Microfinance Product Costing Tool

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Norway: Ministry of Foreign Affairs/ Norwegian Agency for Development Cooperation

Sweden: Swedish International Development Cooperation Agency

Switzerland: Swiss Agency for Development and Cooperation

United Kingdom: Department for International Development

United States: U.S. Agency for International Development

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Microfinance Product Costing Tool

by
Brigit Helms
and
Lorna Grace

in collaboration with

MicroSave and Bankakademie

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Microfinance Product Costing Tool

1818 H Street, NW, Washington, DC 20433
Telephone: 202-473-9594
E-mail: cgap@worldbank.org
Internet: www.cgap.org

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Preface

Costing is a powerful tool that helps managers discover the true costs of products. Better management information on products helps managers make key decisions about product design, delivery mechanisms, and pricing. A costing exercise can also raise awareness of the cost components of different products, reveal hidden costs, instill cost-consciousness in staff, and uncover excess capacity and other operational problems.

Activity-based costing (ABC), the preferred method outlined in this tool, traces indirect costs in microfinance to core operational activities. In addition to individual product costs, ABC helps employees and management understand the processes and activities they perform, as well as the costs of each process. It is a potent tool for identifying opportunities to improve business process effectiveness and efficiency.

The 18 microfinance institutions (MFIs) that have tested the present tool made several changes as a result of using ABC. Examples include raising or lowering interest rates on products, automating more expensive

Box 1. Benefits of activity-based costing: Credit Indemnity in South Africa

Credit Indemnity, a consumer loan firm in South Africa catering to low-income clients, implemented a sophisticated ABC model in late 2003. Management found the results so compelling that it immediately made a number of concrete decisions based on its improved understanding of the profitability of specific loan products and client profiles. These decisions included:

- discontinuing the firm's one-month loan product, as well as its 12-month loan product, to clients profiled as "Bronze" (medium risk)
- discontinuing lending to rehabilitated clients
- migrating as many clients as possible from four- to six-month loans
- improving profitability on first-time loans (by reducing the lending approval rate on new account profiles and introducing a fee for such new profiles)

Credit Indemnity believes that its ABC model has made it easier for management, staff, and shareholders to discuss the merits and challenges of specific products and types of clients. These discussions are now based on hard data, as opposed to assumptions or educated guesses.

procedures, using timesheets on a more regular basis, reassigning activities among staff, and introducing performance incentives that enhance productivity. The overall impact has been to instill a culture of cost-consciousness among staff, a critical first step toward improved efficiency.

It is hoped that the *Microfinance Product Costing Tool* will help more MFIs benefit from an improved understanding of their cost structure. Ultimately, streamlined processes and better products will benefit larger numbers of poor clients, who will gain permanent access to more efficient financial services.

The *Microfinance Product Costing Tool* was developed by Brigit Helms, lead microfinance specialist at CGAP, and Lorna Grace, independent consultant, in collaboration with *MicroSave* and Bankakademie. A spreadsheet model was developed for the tool by independent consultant Kim Craig. The tool, spreadsheet, training materials, and other product costing resources can be found on www.cgap.org/productcosting. The views expressed and mistakes made in this publication, however, are solely those of the authors. We welcome your comments on the tool and accompanying resources; please send them to Brigit Helms at bhelms@worldbank.org.

Brigit Helms and Lorna Grace
June 2004

Introduction

As microfinance matures, increasing numbers of microfinance institutions (MFIs) are offering multiple products to their customers. Much of this product proliferation derives from two related trends: a keen interest in making microfinance services more responsive to the needs of the poor and increased competition in certain key markets, such as Bangladesh and Bolivia.

Better management information on products contributes to better decisions on product design, delivery mechanisms, and pricing.

At the same time, the costs of microfinance remain high. Early discussions of the sustainability and profitability of microfinance focused mainly on the revenue side—i.e., how to set appropriate interest rates on microloans to cover all costs and allow for growth. More recently, many practitioners and experts have begun to question the value of passing on operational inefficiencies to microfinance clients, recognizing the importance of cost management for long-term sustainability. Relatively few MFIs, however, conduct detailed operational cost analyses to understand the structure and causes of their costs, whether at the branch, product, or client level. This type of information can help MFI managers streamline processes and reduce costs.

Specifically, MFIs rarely cost their individual products to determine whether they are viable, even though each product contributes to the bottom line (positive or negative). Better management information on products contributes to better decisions on product design, delivery mechanisms, and pricing. A costing exercise can also raise awareness of the cost components of different products, including hidden costs.[1]

What does this tool do?

This tool outlines two methods for determining the administrative cost structure of individual microfinance products. Once product costs are determined, the tool suggests methods for understanding how and why costs are incurred for a specific product, and how the product contributes (or not) to the overall financial viability of the MFI.

The tool moves beyond simple cost allocation among products to analyze the causes of costs. To do so, it borrows from an accepted cost

[1] Cracknell and Sempangi, *Product Costing in Practice*.

management technique widely used in business: activity-based costing (ABC). This approach allows managers to more fully understand the true costs of each product, identify excess capacity in their operations, and make informed decisions to improve efficiency.

The tool also facilitates customer segment analysis within particular product groups. For instance, managers can compare the costs of new vs. repeat loans, current vs. delinquent loans, savings accounts of varying balance size and transaction frequency, and other useful customer segments.

Although this tool applies equally to credit and savings products, the viability analysis focuses on savings products because this topic has been largely neglected in microfinance literature. Several other resources cover the topic of viability of microcredit.[2]

The *Microfinance Product Costing Tool* is not a projection tool. It focuses on distributing existing costs among existing products and does not explain how to project costs of future products. In the authors' opinion, it is crucial that MFIs understand current product costs more fully before they introduce new products. The cost structure of existing products will, however, provide them valuable information about expected costs of new products and can inform projection models.

Who is the audience for this tool?

This tool targets (1) managers of MFIs with multiple products and (2) managers of banks that have begun downscaling and want to understand the costs of their new microfinance product(s).

Although the tool aims to simplify the product costing process, MFI managers should know that a product costing exercise is a complex project that delves into nearly every aspect of an MFI's operations. A costing exercise requires both commitment from top management and buy-in from staff members throughout the organization. Such an exercise can uncover inefficiencies and other operational problems; in light of these discoveries, staff must keep an open mind about improving processes and enhancing efficiency.

How long will it take a first-time user to work with this tool?

The level of effort required to use this tool depends on many factors specific to MFIs, such as the size and complexity of the organization, the quality of its information system, the number of distinct operational

[2] See CGAP, *Format for Appraisal of Microfinance Institutions;* Lunde, *Using Microfin 3;* Waterfield and Ramsing, *A Handbook for Management Information Systems for Microfinance Institutions;* and Rosenberg, "Microcredit Interest Rates."

activities and processes, the degree of operational uniformity within the organization, and the number of staff levels.

Experience shows that an MFI's first activity-based costing exercise entails two general phases: preparation and implementation. The first phase involves planning, selecting a costing team, and developing a questionnaire, and can take up to two days for each member of the team (usually composed of four to six members of middle management, including operational staff).

The implementation phase generally takes a few weeks, but the time required is highly dependent on the size of the MFI and the quality of its information system. Data gathering of different types (e.g., validating and using a staff questionnaire, organizing MIS data into the preferred format, etc.) can be done in parallel by different members of the costing team. Development (or modification) of a database model and subsequent analysis generally takes two to three days. Subsequent costing exercises would require a lesser time commitment, as much of the work will have been completed during the initial exercise.

How is this tool structured?

This tool first demonstrates a traditional cost allocation model that allocates administrative (non-financial) costs directly to products. The tool then walks the reader through an ABC approach that traces administrative costs, first through activities and then to products. For each step, the tool outlines basic procedures and illustrates the steps with realistic numbers in a simple case study of a fictitious small rural bank (Attractive Rural Bank, or ARB). For many steps in the process, different options and complexities are discussed and occasionally illustrated.

The final sections show how to use costing information to analyze the sources of costs for decision making. The analysis breaks down costs into general categories, thereby facilitating unit cost analysis, customer segment analysis, and total cost and viability analysis (the latter two categories are applied to savings products only). Finally, the tool shows how to apply ABC tools to overall institutional and branch-level cost analysis.

This costing tool has already been tested by several MFIs, including 18 sponsored by CGAP and several that have tested it independently. The tool integrates real-life examples from these MFIs, most of which agreed to share their experiences and results.[3] A companion spreadsheet model, "ABC for MFIs," is included with this tool on a CD-ROM, and can be used to implement activity-based costing. This spreadsheet model can be

[3] See appendix 3 for a list of MFIs that have tested the tool.

used in English, French, and Spanish. The tool, spreadsheet model, information on individual MFIs that have tested the tool, and other product costing resources are available on www.cgap.org/productcosting.

Tables in this tool

Both the text of this tool and the ongoing case study are illustrated with tables. To distinguish between them, tables that illustrate the text of the tool are labeled alphabetically (table A, table B, etc.), whereas tables that illustrate the ARB case study are labeled numerically (table 1, table 2, etc.). The two sets of tables are clearly distinguished in the Contents.

Chapter 1

Product Costing

Traditional cost allocation vs. activity-based costing (ABC)

Whatever the method chosen, MFI managers should be aware of the ever-present tension among accuracy, complexity, and cost.

The purpose of all cost allocation methods is to assign shared, or "indirect," costs to individual products, customers, branches, or other cost objects (sometimes called cost centers), as defined by an organization.[4] Many, if not most, non-financial costs in a financial services institution are indirect, requiring some sort of allocation system if management wants to analyze product costs. The preponderance of indirect costs applies particularly to MFIs, where staff members, who represent the largest non-financial cost, often do not specialize in one product or another, but instead deal with a range of products.

Several methods exist for allocating costs among products.[5] A reasonable allocation method should have the goal of minimizing cost distortions and improving overall institutional performance through more efficient use of common resources (indirect costs). Whatever the method chosen, MFI managers should be aware of the ever-present tension among accuracy, complexity, and cost. More complex and expensive costing approaches will not necessarily lead to more accurate results. In fact, simpler models may provide enough information to help managers begin thinking about product costs. On the other hand, MFIs should understand that costing models that are too simple or general may not provide the depth of information needed for meaningful decision making.

This tool examines two methods for allocating costs to microfinance products: traditional cost allocation and activity-based costing.

Traditional cost allocation methods use allocation bases to distribute costs among products, such as direct labor hours or total account balances of a specific financial product. A cost allocation exercise can be relatively simple to implement and provide insight into how much is spent on each product.

Most cost allocation methods rely on volume-related allocation bases to allocate costs among products. Unfortunately, these allocations

[4] For help in navigating the often complex world of costing terminology, see box 2 and the glossary.

[5] For an excellent discussion of various microfinance cost measurement and management methods, see Brand and Gerschick, *Maximizing Efficiency.*

Box 2. Making sense of costing terminology

Cost accounting terminology is voluminous and sometimes confusing. In particular, there is often confusion about the proper use of direct vs. indirect, variable vs. fixed, and total vs. marginal costs. A more complete glossary can be found at the end of this publication, but a few of these terms are defined below:

Cost objects: Cost units targeted for a costing exercise; can be products, branches, programs, departments, customers, etc. (sometimes referred to as "cost centers")

Direct costs: Costs that can be identified specifically with or directly traced to a given cost object

Indirect costs: Costs that are not directly related to a cost object, but are shared among them

Fixed costs: Costs that remain constant regardless of activity or output levels

Variable costs: Costs that change in proportion to levels of activity or output

Marginal costs: The additional or extra costs caused by adding another product or product line (Alternatively, it can also be the cost reduction achieved by eliminating a product or product line. Marginal costs can also be applied to the marginal addition or subtraction of other cost objects, e.g., branches.)

For financial institutions, particularly most MFIs, nearly all administrative (non-financial) costs can be considered indirect when looking at product costing (i.e., when the cost object is the product or product line). It is rare that individual MFI staff members or resources work solely on one product, so nearly all costs must be distributed among products using a costing methodology. At the same time, nearly all non-financial costs are fixed in financial institutions, at least in the short term—very few costs outside of certain materials (forms, passbooks, etc.), and possibly some communications and transportation costs, increase in proportion to the level of output or number of products.

Because of the preponderance of fixed costs, marginal costs can be very small for individual products. However, a costing exercise must not take any costs for granted, regardless of whether they are indirect or fixed. All costs should be carefully examined to make sure that they are absolutely necessary to deliver microfinance products to clients.

Table A: Traditional cost allocation vs. activity-based costing (ABC)

	Traditional cost allocation	*ABC*
Pros	• Requires fewer steps • Is simpler, less expensive • Is consistent with the chart of accounts • Can be powerful when used to identify and focus additional investigation of costs	• Traces (rather than allocates) costs in a cause-and-effect relationship • Allows management to understand how and why costs are incurred • Focuses on activities that are meaningful to staff and management • Identifies cost drivers and depicts the circumstances or requirements that cause an activity to take more time • Focuses management on reducing costs by reviewing essential and expensive activities • Helps management better understand business processes • Is useful for projections and introducing new products • Is useful for designing staff and client incentives
Cons	• Relies on subjective input • Simplistically allocates costs • Volume-related allocation bases fail to account for product diversity and complexity • Over-burdens "large" products • Presents costs in an accounting framework (i.e., by general ledger account) that is not meaningful to most staff • Tends to focus managers' attention on the allocation process rather than the management of underlying costs	• Relies on subjective input • Is more complex, time-consuming, and expensive to implement • Incorporates an additional step of allocating costs to activities

can overestimate the per-unit costs of "larger" products and may not capture the complexities of "smaller" products. Another drawback of traditional cost allocation methods is that they do not provide MFI managers with much insight into why a particular product costs more than another.

Instead of allocating indirect costs immediately to products, activity-based costing traces costs to specific activities undertaken by an MFI (e.g., processing a loan application, opening a savings account). These activities are then "used" or "consumed" by the different products, depending on specific attributes that drive activity costs (e.g., number of housing loan applications received, number of passbook savings accounts opened, etc.). A given product consumes many different activities. When these activities are added up, the total cost of delivering the product is revealed.

Identifying activities that link employee costs to the products they deliver is a very important distinction in product costing analysis. This approach provides much richer information than traditional cost allocation methods because the sources of product costs can be traced back to specific activities.

The ability to quantify and address the costs of activities provides a powerful tool for understanding and managing costs. For instance, an MFI manager may find that loan processing for housing loans takes much longer and consumes more of the institution's resources relative to other kinds of loans because of onerous inspection and verification procedures that might or might not be necessary.

A more traditional allocation model might miss this dynamic altogether if the housing loan product is "smaller" than other products in terms of volume. Even if estimates of staff time reveal that more time is spent on housing loans in a traditional cost allocation exercise, the question of why or how these costs are incurred would be difficult to trace.

Tracking performance over time, however, will assist managers to verify whether efficiency-related decisions have, in fact, had the desired effect.

In another example, a manager may use branch-level ABC analysis to find that delinquency management in one branch (regardless of loan product) consumes significant amounts of time and therefore incurs additional costs. These resources could potentially be shifted to more productive activities. Tracking information on resource use and unit costs over time can show how costs change relative to changes in activity levels or results (e.g., delinquency rates). Further, branch-level ABC analysis can assist an MFI to establish cost benchmarks among branches.

For all its benefits, ABC also has its drawbacks. A full activity-based costing model requires a significant amount of detailed process-level information. The data requirements of this model most likely exceed the scope of the information system of many MFIs. An MFI can, however, first conduct a simpler cost allocation exercise and then go back and examine activity-based costs to uncover hidden sources of costs. Table A (see page 3) summarizes the pros and cons of traditional cost allocation vs. ABC.

Steps in the product costing exercise

The main operational difference in implementing traditional cost allocation and activity-based costing models is that the latter traces an institution's costs to activities before driving them to products. Figure 1 illustrates the differences between the two approaches and table B lists the basic steps for each type of product costing exercise.

Whatever methodology is chosen by an MFI, product costing is most effective when conducted on a regular basis—at least once a year. More frequent product costing investigations may provide management with better insight into seasonality issues, but a full exercise may not be necessary. A one-time study will provide management with significant insights and facilitate decision making. Tracking performance over time, however, will assist managers to verify whether efficiency-related decisions have, in fact, had the desired effect. Technology advances have made this kind of ongoing performance tracking possible. For instance,

Figure 1. Traditional cost allocation vs. activity-based costing (ABC)

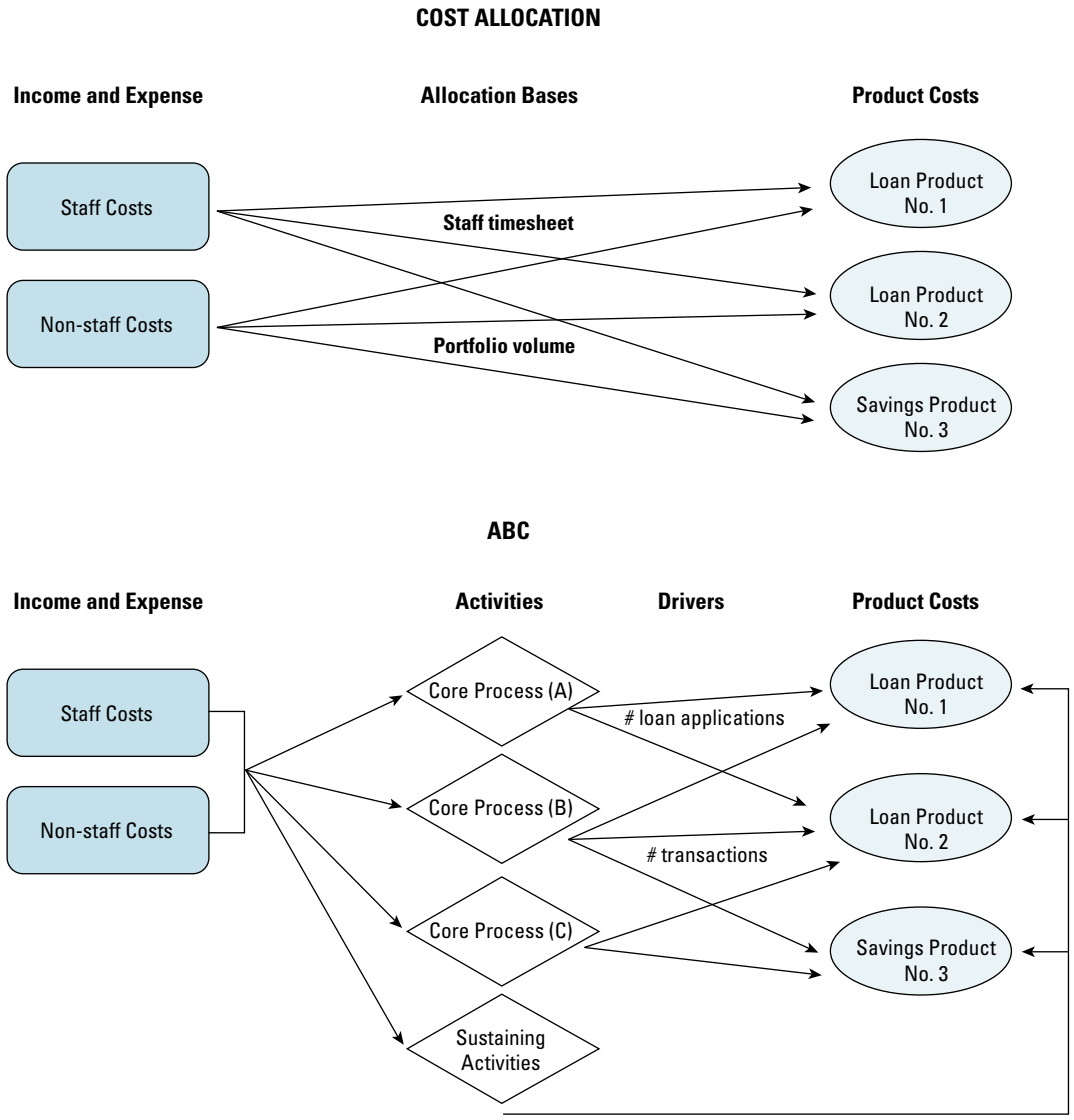


Table B. Steps for costing exercises

All methods	*Traditional cost allocation*	*ABC costing*
Step 1. Plan for the costing exercise Step 2. Identify products for costing		
	Step 3. Identify costs to allocate Step 4. Decide and calculate allocation bases for each type of cost Step 5. Use allocation bases to distribute costs among products	Step 3. Ascertain core processes and activities Step 4. Conduct staff time estimates for each activity Step 5. Trace costs to activities Step 6. Assign cost drivers and determine unit activity costs Step 7. Apply activity unit costs to products

Credit Indemnity of South Africa installed a warehousing database that provides managers costing data at their fingertips.

To maximize comparability of results over time, MFIs should stick with the same costing model and follow the same steps each and every time they conduct a costing exercise. However, each MFI will go through a "teething" phase, during which modifications to the process and tools may be made to better suit its circumstances. In the future, introduction of new products or a change in processes may require modification of the costing model. In fact, MFIs undergoing major changes in their operations, such as process changes, new product launches, or downsizing, may wish to delay a costing exercise for several months until these changes have been more fully absorbed by the institution.

A comprehensive costing team will enrich the analysis and make recommendations that incorporate all operational points of view, not only that of financial operations.

Step 1: Plan for the costing exercise

Experience indicates that the full commitment of top management is crucial to the success and usefulness of a product costing exercise. Management should assemble an appropriate working group or costing team that includes all departments or key units of the MFI. A comprehensive costing team will enrich the analysis and make recommendations that incorporate all operational points of view, not only that of financial operations. Because a costing exercise will combine financial and nonfinancial (operational) information, it is critical that the costing team have adequate access to all institutional information.

MicroSave-Africa, a program with significant experience in microfinance product development and costing, recommends the following preparatory steps to an MFI when planning a costing exercise:[6]

1. **Communicate the purpose.** Senior management must thoroughly explain the purpose and importance of the costing exercise. Specifically, management should reassure staff that the inputs and outputs of the exercise will not be used against them, but rather help them make better decisions.

2. **Choose a team leader.** Due to the time requirements of a serious costing exercise, the CEO or executive director should delegate the task to a member of the senior management team. The team leader should report to the CEO and take responsibility for the day-to-day activities of the team.

