentially, in each symbol. The first pair, for example, might be labelled "1" while the second the pair would be labelled "2". The reader knows which one of the connector links to the other.

11. Up to this point, the three inputs—the passbook, deposit slip, and cash—have been flowing together. It is now time to show storage of the cash **(Ref-12)** and to separate their flow **(Ref-13)**. The deposit slip and the passbook will continue to flow together; redraw and label the document symbols for each of these inputs next to each other, followed by one arrow. (To emphasise that these documents flow together, the documents can be overlapped as shown in the sample). The cash symbol needs to be redrawn and labelled, followed by an arrow. The storage symbol should be used, and placed after the arrow leading from the Cash symbol to show that the cash has been dropped from the flow. If it adds clarity and not clutter, the storage symbol can be labelled (in this case, "Till"). The act of the cashier placing the money in the till does not need a process box; it is sufficiently clear to show through the use of the cash symbol, arrows, and storage symbol that the cash is going into the till. This illustrates how the use of symbols can eliminate unnecessary and redundant process boxes.

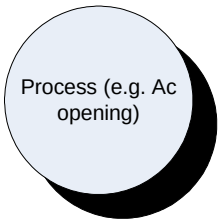
12. The details of the inspection performed by the back office supervisor can be described in the second tier of the map. Alternatively, the Manual Input can be shadowed (refer to the "Tier Your Maps" section) and a sub-process map can be created that describes what the back office supervisor actually does **(Ref-14)**. There are two ways to show a process that is completed elsewhere:

Sub-process – this is another process within the process map. E.g. a legal process to perfect loan collateral/security



and

Different process – takes place irrespective of the map being drawn. When a process is mapped elsewhere. The process would take place with or without that particular process



13. **(Ref-15)** This step demonstrates a teaching point discussed above. Which point is represented here?[16] Hint: Describe what is happening here.

14. The passbook/receipt, posted with the deposit (the output), is returned to the customer. This is the end of the process. **(Ref-16)**. The End Process symbol is used, (which is the same as the Start symbol) and it is labelled to show that the customer is the endpoint. Since the Passbook leaves with the customer, it is show overlapping with and below the customer as the end point. This completes the first tier of the Process Map.

15. In the second tier, the description for each step is recorded. **(Ref-17)**. This task serves a dual purpose; it forces proofreading of the symbols to make sure that the requirements described in the "Proof Read Map" section above have been complied with. It can also be seen firsthand whether the process map makes sense. Alternatively, these descriptions can be completed as the symbols are drawn; it may be felt however, that keeping up with the text while also posting symbols on the map is cumbersome.

16. Lastly, since a second page has been used, the Process Map title has to be carried forward and the map pages numbered in the upper right hand corner **(Ref-18)**.

Creating the MFI's Own Map-Incoming Mail Procedure

Having gained familiarity with the symbols and methods by going through the earlier sections, an attempt must now be made to create the MFI's own process map from a blank sheet of paper, using tiers 1 and 2 of *MicroSave*'s approach. A simple and short exercise using a generic incoming mail procedure is suggested below, with the suggested solution shown as Annex 7. Learning from this exercise can be maximised if the instructions provided so far in this toolkit are used to create the MFI's own map, referring to the suggested solution only there is a problem.

Define the boundaries of this process, starting with the receipt of the mail from the MFI messenger to its delivery to the addressee person or department.

Begin your map as described above in "Standard Beginning". Identify the processes: sort mail, assign incoming reference number, record in incoming mail register, deliver to addressee, obtain signature. In this example, the MFI's head office secretary is responsible for the incoming mail distribution.

File the incoming register upon completion of delivery in the secretary's file cabinet.

Now the result can be compared with Annex 7. Refer to the savings deposit tutorial to answer questions about page setup, use of symbols and placement of symbols.

