

THE POTENTIAL FOR CREDIT SCORING FOR SME LENDING IN KENYA

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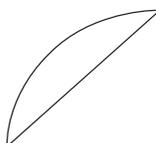


Growth  Fin
financing for growth



FSD Kenya
Financial Sector Deepening

**This study was undertaken for FSD Kenya's GrowthFin programme by:
Microfinance Risk Management, L.L.C**



in collaboration with



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David Snyder, Team Leader

ACRONYMS AND ABBREVIATIONS

AVG	Average
CRB	Credit Reference Bureau
FSD	Financial Sector Deepening Trust
ID	Identification
IFC	International Finance Corporation
IT	Information Technology
Ltd	Limited
PIN	Personal Identification Number
P & L	Profit and Loss
PRM	Portfolio Risk Management
PSDS	Private Sector Development Strategy
RM	Relationship Manager
SMEs	Small and Medium Enterprises
USA	United States of America

EXECUTIVE SUMMARY

1.0 INTRODUCTION:

Fewer than 20 percent of small to medium sized enterprises (SMEs) in Kenya have ever received credit from formal financial institutions. Access is limited due to challenges in assessing SME risk in a cost-effective manner. Lenders in Kenya address this risk-assessment problem either by not lending to SMEs at all or by requiring collateral and charging high interest rates. High-income countries, such as the United States, have addressed this challenge in part by using credit scoring. Credit scoring has the potential to offer a number of benefits which can improve access to credit for SMEs. There are also a number of prerequisites that must be in place, however, in order to fully realize the potential benefits of an effective risk management strategy that incorporates credit scoring.

2.0 OBJECTIVE:

GrowthFin, a programme of the Financial Sector Deepening Trust (FSD), Kenya, aims to play a catalytic role in expansion of access to formal financial services for SMEs. In this context, GrowthFin requested that we investigate the credit-scoring situation for SMEs in Kenya. Specifically, we investigated the current use of credit scoring to aid in SME credit decisions, constraints on the implementation of credit scoring, and options for an implementation strategy.

3.0 METHODS:

The team assessed whether the following key prerequisites for SME scoring are currently in place in Kenya:

- Demand for scoring's benefits
- A supportive business and policy environment
- Predictive and reliable data that is efficiently available at underwriting
- Skill sets and tools so that risk-management departments can effectively implement and manage a credit-scoring-based risk-management system.

We sought to assess the presence of these key prerequisites through a combination of methods:

- Literature review
- Interviews with key stakeholders (banks, prospective credit bureaus, the Ministry of Finance, the International Finance Corporation, the Kenya Institute of Bankers, SMEs)
- Survey sent to the Risk Management Departments of nine major SME lenders

4.0 RESULTS:

Most lenders are not using credit scoring for assessing the credit risk of SMEs. Two of the larger international banks have developed their own internal models that build on expertise and models from other countries. One other large domestic bank is developing a scorecard customized to its customer base. We found that there is demand for the benefits of scoring among SME lenders, but there are also several major constraints to the widespread use of credit scoring:

- The volume of SME applications and accounts is insufficient to allow most lenders to develop their own scorecards using their own data
- There is a lack of licensed credit bureaus, a lack of mandatory reporting of positive and negative credit performance information, and a lack of standardized collections and calculations of key financial data, all of which impede the development of a generic, pooled-data scoring model that could be used by all lenders
- Because portfolio risk management that leverages credit scoring requires a significant up-front and ongoing investment in risk-management skills and infrastructure, it is potentially not cost-effective for small-volume lenders

5.0 CONCLUSIONS:

The larger lenders are developing their own custom scorecards using internal data and best practices. The smaller lenders will not be able to develop, implement, and manage their own custom credit scorecards. Once the credit bureaus begin providing generic credit-risk scores, all lenders will have a cost-effective tool to aid in assessing SME credit risk, and SME customers in general will benefit due to increased access for the lowest risk customers, and perhaps also fewer collateral requirements and lower interest rates.

6.0 RECOMMENDATIONS:

6.1 For the Government of Kenya

Publish the credit-information regulations so that licensed credit bureaus can be established, and require all lenders to report positive and negative information on repayment performance.*

* Note: The Banking (Credit Reference Bureau) regulation 2008 were published in September 2008 and the CBK and KBA have engaged in an ambitious programme that will make them operational by February 2009.