3. **Assemble the costing team.** At a minimum, the costing team should include staff members from operations, accounting, and MIS

[6] This list of preparatory steps is adapted from *MicroSave*-Africa, *Costing and Pricing of Financial Services,* and incorporates guidance from field-testing experience.

departments. If possible, the operations contingent should include representatives from both branch and head-office levels. Additional team members from human resources and internal audit personnel could also be added. The team should be representative and credible, but not too large and cumbersome (a team of three to five would be adequate).

4. **Choose the period for analysis.** The team should choose a time period for analysis and all data should come from that time period. A full year is ideal, as it can even out swings in business cycles, but shorter periods may either be necessary or desired (by MFIs that wish to better understand the effects of seasonality on costs). The most recent period possible should be used.

5. **Choose the representative branch site.** It may not be possible to gather data from all branches, especially for large MFIs. Often one or two representative branches will suffice for developing key aspects of a costing model, based on time estimates and discussions with staff. The branches should be mature, larger than average, not located in the headquarters office, and offer all products under investigation.

   If the team has sufficient resources to include more branches, a wider sample could be used to gather data from branch systems with varying operational approaches. The criteria for choosing branches should include size (large and small), maturity (stage of development and capacity), location (rural vs. urban/peri-urban), and type of operations.

6. **Assemble the necessary information.** The costing team will need all sorts of financial and operational information, including a chart of accounts, income statement, actual staff costs and numbers by grade or level, organizational charts, product balances, and transaction statistics. The accumulation of this information in the format required can take some time and should be collected in parallel with the collection of timesheets or time estimates.

7. **Complete timesheets or time estimates.** Depending on the method chosen, the costing team may wish to collect timesheets ahead of time to obtain information about staff time dedicated to specific products or activities.

8. **Prepare the workplan.** The costing team should identify the major steps involved in the costing exercise. For each step, they should estimate the

Box 3. Branch selection in the field

An MFI is in the midst of introducing cages into its branch operations. To date, about half of its largest branches have introduced the cages, which serve a teller/cashier function. Clients from branches without cages deal frequently and directly with local banks. When selecting branch sites for data collection in a costing exercise, it was important that both types of branches be represented. Ultimately, the MFI focused on four branches, two urban and two peri-urban. Each type had one site with cage operations and one without.

amount of time needed, indicate the person(s) responsible for implementation, and estimate the nature and quantity of resources required. The team leader should then obtain formal approval from the CEO for the plan. Table C shows a sample workplan for a costing exercise.

This publication features the fictitious case study of the Attractive Rural Bank (ARB), which runs throughout the text to illustrate each step in the product costing exercise. The first such illustration explores how ARB prepared for a cost allocation exercise.

Table C. Prizma costing work plan

Task	*Responsible*	*Start date*	*End date*
Develop work plan	Maja, Janis & Team	4–Jun	9–Jun
Learn about product costing: allocation and ABC	Janis & Maja	4–Jun	9–Jun
Identify core processes/activities	Team	4–Jun	6–Jun
Identify cost drivers and allocation bases	Team	4–Jun	6–Jun
Design staff timesheets	Team	4–Jun	6–Jun
Identify branch sites	Team	4–Jun	6–Jun
Pilot draft timesheet at Mostar	Mostar Branch, Janis, Maja	7–Jun	7–Jun
Focus group feedback from Mostar	Maja, Beba, Janis	7–Jun	7–Jun
Redesign timesheet	Janis & Maja	8–Jun	9–Jun
Devise timesheet collection process	Davor	8–Jun	14–Jun
Gather necessary IS data	Davor	9–Jun	5–Jul
Train Mostar branch staff on timesheets	Maja & Beba	10–Jun	10–Jun
Test timesheet pilot 2—Mostar branch	Maja & Beba	10–Jun	14–Jun
Develop plan to collect and consolidate timesheets	Maja & Davor	10–Jun	14–Jun
Devise management of weekly timesheet consolidation	Davor	10–Jun	12–Jul
Enter data and keep model	Maja	10–Jun	18–Oct
Get preliminary feedback from branches	Maja & BMs	10–Jun	15–Aug
Redesign timesheet	Maja	14–Jun	16–Jun
Train all staff on timesheets	Maja & BMs	17–Jun	17–Jun
Complete timesheets	Maja & Davor	17–Jun	19–Jul
Timesheet management	BM & Juliet	17–Jun	19–Jul
Select staff sample to be interviewed	Maja & BMs	20–Jun	24–Jun
Conduct interviews—verification and weighting	Maja, Juliet & BMs	24–Jun	5–Jul
Preliminary advice on first round	Janis	12–Jul	15–Aug
Review core processes, activities, cost drivers, and timesheets	Maja & team	15–Jul	19–Jul
Conduct initial analysis	Team	15–Jul	19–Jul
Send preliminary model to branches	Maja	17–Jul	19–Jul
Redesign timesheets	Maja & BMs	19–Jul	30–Aug
Timesheets and interviews—all	Maja	1–Sep	30–Sep
Send final ABC model to branches	Team	30–Sep	4–Oct
Analysis	Team	4–Oct	11–Oct
Action planning	Team	16–Oct	18–Oct

Source: Actual workplan from Prizma, an MFI in Bosnia.

Case Study 1

ARB embarks on a product costing exercise

Ms. Tam, executive director of the Attractive Rural Bank (ARB), was pleased to announce to shareholders that ARB had posted a handsome profit in 2003, with a 3 percent return on assets. ARB had managed this spectacular performance just three short years after it commenced operations, and without any donor contributions in 2003 (although it had benefited from some start-up assistance in previous years).

ARB's founders began the MFI with the intention of applying microfinance best practice, offering a basic microcredit product, a housing improvement loan product, and two savings products: passbook savings and a time-deposit account. See the ARB financial statements in tables 1 and 2.

Ms. Tam had set the interest rates on ARB loans to cover all costs, as instructed by "best practice" microfinance literature. One of her shareholders noticed, however, that costs seemed very high—administrative costs (excluding financial costs) alone were 36 percent of the average loan portfolio and nearly 16 percent of average assets.

Why were these costs so high? In terms of the number of loan clients per loan officer, productivity levels were extremely high relative to international standards, with each loan officer handling 330 clients. The proportion of staff costs to overall administrative costs (70 percent) also looked "good." When Ms. Tam looked at branch costs relative to overall costs, she noticed that over half of all costs (53 percent) were incurred at the branch or operational level, another indication that ARB was on the right track.

Ms. Tam needed better cost information. She wanted to know which products cost more and which contributed most to the bottom line. Did she have the right products from a cost-efficiency point of view? Were her products viable?

She decided to conduct a product costing exercise to give her insight into these questions. As a first step, she chose to implement a relatively simple cost allocation project, although she had read that any costing exercise would entail a great deal of staff work and the cooperation and analytical expertise of many members of the management team. She had also read about activity-based costing and thought that it might reveal additional management information. For now, however, she chose to move forward with the more traditional cost allocation model.

Her first step was to explain the costing exercise to the entire staff, reassuring them that she intended to use the information gathered by the exercise to improve ARB's performance and decision making, not to point the finger at anyone. She named the finance manager the team

Table 1. ARB income statement, December 2003

Item	*Amount**
Interest and fee income from loans	125,379
Fee income from deposits	4,780
Investment income	20,000
Total income	150,159
Interest expense	21,014
Gross margin	129,145
Loan loss provision	2,415
Net margin	126,730
Staff costs	72,000
Transportation	4,248
Maintenance	2,232
Depreciation	1,920
Rent	5,028
Utilities	1,884
Materials	3,156
Security	2,652
Postage and communications	5,040
Professional fees	2,496
Publicity and promotion	1,344
Total administrative costs	102,000
Profit/loss before taxes	24,730
Taxes	4,946
Profit/loss after taxes	19,784

*All amounts in this and all other tables in this publication are expressed in generic monetary units.

Table 2. ARB balance sheet, 2002 and 2003

Item	*Dec-02*	*Dec-03*
Cash	53,000	69,834
Reserves	20,264	27,520
Loan portfolio	241,500	322,000
Loan loss reserve	(7,245)	(9,660)
Investments	200,000	300,000
Net fixed assets	32,200	42,929
Total assets	539,719	752,623
Passbook savings	315,280	450,400
Time deposits	90,000	100,000
Total liabilities	405,280	550,400
Shares	70,000	118,000
Donor contributions	107,000	107,000
Retained earnings—previous	(40,000)	(42,561)
Retained earnings—current	(2,561)	19,784
Total equity	134,439	202,223
Total liabilities and equity	539,719	752,623

leader and he recommended that the costing team consist of himself, the accountant, and the two branch supervisors. She asked her external auditor to advise the team so that elements of internal control would be considered. She expected that the advice of the external auditor would be most relevant when reviewing the proposed changes that would emanate from the costing exercise.

The team decided to work with the financial data of the previous year and with all staff in both branches. Team members began assembling all the financial and operational information that might be helpful for their research and commenced the design of staff timesheets. Finally, the group prepared a work plan that included eight steps to be completed within a one-month time period, as shown in table 3.

Table 3. ARB work plan

Task	*Responsible person*	*Start date*	*End date*	*No. of days*
1. Train team on the purpose and terms of reference	Team leader	2 July	2 July	1
2. Develop staff time estimate sheets and interviewers	Team	4 July	4 July	1/2
3. Train interview teams	Team	8 July	8 July	1/2
4. Collect information through interviews and timesheets	Team	9 July	12 July	4
5. Process information/data	Accounting/MIS	15 July	19 July	4
6. Analyze outcome and write report based on results	Team	22 July	26 July	5
7. Report on results and present action plan	Team	29 July	30 July	2

Step 2: Identify products for costing

Many multi-product MFIs have several loan products and a few savings products. Examples include general loans, housing loans, and emergency loans on the asset side, and passbook savings and demand deposits on the liabilities side. Very few MFIs dedicate resources to specific products, most costs recorded in their accounting systems are "indirect" and are thus shared among products. For instance, an MFI loan officer may collect savings deposits and loan repayments during the same visit or group meeting. In other institutions, a branch teller may perform these two functions, in addition to other tasks.

Case Study 2

ARB identifies four products for costing analysis

ARB is a relatively small MFI, with 2,000 borrowers, 4,000 passbook savers, and 250 time-deposit holders. The bank operates out of two branch offices in a peri-urban area outside a major metropolitan center. One branch office also houses bank headquarters.

ARB selected the following products for the costing exercise:

- Microcredit loan product: one- to six-month loan at 2.5 percent flat monthly interest, with monthly repayments
- Housing improvement loan product: three- to twelve-month loan with a 2 percent up-front fee, a 2.5 percent flat monthly interest rate, and monthly repayments
- Passbook savings product: a low-balance product that pays 4 percent per year, minus a 1 percent annual administrative fee
- Time-deposit savings product: three-month savings account that pays 6 percent per year, minus a 1 percent annual administrative fee

As seen in table 4, ARB caters primarily to customers who seek to hold very small deposit balances in a secure place. The bank also has a small but growing microcredit loan portfolio that offers very small loans, mostly to market vendors working out of marketplaces located fairly close to each branch.

Table 4. ARB Products

Product	*No. of accounts*	*Average account size*
Microcredit loans	1,800	134
Housing loans	200	403
Passbook savings	4,000	113
Time deposits	250	400

Chapter 2

Traditional Cost Allocation

This section outlines a simple cost allocation model and then illustrates each step using the ARB case study. Note that the choices made by ARB in no way represent the only option, nor even the recommended option. Rather, the case study simply shows one among many ways to approach the costing problem.

The purpose of a cost allocation exercise is to allocate direct and indirect costs to microfinance products.

Chapter 1 already covered the first two steps of the cost allocation costing process:

Step 1. Plan for the costing exercise

Step 2. Identify products for costing

The remainder of this chapter will cover the remaining steps:

Step 3. Identify costs to allocate

Step 4. Decide and calculate allocation bases for each type of cost

Step 5. Use allocation bases to distribute costs among products

The end of this chapter will discuss marginal product costing, or the implications of traditional cost allocation methods for understanding the marginal product costs.

Step 3: Identify costs to allocate

The purpose of a cost allocation exercise is to allocate direct and indirect costs to microfinance products. This exercise focuses only on non-financial costs (i.e., it does not include the cost of funds or loan loss provisions). The costing team may decide on different levels of detail or aggregation when deciding which costs to allocate. Suppose, for instance, that each line item or cost in the income statement is broken down by department, so that each department has its own income statement. An MFI may then wish to allocate an entire department to products instead of looking at individual line items.

Case Study 3

ARB decides which costs to allocate

The costing team realized that literally all non-financial costs in ARB's income statement were indirect costs, or costs shared by more than one product (if not all). At the same time, ARB divided and tracked expense line items separately for branch and headquarters levels (see table 5). The team realized that this more detailed information might mean that the same line item would behave differently, depending on whether it was incurred at the branch or head office. For instance, postage and communications at the branch level are almost exclusively used to communicate with delinquent loan clients. At the head-office level, these same costs are used to communicate with a wider range of clients and other stakeholders.

Table 5. ARB administrative (indirect) expenses by organizational level

Item	*Branch*	*Head office*	*Total*
Staff costs	43,200	28,800	72,000
Transportation	1,944	2,304	4,248
Maintenance	1,080	1,152	2,232
Depreciation		1,920	1,920
Rent	1,188	3,840	5,028
Utilities	540	1,344	1,884
Materials	1,620	1,536	3,156
Security	2,268	384	2,652
Postage and communications	2,160	2,880	5,040
Professional fees		2,496	2,496
Publicity and promotion		1,344	1,344
Total administrative costs	54,000	48,000	102,000

Step 4: Decide and calculate allocation bases for each type of cost

Indirect costs can be allocated to each product using allocation bases. The allocation bases should represent as closely as possible the consumption of indirect costs by each product. Other criteria for allocating indirect costs include the benefits received by each product, fairness or equity considerations, and the ability of each product to bear costs based on its income-earning potential.

The same cost line item may require different allocation bases if an institution records costs separately for different departments, or for different branches and headquarters. For instance, the materials line item related to the marketing department may be related strictly to the development and marketing of one type of product, a time-deposit savings brochure. In the operations department, however, materials may be allocated among products based on the number of transactions or number of accounts per product.

It is impossible to achieve 100 percent accuracy in product cost allocation.

Table D outlines a few of the more commonly used bases for allocating indirect costs to products.

Note that for costs that can be more directly associated with a particular product, other allocation bases exist. These include direct staff costs (e.g., when a loan officer only works on one loan product) and actual or direct cost bases (e.g., when costs are recorded from the outset by product, such as telephone or transportation logs). These more direct methods are, however, more frequently applicable to allocating costs to departments, branches, or programs. Area use or relative office space use represents another allocation basis that can be used, but it is not ideal for product-level allocation.

It is impossible to achieve 100 percent accuracy in product cost allocation. Although an MFI should strive for as much accuracy as possible, often the most valuable outcome of a traditional cost allocation exercise will be the discussions held with staff members throughout the costing process. The costing team should be ready to discuss and possibly amend decisions on allocation bases as a result of consultations with staff.

Table D: Selected allocation bases

Allocation basis	*Application*
Staff time	Proportion of staff time across products over a defined period of time, based on timesheet data or other estimation techniques
Number of transactions	Total number of transactions per product over a defined period as a percentage of all transactions
Number of accounts	Number of accounts as a proportion of total accounts
Portfolio volume	Proportion of the average product portfolio over a defined period
Equal	If a resource is generic, each product given an equal share

Case Study 4

ARB selects and calculates allocation bases

The ARB costing team considered a number of different allocation bases. They decided to look separately at branch and headquarters levels, with an eye toward matching allocation bases to individual cost items as closely as possible. Table 6 shows the allocation bases proposed by the costing team.

As Ms. Tam and the costing team expected, the division of administrative costs between headquarters and the branches yielded different allocation bases for certain line items. For example, the line items for rent and utilities are allocated by the number of accounts at the head office, but by the number of transactions at the branch level. Similarly, the loan officer timesheet is used to allocate transportation and maintenance costs at the branch level, whereas the portfolio volume (related to the executive director's vehicle) is used at headquarters. If the costing team had lumped these costs together, they would have used a single allocation basis, thus neglecting key complexities in the relationship of costs to products.

The costing team decided to use timesheets only for branch staff, as they felt that staff operating farther away from the products would have a hard time recording time spent per product. They believed that volume-related allocation bases would more fairly distribute head-office staff costs to products.

Table 7 outlines the average percentage of time spent by each type of branch staff on the four products, distilled from individual timesheets completed over a period of one month. The costing team reviewed these percentages with branch staff to make sure that the figures reflected an average month, since ARB experiences serious seasonal differences in its operations.

Other allocation bases used by the costing team included portfolio volume, number of accounts, number of transactions, and equal. Table 8 calculates each of these allocation bases for the four products.

The first thing that the costing team noticed was the wide variety of possible allocation bases. Clearly, the choice of bases would make a big difference to the outcome of their costing project.

Table 6. Allocation bases used by ARB

Head-office cost item	*Allocation basis*	*Rationale for selection of basis*
Staff costs	Varies as noted below	
Executive director	Portfolio volume	Reflects requirement that executive director's (ED) salary must be covered by income earned from all products (or by maintaining low costs, in the case of savings)
Finance manager	Portfolio volume	Reflects the finance manager's focus on treasury/cash management
Accountant, assistant accountant, and support staff	Number of accounts	These staff members manage client accounts rather than detailed transactions
Transportation	Portfolio volume	Relates to ED vehicle; allocated according to her time
Maintenance	Portfolio volume	Most maintenance costs relate to the use of ED vehicle
Depreciation	Portfolio volume	Most depreciation costs are related to the use of ED vehicle, plus branch vehicles
Rent	Number of accounts	Head office used primarily for support of client administration, not for interaction with clients, so the number of accounts reflects the use of space by the management and administrative staff
Utilities	Number of accounts	Linked to rent above
Materials	Number of accounts	Relates to consolidation of accounts, reporting, and related paperwork
Security	Portfolio basis	Reflects requirements for security, based on the volume of cash movements at head office
Postage and communications	Number of accounts	Used primarily (although not exclusively) to correspond with clients
Professional fees	Equal	Incurred by senior staff responsible for the institution as a whole
Publicity and promotion	Equal	Used to communicate about the bank as a whole
Branch-office cost item	*Allocation basis*	*Rationale for selection of basis*
Staff costs	Staff time	Per timesheet developed for each branch staff position
Transportation	Loan officer timesheet	Mostly incurred by loan officers and management in loan operations and follow-up
Maintenance	Loan officer timesheet	Linked to use of vehicles
Rent	Number of transactions	Reflects need for space to accommodate client transactions
Utilities	Number of transactions	Linked to rent
Materials	Number of transactions	Relates to transaction paperwork
Security	Portfolio volume	Reflects requirements for security, based on the volume of cash movements at the branch
Postage and communications	Loan officer timesheet	Mainly directed by loan officers to clients with overdue loan payments

Table 7. Proportion of ARB branch staff time by product

Branch staff	*Microcredit loan*	*Housing loan*	*Passbook savings*	*Time deposits*	*Total*
Branch supervisor	70%	15%	10%	5%	100%
Loan officer	80%	20%	0%	0%	100%
Senior teller	25%	5%	60%	10%	100%
Teller	20%	5%	65%	10%	100%
Cashier	25%	10%	60%	5%	100%
Bookkeeper	15%	5%	70%	10%	100%

Table 8. Calculation of ARB allocation bases

Allocation base	*Microcredit loan*	*Housing loan*	*Passbook savings*	*Time deposits*	*Total*
Average portfolio	211,313	70,438	382,840	95,000	759,590
Allocation ratio	27.8%	9.3%	50.4%	12.5%	100.0%
Number of accounts	1,800	200	4,000	250	6,250
Allocation ratio	28.8%	3.2%	64.0%	4.0%	100.0%
Annual transactions	25,980	2,820	20,400	900	50,100
Allocation ratio	51.9%	5.6%	40.7%	1.8%	100.0%
Equal	25.0%	25.0%	25.0%	25.0%	100.0%

Step 5: Use allocation bases to distribute costs among products

The final stage of allocating administrative (non-financial) costs to products is to calculate costs per product by applying the allocation bases to an MFI's actual costs.

Case Study 5

ARB distributes costs among products

Ms. Tam felt comfortable with the allocation bases proposed by the costing team and now wanted to see the results. The team's work, which allocated head-office, branch-level, and consolidated costs to products, is shown in tables 9–11. (The allocation bases used for each line item can be found in table 6.)

Table 9. ARB head-office administrative costs by product

Cost	*Microcredit loan*	*Housing loan*	*Passbook savings*	*Time deposits*	*Total*
Staff costs	8,118	2,015	15,984	2,683	28,800
Transportation	641	214	1,161	288	2,304
Maintenance	320	107	581	144	1,152
Depreciation	534	178	968	240	1,920
Rent	1,106	123	2,458	154	3,840
Utilities	387	43	860	54	1,344
Materials	442	49	983	61	1,536
Security	107	36	194	48	384
Postage and communications	829	92	1,843	115	2,880
Professional fees	624	624	624	624	2,496
Publicity and promotion	336	336	336	336	1,344
Total operating/admin costs	13,445	3,816	25,991	4,748	48,000

Table 10. ARB branch-level administrative costs by product

Cost	*Microcredit loan*	*Housing loan*	*Passbook savings*	*Time deposits*	*Total*
Staff costs	23,520	5,640	11,880	2,160	43,200
Transportation	1,555	389	0	0	1,944
Maintenance	864	216	0	0	1,080
Rent	616	67	484	21	1,188
Utilities	280	30	220	10	540
Materials	840	91	660	29	1,620
Security	631	210	1,143	284	2,268
Postage and communications	1,728	432	0	0	2,160
Total operating/admin costs	30,034	7,076	14,386	2,504	54,000

Table 11. Total ARB administrative costs by product

Cost	*Microcredit loan*	*Housing loan*	*Total loan products*	*Passbook savings*	*Time deposits*	*Total savings products*	*Total products*
Staff costs	31,638	7,655	39,293	27,864	4,843	32,707	72,000
Transportation	2,196	602	2,798	1,161	288	1,149	4,248
Maintenance	1,184	323	1,507	581	144	725	2,232
Depreciation	534	178	712	968	240	1,208	1,920
Rent	1,722	190	1,912	2,941	175	3,116	5,028
Utilities	667	73	740	1,080	63	1,143	1,884
Materials	1,282	140	1,422	1,643	91	1,734	3,156
Security	738	246	984	1,337	332	1,669	2,652
Postage and communications	2,557	524	3,081	1,843	115	1,958	5,040
Professional fees	624	624	1,248	624	624	1,248	2,496
Publicity and promotion	336	336	672	336	336	672	1,344
Total operating/admin costs	43,479	10,892	54,371	40,378	7,251	47,629	102,000

Although Ms. Tam found this information very interesting, she felt that she could not use the raw data very easily. She wanted to know how product costs related to the average portfolio of each product. Her specific question was how much did it cost ARB per dollar outstanding for each product?