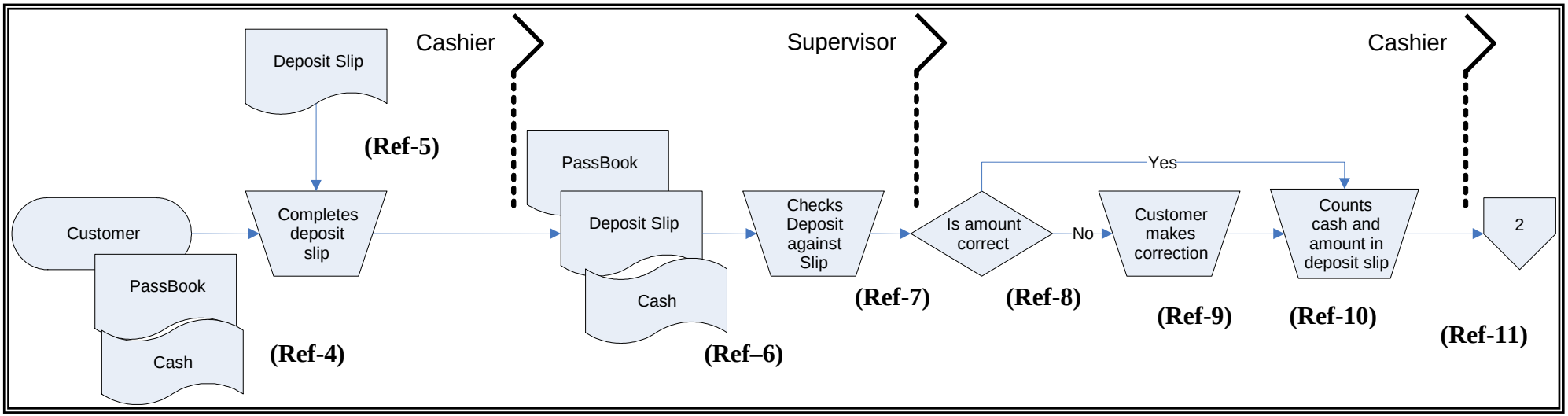
You are now ready to start mapping processes in your own MFI.

[16] The symbols for the two remaining inputs (passbook and deposit) that have been flowing together from the inspection point to the cashier, now go in separate directions. For clarity's sake, these symbols are redrawn and labeled, each followed by its own arrow. This was demonstrated in (Ref-13).

Cashier Process Of Savings Deposit-B1 (Ref-1)

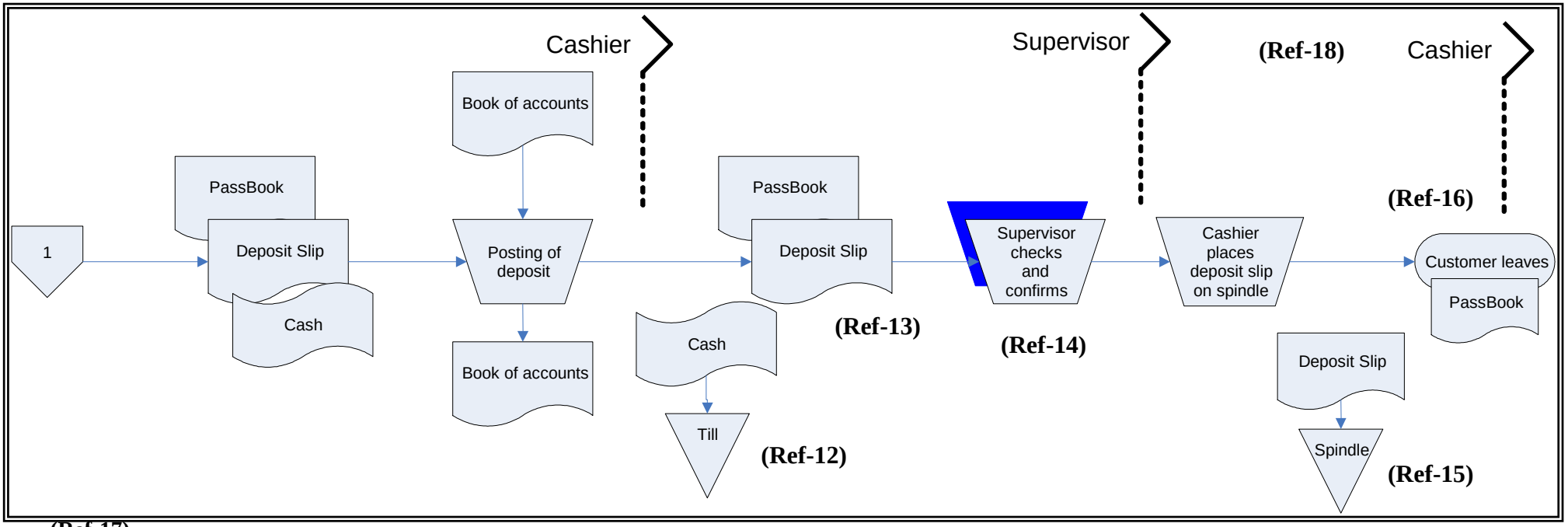
Prepared by: Your Name (Ref-2)

Date: (Ref-3)



Description	• Customer enters banking hall, bearing passbook and cash • Customer completes deposit slip	• Customer hands deposit slip, passbook and cash to cashier	• Cashier greets customer, then checks deposit slip for name, account number, agreement of written and numerical amounts • Cashier counts cash and ticks to amount on deposit slip • The Cashier checks whether the amount on the deposit slip is correct against the cash handed by the customer. • If the amount is not correct, the customer corrects and initials correction on deposit slip or adjusts amount of cash tendered.