The costing team then presented her with table 12. Interestingly, the savings products cost much more than Ms. Tam had expected, even before including interest paid to clients. At the same time, the microcredit product cost much more than the housing product per unit. This was unsurprising, since microcredit loans require many more transactions and loan renewals than do housing loans.

The cost allocation exercise had shed light on ARB's cost structure. But Ms. Tam still wanted the answer to two questions:

- What would happen if ARB dropped one of the products? Would the bank save the entire amount allocated to that product? Or just some portion of that cost?
- What did the cost allocation information say about how and why costs are incurred? Was there another method that could be used to learn more about the causes of costs?

Table 12. Administrative cost of ARB products as percentage of average product portfolio

Cost	*Microcredit loan*	*Housing loan*	*Total loans*	*Passbook savings*	*Time deposits*	*Total savings*
Staff costs	15.0%	10.9%	13.9%	7.3%	5.1%	6.8%
Transportation	1.0%	0.9%	1.0%	0.3%	0.3%	0.3%
Maintenance	0.6%	0.5%	0.5%	0.2%	0.2%	0.2%
Depreciation	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Rent	0.8%	0.3%	0.7%	0.8%	0.2%	0.7%
Utilities	0.3%	0.1%	0.3%	0.3%	0.1%	0.2%
Materials	0.6%	0.2%	0.5%	0.4%	0.1%	0.4%
Security	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Postage and communications	1.2%	0.7%	1.1%	0.5%	0.1%	0.4%
Professional fees	0.3%	0.9%	0.4%	0.2%	0.7%	0.3%
Publicity and promotion	0.2%	0.5%	0.2%	0.1%	0.4%	0.1%
Total admin costs	20.6%	15.5%	19.3%	10.5%	7.6%	10.0%

Marginal cost allocation

The traditional cost allocation (sometimes called full-cost allocation) model described thus far distributes total costs among products. It provides criticial information to managers about the cost structure of each product. It is important to understand the full cost of each product for product viability analysis—a key business principle states that all costs must be incurred in order to earn income, therefore products must support all costs, not just some of them.

When an institution offers a new product, it will incur additional or "marginal" costs. Conversely, if a product is discontinued, the institution will save the marginal costs incurred by that product.

*Marginal costing of **existing** products may result in only minimal cost savings because the majority of financial institution costs are fixed with respect to individual products.*

One weakness of the full-cost allocation model is that it does not provide insight into how much would be saved if a product were discontinued (or how much additional cost a new product would incur). Some costs will be incurred whether an institution offers one product or four. For example, an MFI will need an executive director, or may need the same number of branches, regardless of the number of products it offers. These costs are known as "fixed costs" and they do not depend on the number of products.

The process for determining the marginal costs of a product follows the same basic steps as the full-cost allocation exercise. However, marginal product costing introduces even more subjective elements. The main difference between the two processes lies in the selection of an allocation basis for each cost type. Table E introduces two additional allocation bases for marginal costing.

Note that marginal costing of **existing** products may result in only minimal cost savings because the majority of financial institution costs are fixed with respect to individual products. The few exceptions include materials, postage and communications, and some transportation costs, to the extent that the "use" of these costs by individual products is linked to the number of accounts or transactions (variable costs).

In the case where MFI staff does not specialize in the delivery of specific products, most costs would be considered fixed. MFIs would thus

Table E. Allocation bases for marginal costing

Allocation basis	*Application*
Core product	Defines a subjective split between core, or primary, product(s) and marginal product(s). The allocation basis assumes that a large proportion of marginal costs would continue to be incurred by core product(s).
Fixed	Applies to cost items that are fixed in nature and fully allocated to core product(s)

likely find it difficult to fire staff that were underutilized due to the elimination of a particular product.

Larger MFIs, however, may gain more significant savings when they fire staff after the elimination of a product. The elimination of an entire product line (e.g., all savings products) might also result in more cost savings, although these savings will not equal the total cost allocation to the product line, since the institution would continue to incur some staff and other costs previously shared among product lines.

On the other hand, the addition of a **new** product will likely entail extra costs. These costs include both start-up costs like staff training, new systems, and fixed assets, as well as ongoing costs related to new staff and other variable costs (materials, communications, transportation, etc.). The marginal costs of adding a new product would not show up when conducting a marginal cost analysis of existing products and thus requires a separate forecasting exercise.

Finally, marginal costs should be analyzed in the context of institutional capacity. If an MFI drops a product, fixed costs will continue to be incurred. In the short term, staff members and other resources previously involved in handling the product will remain partially idle. It may take time for the remaining products to efficiently absorb the time of those fixed staff members or other resources. At the same time, when adding a new product, the need to hire new staff and/or invest in new infrastructure will depend on the extent to which the institution already has excess capacity.

Case Study 6

ARB calculates marginal costs for housing loan product and savings

Ms. Tam wanted to determine which administrative costs would be saved if ARB discontinued the housing loan product and asked the costing team to look into the matter. Since most of ARB's costs were fixed and no staff specialized in the housing loan product, the costing team concluded that the bank would still have to cover all staff costs after eliminating the housing product. The only cost items that would offer savings were materials and postage and communication, at both the headquarters and branch levels, plus transportation and maintenance costs at the branch level. Table 13 calculates the allocation bases for these items.

Applying these allocation bases to ARB's costs yielded the results in table 14. According to these results, eliminating the housing loan product would not generate significant savings. This exercise demonstrated to Ms. Tam and the costing team exactly how many of their costs were

fixed, particularly with respect to the marginal costing of a smaller product line.

What would happen if ARB decided to drop all savings products? The costing team realized it could immediately fire all tellers (the two senior tellers and the four regular tellers) for a savings of 12,000. In addition, it would save on materials at the branch level (in proportion to the number of transactions involved in savings product activities), as well as on materials and postage and communications costs at headquarters level (in proportion to the number of accounts). Table 15 shows the results of the team's analysis.

In this case, eliminating the savings products (i.e., one-half of all ARB products), would result in savings of just over 15 percent of total product costs. The costing team compared these savings to the original full-cost allocation for both savings products of 47,629 (see table 11) and concluded that the savings would equal roughly one-third of the entire cost of the product line. The other two-thirds of the full-cost allocation would still be incurred, reflecting excess capacity in the short term. Although the allocation model provided some insight into the excess capacity problem, Ms. Tam wondered if an activity-based approach would shed more light on the issue.

Table 13. Allocation bases for ARB marginal costing

			Value of bases	
Cost item	*Allocation basis*	*Rationale*	*Housing*	*Non-housing*
Materials (HQ)	Number of accounts	Fewer accounts would reduce the cost of this item	3.2%	96.8%
Postage and communications (HQ)	Number of accounts	Fewer accounts would reduce correspondence with clients	3.2%	96.8%
Transportation (branch)	Core product: related to loan officer timesheet	Some proportion of loan officers' time would be saved (no need to use vehicles to follow up on housing loans)	10.0%	90.0%
Maintenance (branch)	Core product: related to loan officer timesheet	Linked to use of vehicles	10.0%	90.0%
Materials (branch)	Number of transactions	Transaction paperwork would be reduced	5.6%	94.4%
Postage and communications (branch)	Core product: related to loan officer timesheet	Some proportion of loan officers' time would be saved (no need to follow up on delinquent housing loans)	10.0%	90.0%

Table 14. Marginal cost allocation of ARB products

Cost item	*Non-housing products*	*Housing products*	*Total*
Staff costs	72,000	0	72,000
Transportation	4,054	194	4,248
Maintenance	2,124	108	2,232
Depreciation	1,920	0	1,920
Rent	5,028	0	5,028
Utilities	1,884	0	1,884
Materials	3,016	140	3,156
Security	2,652	0	2,652
Postage and communications	4,732	308	5,040
Professional fees	2,496	0	2,496
Publicity and promotion	1,344	0	1,344
Total administrative costs	101,249	751	102,000

Table 15. Marginal cost of ARB savings product line

Cost item	*Loan products*	*Savings products*	*Total*
Staff costs	60,000	12,000	72,000
Transportation	4,248	0	4,248
Maintenance	2,232	0	2,232
Depreciation	1,920	0	1,920
Rent	5,028	0	5,028
Utilities	1,884	0	1,884
Materials	1,423	1,733	3,156
Security	2,652	0	2,652
Postage and communications	3,082	1,958	5,040
Professional fees	2,496	0	2,496
Publicity and promotion	1,344	0	1,344
Total administrative costs	86,308	15,692	102,000

Chapter 3

Activity-Based Costing

Activity-based costing (ABC) is an alternative but related costing method that allows more detailed analysis of how and why costs are incurred. Instead of allocating costs directly to products, ABC first determines the costs of an MFI's core processes and activities. It then allocates costs to products on the basis of how each product "consumes" these activities.

ABC first determines the costs of an MFI's core processes and activities. It then allocates costs to products on the basis of how each product "consumes" these activities.

The first two steps of the ABC process are the same as those of the traditional cost allocation model presented in chapter 1.

Step 1. Plan for the costing exercise
Step 2. Identify products for costing

This chapter walks through the remainder of the ABC process, using the ARB case study as an illustration. Note that the choices made by ARB do not represent the only option, or even the recommended option. Rather, the case study shows one among many ways to approach costing. The chapter covers the following steps:

Step 3. Ascertain core processes and activities
Step 4. Conduct staff time estimates for each activity
Step 5. Trace costs to activities
Step 6. Assign cost drivers and determine unit activity costs
Step 7. Apply activity unit costs to products

The end of this chapter will then discuss the implications of ABC analysis for understanding the marginal costs of each product.

Step 3: Ascertain core processes and activities

Every MFI has different core processes. Typical core processes include loan origination, servicing existing loans, opening deposit accounts, servicing deposits and withdrawals from savings accounts, etc. Other core processes could involve client identification, mobilization, and/or group formation. In addition to these operational processes, MFIs also engage in processes that support "sustaining activities," that is, activities not

easily traced to products. Such activities include, among others, general management, accounting, secretarial tasks, information technology support, human resource management, and marketing.

For each major process, a costing team must identify the main activities performed by staff at both the branch and headquarters levels. For microfinance operations, these activities will include things like accepting and approving loan applications, booking deposits in the accounting system, and performing general accounting and reporting functions.

The first step is to develop an activities dictionary that delineates all major activities of each core process…

The first step is to develop an activities dictionary that delineates all major activities of each core process, including a "general" activity for each process that captures time spent on the process which cannot be categorized under the other activities. This general category helps managers identify excess capacity or inefficiency.

For example, if a particular staff member or a number of staff members spend a significant amount of time on a "general" activity, this activity would appear to comprise a relatively large proportion of total product costs. This situation might signal to management that staff members spend too much time on activities that do not add sufficient value to overall operations. On the other hand, excessive time spent on "general" activities could indicate that the activities dictionary is missing important activities and/or processes, sending the costing team back to the drawing board.

Most MFIs have neither identified nor documented their core business processes. An ABC project gives them an ideal opportunity to document both their processes and activities in detail. Process mapping, a management tool used to streamline business processes, may also be a logical outcome of an ABC exercise. The act of documentation can, in and of itself, assist management to identify inconsistencies between what staff actually do and an MFI's written procedures. It can also identify onerous and unnecessary procedures that can be simplified or eliminated, as well as enhance management's understanding of their business and improve decision making to improve efficiency.

For example, the MFI Prizma in Bosnia found that an ABC exercise gave management a deeper understanding of its procedures. This understanding helped them streamline and refine specific activities instead of changing entire processes, as well as set performance standards for those activities.

Case Study 7

ARB constructs an activities dictionary

Ms. Tam and the costing team identified the following six core processes in ARB:

1. Making Loans
2. Servicing Existing Loans
3. Opening Deposit Accounts
4. Servicing Deposit Accounts
5. Handling Cash Transactions
6. Sustaining Activities

The product costing team then developed an activities dictionary for ARB, based on these core processes (see table 16).

ARB has only two relatively small branches and its clients come to the teller window to receive loans, make payments, and service their savings accounts. ARB management is considering the implementation of a more

Table 16. ARB activities dictionary

Core process	*Activity*
Making Loans	Answer client questions/Advise Accept loan application Review and approve loan application Perform general loan disbursement administration
Servicing Existing Loans	Follow up with delinquent clients Track repayments and delinquency Perform portfolio analysis Perform general loan administration
Opening Deposit Accounts	Answer client questions/Advise Issue passbook Perform general new deposit administration
Servicing Deposit Accounts	Update passbooks, issue replacements Close deposit accounts Perform portfolio analysis Perform general deposit administration
Handling Cash Transactions	Collect and record cash in (loan repayments, deposits) Disburse and record cash out (loans, withdrawals) Perform general cash administration
Sustaining Activities	Engage in general marketing and promotion Maintain donor/investor relations Perform general accounting and reporting Recruit, train, and pay staff Maintain information technology Perform general administration

"mobile" banking system, where loan officers and/or other bank officers would go to a client's workplace or home to facilitate cash transactions. This mobile banking system—common to other microfinance programs—could easily be added to the activities dictionary, either by including a whole new process called "Providing Mobile Banking Services," with a number of dedicated activities, or including mobile banking activities within existing processes.

For the moment, however, ARB management decided to stick with the simple activities dictionary outline in table 16 for its ABC costing exercise.

Box 4. How to handle group meetings

There is a debate in microfinance costing about how to handle group meetings. Should they be considered a core process? Depending on which activities are conducted in group meetings and the degree of decentralization in an MFI's decision making, group meetings may absorb loan origination, loan approval, and loan collection processes. In the case where many loan activities occur within a group meeting, it may be difficult for staff to assess time spent on each activity. Regardless, extensive travel time to and from such meetings should be included in an activities dictionary. Alternatively, an MFI can treat extensive staff travel as a separate core process.

Step 4: Conduct staff time estimates for each activity

Before moving forward, the costing team should validate the draft activities dictionary with selected staff members to ensure accuracy. The team may discover new processes or major activities within processes that they had not thought of previously.

Upon compiling an acceptable activities dictionary, the next step is to study the cost dynamics of each activity, starting with estimates of the amount of time all staff spend on the activity. Three general methods for estimating staff time per activity are: staff journals or timesheets, direct observation, and in-depth interviews.

Staff members can complete timesheets over a specified period of time or simply estimate the percentage of time spent on each activity.

In practice, percentage estimates can be less accurate, so care should be taken to verify information by cross-checking estimates among staff members at the same level. A specified amount of time (e.g., minutes, hours) works well at the field-staff level. At the head office, percentage time estimates are easier to estimate because activities are often varied and unscheduled and staff is better able to conceptualize the proportion of time that they spend on different activities.

Some organizations conduct relatively complex time and motion studies to obtain more precise estimates of employee time use. For instance, *MicroSave*-Africa uses direct observation of time spent on key processes, supplemented by additional indicators such as "customer time in branch," and "customer time at counter." These indicators give increased robustness and detail to a costing exercise. The process and discussions sparked by such measurements resulted in considerable efficiencies in a pilot branch of a *MicroSave*-Africa partner institution: back-office time for one key process was reduced from eight minutes to five. Often, however, detailed measurement is less important than a focus on efficiency and customer service.[7]

The *Microfinance Product Costing Tool* recommends using a series of in-depth interviews to inquire about the time spent on each activity in a typical week or month. In a small MFI, nearly all staff should be interviewed. In larger MFIs, a representative sample of every type of staff member should be interviewed. It is recommended that at the field level, a minimum of 30 percent of front-line field staff (field officers and/or cashiers/tellers, depending on the structure of operations) be interviewed at each representative branch. All representative branch managers and at least one person from each non-front-line staff level should also be interviewed.

The timeframe for estimating time commitments to different activities can be daily, weekly, monthly, or annually. Smaller timeframes may be more accurate for a specific day or week, but may miss the effects of seasonality or periodic fluctuations in transactions. For instance, the beginning or end of the month may be busier because people receive their paychecks then. Holiday or harvest seasons may require more time on certain activities than other times of year.

It is recommended that an MFI look carefully at a "typical" week or month when estimating time use, especially at the field level.[8] It is possible to use different timeframes for different field staff levels to capture most, if not all, of their activities. For example, a daily timeframe might

[7] Cracknell and Sempangi, *Product Costing in Practice.*

[8] For more information on conducting time estimates for activities, see Kohl and Pagano, "Learn the ABC Basics," *Credit Union Management,* and The Kohl Advisory Group, *Improving Financial Performance with Activity-Based Costing and Product Profitability Management.*

be used for cashiers or tellers, whose work may vary little from day to day, whereas a weekly timeframe might be used for front-line field officers. At the head-office level, the timeframe might be longer, since headquarters duties do not usually follow a daily, weekly, or monthly schedule.

The activities dictionary, combined with the timeframe chosen for each staff type, becomes the staff time questionnaire (see table F).

Once the timesheet questionnaire has been developed, the costing team should pilot test the questionnaire with two or three staff members in a branch that will not be a data collection site. This test will serve two purposes: to discover needed modifications and to gain experience using the instrument. First, testing helps gauge the appropriateness of the core processes and activities; determines whether any additional activities, core processes, or supplemental questions should be added or removed; and suggests possible modifications to the time period to be analyzed.

One MFI found during pilot testing that its field staff dedicated 80 percent of their time to one core process. To capture better information, the MFI decided to split this process into two. In another case, a costing team found that an activity that they had considered unimportant came up time and again in test interviews causing them to modify their questionnaire accordingly.

Secondly, a pilot test gives the costing team experience with the interview process. (The prospect of interviewing can cause initial trepidation among team members.) Further, the team will become acquainted with the quality control challenges of staff interviews. Common problems include hastiness, boredom with the exercise, and inconsistent formatting of data entry on the timesheets.

Upon completing the pilot test and making necessary changes to the activities dictionary and questionnaire, the next step is to "roll out" interviews in selected branches. One key element of a rollout is to introduce the staff to the purpose of the interviews and how they will help the institution. This orientation sets employees' minds at ease about the

Table F. Sample staff time questionnaire

Core process/Activity	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*	*Total*
Making Loans							
Answering client questions/Advise							
Accept loan application							
Review and approve loan application							
Servicing Existing Loans							
Follow up with delinquent loans							
Total							

nature of the exercise. Staff members unfamiliar with the purpose of the interviews may otherwise assume that this is a "cost-cutting" (i.e., staff-cutting) exercise. In one MFI, the costing team presented the purpose of the costing exercise to the entire branch staff. The presentation included an introductory run-through of the questionnaire on a blackboard for a specified type of staff member.

Product costing team members should conduct interviews on a one-on-one basis to maximize the comfort level and accuracy of the interviewees. Interviews should be conducted during a "down" day or time period at the branches. Often there is one day when more staff are present, either doing paperwork or having staff meetings. Where activities are performed primarily on a daily cycle, a full day in each branch might be required in order to take advantage of staff downtime during the day, as there may be no particular day during the week that is less active than others.

Interviews should be conducted during a "down" day or time period at the branches.

At the head-office level, a different approach can be taken. Work patterns and rhythms for head-office staff are more varied, especially for those at more senior levels. This type of staff does not usually have weekly or even monthly cycles to their work. Instead of asking for a day-to-day description of activities, the interviewer should first ask these staff members what they do and what percentage of time they spend on various activities over the period under analysis. Activities often mentioned include meetings, paperwork, accounting, payroll, etc. These estimates are then matched to the list of core and sustaining activities in the activities dictionary.

To better capture cost dynamics, an MFI should supplement interviews with a series of carefully structured questions that address qualitative issues of efficiency and effectiveness. This information will enhance staff understanding of how and why each activity is performed and the reasons for possible inefficiencies.

Examples of supplemental questions include:

- What kinds of circumstances cause performance of this activity to take longer than "normal"?
- Does this activity have to be repeated sometimes because of errors? Why? What aspects of this activity cause it to be prone to errors?
- Do clear procedures and policies exist for this activity? Are the procedures easy to follow? Why or why not?
- Is this activity appropriate for the job? Are there additional skills that might be required to conduct this activity more effectively?
- Does more than one person engage in this activity at the same time? At different times?
- How can the activity be improved to produce the same result more efficiently?

- Should this activity or part of this activity be automated or outsourced?
- Do you work at home?

After completing the first round of interviews, some MFIs have migrated to timesheets that staff fill out independently. In these cases, timesheets can be filled out over the course of a month or longer, relying on actual time spent, as opposed to estimates of "typical" amounts of time. The timesheets are often then augmented by selected interviews to capture more detailed information.

Detailed time analysis does not need to be completed every time an MFI does an ABC exercise. This is particularly true if an MFI is conducting the exercise on a quarterly basis. A costing team may choose to maintain the existing time analysis, while changing other inputs. It is recommended, however, that time analysis data be collected annually, so as to reflect any shifts in the way staff and managers are doing business.

Case Study 8

ARB estimates staff time spent on activities

Interviews were conducted with all 24 ARB staff members to determine the percentage of time spent by each type of staff on each activity in an average month. At first, the staff found it difficult to estimate percentages, particularly those who worked on many different processes. Take the case of the branch supervisor. As it turned out, the two branch supervisors were involved in nearly every process. The costing team helped them walk through a typical week by thinking through, day by day, how many hours they spent on each activity. These weekly figures were then extrapolated to monthly estimates. Table 17 provides a detailed breakdown of an ARB branch supervisor's time.

These time estimates were then fed into an activity-based time map for each process, showing each type of staff member. Table 18 shows the time breakdown for activities under the core process "Making Loans."

Table 19 aggregates all staff time estimates to the level of the six major core processes.

During the course of the staff interviews, a number of efficiency-related issues and questions came up that affected the average times described in table 19. These included:

- Passbook printer breaks down two or three times a week.
- Phone system does not always work.
- Teller and cashier positions turn over often.

Table 17. ARB branch supervisor time estimate

	Branch supervisor	
Core process/Activity	*Hours*	*% of total time*
Making Loans	18	45%
Answer client questions/Advise	-	
Accept loan application	-	
Review and approve loan application	12	30%
Perform general loan disbursement administration	6	15%
Servicing Existing Loans	6	15%
Follow up with delinquent clients	-	
Track repayments and delinquency	2	5%
Perform portfolio analysis	2	5%
Perform general loan administration	2	5%
Opening Deposit Accounts	2	5%
Answer client questions/Advise	-	
Issue passbook	-	
Perform general new deposit administration	2	5%
Servicing Deposit Accounts	4	10%
Update passbooks, issue replacements	-	
Close deposit accounts	-	
Perform portfolio analysis	2	5%
Perform general deposit administration	2	5%
Sustaining Activities	10	25%
Engage in general marketing and promotion	2	5%
Maintain donor/investor relations	-	
Perform general accounting and reporting	2	5%
Recruit, train, and pay staff	4	10%
Maintain information technology	-	
Perform general administration	2	5%
Total	40	100%

- Too many people handling cash? What are the distinct roles and activities of a teller vis-à-vis a cashier?
- Is there a bottleneck in loan application reviews at the branch supervisor level? The supervisor spends 30 percent of his time making loan decisions. In fact, every file has to receive a sign-off from the supervisor. This slows down loan officers, who are constantly waiting for approvals.

Table 18. "Making Loans" activities: Total ARB staff time estimates (in percentages)

Staff	*Answer client questions/Advise*	*Accept loan application*	*Review and approve loan application*	*Perform general loan disbursement administration*	*Making Loans total*
Branch staff					
Branch supervisor			30%	15%	45%
Loan officer	25%	10%	15%	10%	60%
Senior teller					
Teller					
Cashier				35%	35%
Bookkeeper				5%	5%
Headquarters staff					
Executive director			10%	10%	20%
Finance manager					
Accountant				15%	15%
Assistant accountant					
Support staff					

Table 19. Proportion of ARB staff time spent by process

	Processes					
Staff	*Making Loans*	*Servicing Existing Loans*	*Opening Deposit Accounts*	*Servicing Deposit Accounts*	*Handling Cash Transactions*	*Sustaining Activities*
Branch staff						
Branch supervisor	45%	15%	5%	10%		25%
Loan officer	60%	35%				5%
Senior teller			60%	10%	25%	5%
Teller		10%	25%	20%	45%	
Cashier	35%			15%	30%	20%
Bookkeeper	5%	10%	5%	10%	50%	20%
Headquarters staff						
Executive director	20%	5%				75%
Finance manager		20%		20 %	20%	40%
Accountant	15%	20%	10%	10 %	20%	25%
Assistant accountant		25%		25%		50%
Support staff					20%	80%

Box 5. Breaking activities into tasks: Tools for further analysis

Note that many activities can be broken into several tasks. For more detailed analysis than the simple percentage estimations presented in this tool, MFIs can conduct time and motion studies that delve below the activity level and address specific tasks. In this case, either staff can observe the exact time required for each task or they can estimate the amount of time it takes on average to complete each of their tasks and then aggregate these tasks to the activity level. For instance, suppose there is an activity called "issue passbook, collect, and book new deposit" under the process "Opening Deposit Accounts." This activity might have the following specific tasks:

Task	*Responsible staff member*
Obtain documentation from client (enrollment form, signature cards, etc.)	Senior teller/new accounts clerk
Encode client information and print passbook	Senior teller/new accounts clerk
Forward enrollment form, signature cards, passbook, etc., to senior teller	Senior teller/new accounts clerk
Check completeness of documentation and sign	Branch supervisor
Return approved documents to teller	Branch supervisor
Assist client in filling out deposit slip	Senior teller/new accounts clerk
Forward documentation, deposit slip, and money to teller	Senior teller/new accounts clerk
Encode client's first deposit transaction in computer and print details on passbook	Teller
Give passbook to client and signature cards to new accounts clerk for filing	Teller
File documentation (enrollment form, signature cards, etc.)	Senior teller/new accounts clerk

This level of detail is not required to conduct an ABC analysis, but can be helpful if an MFI wishes to deepen its understanding of operational costs. Greater detail may also prove useful for very large MFIs, as the elimination or modification of a specific task can achieve significant savings in large organizations.

Source (table): Adapted from Joanna Ledgerwood, unpublished training materials.

Step 5: Trace costs to activities

The next step in the costing exercise is to determine the monthly or annual cost of each activity.

The next step in the costing exercise is to determine the monthly or annual cost of each activity. First, staff salaries and benefits are distributed to activities, based on the time estimates already completed. The team will need actual staff costs by staff category. Unfortunately, this information may not always be available in the most useful format. In addition, contrary to proper accounting practices, some MFIs may not accrue certain staff costs on a regular basis, such as staff gratuities, insurance payments, bonuses, etc. Some thought should be given to how best to allocate such costs. For example, in the instance of a quarterly costing process, an annual gratuity may need to be estimated and spread across each quarter equally.

Next, the costing team allocates all non-staff costs (except financial costs) to the activities to obtain total non-financial costs per activity.

Certain non-staff costs, like stationary or communications, can be allocated to activities according to direct usage, either based on available records or using allocation bases similar to those introduced in chapter 2. However, determining specific allocation bases for each and every activity can be very cumbersome, particularly if the activity dictionary is large. One approach is to use a hybrid allocation technique, where staff costs are allocated to products based on time spent on activities, and non-staff costs are allocated directly to products using traditional cost allocation. However, this approach would omit many of the benefits of ABC because the link between activities and costs would be lost.

Another, simpler approach—the approach recommended by this tool—is to distribute non-staff costs among activities in the same proportion as total staff time. This approach preserves the multiple uses (product costing and efficiency analysis) of an activity-based costing exercise. It also reflects the overall level of effort by staff who "consume" non-staff costs in the course of doing business. For instance, it seems reasonable that the time spent by all branch staff on a particular activity, say "answer client questions/advise," would form the basis for allocating non-staff costs to that activity.

If an MFI's reports separate out branch- and headquarters-level costs, then these costs should be distributed to the activities in the same proportion as branch and headquarters staff time, respectively. Otherwise, overall staff time distributions should be used to allocate non-staff costs.

Case Study 9

ARB determines costs per activity

Once the ARB costing team had collected time estimates from all staff regarding their level of involvement in the various activities outlined in the ARB activities dictionary, they multiplied the percentage of time spent on each activity by the total monthly salary cost for each staff member. Table 20 shows the resulting total staff cost per activity (as recorded in the general ledger).

The staff costs in table 20 were then applied to each of the activities, based on the proportion of staff time spent on each. For example, table 21 shows both the various staff members involved in and the total cost of the "review and approve loan application" activity.

Table 20. Breakdown of ARB staff costs

	Monthly cost	*No. of positions*	*Total cost*
Branch staff			
Branch supervisor	500	2	1,000
Loan officer	200	6	1,200
Senior teller	200	2	400
Teller	150	4	600
Cashier	100	2	200
Bookkeeper	100	2	200
Total branches		18	3,600
Headquarters staff			
Executive director	900	1	900
Finance manager	600	1	600
Accountant	400	1	400
Assistant accountant	200	1	200
Support staff	150	2	300
Total headquarters		6	2,400
Grand total		24	6,000

Table 21. ARB activity cost breakdown: "Review and approve loan application" activity

	Time spent	*Total monthly cost*	*Staff cost*
Branch supervisor	30%	1,000	300
Loan officer	15%	1,200	180
Executive director	10%	900	90
Total	-	-	570

Applying this methodology to all activities resulted in table 22, which allocates branch and headquarters staff costs to each ARB activity.

With staff costs assigned to each activity, ARB then decided to allocate non-staff costs in the same proportion as staff time. First, the average weekly time per activity for each type of staff was multiplied by the number of staff, resulting in the total number of staff hours per activity per week. The proportion of total hours per activity to total weekly staff hours then served as the basis for allocating non-staff costs among

Table 22. ARB branch and head-office costs by activity

	Monthly staff cost			
Core process/Activity	*Branch*	*HQ*	*Total*	*Annual Total*
Making Loans	1,250	240	1,490	17,880
Answer client questions/Advise	300	-	300	3,600
Accept loan application	120	-	120	1,440
Review and approve loan application	480	90	570	6,840
Perform general loan disbursement administration	350	150	500	6,000
Servicing Existing Loans	650	295	945	11,340
Follow up with delinquent clients	300	-	300	3,600
Track repayments and delinquency	170	30	200	2,400
Perform portfolio analysis	50	205	255	3,060
Perform general loan administration	130	60	190	2,280
Opening Deposit Accounts	450	40	490	5,880
Answer client questions/Advise	200	-	200	2,400
Issue passbook	40	-	40	480
Perform general new deposit administration	210	40	250	3,000
Servicing Deposit Accounts	310	210	520	6,240
Update passbooks, issue replacements	60	-	60	720
Close deposit accounts	20	20	40	480
Perform portfolio analysis	50	80	130	1,560
Perform general deposit administration	180	110	290	3,480
Handling Cash Transactions	530	260	790	9,480
Collect and record cash in (loan repayments, deposits)	240	-	240	2,880
Disburse and record cash out (loans, withdrawals)	170	100	270	3,240
Perform general cash administration	120	160	280	3,360
Sustaining Activities	410	1,355	1,765	21,180
Engage in general marketing and promotion	110	225	335	4,020
Maintain donor/investor relations	-	135	135	1,620
Perform general accounting and reporting	100	385	485	5,820
Recruit, train, and pay staff	100	225	325	3,900
Maintain information technology	-	90	90	1,080
Perform general administration	100	295	395	4,740
Total	3,600	2,400	6,000	72,000

activities. The costing team performed this allocation separately for branch and headquarters, as ARB collects data on administrative costs at both levels. Annual non-staff costs for branch and headquarter levels were 10,800 and 19,200, respectively, for a yearly total of 30,000. Table 23 provides a breakdown of non-staff costs and total hours worked per activity.

Table 23. Allocating monthly non-staff costs to activities

Annual non-staff costs	*Branch 10,800*	*HQ 19,200*	*Total 30,000*
Core process/Activity		*Hours per week*	
Making Loans	212	14	226
Answer client questions/Advise	60	-	60
Accept loan application	24	-	24
Review and approve loan application	60	4	64
Perform general loan disbursement administration	68	10	78
Servicing Existing Loans	120	28	148
Follow up with delinquent clients	60	-	60
Track repayments and delinquency	28	2	30
Perform portfolio analysis	4	18	22
Perform general loan administration	28	8	36
Opening Deposit Accounts	96	4	100
Answer client questions/Advise	48	-	48
Issue passbook	12	-	12
Perform general new deposit administration	36	4	40
Servicing Deposit Accounts	68	22	90
Update passbooks, issue replacements	16	-	16
Close deposit accounts	8	2	10
Perform portfolio analysis	4	6	10
Perform general deposit administration	40	14	54
Handling Cash Transactions	156	32	188
Collect and record cash in (loan repayments, deposits)	68	-	68
Disburse and record cash out (loans, withdrawals)	60	8	68
Perform general cash administration	28	24	52
Sustaining Activities	68	140	208
Engage in general marketing and promotion	16	10	26
Maintain donor/investor relations	-	6	6
Perform general accounting and reporting	24	48	72
Recruit, train and pay staff	8	26	34
Maintain information technology	-	4	4
Perform general administration	20	46	66
Total	720	240	960

Annual non-staff costs in table 23 were distributed in proportion to staff time on each activity. For instance, annual non-staff costs at the branch level (10,800) were distributed to the activity "track repayments and delinquency" under the core process "Servicing Existing Loans" using the following method (note that time was measured in weekly average hours):

1. total branch time spent on "track repayments and delinquency" 28
2. total time worked at branch level 720
3. proportion of time spent on activity [(1)/(2)] 3.9%
4. total branch-level non-staff costs 10,800
5. branch-level non-staff costs allocated to activity [(3) x (4)] 420

To aggregate to the process level, a similar calculation was used. To calculate total non-staff costs (branch plus headquarters for the process "Making Loans," the following procedure applied:

1. total branch time spent on "Making Loans" 212
2. total headquarters time spent on "Making Loans" 14
3. total time worked at branch level 720
4. total time worked at headquarters 240
5. total branch-level non-staff costs 10,800
6. total headquarters-level non-staff costs 19,200
7. total costs allocated to "Making Loans": [(1)/(3) x 5] + [(2)/(4) x 6] 4,300

Following the same methodology for all activities/processes, all staff, non-staff, and total administrative costs were aggregated to the process level and annualized, as shown in table 24. (A complete list of ARB costs broken down by individual activity can be found in appendix 2.)

When Ms. Tam reviewed table 24, she noticed that the total figures exactly matched those in the ARB income statement (see table 1), only

Table 24: ARB costs by core process

	Branch			*HQ*			*Total*		
Core process	*Staff*	*Non-staff*	*Total*	*Staff*	*Non-staff*	*Total*	*Staff*	*Non-staff*	*Total*
Making Loans	15,000	3,180	18,180	2,880	1,120	4,000	17,880	4,300	22,180
Servicing Existing Loans	7,800	1,800	9,600	3,540	2,240	5,780	11,340	4,040	15,380
Opening Deposit Accounts	5,400	1,440	6,840	480	320	800	5,880	1,760	7,640
Servicing Deposit Accounts	3,720	1,020	4,740	2,520	1,760	4,280	6,240	2,780	9,020
Handling Cash Transactions	6,360	2,340	8,700	3,120	2,560	5,680	9,480	4,900	14,380
Sustaining Activities	4,920	1,020	5,940	16,260	11,200	27,460	21,180	12,220	33,400
Total	43,200	10,800	54,000	28,800	19,200	48,000	72,000	30,000	102,000

organized in a way that made it easier to understand how and why costs were incurred. This organization of costing information contrasted with the traditional ledger accounts that she was used to seeing.

What did Ms. Tam learn about the cost structure of the organization? About one-third of total ARB non-financial costs are incurred by sustaining activities, or activities that do not contribute directly to the delivery of products. Eighteen percent of all sustaining activities occur, moreover, at the branch level, so not all sustaining costs are headquarters costs.

A careful examination of the five productive processes reveals that an additional 25 percent of total costs are absorbed by the "general administrative" activity within each core process, possibly indicating serious inefficiencies or excess capacity in operations. Other explanations for this general activity percentage could include an incomplete activity dictionary, inaccurate time allocation, or an over-burdening of this activity due to the method used to allocate non-staff costs. This stage in the ABC exercise provided the costing team a great opportunity to look into such possible errors in methdodology.

Step 6: Assign cost drivers and determine unit activity costs

This step identifies activity cost drivers that allow a per-unit or per-transaction cost to be calculated for each activity.[9] Unit costs are then transferred to individual products, based on how intensively each product "uses" or "consumes" each activity.

A cost driver is an event or action that triggers the activity and is therefore a reasonable basis for the calculation of unit costs.

A cost driver is an event or action that triggers the activity and is therefore a reasonable basis for the calculation of unit costs. The volume of cost drivers must match the period examined by the costing exercise. A cost driver for the activity "collect and record cash in" under the core process "Handling Cash Transactions," for example, could be the number of annual cash transactions from loan repayments and savings deposits across all four financial products. Dividing total activity costs by the total number of cash transactions yields a unit cost per transaction. This unit cost can then be distributed among the various products, depending on the number of cash receipt transactions incurred (or expected to be incurred, for future-looking cost models) by each product over the year.

[9] It is generally preferred that cost drivers be assigned early in the costing exercise, since their collection can be quite time-consuming.

Note that it may be difficult to assign meaningful cost drivers to all activities of each process. Specifically, activity-based costing works best for activities that are most closely associated with an MFI's core business. This means that sustaining activities that support the institution as a whole may require a more traditional cost allocation (see step 7).

Most MFIs have easily discernible cost drivers, but they cannot readily be calculated by product. When transaction-based cost drivers are not produced automatically by an MIS, a costing team has two options:

1. Conduct a manual count of a cost driver (e.g., repayment vouchers) over a shorter period of time and then extrapolate—this is a good choice if the team has the manpower to do a manual count and the count can be completed for a representative period of time for the activity. Seasonality may, however, affect the calculation of cost drivers significantly.
2. Choose the best estimate for the cost driver. For loan repayments, for example, one estimate might be the number of loans outstanding by product, multiplied by the repayment patterns for each loan product (e.g., weekly, biweekly, monthly).

Another example is how to best determine the cost driver for a delinquency management activity, such as "follow up with delinquent clients." A simplified cost driver may be the number of delinquent clients at the end of the period. However, a more sophisticated cost driver would be the number of visits to delinquent clients.

The number of visits could be determined through a careful analysis of the delinquent loan process at each stage of delinquency. For example, when a loan falls into delinquency of 1–30 days, one or more visits might take place. From 30–90 days, MFI policy stipulates that three visits should take place, and so on. In this manner, the costing team can build an estimated driver based on the number of visits, using both the MIS and expectations related to delinquent loan procedures.

The selection of cost drivers can pose challenges for an MFI, since both activities and individual tasks within activities can have multiple cost drivers. The product costing team must build a model that reflects reality as closely as possible without becoming too complex (i.e., defining too many activities and cost drivers). Appendix 1 provides specific examples of cost drivers used by several MFIs that have tested the *Microfinance Product Costing Tool*.

After selecting which cost drivers to use, an MFI can derive a unit cost by dividing the total activity cost by the volume of cost drivers for the period under examination. The unit cost represents the cost of performing the activity each time. For example, if the cost driver is the number of deposit accounts opened, a unit cost of 0.12 for "Opening Deposit Accounts" means that it costs the MFI 0.12 each to open each deposit

account. If the cost driver for the "follow up with delinquent clients" activity is the average number of delinquent clients over the period, that means that the MFI spends 1.50 on every delinquent client. If the cost driver is the number of visits to delinquent clients, however, then the unit cost is interpreted differently: It would mean that the MFI spends 1.50 on every visit to a delinquent client.

Case Study 10

ARB calculates unit costs

ARB identified the cost drivers in table 25 for each of its activities. It then used operational records and estimates to determine the volume of each cost driver in an average month. For instance, the number of new deposit accounts is the cost driver for the three main activities within the process "Opening Deposit Accounts." ARB's records show that over the past year, its customers opened 205 new deposit accounts in an average month. Since ARB had already calculated the average monthly cost of all activities within this process in step 5, the costing team simply divided the monthly cost of each activity by the monthly cost driver volume to obtain a unit activity cost.

For example, the total cost for the activity "collect and record cash in" under the "Handling Cash Transactions" process is 3,900/year, or 325/month. Dividing this amount by average monthly cash receipt journal transactions (3,055), it costs ARB 0.11 (325/3,055) per journal entry to handle cash receipts.

The costing team presented the cost drivers and unit costs in table 25 to top management. Ms. Tam immediately observed that some activities carried very high unit costs. She made a list of the seven most expensive activities, or those that cost more than 1.00 per unit (see table 26).

The high unit cost for delinquent clients was expected, but why did it cost 1.58 per account to close deposit accounts? If ARB shortened the procedure for "close deposit accounts," would the unit cost be reduced? If ARB could "review and approve" more loan applications in the following quarter, would that unit cost be reduced?

Ms. Tam noticed that two "general administration" activities were on the list of the most expensive activities (loan disbursement and new deposit administration). Could these costs conceal inefficiencies in operations? Were these unit costs reasonable? What were unit cost benchmarks within the industry, for example, the "review and approve loan application" activity? Finally, Mrs. Tam realized that she could look at these unit costs over time to track improvements (in productivity and costs) at ARB.

Table 25. Calculation of ARB unit costs by activity

Core process/Activity	*Cost drivers*	*Activity cost/ month*	*Driver volume/ month*	*Unit activity cost*
Making Loans				
Answer client questions/Advise	Number of loan applications	375	460	0.82
Accept loan application	Number of loan applications	150	460	0.33
Review and approve loan application	Number of loan applications	672	460	1.46
Perform general loan disbursement administration	Number of approved loan applications	652	400	1.63
Servicing Existing Loans				
Follow up with delinquent clients	Number of delinquent clients	375	200	1.88
Track repayments and delinquency	Number of delinquent clients	248	200	1.24
Perform portfolio analysis	Number of outstanding loans	380	2,000	0.19
Perform general loan administration	Number of outstanding loans	278	2,000	0.14
Opening Deposit Accounts				
Answer client questions/Advise	Number of new deposit accounts	260	205	1.27
Issue passbook	Number of new deposit accounts	55	205	0.27
Perform general new deposit administration	Number of new deposit accounts	322	205	1.57
Servicing Deposit Accounts				
Update passbooks, issue replacements	Number of outstanding accounts	80	4,250	0.02
Close deposit accounts	Number of accounts closing	63	40	1.58
Perform portfolio analysis	Number of outstanding accounts	175	4,250	0.04
Perform general deposit administration	Number of outstanding accounts	433	4,250	0.10
Handling Cash Transactions				
Collect and record cash in (loan repayments, deposits)	Number of cash receipt journal entries	325	3,055	0.11
Disburse and record cash out (loans, withdrawals)	Number of cash disbursement journal entries	398	1,120	0.36
Perform general cash administration	Number of total cash transaction entries in journal	475	4,175	0.11

Table 26: Seven highest unit costs of ARB

Activity	*Unit cost*
Follow up with delinquent clients	1.88
Perform general loan disbursement administration	1.63
Close deposit accounts	1.58
Perform general new deposit administration	1.57
Review and approve loan application	1.46
Answer client questions/Advise	1.27
Track repayments and delinquency	1.24

Step 7: Apply activity unit costs to products

The final step in the ABC process applies the unit cost for each activity to the products of an MFI. To complete this step, the costing team must split the average volume or value of each cost driver among products. For instance, if a particular cost driver is the number of cash receipt journal entries, the cost driver volume must first be split among the products. Costs are then driven to each product by multiplying the cash receipt journal entries for the period measured for that product by the unit cost. The formula for driving unit activity costs is shown below. (See figure 2 for a visual depiction.)

(cost driver per product) x (unit cost) = activity cost per product

Applying this formula to all activities will allocate total activity costs to each product. Note that in figure 2, the activity cost and the sum of the activity costs per product is the same (100).