Cashier Process Of Savings Deposit-B1 (Ref-18) **Page 2**



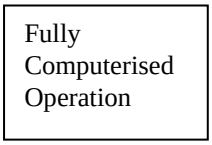
(Ref-17)

DESCRIPTION	• If the amount is correct, the Cashier posts transaction to MFI's books of account. • The Cashier posts deposit to customer's passbook, calculates and posts new balance, initials passbook balance, then passes passbook and deposit slip to back office supervisor.	• Back office supervisor: o compares data on deposit slip to amount credited in passbook, o confirms correctness of both, initials deposit slip and o returns both to cashier.	• Cashier thanks customer, placing the deposit slip on spindle for end of day balancing. • Cashier passes passbook to customer, thanks customer. • Customer leaves banking hall.

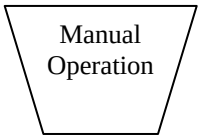
PROCESS MAPPING SYMBOLS

The most common symbols used in Process Mapping include the following:

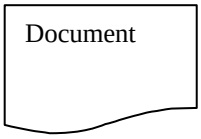
This symbol is used to indicate both the beginning and the end of the program.



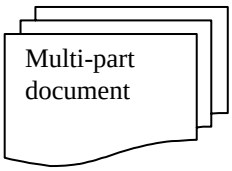
Fully Computerised Operation: If the operation is fully computerised, it can be denoted by the square/rectangle.



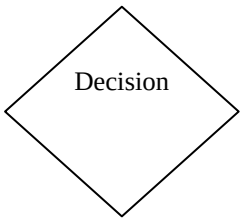
If it is important to indicate that an operation is manually performed, this is used instead of the square Operations Process symbol.



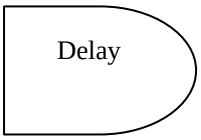
Indicates a physical paper/register/file on which information is recorded.



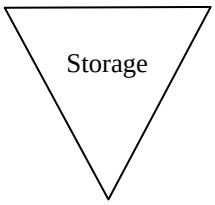
The document symbol, superimposed on itself, indicates the presence of multiple copies of a document. At left, for example, a document in triplicate is shown. When a document is shown in this manner, the origination and destination of each copy should be traced.



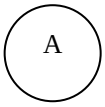
Identifies a decision or branching point in the process. The decision is written inside. Each path emerging from the Decision Diamond is labelled with the appropriate options, usually “yes” or “no.” Decision diamonds must post a question. Questions should be worded as specifically and objectively as possible, so that everyone will interpret them in the same way.



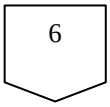
Indicates when something must wait or is placed in temporary storage. This could be batching of documents. The symbol is used as a ‘flag’ at the top of the process.



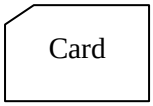
Indicates that an output is in storage. Storage differs from delay based on the duration of the wait and the need for some type of authorisation to retrieve the item.



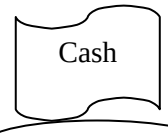
An On-Map connector indicates that an output from this process is continued elsewhere on the process map. It is used to reduce awkward or confusing lines across a map. In order to help the reader follow the path, the same letter is used in a corresponding connector posted where the process resumes.



Off-Page connector indicates that the flow continues on another page. The page number is recorded inside the symbol to show in which page the reader will pick up the flow.

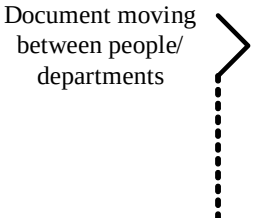


Card is used where each customer uses an electronic card to access his or her account.

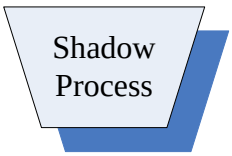


This symbol is used to indicate the flow of cash/draft/cheque/ornaments through the process.

Indicates where data is stored or retrieved from a computer system – a standard MIS symbol.

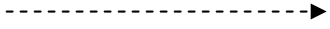


The symbol for documents moving between people/departments (Separator) is used to show the movement of documents from one person to another. These hand offs are often the cause of inefficiencies in processes.



Shadow Process is used to should another parallel process within the same process map

A solid arrow denotes the main or core process flow.



A dotted arrow links the symbols supporting the process, like database, file, documents, to the core process flow.

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