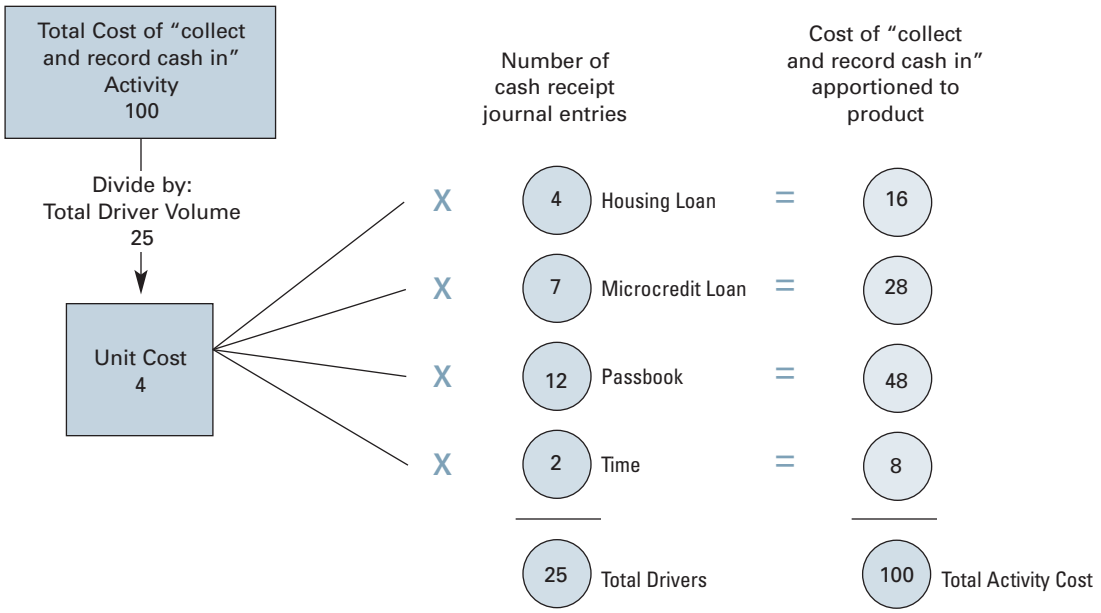
Sustaining activities may not lend themselves easily to the calculation of unit costs that meaningfully relate to a specific product. To resolve this problem, these activities may be allocated directly to products using allocation bases similar to those outlined in chapter 2.

Examples of allocation bases that can be used to allocate sustaining activities include:

- portfolio volume
- number of clients or accounts
- a proportion equal to the activity costs already assigned under ABC (This approach means absorbing sustaining activities into more operational activities and then distributing them proportionately.)

Whatever method is chosen to allocate sustaining activities, these activities should be tracked separately by product to properly understand the cost burden on each product with respect to efficiency.

Figure 2: Driving unit activity costs to products



Case Study 11

ARB reveals the structure of costs for each product

The ARB costing team realized that each product "used" the activities according to the volume of cost drivers related to that particular product. For instance, consider the activity "collect and record cash in" under the process "Handling Cash Transactions." The cost driver is the number of cash receipt journal entries. The value of that cost driver on a monthly basis equals 3,055 and the unit cost is 0.11 (activity cost 325 divided by the cost driver 3,055).

As shown in table 27, each product "uses" part of the activity cost of 325. The amount used by each product equals the volume of the cost driver for that product multiplied by the unit cost.

To calculate the costs for the microcredit loan product under the core process "Making Loans," the costing team first determined the value of the cost driver for each activity associated with the product (see table 28).

The total of 1,656 equals the monthly cost that the microcredit product "consumes" of each of the activities that comprise the "Making Loans" core process. To calculate the total microcredit loan cost of all core processes, the costing team completed the same analysis for the "Service Existing Loans" and "Handling Cash Transactions" processes. The team then conducted similar calculations for all ARB products. The

results of their calculations are shown in table 29, which summarizes the total cost for each product by core process.

What about sustaining activities? The costing team decided to try two approaches. One approach used a single allocation base for all sustaining activities: portfolio volume. The second approach allocated the cost of sustaining activities according to the allocation bases outlined in table 30.

Table 31 gives the allocation proportions implied by three bases: portfolio volume, number of accounts, and ABC process. As the table makes clear, the choice of allocation basis makes a big difference. For instance, using the portfolio volume resulted in significant allocations to the passbook savings product, since this is the largest ARB product (and, some would argue, more "able" to bear the cost burden). On the other hand,

Table 27. Applying costs to ARB products: "Collect and record cash in" activity

Product	*Number of cash receipt journal entries*	*Applying unit cost*	*Product cost*
Calculation of unit cost	Total: 3,055	Unit cost ⇒ (325/3,055) = 0.11	325.00
Microcredit loan	1,800	x unit cost =	191.49
Housing loan	200	x unit cost =	21.28
Passbook savings	1,000	x unit cost =	106.38
Time deposits	55	x unit cost =	5.85

Table 28. Allocating costs of "Making Loans" process to ARB microcredit loan product

Core process/Activity	*Cost driver*	*Unit cost*	*Product cost driver*	*Monthly product cost*
Making Loans				1,656
Answer client questions/Advise	No. of loan applications	0.82	408	333
Accept loan application	No. of loan applications	0.33	408	133
Review and approve loan application	No. of loan applications	1.46	408	596
Perform general loan disbursement administration	No. of approved loan applications	1.63	365	595

Table 29. Monthly ARB product costs by core process

	Loans			*Savings*			
Core process	*Microcredit*	*Housing*	*Total*	*Passbook*	*Time*	*Total*	*TOTAL*
Making Loans	1,656	192	1,848				1,848
Servicing Existing Loans	748	533	1,282				1,282
Opening Deposit Accounts				621	16	637	637
Servicing Deposit Accounts				695	56	752	752
Handling Cash Transactions	568	60	628	549	21	570	1,198
Monthly cost before sustaining costs	2,972	786	3,758	1,865	93	1,959	5,717
As percentage of total costs (before Sustaining Activities)	52.0%	13.8%	65.8%	32.6%	1.6%	34.2%	100.0%

using activity-based criteria resulted in a higher proportion of costs being allocated to the microcredit loan product and barely any to the time-deposit product. The ABC method loaded the sustaining costs onto each product according to its "consumption" of these activities.

Table 32 shows how the costing team applied the two options to the microcredit loan product.

Table 33 summarizes the results for all products, using the same methodology. Ms. Tam and the costing team decided that option 2 was the more accurate method for allocating sustaining activities, since this option attempted to match allocation bases with the type of activity.

After allocating sustaining costs, Ms. Tam's team had finished the administrative costing of each product. They produced two overview tables (tables 34 and 35) for the next costing team meeting.

Ms. Tam now had the cost of each product broken down by process and activity. These breakdowns reinforced the results of the traditional cost allocation exercise illustrated in chapter 1, with savings products costing much more to administer than Ms. Tam had originally anticipated. Passbook savings, for instance, cost ARB nearly 10 percent of total product costs before factoring in the 4 percent interest paid to savings clients.

Table 30: Allocation bases for ARB sustaining activities

Activity	*Allocation basis*	*Rationale for selection of basis*
General marketing and promotion	Equal	Activities affect institution as a whole, products benefit equally
Maintain donor/investor relations	Equal	Activities affect institution as a whole, products benefit equally
Perform general accounting and reporting	No. of accounts	Demands placed on the general accounting and reporting system varies with the number of accounts
Recruit, train, and pay staff	ABC	Human resource management follows pattern of staff costs in ABC model
Maintain information technology	No. of accounts	Demands placed on the MIS system varies with the number of accounts (or transactions)
Perform general administration	ABC	Very general institution-level costs can be "loaded" onto more operational activities

Table 31. Alternative allocation bases for ARB sustaining activities costs

	Micro	*Housing*	*Passbook*	*Time*	*Total*
Average portfolio	211,313	70,438	382,840	95,000	759,590
Allocation ratio	27.8%	9.3%	50.4%	12.5%	100.0%
Number of accounts	1,800	200	4,000	250	6,250
Allocation ratio	28.8%	3.2%	64.0%	4.0%	100.0%
ABC core processes	2,972	786	1,865	93	5,717
Allocation ratio	52.0%	13.8%	32.6%	1.6%	100.0%

Table 32. Two options for allocating costs of ARB sustaining activities to microcredit product

	Allocation basis	*Allocation %*	*Total monthly cost*	*Microcredit product cost*
Option 1: Sustaining activities allocated by portfolio volume				
	Portfolio volume	27.8%	2,783	774
Option 2: Sustaining activities allocated by activity-based criteria				
	ABC processes		2,783	1,065
Engage in general marketing and promotion	Equal	25.0%	422	105
Maintain donor/investor relations	Equal	25.0%	175	44
Perform general accounting and reporting	No. of accounts	28.8%	835	240
Recruit, train, and pay staff	ABC	52.0%	508	264
Maintain information technology	No. of accounts	28.8%	117	34
Perform general administration	ABC	52.0%	727	378

Table 33. Two options for allocating costs of ARB sustaining costs to all products

	Loans			*Savings*			
	Micro	*Housing*	*Total*	*Passbook*	*Time*	*Total*	*TOTAL*
Option 1: Sustaining activities allocated by portfolio volume							
Sustaining Activities	774	258	1,032	1,403	348	1,751	2,783
Total monthly cost	3,746	1,044	4,790	3,268	441	3,710	8,500
Total annual cost	44,956	12,530	57,486	39,217	5,297	44,514	102,000
Average balance	211,313	70,438	281,750	382,840	95,000	477,840	n/a
Cost/average balance	21.3%	17.8%	20.4%	10.2%	5.6%	9.3%	
Option 2: Sustaining activities allocated by various bases							
Sustaining Activities	1,065	349	1,415	1,161	207	1,369	2,783
Total monthly cost	4,037	1,136	5,173	3,026	301	3,327	8,500
Total annual cost	48,448	13,626	62,074	36,317	3,609	39,926	102,000
Average balance	211,313	70,438	281,750	382,840	95,000	477,840	n/a
Cost/average balance	22.9%	19.3%	22.0%	9.5%	3.8%	8.4%	

Overall, the costing results raised many questions for ARB. On the loan side, was there a significant cost difference between new and repeat loans? In addition to lost interest revenue, just how much did delinquent loans really cost in terms of administrative effort vis-à-vis current loans?

For savings, given the overall cost structure, what account size made sense for ARB? How could ARB compare the cost of savings to alternative sources of funds? How could it analyze whether a given product would be profitable for ARB over the long term? How could ARB reduce its costs? Given the cost estimates produced by the ABC exercise, what kinds of changes should be made to ARB's pricing strategy?

Clearly, more analysis was required.

Table 34. Overview of ABC results: Activity costs

Core process/Activity	*Total annual activity cost*	*Total monthly activity cost*
Making Loans	22,180	1,848
Answer client questions/Advise	4,500	375
Accept loan application	1,800	150
Review and approve loan application	8,060	672
Perform general loan disbursement administration	7,820	652
Servicing Existing Loans	15,380	1,282
Follow up with delinquent clients	4,500	375
Track repayments and delinquency	2,980	248
Perform portfolio analysis	4,560	380
Perform general loan administration	3,340	278
Opening Deposit Accounts	7,640	637
Answer client questions/Advise	3,120	260
Issue passbook	660	55
Perform general new deposit administration	3,860	322
Servicing Deposit Accounts	9,020	752
Update passbooks, issue replacements	960	80
Close deposit accounts	760	63
Perform portfolio analysis	2,100	175
Perform general deposit administration	5,200	433
Handling Cash Transactions	14,380	1,198
Collect and record cash in (loan repayments, deposits)	3,900	325
Disburse and record cash out (loans, withdrawals)	4,780	398
Perform general cash administration	5,700	475
Sustaining Activities: Option 2	33,400	2,783
Engage in general marketing and promotion	5,060	422
Maintain donor/investor relations	2,100	175
Perform general accounting and reporting	10,020	835
Recruit, train, and pay staff	6,100	508
Maintain information technology	1,400	117
Perform general administration	8,720	727
Total	102,000	8,500

Cost drivers	*Total cost driver volume*	*Unit cost*
Number of loan applications	460	0.82
Number of loan applications	460	0.33
Number of loan applications (weighted)	460	1.46
Number of approved loan applications	400	1.63
Number of delinquent clients	200	1.88
Number of delinquent clients	200	1.24
Number of outstanding loans	2,000	0.19
Number of outstanding loans	2,000	0.14
Number of new deposit accounts	205	1.27
Number of new deposit accounts	205	0.27
Number of new deposit accounts	205	1.57
Number of outstanding accounts	4,250	0.02
Number of accounts closing	40	1.58
Number of outstanding accounts	4,250	0.04
Number of outstanding accounts	4,250	0.10
Number of journal transaction entries	3,055	0.11
Number of journal transaction entries	1,120	0.36
Number of journal transaction entries	4,175	0.11
Equal		
Equal		
Number of accounts		
ABC		
Number of accounts		
ABC		

Table 35. Overview of ABC results: Product costs

	Microcredit			*Housing loan*		
Core process/Activity	*Cost driver volume*	*Monthly allocated cost*	*Cost / Avg. balance*	*Cost driver volume*	*Monthly allocated cost*	*Cost / Avg. balance*
Making Loans		1,656	9.4%		192	3.3%
Answer client questions/Advise	408	333	1.9%	52	42	0.7%
Accept loan application	408	133	0.8%	52	17	0.3%
Review and approve loan application	408	596	3.4%	52	76	1.3%
Perform general loan disbursement administration	365	595	3.4%	35	57	1.0%
Servicing Existing Loans		748	4.2%		533	9.1%
Follow up with delinquent clients	50	94	0.5%	150	281	4.8%
Track repayments and delinquency	50	62	0.4%	150	186	3.2%
Perform portfolio analysis	1800	342	1.9%	200	38	0.6%
Perform general loan administration	1800	251	1.4%	200	28	0.5%
Opening Deposit Accounts						
Answer client questions/Advise						
Issue passbook						
Perform general new deposit administration						
Servicing Deposit Accounts						
Update passbooks, issue replacements						
Close deposit accounts						
Perform portfolio analysis						
Perform general deposit administration						
Handling Cash Transactions		568	3.2%		60	1.0%
Collect and record cash in (loan repayments, deposits)	1800	191	1.1%	200	21	0.4%
Disburse and record cash out (loans, withdrawals)	365	130	0.7%	35	12	0.2%
Perform general cash administration	2165	246	1.4%	235	27	0.5%
Sustaining Activities: Option 2		1,065	6.0%		349	6.0%
Engage in general marketing and promotion	25.0%	105	0.6%	25.0%	105	1.8%
Maintain donor/investor relations	25.0%	44	0.2%	25.0%	44	0.7%
Perform general accounting and reporting	28.8%	240	1.4%	3.2%	27	0.5%
Recruit, train, and pay staff	52.0%	264	1.5%	13.8%	70	1.2%
Maintain information technology	28.8%	34	0.2%	3.2%	4	0.1%
Perform general administration	52.0%	378	2.1%	13.8%	100	1.7%
Total		4,037	22.9%		1,136	19.3%

	Passbook savings			Time deposits		
	Cost driver volume	*Monthly allocated cost*	*Cost / Avg. balance*	*Cost driver volume*	*Monthly allocated cost*	*Cost / Avg. balance*
		621	1.9%		16	0.20%
	200	254	0.8%	5	6	0.08%
	200	54	0.2%	5	1	0.02%
	200	314	1.0%	5	8	0.10%
		695	2.2%		56	0.71%
	4000	75	0.2%	250	5	0.06%
	30	48	0.1%	10	16	0.20%
	4000	165	0.5%	250	10	0.13%
	4000	408	1.3%	250	25	0.32%
		549	1.7%		21	0.27%
	1000	106	0.3%	55	6	0.07%
	700	249	0.8%	20	7	0.09%
	1700	193	0.6%	75	9	0.11%
		1,161	3.6%		207	2.62%
	25.0%	105	0.3%	25.0%	105	1.33%
	25.0%	44	0.1%	25.0%	44	0.55%
	64.0%	534	1.7%	4.0%	33	0.42%
	32.6%	166	0.5%	1.6%	8	0.10%
	64.0%	75	0.2%	4.0%	5	0.06%
	32.6%	237	0.7%	1.6%	12	0.15%
		3,026	9.5%		301	3.8%

Marginal costing with ABC

As discussed in chapter 2, nearly all costs are fixed in financial institutions. Marginal costs are therefore likely to be very small for individual products. Marginal costs will may become significant, however, in situations where staff members are retrenched after a product or product line is eliminated (or when extra staff members are hired when a new product or product line is introduced).

The activity-based framework allows managers to more fully understand the day-to-day operational implications of a marginal product.

ABC adds value to an MFI's understanding of marginal costs in three ways. First, ABC allows managers to understand the specific activities that will no longer be performed after a given product is eliminated. Second, in cases where some staff members are dismissed, the workload impact on remaining staff can be analyzed. For instance, if a dismissed staff member had spent some proportion of his/her time on activities not uniquely related to the marginal product, other staff members will have to take up the slack.

The third benefit of ABC is its ability to specifically identify and quantify the excess capacity of staff members who are retained after eliminating a product. Overall, the activity-based framework allows managers to more fully understand the day-to-day operational implications of a marginal product.

Case Study 12

ARB uses ABC to analyze marginal costs of savings and excess capacity

Ms. Tam remembered that the costing team had completed a marginal costing exercise following the traditional cost allocation project. She now wanted to know how she could use the ABC data to better understand the costs of excess capacity, should ARB decide to eliminate its savings product line. She recalled that ARB could dismiss all of its tellers for a savings in staff costs of 12,000, plus some savings in materials and postage and communications costs for a total savings of 15,692.

The costing team began a new analysis by examining what proportion of branch-level staff time was spent on the three core processes consumed by the savings product line (see table 36). Senior and regular tellers spend 70 and 45 percent of their time, respectively, on the two core activities uniquely related to the savings product line: "Opening Deposit Accounts" and "Servicing Deposit Accounts." The branch supervisor, cashier, and bookkeeper each spend 15 percent of their time on these two activities.

The "Handling Cash Transactions" process presents an interesting case because it straddles both product lines, loans and savings. If tellers are eliminated, their contribution to processing cash transactions will also be eliminated, meaning that other staff members would have to perform this activity. Although the two senior tellers and four regular tellers focus mainly on savings products, the team found that they also processed loan repayments, as per the "collect and record cash in" activity.

To determine how many transactions would be saved due to the elimination of the savings products, the costing team revisited the cost drivers for the three "Handling Cash Transactions" activities (see table 37). The reduction in number of transactions served as a proxy for reduced workload per activity. For instance, the activity "collect and record cash in" would experience an overall decline of 35 percent due to the decrease in relevant savings-related transactions (deposits). The team determined that the reduction in the number of transactions would allow the cashiers to take on the tellers' cash responsibilities. After conferring with the external auditor, the team also established that the change would not compromise existing internal controls.

Table 36. Proportion of ARB branch-level staff time spent on savings-related activities

Core process/Activity	*Branch supervisor*	*Senior teller*	*Teller*	*Cashier*	*Bookkeeper*
Opening Deposit Accounts	5%	60%	25%		5%
Answer client questions/Advise		20%	20%		
Issue passbook			5%		5%
Perform general new deposit administration	5%	40%			
Servicing Deposit Accounts	10%	10%	20%	15%	10%
Update passbooks, issue replacements			10%		
Close deposit accounts				10%	
Perform portfolio analysis	5%				
Perform general deposit administration	5%	10%	10%	5%	10%
Handling Cash Transactions		25%	45%	30%	50%
Collect and record cash in (loan repayments, deposits)			35%		15%
Disburse and record cash out (loans, withdrawals)		10%		30%	35%
Perform general cash administration		15%	10%		

Table 37. Marginal ARB workload savings due to elimination of savings product line

Handling cash transactions	*Cost drivers*	*Total*	*Loans*	*Savings*	*Savings as % of total*
Collect and record cash in (loan repayments, deposits)	Number of cash receipt journal entries	3,055	2,000	1,055	35%
Disburse and record cash out (loans, withdrawals)	Number of cash disbursement journal entries	1,120	495	720	64%
Perform general cash administration	Number of journal transaction entries	4,175	2,411	1,775	43%

At the headquarters level, table 38 shows that three staff members spent between 20 and 25 percent of their time on the core processes related to the savings product line: "Opening Deposit Accounts" and "Servicing Deposit Accounts."

After eliminating the savings product line, time spent by headquarters staff on these activities, plus that of branch-level staff, would represent excess capacity for ARB, at least in the short term. The costing team quantified this excess capacity cost in table 39.

The excess capacity cost shown in table 39 does not include potential excess capacity in sustaining activities that would result from the elimination of the savings product line. For instance, the "perform general accounting and reporting" and "maintain information technology" activities would likely experience excess capacity, since they are linked to the number of accounts or transactions. The costing team thus informed Ms. Tam that the excess capacity cost of 5,520 needed to be considered against the 15,692 marginal cost savings related to the savings product line. In the short run, ARB would enjoy a net benefit of just over 10,000 (the marginal cost savings minus the excess capacity cost). The costing team expected that other products would absorb the excess capacity costs over time.

Table 38: Proportion of ARB headquarters staff time spent on savings-related activities

	Finance manager	*Accountant*	*Assistant accountant*
Opening Deposit Accounts		10%	
Perform general new deposit administration		10%	
Servicing Deposit Accounts	20%	10%	25%
Close deposit accounts		5%	
Perform portfolio analysis	10%	5%	
Perform general deposit administration	10%		25%

Table 39. Cost of ARB excess capacity due to elimination of savings product line

	Idle time (%)	*Annual salary cost*	*Excess capacity in monetary units*
Branch manager	15%	12,000	1,800
Cashier	15%	2,400	360
Bookkeeper	15%	2,400	360
Finance manager	20%	7,200	1,440
Accountant	20%	4,800	960
Assistant accountant	25%	2,400	600
Total			5,520

Institutionalization of the ABC process

Once an MFI has completed an initial ABC exercise, the results may be so illuminating that management may want to repeat the exercise on a regular basis. Because the process can be time consuming, repeat ABC exercises could be difficult to rationalize internally. An MFI can, however, lower the cost of successive costing exercises in several different ways:

- Modify the management information system (MIS) to automatically calculate cost drivers and costs on a periodic basis.
- Use and refine the ABC spreadsheet to reflect the institution's specific needs.
- Develop activity-based timesheets to be used by staff on a regular basis. This practice also has the advantage of being a more consistent source of information than interviews. (Prizma in Bosnia automated time data entry by each staff member at the end of each day/week.) Typically, timesheets need to be facilitated and verified, especially initially.
- Redo the timesheet or staff interview process at more lengthy intervals than the ABC exercise, updating only the cost drivers and the expense items for interim analysis. For example, the MFI MedNet interviews staff twice a year, but completes the entire ABC exercise quarterly. This also allows time for the impact of changes to occur, as an institution may not see dramatic changes in time allocation from quarter to quarter.

Regular ABC exercises will aid MFI management to understand and control operating costs.

The advantage of conducting an ABC exercise on a regular basis is multifold:

- Familiarization with the ABC exercise on the part of all staff will make each successive exercise clearer and more meaningful. It will focus staff on activities and processes: what they do each day and how they manage their time. Over time, the activities dictionary will become more valid and refined, and the terminology easily understood by all staff.
- Regular ABC exercises will aid MFI management to understand and control operating costs. The exercises will highlight seasonality and excess capacity and allow for fine tuning of staffing levels and other resources.
- ABC can provide useful information for incentive plans, especially when monitoring specific branch targets.
- Successive ABC exercises help an institution see the impact of any changes they have made since the previous exercise.

Chapter 4

Comparing Traditional Cost Allocation with ABC

ABC provides additional information about how and why costs are incurred by allocating costs first to processes and activities, and then to products.

Traditional cost allocation methods that distribute costs according to an MFI's chart of accounts provide valuable information about product costs. These methods allow managers to see the major components of costs by cost category (staff costs, rent, etc.). Combined with cost information at the department or branch level, product costs derived from a traditional cost allocation exercise can help managers begin to pinpoint the sources of costs.

Accounting cost categories are, however, not necessarily useful for decision making because they do not directly address how and why costs are incurred. What does it mean when staff or office rent expenses are higher for, say, a microenterprise credit product than for an emergency loan product? What lies behind the cost structure of different products?

ABC provides additional information about how and why costs are incurred by allocating costs first to processes and activities, and then to products. Most MFI staff can relate much better to the concept of an activity (reviewing loan applications) than to an accounting line item (utilities expenses) when breaking down the costs of a product. Figures 3 and 4 provide a graphic depiction of how cost allocation and ABC break down costs, using the example of one product (microcredit loans).

Figure 3. Traditional cost allocation

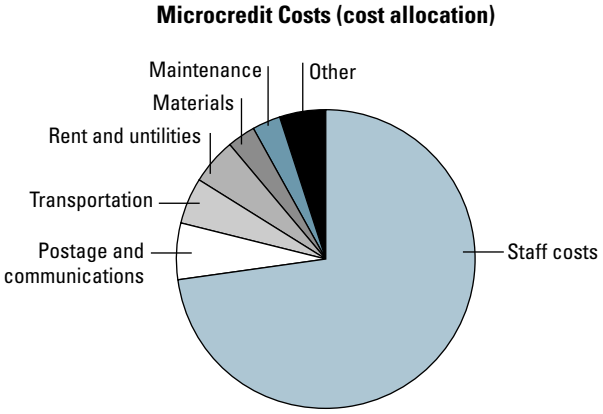
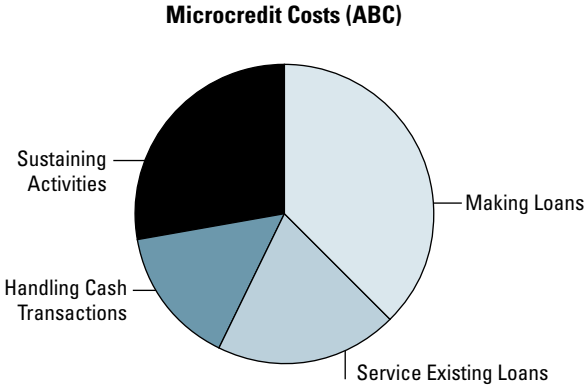


Figure 4. Activity-based cost allocation



Case Study 13

ARB compares traditional cost allocation to ABC

Ms. Tam now had two sets of costing information for her products: one set developed from a traditional cost allocation model and another from an ABC model. She wanted to see the differences between the two, in particular, how the models broke down product costs into different components. The costing team presented her with the summaries in tables 40 and 41.

Table 40. Summary of ARB administrative costs by product using traditional cost allocation (expressed as percentage of average balance of products/product lines)

	Loans			*Savings*		
Item	*Microcredit*	*Housing*	*Total*	*Passbook*	*Time*	*Total*
Staff costs	15.0%	10.9%	13.9%	7.3%	5.1%	6.8%
Transportation	1.0%	0.9%	1.0%	0.3%	0.3%	0.3%
Maintenance	0.6%	0.5%	0.5%	0.2%	0.2%	0.2%
Depreciation	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Rent	0.8%	0.3%	0.7%	0.8%	0.2%	0.7%
Utilities	0.3%	0.1%	0.3%	0.3%	0.1%	0.2%
Materials	0.6%	0.2%	0.5%	0.4%	0.1%	0.4%
Security	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Postage and communications	1.2%	0.7%	1.1%	0.5%	0.1%	0.4%
Professional fees	0.3%	0.9%	0.4%	0.2%	0.7%	0.3%
Publicity and promotion	0.2%	0.5%	0.2%	0.1%	0.4%	0.1%
Total administrative costs	20.6%	15.3%	19.2%	10.7%	7.8%	10.0%

Table 41. Summary of ARB administrative costs by product using ABC

	Loans			*Savings*		
Core process/Activity	*Microcredit*	*Housing*	*Total*	*Passbook*	*Time*	*Total*
Core administrative costs						
Making Loans	9.4%	3.3%	7.9%			
Servicing Existing Loans	4.2%	9.1%	5.5%			
Opening Deposit Accounts				1.9%	0.2%	1.6%
Servicing Deposit Accounts				2.2%	0.7%	1.9%
Handling Cash Transactions	3.2%	1.0%	2.7%	1.7%	0.3%	1.4%
Total core administrative costs	16.9%	13.4%	16.0%	5.8%	1.2%	4.9%
Sustaining Activities	6.0%	6.0%	6.0%	3.6%	2.6%	3.4%
Total	22.9%	19.4%	22.0%	9.4%	3.8%	8.3%

The two sets of results were really quite different, particularly with respect to the housing loan and time deposit products. But which results were more realistic? Ms. Tam noted that staff costs were the largest cost category in the cost allocation model, but that staff time was not broken down beyond the product level. By contrast, the ABC exercise spent much more time and effort figuring out how people spent their time, activity by activity. She decided that the ABC results were probably more accurate. Certainly, these results gave her more information for management decisions. She instructed the costing team to use the ABC results to conduct additional analysis of ARB products and customer segments.

Chapter 5

Analyzing Product Costs

This section shows how ABC costing results can be used to analyze product cost components and customer segments within product lines (e.g., new loans vs. repeat loans, different sized savings accounts). The section specifically addresses total cost and viability analysis of savings products.

The structure of product costs offered by ABC analysis can help managers more fully recognize the sources of inefficiencies for specific products.

General analysis of product cost components

The structure of product costs offered by ABC analysis can help managers more fully recognize the sources of inefficiencies for specific products. In particular, by digging "behind" product costs, management can pinpoint those activities that absorb large amounts of staff time (and thus costs) and decide whether process changes might improve efficiency.

Case Study 14

ARB analyzes high-cost products

Ms. Tam realized that she now had some of the tools she needed to investigate the cost structure of ARB products more fully.

The first thing she noticed was that the "Making Loans" process represented a very large proportion of administrative costs for the microcredit product, 9.4 percent out of the total unit cost of 22.9 percent, or roughly 41 percent of total product costs (see table 41). Why was this core process so expensive?

She examined the activity costs under the "Making Loans" core process for the microcredit product. The two most expensive activities were "review and approve loan application" and "perform general loan disbursement administration." Table 42 gives the original data, illustrating that together, these two activities comprised around 72 percent of total process costs.

Table 42. Breakdown of "Making Loans" process costs for ARB microcredit loan product

Core process/Activity	*Unit cost*	*Total cost*	*Percentage*
Making Loans		1,656	100.0%
Answer client questions/Advise	0.82	333	20.1%
Accept loan application	0.33	133	8.0%
Review and approve loan application	1.46	596	36.0%
Perform general loan disbursement administration	1.63	595	35.9%

Digging back into the staff time analysis, Ms. Tam found that both branch supervisors and loan officers spent a relatively large proportion of their time on the "review and approve loan application" process. In fact, even Ms. Tam became involved in the activity from time to time. She wanted to look into ways of streamlining the review and approval process without sacrificing portfolio quality.

Ms. Tam was much more concerned about the large proportion of costs under the "perform general loan disbursement administration." She realized that a number of staff recorded their time in this category, including herself, the executive director. One person in particular, the branch cashier, spent a significant amount of time on this process (35 percent). Although the two cashiers' salaries were minimal compared to those of senior management, perhaps there was a way to streamline the procedures so that the unit cost of this activity was reduced.

Ms. Tam asked the costing team to investigate disbursement procedures at both the branch and head-office levels and to make recommendations. However, she cautioned the team that ARB should continue to maintain proper controls when streamlining the process.

The extremely high cost of the process "Servicing Existing Loans" for the housing loan product represented another glaring cost issue (see table 41). Nearly half of the total costs of this product (9.1 percent out of 19.4 percent) were tied up in servicing the loans. Closer inspection of the cost breakdown revealed that a very large proportion of this cost went to delinquent loan follow-up (see table 43). In addition to losing interest revenue and potentially loan capital, these figures were a clear indication of the cost of delinquency. If ARB could just get a handle on the delinquent housing loan portfolio, they could reduce the administrative cost of the product by 50 percent or more.

Sustaining activities made up a fairly large proportion of administrative costs for both savings products (table 41)—around 38 percent of total administrative costs for passbook savings and 68 percent for time deposits. This result stemmed from the fact that the allocation of these costs relied heavily on volume-related allocation bases, such as portfolio size (which affects time deposits relatively more) and number of accounts (which affects passbook savings more). However, the fact remained that

Table 43. Breakdown of "Servicing Existing Loans" process for ARB housing loan product

Core process/Activity	*Unit cost*	*Total cost*	*Percentage*
Servicing Existing Loans		533	100.0%
Follow up with delinquent clients	1.88	281	52.7%
Track repayments and delinquency	1.24	186	34.9%
Perform portfolio analysis	0.19	38	7.1%
Perform general loan administration	0.14	28	5.3%

it would be difficult for these savings products to continue to bear the burden of sustaining activities, so Ms. Tam sought a complete review of these activities and how they could be reduced.

Ms. Tam realized what a powerful tool unit costs can be for managing costs. She determined to follow up with future ABC exercises to see whether changes she made this year would have an impact on unit costs in the future. For instance, she decided to remove herself from the process of reviewing most loan applications. The ABC analysis would give her a tool to track and measure changes in the unit costs related to the process "Making Loans," verifying whether the operational change translated into lower costs.

Analysis of customer segments within product lines

Microfinance managers can use ABC analysis to gain additional insight into the cost structure of different products by conducting cost analysis of different client segments within each product line. For instance, many microfinance managers believe that new loan clients are significantly more expensive than repeat loan clients. Data from an ABC study could be used to check this type of assumption. Other questions commonly asked by MFI managers relate to the cost of current vs. delinquent loans and the costs of customers with different loan or savings account sizes. This section uses the ARB case study data to demonstrate possible applications of this cost analysis.

Microfinance managers can use ABC analysis to gain additional insight into the cost structure of different products by conducting cost analysis of different client segments within each product line.

Case Study 15

ARB conducts detailed customer segment analysis of loan and savings products

Ms. Tam asked the costing team to perform more detailed analysis to deepen her understanding of ARB's administrative cost structure. She was particularly interested in the differences between the cost structure of new and repeat loans.

Weighting cost drivers: The case of new vs. repeat loans

Before embarking on a segment analysis, Ms. Tam wondered whether the simple ABC model developed by the costing team allowed for more detailed analysis of customer segments. For instance, in the "Making Loans" process, the "answer client questions/advise" activity had one unit cost (0.82) for both loans. Ms. Tam's experience (and intuition) told her that the intensity of client consultations for the microcredit and housing loan products were likely different, with the latter being slightly more complicated. She also thought that there might be a different unit cost for new loans as opposed to repeat loans. Was there a way to "weight" the number of loan applications (the cost driver for both types of loans) to take these differences into account?

Ms. Tam felt that the same issue also pertained to the "accept loan application" and "review and approve loan application" activities under the "Making Loans" core process. She sought a solution for all three activities.

The costing team started by breaking down the 460 loan applications received per month into new and repeat loans for each of the two loan products (see table 44):

Table 44. New and repeat ARB loan applications by product

	Microcredit	*Housing*	*Total*
New	128	22	150
Repeat	280	30	310
Total	408	52	460

Note: Number of loan applications is the cost driver.

Referring back to the activity analysis interviews conducted with staff members, the costing team realized that the loan officers were the main staff members involved with the three activities in question: "answer client questions/advise," "accept loan application," and "review and approve loan application." The branch supervisor and to some extent, the executive director, also participated in loan application review and approval.

The team decided to check with a sample of these staff members to help them place weights on each type of loan (new microcredit, repeat microcredit, new housing, and repeat housing), according to the relative difficulty of each of the three activities.[10]

Using the repeat microcredit loan as the baseline, the team asked staff members the following question: "If the repeat microcredit loan product equals 1, then what number would you assign to a [new microcredit loan, new housing loan, repeat housing loan] in terms of how much more or less time would it take to answer client questions and provide them with advice? How much more or less time would it take for these other types of loans in comparison to repeat microcredit loans?" After talking to four loan officers and the two branch supervisors, the costing team then cross-checked results until they were satisfied. They then calculated weightings for the three activities, as shown in table 45.

The most dramatic weighting impact occurred for activities 1 and 3. For instance, in the case of activity 1, staff members estimated that providing advice on a new microcredit loan or housing loan required 2.5 and 4 times more effort, respectively, than a repeat microcredit loan. Advice on repeat housing loans required three times as much effort than a repeat microcredit loan. The review and approval process was also

Table 45. Weighting of "Making Loans" process activities

	Type of loan	
	Microcredit	*Housing*
Activity 1: Answer client questions/Advise		
New	2.5	4
Repeat	1	3
Activity 2: Accept loan application		
New	1.5	3
Repeat	1	2
Activity 3: Review and approve loan application		
New	2	5
Repeat	1	5

[10] To complete relative weightings in a large-scale interview process, it is useful to add the additional step of Analytical Hierarchy Process (AHP), as developed by T. L. Saaty. See Saaty, *The Analytic Hierarchy Process*.

much more cumbersome for housing loans, as each housing improvement project was checked and verified as part of the review process.

Using these weighting factors, the costing team came up with a new cost driver for the three "Making Loans" activities by multiplying the number of applications for each type of loan by the weightings. Table 46 shows the calculation of the weighted cost drivers for the activity, "answer client questions/advise."

The team then divided the total monthly cost of the activity "answer client questions/advise" (375) by the sum of the weighted cost drivers (778) to derive the (diluted) unit cost of 0.48. Using the same process for all three activities under the "Making Loans" process generated table 47.

These new "diluted" unit costs were then used to allocate activity costs to each product. Ms. Tam was confident that the results would now be much more realistic. Table 48 compares the results for both products before and after using the weighted cost drivers. The overall difference is not great, although the housing product now appeared more expensive per dollar of portfolio than the microcredit product. The cost of the "review and approve loan application" activity also increased significantly for the housing product, reflecting the more detailed verification procedures that ARB demands for this product.

Table 46. Deriving the weighted cost driver: "Answer client questions/Advise" activity

Type of loan	*Number of applications*	*Weighting*	*Total weighted driver*
New microcredit	128	2.5	320
Repeat microcredit	280	1.0	280
New housing	22	4.0	88
Repeat housing	30	3.0	90
		Total: 778	

Table 47. Diluted unit costs for "Making Loans" process

Activity	*Cost driver*	*Total activity cost*	*Sum of weighted cost drivers*	*Diluted unit cost*
Answer client questions/Advise	Number of loan applications (weighted)	375	778	0.48
Accept loan application	Number of loan applications (weighted)	150	598	0.25
Review and approve loan application	Number of loan applications (weighted)	672	796	0.84
Perform general loan disbursement administration	Number of approved loan applications	652	400	1.63

Table 48. ARB loan product cost comparison: Unweighted vs. weighted cost drivers

	Microcredit loan		*Housing loan*	
Core process/Activity	*Unweighted*	*Weighted*	*Unweighted*	*Weighted*
Making Loans	9.4%	8.3%	3.3%	6.7%
Answer client questions/Advise	1.9%	1.6%	0.7%	1.5%
Accept loan application	0.8%	0.7%	0.3%	0.5%
Review and approve loan application	3.4%	2.6%	1.3%	3.7%
Perform general loan disbursement administration	3.4%	3.4%	1.0%	1.0%
Servicing Existing Loans	4.2%	4.2%	9.1%	9.1%
Handling Cash Transactions	3.2%	3.2%	1.0%	1.0%
Sustaining Activities	6.0%	6.0%	6.0%	6.0%
Total	22.9%	21.8%	19.3%	22.8%

Loan analysis: New vs. repeat

Ms. Tam knew intuitively that new loans cost more than repeat loans for both housing and microcredit products, since the average size of first loans fell below that of repeat loans. In addition, new loans cost more in terms of recruiting, educating, verifying, and monitoring new clients. Ms. Tam knew that she could cut costs as a percentage of average balances simply by increasing the average size of new loans. However, a key element of ARB's microfinance methodology was to start with small loans and allow customers to build creditworthiness in increments.

ARB had anticipated important differences in the cost structure of new vs. repeat loans after calculating the weighted cost drivers for "Making Loans" activities (see tables 44–48). The costing team now used this data to distinguish between new and repeat loan costs (see table 49). To better analyze the cost differences, they also prepared a distribution of new and repeat loans (see table 50).

Table 49. ARB cost structure of new and repeat loans

	Microcredit loans				*Housing loans*			
	New		*Repeat*		*New*		*Repeat*	
Core process/Activity	*Cost*	*Cost/Balance*	*Cost*	*Cost/Balance*	*Cost*	*Cost/Balance*	*Cost*	*Cost/Balance*
Core administrative costs								
Making Loans	605	25.6%	850	5.6%	176	15.1%	218	4.6%
Servicing Existing Loans	225	9.5%	524	3.4%	213	18.3%	320	6.8%
Handling Cash Transactions	170	7.2%	397	2.6%	24	2.1%	36	0.8%
Total core administrative costs	1,000	42.3%	1,771	11.6%	413	35.4%	574	12.2%
Sustaining Activities	320	13.5%	746	4.9%	140	12.0%	210	4.5%
Total costs	1,319	55.8%	2,516	16.5%	553	47.4%	784	16.7%

Table 50. Distribution of ARB loans

Loan type	*New*	*Repeat*	*Total*
Microcredit	540	1,260	1,800
Housing	80	120	200
Total	620	1,380	2,000

As tables 49 and 50 indicate, first-time loans—although relatively new in number—are indeed much more expensive than repeat loans for both products. Among core process costs, "Making Loans" for new microcredit loans and "Servicing Existing Loans" for new housing loans were the highest-cost processes. Ms. Tam now decided to look for cost-saving opportunities in both processes, focusing particularly on first-time loans.

The costing team came up with a number of ideas to increase efficiency:

- Increase initial loan size for the microcredit loan portfolio. Although this might increase the administrative unit cost of larger loans due to a more intensive application review, it would likely reduce administrative costs as a proportion of the portfolio balance (but it could also increase credit risk).
- Streamline the loan approval process, particularly for first-time loans (the branch supervisors currently spend 30 percent of their time on this activity and loan officers spend 15 percent). One idea would stagger loan approval amounts, with different levels of staff authorized to approve specified amounts. Ms. Tam thought this might be a good idea, but she knew that the first-time loan review was critical. Saving effort here could lead to an increase in first time-client delinquency.
- Review policies for involving the executive director in loan approval (she currently spends 10 percent of her time on this function), especially for smaller new loans. Perhaps only loans over a certain size should require approval from this position.
- Look more closely at the specific role played by the branch supervisor, cashier, and bookkeeper, as well as the headquarters accountant. All four of these staff members report spending a significant amount of time on unspecified "general" activities related to loan disbursements in the loan product analysis.
- Structure internal and external incentive systems to encourage client retention, as repeat clients will always cost less to service.

Savings analysis: Account size

Since the passbook savings product proved to be so expensive, Ms. Tam wanted to analyze the product more carefully. She wanted to know, for instance, how much more expensive the smaller accounts were than the larger accounts. Not only were the balances small, but these accounts also tended to experience more transactions. Small-account customers seem to use these accounts as liquidity management tools, particularly those who owned small trading businesses operating out of a nearby public marketplace.

In determining the cost drivers for savings products, no distinction had been made between savings account sizes. The accounting journal revealed an average of 1,000 deposits and 700 withdrawals per month for the 4,000 passbook accounts. Closer investigation showed the following breakdown of these transactions by passbook account size.

Already, the data in table 51 showed some striking results: 60 percent of passbook savings clients had account balances below 100. Together, these clients were responsible for 75 percent of the deposits and 90 percent of the withdrawals in an average month.

The costing team used this transaction data to break down the cost of each activity under the "Handling Cash Transactions" process for the passbook savings product. Table 52 shows how costs under the activity "collect and record cash in" were allocated for different sized accounts.

Table 51. Transaction volumes by passbook savings account size

Account size	*Number of accounts*	*Deposits*	*Withdrawals*	*Total*
0–10	1,000	300	280	580
11–50	600	250	175	425
51–100	800	200	175	375
101–200	1,000	150	35	185
200+	600	100	35	135
Total	4,000	1,000	700	1,700

Table 52. Calculation of ARB "collect and record cash in" activity costs, based on account balance

Savings balance	*Number of deposits*	*Applying unit cost*	*Product cost*
Calculation of unit cost	Total: 1000	Unit cost ⇒ (106/1,000) = 0.106	106
0 –10	300	x unit cost =	32
11–50	250	x unit cost =	27
51–100	200	x unit cost =	21
101–200	150	x unit cost =	16
200+	100	x unit cost =	11

The costing team then used the same methodology to allocate all other activity costs related to the product, including those associated with the "Opening Deposit Accounts," "Servicing Deposit Accounts," "Handling Cash Transactions," and "Sustaining Activities" processes. Note that the team was careful to use the appropriate cost driver and unit cost for each activity, as per table 25. Table 53 provides the resulting cost structure for each segment of the passbook savings product.

The costing exercise showed that all accounts with balances under 100 might not be cost-effective for ARB. This problem was particularly acute for clients with accounts below a balance of 10—a full 25 percent of all passbook savings clients. These clients cost ARB 1.65 for every 1.00 on deposit! Even if ARB did not offer any interest on smaller balances, the cost of this product would remain prohibitively high. The end-of-year service fee of 1 percent of the average annual balance would not make much of a difference for the smaller accounts, even if it were tripled.

Ms. Tam wanted to examine the cost dynamics of the smaller and larger passbook deposit clients in more detail, so she asked for a comparison of activity-level costs for client segments with deposit balances under and over 100. Table 54 shows a dramatic difference in the costing structure between the two segments.

Even without the load of sustaining activities, small balance passbook accounts with balances below 100 cost ARB nearly 20 percent to administer on average (30.4 percent of total costs minus 10.9 percent sustaining activities costs).

Ms. Tam was particularly concerned about the percentage of costs devoted to general administration activities under both the "Opening Deposit Accounts" and "Servicing Deposit Accounts" processes. Since these activities are "catch-all" categories for staff to assign time spent on general tasks that are not directly identified with specific activities, these results could indicate inefficiencies. For instance, when the task force reviewed the time allocation to activities and processes, they noted that the senior teller spent 50 percent of her time on these general activities. What exactly was the job of this individual?

The most likely root cause of the high cost of small-balance savings accounts was that such accounts were both small and incurred significant

Table 53. ARB passbook savings product analysis by account size

Account range	*Cost*	*Cost/Balance*
0–10	817	164.8%
11–50	509	34.2%
51–100	622	14.1%
100–200	669	6.3%
200+	410	2.8%
Total	3,026	9.5%

Table 54. Costs of smaller and larger ARB passbook deposit clients

	Balances < 100		*Balances > 100*	
Core process/Activity	*Cost/Balance*	*%*	*Cost/Balance*	*%*
Opening Deposit Accounts	5.8%	19.1%	1.0%	23.0%
Answer client questions/Advise	2.4%	7.8%	0.4%	9.4%
Issue passbook	0.5%	1.7%	0.1%	2.0%
Perform general new deposit administration	2.9%	9.7%	0.5%	11.6%
Servicing Deposit Accounts	6.5%	21.4%	1.1%	25.8%
Update passbooks, issue replacements	0.7%	2.3%	0.1%	2.8%
Close deposit accounts	0.4%	1.5%	0.1%	1.8%
Perform portfolio analysis	1.5%	5.1%	0.3%	6.1%
Perform general deposit administration	3.8%	12.6%	0.6%	15.1%
Handling Cash Transactions	7.2%	23.7%	0.3%	8.1%
Collect and record cash in (loan repayments, deposits)	1.2%	4.1%	0.1%	2.5%
Disburse and record cash out (loans, withdrawals)	3.5%	11.5%	0.1%	2.3%
Perform general cash administration	2.5%	8.1%	0.1%	3.4%
Sustaining Activities	10.9%	35.8%	1.8%	43.0%
Engage in general marketing and promotion	1.0%	3.2%	0.2%	3.9%
Maintain donor/investor relations	0.4%	1.3%	0.1%	1.6%
Perform general accounting and reporting	5.0%	16.5%	0.8%	19.8%
Recruit, train, and pay staff	1.6%	5.1%	0.3%	6.1%
Maintain information technology	0.7%	2.3%	0.1%	2.8%
Perform general administration	2.2%	7.3%	0.4%	8.8%
Total	30.4%	100.0%	4.2%	100.0%

transactions. Although reducing costs remained a priority, ARB decided to adopt a goal of increasing average balances and improving the stability of those balances.

Potential strategies for achieving these goals included encouraging customers to save more (raffles, attaching life insurance protection to savings accounts, etc.), weeding out low-balance accounts, and reducing or eliminating interest paid on low-balance accounts. Another idea was to make the service fee on such accounts a fixed amount rather than a percentage of the average annual balance. This change would defray some of the administrative costs of the savings products.

It is important to note that ARB had not designed new savings products for some time, therefore new product development activities were not included in the activity-based costing model. Such costs should be considered separately because the development of new products, if done properly, will likely incur a fair amount of costs. The costing exercise should not, however, discourage ARB from designing new products that better meet the needs of its clients.

Chapter 6

Analyzing Savings Products

As demonstrated in previous chapters, the *Microfinance Product Costing Tool* applies equally to credit and savings products. This chapter, however, focuses exclusively on calculating total costs and conducting viability analysis for savings products.[11] Savings products are much less understood than credit products in the microfinance community, as most analytical tools developed for financial analysis by industry practitioners and experts have concentrated solely on microcredit.[12]

Savings products are much less understood than credit products in the microfinance community, as most analytical tools developed for financial analysis by industry practitioners and experts have concentrated solely on microcredit.

Analyzing the total costs of savings

ABC analysis provides information on all administrative (i.e., non-financial) costs for each savings product. Yet fees charged to clients or interest rates paid to clients also need to be taken into account in a costing analysis.

MFIs typically charge fees on savings products to partially defray the administrative costs of processing these accounts. The first step towards understanding the total cost of savings products is to net out any such fees from the product-level costs calculated by an ABC costing exercise. Next, finance costs must be added to net administrative costs to determine total costs.

For this type of analysis, it is recommended that all costs be expressed as a percentage of the relevant product's average portfolio. Percentages are generally easier to interpret and analyze than raw cost data.

[11] Compulsory savings products, or savings that are required to access loans and not accessible to the client, are not considered in this analysis. They are considered part of the loan product.

[12] For a discussion of viability analysis of microcredit products, see Rosenberg, *Microcredit Interest Rates*, revised 2002. Also search under "Financial Management" on the Microfinance Gateway: www.microfinancegateway.org.

Case Study 16

ARB calculates total product costs for savings products

The ARB costing team summarized the ABC data for the two savings products in table 55.

Ms. Tam wanted to ascertain the total cost of ARB's savings products. The costing team started by subtracting the savings fee from the administrative costs determined by the ABC analysis, and then added the interest rate (finance costs) for each product (see table 56).

The question remained for Ms. Tam: Were these costs too high? How did they compare with alternative sources of funds available to ARB?

Table 55. Cost structure of ARB savings products

Core process/Activity	*Passbook savings*	*Time deposits*	*Total savings products*
Core administrative costs			
Opening Deposit Accounts	1.9%	0.2%	1.6%
Servicing Deposit Accounts	2.2%	0.7%	1.9%
Handling Cash Transactions	1.7%	0.3%	1.4%
Total core administrative costs	5.8%	1.2%	4.9%
Sustaining administrative costs			
Sustaining Activities	3.6%	2.6%	3.4%
Total administrative costs	9.5%	3.8%	8.4%

Table 56. Total cost calculation for ARB savings products

	Passbook savings		*Time deposits*	
	Annual cost	*Cost/Balance*	*Annual cost*	*Cost/Balance*
Administrative costs				
Core administrative costs				
Opening Deposit Accounts	7,454	1.9%	186	0.2%
Servicing Deposit Accounts	8,344	2.2%	676	0.7%
Handling Cash Transactions	6,585	1.7%	258	0.3%
Total core admininistrative costs	22,383	5.8%	1,120	1.2%
Sustaining Activities	13,934	3.6%	2,489	2.6%
Total administrative costs	36,317	9.5%	3,609	3.8%
Fees	(3,828)	(1%)	(952)	(1%)
Net administrative costs	32,489	8.5%	2,657	2.8%
Finance costs	15,314	4.0%	5,700	6.0%
Total cost	47,803	12.5%	8,357	8.8%

Viability analysis for savings products

Since savings products do not directly earn income, how can product viability be measured? For loan products, costs are compared to income earned from interest and fee charges to determine profitability. To analyze the viability of a savings product, it is necessary to compare the total cost of the savings product to alternative sources of funds (or the next best proxy) with similar terms that might be available on the market. These alternative sources should have negligible administration costs and not require labor-intensive customer interaction. The price of an alternative source of funding is often referred to as the "transfer price."

To analyze the viability of a savings product, it is necessary to compare the total cost of the savings product to alternative sources of funds…

The difference between the finance costs of savings and the transfer price is called the interest cost "contribution margin" of that product, or the "interest contribution." For instance, say that an MFI pays 4 percent interest on its regular passbook savings, and the next best wholesale alternative is a commercial loan at 7.5 percent. The interest contribution of collecting savings rather than contracting a commercial loan is 7.5 percent minus 4 percent, or 3.5 percent.

Using ABC methodology, the next step is to compare each product's interest contribution to net administrative costs (administrative costs for core processes minus fees). Finally, the implicit "cost" of holding savings in reserve should also be subtracted. This reserve cost is calculated by using the following formula:

$$\frac{\text{Financial cost (i.e., interest rate)}}{(1 - \text{reserve rate})} - \text{Financial cost}$$

For this example, if the financial cost is 4 percent and the reserve rate for our example equals 10 percent, then the reserve cost equals

$$\frac{.04}{(1 - 0.10)} - .04 = 0.0044 \text{ or } 0.44\%$$

The following calculation shows how to complete the viability analysis for this simple example where core administrative costs equal 4 percent and fees are 1.5 percent (all figures are expressed as a percentage of average product balance):

A) interest contribution	3.5%
B) minus core administrative costs	4.0%
C) plus fees	1.5%
D) minus reserve cost	0.4%
(A-B+C-D) equals contribution to cover sustaining costs	0.6%

If sustaining activity costs for the savings product fall below 0.6 percent, then the product is completely viable and covers both core administrative and sustaining costs.

If, on the other hand, sustaining costs exceed 0.6 percent, then the MFI must evaluate whether to continue offering the product, to seriously modify the product, or to consciously continue to offer it with the expectation that other, more lucrative, products will make up the difference in sustaining costs. Of course, another option would be to figure out how to reduce the costs of all activities, especially sustaining activities.

To better understand the implications of a viability analysis, managers need to conduct customer segment analysis as well as overall averages per product…

Alternative funding sources are not always available to MFIs operating in certain markets and, if they are, they may not be sufficient in volume to meet the needs of an MFI. Additionally, certain MFIs consider retail savings more than just a source of funds, they consider these savings a service greatly needed by their customers. Thus when choosing a transfer price against which to compare a given savings product, these issues must be taken under consideration.

To better understand the implications of a viability analysis, managers need to conduct customer segment analysis as well as overall averages per product (i.e., customers that hold smaller balances will be less viable). Customers with larger balances may subsidize customers with smaller balances, which may be acceptable to an MFI.

Another issue to consider is the life cycle of a given product. If a savings product has been recently introduced, the unit activity costs for that product may be high relative to future expectations, as the processes and activities associated with the product may not yet have been fully worked out or be performed at peak efficiency levels. In this case, managers should conduct sensitivity analysis on the numbers to reflect expected as well as actual performance. Such an analysis requires plugging in future expected costs of core activities instead of actual costs to see whether the product will become more viable if expectations turn into reality.

The presence of significant excess capacity, as is the case with many state-owned savings institutions, poses additional challenges to savings product analysis. In ABC analysis, large amounts of time and costs allocated to "general" categories can help identify and/or quantify excess capacity. Another approach is to create a separate "excess capacity" line item in order not to inflate the cost per unit of individual products.

In general, an MFI should aim toward the financial viability of all products. Specifically, when the alternative commercial option for a product is cheaper than the combination of the MFI's financial and nonfinancial administrative costs, MFI managers should make serious efforts to cut the costs or improve the revenues of the product.

Case Study 17

ARB determines whether its savings products are viable

To complete the viability analysis on its two savings products, the costing team compared them to alternative funding options available to ARB on similar terms. The most similar source of funds to the passbook savings account was a rediscount line of credit offered by the Central Bank at 10 percent interest. This proxy was chosen because it could be accessed in any amount and paid back at any frequency, based on the liquidity requirements of ARB, similar to the funding accessibility offered by passbook savings accounts.

The most similar wholesale market alternative for the time deposit product offered by ARB was a three-month commercial loan at 12 percent interest. In addition to the cost of alternative funding, ARB also incurs a reserve cost of five percent of its savings, which is held in an account that earns no interest. Table 57 shows the viability analysis for both the passbook and time deposit products.

The analysis shows that the passbook savings product is, in fact, not pulling its entire weight, and only covers part of the cost of its sustaining activities. The time deposits, however, are extremely profitable, and more than cover their sustaining costs.

Ms. Tam discussed these results with her senior management team. The finance manager (also the leader of the costing team) pointed out that alternative sources of funding, especially the Central Bank line of credit, was not costless from an administrative point of view. To obtain these funds, ARB staff would have to complete a large amount of paperwork, and the act of transferring funds from the Central Bank to ARB could take several weeks. In other words, the cost of those funds exceeded 10 percent from ARB's perspective. From this angle, passbook savings as a source of funding did not seem as disappointing as first thought.

Table 57. Viability analysis for ARB savings products

Cost elements	*Passbook savings*	*Time deposits*
Funding alternative	10.0%	12.0%
minus interest cost	(4.0%)	(6.0%)
Interest contribution	6.0%	6.0%
minus core administrative costs	(5.8%)	(1.2%)
Plus fees	1.0%	1.0%
minus reserve cost	(0.2%)	(0.3%)
Contribution before sustaining activities costs	1.0%	5.5%
minus sustaining activities costs	(3.6%)	(2.6%)
Bottom line	-2.6%	2.9%

Even after taking its chosen transfer price into consideration, ARB management still felt the passbook product needed some revision. Hopefully, some of the options the staff had discussed earlier in terms of reducing costs and raising administrative fees, especially for smaller balances, would help both the revenue and cost sides of this product.

Ms. Tam realized that she could not examine the viability analysis of the savings products in isolation from her balance sheet. Passbook savings, for example, were growing much faster than her current high-yield investment opportunities. Perhaps, she thought, ARB should refrain from promoting more passbook savings until it developed a better strategy for safely expanding the loan portfolio.

Finally, ARB management considered improving the viability of its savings products by lowering the interest paid on passbook deposits. Their questions were: Would such a change damage their market position? How important was the interest rate to passbook savings customers? Would it make sense to eliminate altogether the interest paid on very small accounts?

Chapter 7

Additional Applications of ABC

In addition to product costing, ABC can help management take a harder look at operating costs and the sources of inefficiency in an MFI. Many MFIs that have used ABC find that operating-cost information can be at least as useful as product-cost information, if not more. This section shows how managers can use ABC tools, such as unit costs and staff time data at the activity level, to make concrete improvements in overall efficiency, both for the institution as a whole and at the branch level.

Managers can use ABC tools, such as unit costs and staff time data at the activity level, to make concrete improvements in overall efficiency, both for the institution as a whole and at the branch level.

Institutional analysis

The two case studies discussed below illustrate how two MFIs used ABC information to change how they do business on a day-to-day basis. In both cases, the MFIs used the ABC tool continuously for at least two years as they made operational changes.

MED-Net, Uganda

The Micro Enterprise Development Network (MED-Net) is an MFI based in Kampala, Uganda. It delivers several products (community banking, solidarity loans, and individual loans) through an eight-branch network. As of March 2003, it had approximately 12,500 clients.

MED-Net operates in a competitive environment. Many MFIs in Uganda are undergoing a transformation from non-governmental organizations to regulated, deposit-taking institutions under the guidelines of a recent microfinance regulatory bill. They now need to pay particular attention to their cost structure to stay in business. MED-Net attended an activity-based costing course in Kampala in November 2001. With some technical assistance, it conducted its first ABC exercise shortly thereafter and subsequently completed an ABC exercise on a quarterly basis.

Using activity time allocation and unit costs, MED-Net management identified several areas where ABC helped the MFI increase efficiency and productivity.

1. **Time spent at client meetings.** In June 2002, client meetings were identified as the most expensive activity of MED-Net in terms of unit costs. Previously, branch managers were required to attend all group meetings. MED-Net instituted changes in their core processes, reducing management involvement to working only with groups with problems. This change freed up management time for other activities and the unit cost for client meetings declined to nearly one-third of its original value by December 2002.

2. **Client business inspections.** In December 2002, an ABC exercise revealed that inspecting client businesses was now the most expensive activity of the MFI in terms of unit costs. An earlier delinquency crisis had prompted MED-Net to focus on the business appraisal process and managers had become involved in the process, resulting in higher costs for the activity. The challenge was to maintain the integrity of the appraisal process but reduce the cost. MED-Net developed criteria that qualified loans for inspection and specified what level of manager would be responsible for inspections.

3. **Client mobilization.** From staff timesheets, it was clear that credit officers did not emphasize client selection and recruitment. The portfolio was not growing significantly and client intake numbers were falling drastically. ABC exercises helped management to realize that credit officers with mature portfolios found it difficult to mobilize new clients, make loans, and follow up with existing clients all at the same time. A plan for continuous client mobilization was drafted and the position of "field assistant" was created to take the lead on client mobilization.

4. **Retraining clients and staff.** After further analysis of staff time allocation, it was realized that very little time was invested in training clients. Additionally, MED-Net began to wonder whether its own staff had a clear understanding of the organization's methodologies and processes. MED-Net elected to retrain staff with an emphasis on areas and processes that were considered critical to success, such as client training.

5. **Credit committee composition.** ABC exercises identified credit committee attendance as a large time consumer. MED-Net reduced the number of credit officers required at each credit committee.

6. **Client forms.** Assisting clients to fill out forms absorbed a great deal of loan officer time. MED-Net revised and reduced the number of client forms.

7. **Decentralization of loan approval.** MED-Net found that significant time was spent on approving loans. Loan officers would often be found at the head office, waiting for loan approvals (at the time, all loans had to be approved by the executive director). MED-Net subsequently grouped the loans into ranges and made the executive director responsible only for approving individual loans. All other loans are approved at the branches, saving both staff and client time.
8. **Reporting and analysis at the branch level.** The activities dictionary and timesheet revealed that very little time was being spent on planning, reporting, and analysis by branch supervisors. They were consequently given training in these areas.
9. **Capacity.** Staff who managed individual loans were identified as having too much unproductive time. MED-Net thus set higher caseload-to-portfolio volume targets for these officers.

MED-Net results as of June 2003

- Since January 2002, MED-Net has increased its overall credit officer caseload from 280 to 430.
- Operating efficiency has dropped from 47 percent to 39 percent.
- Portfolio-at-risk over 30 days has dropped from 7.0 percent to 5.5 percent.

*Safe*Save, *Bangladesh*

*Safe*Save is an MFI based in Bangladesh, primarily in the city of Dhaka. It was started in 1997 and provides both savings and lending products to its clients. In 2001, its three products (which have integrated savings and credit components) were distributed through a four- (now six-) branch system. Each branch handles only one product.

When *Safe*Save underwent its first ABC exercise in 2001, its four branches were considered one "large" branch that offered all three products in proportion to their actual contribution to the overall portfolio. All branches worked in similar environments.

The first ABC exercise highlighted several areas of concern related to operational costs.

1. **High cost of collecting overdue fees.** Significant costs were incurred each month when *Safe*Save attempted to collect overdue fees, whether or not the overdue amounts were collected. Senior staff members were too focused on this activity: the vice chairman, general manager, general secretary, and branch supervisors spent 55 percent, 35 percent, 15 percent, and 12 percent of their respective time on overdue clients.

In contrast, collectors spent only 3 percent of their time on collection of overdue payments, suggesting that they relied on senior staff to take care of collection. Overall, the unit cost for collection of overdue loan fees was 17.19 per month per delinquent loan.

*Safe*Save took several specific steps to lower the cost of collecting overdue loan fees:

- It developed an incentive-based pay system that focused on collection of current-due interest. In addition, the MFI now rewards on-time interest collection.
- It negotiated with clients holding old, unproductive loans to forgive past-due interest and allow repayment of principal without further interest. ABC showed that maintaining good clients cost about US $1 per month each, but that overdue clients cost approximately three times that amount. ABC data has allowed management to demonstrate to staff that a line should be drawn when a clients becomes "bad business" and that these loans should be cleared off the books as soon as possible.
- It instituted other, smaller administrative changes to help streamline costs. Reporting became more comprehensive and detailed. Management now resists getting involved directly with a client unless fees are overdue at least three months.

2. **High routine data error-processing costs.** Reconciliation of client passbooks with the database absorbed a great deal of the time of the branch manager (16 percent) and data processor (13 percent). Errors occurred because of accounting mistakes, poor handwriting, arithmetic errors, and incorrect manual data entry into the database.

   To reduce these costs, *Safe*Save:

   - initiated an experiment to reduce the propensity for errors by using handheld computers (personal digital assistants) as data-entry devices
   - revised manual data entry processes to prevent the re-entry of records, with "zero tolerance" for errors
   - required immediate correction by branch supervisors when errors were noted. To avoid this task, supervisors set new standards for data collectors, who now take more care with their paperwork.

3. **Excessive account closures.** Tracking the cost driver volume for closed accounts led *Safe*Save to realize that about 35 percent of clients closed their accounts each year. This high account closure rate translated into increased loan losses, high promotion costs (to replenish lost clients with new clients), and high overall costs for account opening and closing.

To reduce account closure rates, *Safe*Save:

- made the product more attractive by allowing clients to withdraw savings, as long as the balance did not go below 50 percent of their outstanding loan
- changed the renewal term for loans. Clients were able to renew their loans (essentially a line of credit) less frequently, thereby avoiding required fees.
- paid interest more frequently on clients' savings balances
- allowed clients to build up their loan capacity faster by escalating successive loans more quickly
- put into place more focused, better supervised, and more motivated staff

*Safe*Save *results as of December 2003*

- *Safe*Save increased collection (recovery) rates from 85 percent per month to over 93 percent within a few months, and the rates continue to increase steadily.
- Passbooks are now 98–99 percent error free, more or less eliminating the original problem.
- Dropout rates declined in varying degrees among the branches. Overall, client satisfaction with all *Safe*Save products has improved.

It should be noted that overall costs may or may not be reduced as a result of efficiency improvements based on an ABC exercise. In many cases, MFIs do not reduce total costs, but instead reduce the cost of a specific activity. Cost reduction is often achieved by diverting staff and management time away from unproductive to productive activities, such as making loans, customer service, or client mobilization. Staff costs as a whole can be reduced if excess capacity is identified and an MFI is able to use this capacity in other productive areas.

Branch-level analysis

Analyzing operating costs by branch can be revealing. Breaking out ABC data (timesheets, expenses, and cost drivers) by branch allows for a detailed analysis of branch costs. This analysis can help ensure adherence to procedural policies and standards for an organization as a whole. It also supports the process of decentralization, giving branches the tools to identify and manage their costs.

Case Study 18

ARB uses ABC to analyze branch performance

In addition to product analysis, Ms. Tam thought that the ABC approach might also provide insight into the cost structure of the two ARB branches. For example, she knew that Branch B had delinquency problems and she wanted to quantify the cost of those problems. She asked the costing team to split out the ABC data along branch lines.

The team first reviewed staff time allocation by branch and found significant differences in two processes ("Making Loans" and "Servicing Existing Loans"), as shown in table 58. The table illustrates the two core processes, including the two staff positions, where significant time allocation differences existed.

It was clear that the branch supervisor and loan officers in Branch B spent a lot of time on delinquency management. On the other hand, the corresponding staff members in Branch A spent much more time on the "Making Loans" process. This difference in focus was mirrored by split in the branch cost drivers for each of the activities under the two processes.

Tables 59 and 60 show the activity costs (staff and non-staff) for the branches and the corresponding split of cost drivers between the branches. All branch costs (staff and non-staff) were allocated according to the time allocation results. Head-office costs (staff and non-staff) were allocated to the activities in each branch according to the branch's proportion of cost drivers for a particular activity.

Table 58. Selected ARB staff time allocation for "Making Loans" and "Servicing Existing Loans" processes, by branch

	Branch supervisor		*Loan officer*	
Core process/Activity	*Branch A*	*Branch B*	*Branch A*	*Branch B*
Making Loans	55%	35%	80%	40%
Answer client questions/Advise			30%	20%
Accept loan application			15%	5%
Review and approve loan application	40%	20%	20%	10%
Perform general loan disbursement administration	15%	15%	15%	5%
Servicing Existing Loans	5%	25%	15%	55%
Follow up with delinquent clients			10%	40%
Track repayments and delinquency		10%	5%	15%
Perform portfolio analysis		10%		
Perform general loan administration	5%	5%		

Table 59. Branch A unit costs

Core process/Activity	Branch: Staff and non-staff monthly costs	Head office: Staff and non-staff monthly costs	Total monthly costs	Cost drivers	Unit cost
Making Loans					
Answer client questions/Advise	225.0	0.0	225.0	320.0	0.70
Accept loan application	112.5	0.0	112.5	320.0	0.35
Review and approve loan application	370.0	81.0	451.0	320.0	1.41
Perform general loan disbursement administration	255.0	163.0	418.0	300.0	1.39
Servicing Existing Loans					
Follow up with delinquent clients	75.0	0.0	75.0	50.0	1.50
Track repayments and delinquency	37.5	11.0	48.0	50.0	0.97
Perform portfolio analysis	0.0	150.0	150.0	925.0	0.16
Perform general loan administration	82.5	52.0	135.0	925.0	0.15

Table 60. Branch B unit costs

Core process/Activity	Branch: Staff and non-staff monthly costs	Head office: Staff and non-staff monthly costs	Total monthly costs	Cost drivers	Unit cost
Making Loans					
Answer client questions/Advise	150.0	0.0	150.0	140.0	1.07
Accept loan application	37.5	0.0	37.5	140.0	0.27
Review and approve loan application	185.0	36.0	221.0	140.0	1.58
Perform general loan disbursement administration	180.0	54.0	234.0	100.0	2.34
Servicing Existing Loans					
Follow up with delinquent clients	300.0	0.0	300.0	150.0	2.00
Track repayments and delinquency	167.5	33.0	200.0	150.0	1.33
Perform portfolio analysis	55.0	175.0	230.0	1,075.0	0.21
Perform general loan administration	82.5	61.0	143.0	1,075.0	0.13

Ms. Tam could see from this analysis that Branch A was highly productive, disbursing twice as many loans as Branch B. Branch B, meanwhile, seemed bogged down in the administration of many delinquent loans. She could now clearly understand how much delinquency was costing at the branch level, even before adding in portfolio losses and lost interest income.

Based on the data in tables 59 and 60, ARB devised strategies for Branch B to clean up its loan portfolio. Steps included retraining staff in credit analysis, management policies, and skills. Targeted incentives were also used to reduce the delinquency problem in that specific branch. ABC exercises allowed ARB to monitor the progress of Branch B over time in reducing its unit costs for the activities "follow up with delinquent clients" and "tracking repayments and delinquency," which were higher

than those of Branch A. It could also change the overall cost structure of these activities by reducing the number of delinquent loans. This strategy would free Branch B to focus on making good loans.

In addition to using unit costs to track progress over time, Mrs. Tam decided to use the branch unit costs in another way. Since each branch should follow the same set of processes, the unit cost for each activity should be roughly equal, assuming that each branch was equally productive. Thus, ARB could use the unit costs of Branch A as a benchmark against which Branch B could be measured (and other branches as they are added).

Appendices

Appendix 1

Examples of Activities Dictionaries and Cost Drivers

Crac Nor Perú, Perú

Core process	*Activity*	*Cost drivers*
Making Loans	Promote loan	Number of new loans
	Visit and/or interview customer	
	Collect and review loan information	
	Analyze and evaluate loan application	
	Approve loan application	
	Perform loan disbursement	
Servicing Existing Loans	Perform portfolio analysis	Number of outstanding loans
	Advise customer and solve claims	
	Visit and call non-delinquent loan customers	
Delinquent Loans	Track repayments and delinquency	Number of past-due loans
	Visit and call delinquent loan customers	
	Coordinate recovery of judicial loans	
	Coordinate recovery with external recovery firms	
	Meetings and loan arrears committee	
Opening Deposit Accounts	Open accounts	Number of new deposit accounts
	Give information to new clients	
Servicing Deposit Accounts	Advise customer and solve claims	Number of outstanding accounts
	Perform general deposit administration	
	Close deposit accounts	
Handling Cash Transactions	Disburse loans and collect repayments	Number of credit transactions
	Record cash in and withdrawals of deposits	Number of deposit transactions
	Perform general cash administration	Number of accounts
Sustaining Activities	Supervise and follow up transactions	
	Evaluate and analyze reports	
	Maintain information technology	
	Follow up, goal achievement, and planning	
	Recruit and train staff	
	Meet with customers	
	Meet with staff	
	Meet with suppliers	

SKS Microfinance, India

Core process	*Activity*	*Cost drivers*
Group Formation	Village survey	Number of accounts outstanding
	Projection meetings	
	Motivation of members	
	Continous group training	
	Group recognition test	
	Housing survey	
	Traveling	
Center Meetings	Preparation for center meetings	Number of accounts outstanding
	Traveling	
	Late start of meetings	
	Administrative tasks (pledge, attendance, etc)	
	Writing loan and savings cards	
Servicing Savings Products	Closing accounts/dropouts	Number of dropouts
	Opening voluntary account passbook	Number of voluntary savings accounts opened
Making Loans	Receipt and review of applications	Number of loan applications
	Writing loan applications	
	Approval of loans	Number of loans approved
	Pre-disbursement procedures at center	Number of loans disbursed
Servicing Existing Loans	Loan utilizing check (LUC)	Number of loan outstanding accounts
	LUC-related travel	
	Repayment problems	
	Portfolio management (includes preventive visits)	
	Portfolio analysis	
Handling Cash Transactions	Cash collections (loans and savings)	Number of receipts
	Cash disbursements (loans and savings)	Number of payments
	Handing over cash to second signatory	Number of receipts and payments
Sustaining Activities	Monitoring and supervision	
	Staff meetings	
	Fund raising efforts/relations/queries	
	Accounting and internal reporting	
	Recruitment and training of staff	
	Maintenance of MIS/computer work	
	MIS software development	
	Visitors	
	Banking	
	General administration	

PRIZMA, Bosnia

Core process	*Activity*	*Cost drivers*
Making Loans	Work with potential clients	Number of applications
	Processing of applications	
	Monitoring	
	Loan approval	
	Preparation for disbursement	Number of approved applications
	Disbursement	Number of loans disbursed
	General loan making activities/other support	
Collection	Repayment	Number of repayment transactions
	Data processing	
	General collection activities/other support	Number of active clients
Delinquency Management	Collecting late payments	Number of late payments
	Solving delinquency	Number of delinquent clients at previous month's end
	Follow up on written-off loans	Number of written-off loans
	General delinquency managment activities/ other support	Number of late payments
Travel	Travel	Number of clients
Sustaining Activities	Human resource management	Average portfolio
	Reporting	Number of accounts
	Information system	
	Accounting/finance	Number of transactions
	Credit operations	Number of accounts
	Fundraising	
	Representation and promotion	
	Planning and budgeting	
	General sustaining activities	ABC

SEDA, Tanzania

Core process	*Activity*	*Cost drivers*
Making Loans	General mobilization and promotion	Number of enquiries
	Client training and orientation	Number of applicants
	Business verification	
	Opening bank account	Number of new clients
	Receipt of loan application and appraisal	Number of application forms
Loan Disbursement	Check client history	Number of application forms
	Loan approval/processing	
	Writing of payment vouchers and checks	Number of loans approved
	Signing of checks by signatories	
	Issuing of checks to clients	
	Disbursement meeting	Number of loans disbursed
Servicing Existing Loans	Follow up with delinquent clients	Number of delinquent clients
	Recovery	Number of defaulters
	Conflict resolution	Number of conflicts
	Attending collection meeting	Number of collection meetings
	Loan tracking	Number of outstanding loans
	Issuing receipts to clients	Number of receipts issued
	Deposit of cash from sales of recovered items	Number of deposit slips
Reporting	Preparing situation report	Number of situation reports
	Monthly reports	Number of reports
	Productivity reports	
	Weekly operations meetings	Number of meetings
	Analysis of reports	Number of reports
Servicing Deposit Accounts	Closing deposit accounts	Number of closed accounts
Handling Cash Transactions	Collection and recording of cash in (loan repayments, cash deposits)	Number of deposit slips
	Disbursement and recording of cash out (loans, withdrawals)	Number of journal and payment vouchers
	General cash administration (petty cash)	Number of transactions
Reconciliations	Bank reconciliation	Number of bank transactions
	Other balance sheet items reconciliation	Number of reconciled transactions
Other	Other general administration	
Sustaining Activities	General marketing and promotion	
	Donor/investor relations	
	General accounting and reporting	
	Recruitment, training, and payment of staff	
	Information technology maintenance	
	General administration	
	Financial planning	
	Auditing	

Village banking example

Core process	*Activity*	*Cost drivers*
Client Mobilization	Client prospecting	Number of new groups
	Client training	
	Client assessment	
	General client mobilization	
Making Loans	Application preparation	Number of loan applications
	Loan approval/agreement	
	Loan disbursement	
	Loan disbursement (head office)	
	Loan disbursement (Central Bank)	
	Loan disbursement (meeting site)	
	General loan-making activities	
Loan Servicing	Weekly group meetings (general)	Number of VB groups/Number of SEP clients
	Weekly group meetings (transportation)	
	Group meeting management	
	Spot checks	Number of spot checks
	Delinquent client follow-up	Number of delinquent loans
	General loan servicing	Number of outstanding loans
Reporting	Weekly report	Number of VB groups/Number of SEP clients
	Monthly branch reporting	
	Weekly cluster meeting	Number of meetings
	General reporting activities	Number of VB groups/Number of SEP clients
Sustaining Activities	Supervise and follow up transactions	Portfolio volume outstanding
	Evaluate and analyze reports	Number of outstanding loans
	Maintain information technology	Number of VB groups/Number of SEP clients
	Other sustaining activities	Value of loans disbursed
	Follow up, goal achievement, and planning	Portfolio volume outstanding
	Recruit and train staff	
	Meetings with customers	Number of outstanding loans
	Meetings with staff	Portfolio volume outstanding
	Meetings with suppliers	

VB = Village banking

SEP = Small enterprise program

Appendix 2

Detailed Activity Costs of Attractive Rural Bank

A. Branch costs

Core process/Activity	Branch							Branch annual total
	Branch supervisor	Loan officer	Senior teller	Teller	Cashier	Book-keeper	Total	
Making Loans	450	720	–	–	70	10	1,250	15,000
Answer client questions/Advise	–	300	–	–	–	–	300	3,600
Accept loan application	–	120	–	–	–	–	120	1,440
Review and approve loan application	300	180	–	–	–	–	480	5,760
Perform general loan disbursement administration	150	120	–	–	70	10	350	4,200
Servicing Existing Loans	150	420	–	60	–	20	650	7,800
Follow up with delinquent clients	–	300	–	–	–	–	300	3,600
Track repayments and delinquency	50	120	–	–	–	–	170	2,040
Perform portfolio analysis	50	–	–	–	–	–	50	600
Perform general loan administration	50	–	–	60	–	20	130	1,560
Opening Deposit Accounts	50	–	240	150	–	10	450	5,400
Answer client questions/Advise	–	–	80	120	–	–	200	2,400
Issue passbook	–	–	–	30	–	10	40	480
Perform general new deposit administration	50	–	160	–	–	–	210	2,520
Servicing Deposit Accounts	100	–	40	120	30	20	310	3,720
Update passbooks, issue replacements	–	–	–	60	–	–	60	720
Close deposit accounts	–	–	–	–	20	–	20	240
Perform portfolio analysis	50	–	–	–	–	–	50	600
Perform general deposit administration	50	–	40	60	10	20	180	2,160
Handling Cash Transactions	–	–	100	270	60	100	530	6,360
Collect and record cash in (loan repayments, deposits)	–	–	–	210	–	30	240	2,880
Disburse and record cash out (loans, withdrawals)	–	–	40	–	60	70	170	2,040
Perform general cash administration	–	–	60	60	–	–	120	1,440
Sustaining Activities	250	60	20	–	40	40	410	4,920
Engage in general marketing and promotion	50	60	–	–	–	–	110	1,320
Maintain donor/investor relations	–	–	–	–	–	–	–	–
Perform general accounting and reporting	50	–	–	–	10	40	100	1,200
Recruit, train, and pay staff	100	–	–	–	–	–	100	1,200
Maintain information technology	–	–	–	–	–	–	–	–
Perform general administration	50	–	20	–	30	–	100	1,200
Total costs	1,000	1,200	400	600	200	200	3,600	43,200

B. Headquarters costs

Core process/Activity	Headquarters						HQ annual total
	Executive director	Finance manager	Accountant	Asst. Accountant	Support staff	Total	
Making Loans	180	–	60	–	–	240	2,880
Answer client questions/Advise	–	–	–	–	–	–	–
Accept loan application	–	–	–	–	–	–	–
Review and approve loan application	90	–	–	–	–	90	1,080
Perform general loan disbursement administration	90	–	60	–	–	150	1,800
Servicing Existing Loans	45	120	80	50	–	295	3,540
Follow up with delinquent clients	–	–	–	–	–	–	–
Track repayments and delinquency	–	30	–	–	–	30	360
Perform portfolio analysis	45	60	80	20	–	205	2,460
Perform general loan administration	–	30	–	30	–	60	720
Opening Deposit Accounts	–	–	40	–	–	40	480
Answer client questions/Advise	–	–	–	–	–	–	–
Issue passbook	–	–	–	–	–	–	–
Perform general new deposit administration	–	–	40	–	–	40	480
Servicing Deposit Accounts	–	120	40	50	–	210	2,520
Update passbooks, issue replacements	–	–	–	–	–	–	–
Close deposit accounts	–	–	20	–	–	20	240
Perform portfolio analysis	–	60	20	–	–	80	960
Perform general deposit administration	–	60	–	50	–	110	1,320
Handling Cash Transactions	–	120	80	–	60	260	3,120
Collect and record cash in (loan repayments, deposits)	–	–	–	–	–	–	–
Disburse and record cash out (loans, withdrawals)	–	60	40	–	–	100	1,200
Perform general cash administration	–	60	40	–	60	160	1,920
Sustaining Activities	675	240	100	100	240	1,355	16,260
Engage in general marketing and promotion	225	–	–	–	–	225	2,700
Maintain donor/investor relations	135	–	–	–	–	135	1,620
Perform general accounting and reporting	45	120	100	60	60	385	4,620
Recruit, train, and pay staff	45	120	–	–	60	225	2,700
Maintain information technology	90	–	–	–	–	90	1,080
Perform general administration	135	–	–	40	120	295	3,540
Total costs	900	600	400	200	300	2,400	28,800

C. Total costs

Core process/Activity	Staff costs		Non-staff costs			Grand total
	Monthly	Annual	Branch	HQ	Total	
Making Loans	1,490	17,880	3,180	1,120	4,300	22,180
Answer client questions/Advise	300	3,600	900	–	900	4,500
Accept loan application	120	1,440	360	–	360	1,800
Review and approve loan application	570	6,840	900	320	1,220	8,060
Perform general loan disbursement administration	500	6,000	1,020	800	1,820	7,820
Servicing Existing Loans	945	11,340	1,800	2,240	4,040	15,380
Follow up with delinquent clients	300	3,600	900	–	900	4,500
Track repayments and delinquency	200	2,400	420	160	580	2,980
Perform portfolio analysis	255	3,060	60	1,440	1,500	4,560
Perform general loan administration	190	2,280	420	640	1,060	3,340
Opening Deposit Accounts	490	5,880	1,440	320	1,760	7,640
Answer client questions/Advise	200	2,400	720	–	720	3,120
Issue passbook	40	480	180	–	180	660
Perform general new deposit administration	250	3,000	540	320	860	3,860
Servicing Deposit Accounts	520	6,240	1,020	1,760	2,780	9,020
Update passbooks, issue replacements	60	720	240	–	240	960
Close deposit accounts	40	480	120	160	280	760
Perform portfolio analysis	130	1,560	60	480	540	2,100
Perform general deposit administration	290	3,480	600	1,120	1,720	5,200
Handling Cash Transactions	790	9,480	2,340	2,560	4,900	14,380
Collect and record cash in (loan repayments, deposits)	240	2,880	1,020	–	1,020	3,900
Disburse and record cash out (loans, withdrawals)	270	3,240	900	640	1,540	4,780
Perform general cash administration	280	3,360	420	1,920	2,340	5,700
Sustaining Activities	1,765	21,180	1,020	11,200	12,220	33,400
Engage in general marketing and promotion	335	4,020	240	800	1,040	5,060
Maintain donor/investor relations	135	1,620	–	480	480	2,100
Perform general accounting and reporting	485	5,820	360	3,840	4,200	10,020
Recruit, train, and pay staff	325	3,900	120	2,080	2,200	6,100
Maintain information technology	90	1,080	–	320	320	1,400
Perform general administration	395	4,740	300	3,680	3,980	8,720
Total costs	6,000	72,000	10,800	19,200	30,000	102,000

Appendix 3

Microfinance Institutions that Have Tested the *Microfinance Product Costing Tool*

Name	*Country*	*Type of institution*
Beehive Entrepreneurial Development Centre	South Africa	NGO
Bai Tushum Financial Foundation (BTFF)	Kyrgyzstan	NGO
Cooperative Bank of Benguet (CBB)	Philippines	Cooperative
Caja Rural de Ahorro y Credito (CRAC) Nor Perú	Peru	NGO
Enlace	El Salvador	NGO
Federación de Asociaciones de Ahorro y Crédito de El Salvador (FEDECASES)	El Salvador	Cooperative federation
F.I.E.	Bolivia	NGO
PARTNER	Bosnia	NBFI
MED-Net	Uganda	NGO
Prizma	Bosnia	NBFI
PSHM	Albania	NBFI
Rural Bankers Association of the Philippines—Microenterprise Access to Banking Services (RBAP-MABS)	Philippines	Network of rural banks
*Safe*Safe	Bangladesh	NGO
Small Enterprise Development Agency (SEDA)	Tanzania	NGO
Sarvodaya Economic Enterprises Development Services (SEEDS)	Sri Lanka	NGO
Self Help Promotion for Health and Rural Development (Shepherd)	India	NGO
Swayam Krishi Sangam (SKS Microfinance)	India	NGO
Support Organization for Micro Enterprises Development (SOMED)	Uganda	NGO
WWB Bogota	Colombia	NGO

NGO = Non-governmental organization

NBFI = Non-bank financial institution

Glossary of Costing Terminology

activity-based costing (ABC). A costing method that traces costs through significant activities to products or other cost objects.

activities dictionary. Lists and defines all major activities performed by an institution.

administrative costs. For an MFI, all recurrent costs except the cost of funds and loan losses.

allocation basis. Method of assigning indirect and direct costs to cost objects based on modeling the consumption of these costs by cost objects.

contribution before sustaining costs. In MFI viability analysis, the value of a savings product relative to a comparable funding alternative, net of all core administrative costs, fees, and reserve costs.

core administrative costs. All administrative costs associated with MFI core processes (i.e., not sustaining activities).

cost accounting. A managerial accounting activity designed to help managers identify, measure, and control costs.

cost allocation. The assignment of identifiable items of cost (direct or indirect) to cost objects.

cost driver. An event or action that triggers an activity and allows for calculation of a unit cost.

cost objects. Cost units targeted for a costing exercise; can be products, branches, programs, customers, etc.

direct costs. Costs that can be identified specifically with or directly traced to a given cost object.

fixed costs. Costs that remain constant regardless of activity or output levels.

indirect costs. Costs that are not directly related to a cost object, but shared among cost objects.

interest contribution. In MFI viability analysis, the financial value of a savings product relative to a comparable funding alternative.

marginal costs. The amount that costs increase when adding another product or product line (or decrease when eliminating a product or product line).

net administrative costs. For MFI savings products, the administrative costs net of fees charged.

processes. Several activities directed toward a common outcome or objective.

step costs. Costs that remain constant for a range of activity levels, then jump to a new level after activity levels exceed a certain threshold.

sustaining activities. Activities that support an institution as a whole and that are not easily traced to cost objects.

unit cost. Cost per unit produced or per transaction.

variable costs. Costs that change in proportion to levels of activity or output.

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