6.2 For the Financial Sector Deepening Trust

- Conduct targeted consultations with specific banks to evaluate their capacity for portfolio risk-management and development of expert-based scorecards
- Start a project to standardize data collection and financial-ratio calculation across all banks
- Develop and promote ongoing training programs in risk-management analytics

6.3 For Banks

- Hire an experienced portfolio risk manager to assess current SME risk management analytics capacity
- Provide training to staff on credit-risk analysis and portfolio management for SMEs
- Segment the customer population and harness internal data to develop simplified judgmental models and credit-decision strategies, even in the absence of generic bureau scores.

Chapter 1

INTRODUCTION

1.1 OVERVIEW

Most economic activity in the world comes from the small and medium-sized enterprise (SME) sector (Wendel and Harvey, 2006). Yet in many developing countries, SMEs have limited access to formal credit. In sub-Saharan Africa, for example, banking-sector penetration is roughly one percent of the population (Stein, 2001). In Kenya, there are about 2.2 million micro, small and medium enterprises (Strategic Business Advisors (Africa) Ltd. — *SME Banking Sector Report, 2007*), of which 88 percent are non-registered. Of this non-registered group, only 23 percent have bank accounts, and only 10 percent have ever received credit from any formal source.

1.11 SME: The Missing Middle

There is no standard definition of SME in Kenya. Lenders' definitions vary, but typically they define SMEs as businesses with six to 50 employees or with annual revenues less than 50 million Kenyan shillings. Regardless of quantitative definition, it is agreed by virtually all stakeholders in this market that SMEs in Kenya are the "missing middle". Their size and credit demand have outgrown the capacity of microfinance institutions, which offer small, short loans via group-lending methodologies, while the opacity of the SME risk profile—combined with the lenders' lack of sophisticated risk-assessment techniques—makes many of them appear undesirable as credit customers for business banking.

1.12 Bank Risk Aversion and Impact on SME Access To Credit

One major reason why Kenyan lenders are reluctant to lend to SMEs is that they lack cost-effective ways to quantify credit risk. There are currently no licensed credit bureaus with standardized data procedures, and SME financial statements—audited or not—may be of unreliable quality and veracity.

Banks have a fiduciary duty to make prudent loans with their depositors' and investors' funds. Thus, most limit their risk with the SME market either by not lending at all or by charging high interest rates and requiring at least 100-percent collateral coverage.

Many SME are reluctant to seek credit. In one survey, the vast majority of bank credit customers indicated that:

- The costs of getting a loan are high
- Interest rates are very high

- It is difficult to meet the requirements for getting a loan
- There is a common perception that borrowing from a formal lender will imply losing assets and property (Steadman Group Research Division, 2007).

One result of banks' limited ability to assess risk is a reduction of access to appropriate and affordable credit, and consequently, reduced prospects for the development of SMEs and national economic expansion.

1.13 Credit Scoring as an Access Enabler

How can Kenya break the cycle of inadequate and expensive risk assessment leading to reduced access? One key requirement is to accurately and efficiently quantify the risk associated with a loan request. Because SMEs typically request relatively small amounts, and because much of the cost of risk assessment is independent of loan size, the risk assessment must not only be consistently accurate, but it must also be low cost. This challenge for SME lending has been successfully addressed in high-income countries, such as the United States, since the early 1990s by using underwriting and portfolio risk management that leverages credit scoring. This study aimed to see whether Kenya's SME lenders might currently be in a position to use credit scoring for this challenge.

1.2 INTRODUCTION TO THE STUDY

GrowthFin is a programme of the Financial Sector Deepening Trust (FSD Kenya). It was established to play a catalytic role in the growth of SMEs by expanding access to financial products and services. Increasingly, financial institutions are beginning to focus on the small and medium end of the market as a potentially profitable segment. To help develop this market, there have been attempts to introduce sector-wide support services such as credit bureaus and credit scoring. To date, these efforts have received a rather tepid response from the mainstream financial sector.

Despite this, GrowthFin is keen to support innovations that might increase financial sector access by SMEs. It recognizes, however, that a shotgun approach could ultimately backfire. It has determined therefore to develop a strategy that is informed by the reality on the ground. This study to determine what specific constraints exist and how they might be addressed.

1.3 TERMS OF REFERENCE

The following is an outline of the key outputs required, the rationale for the assignment, and the methodology employed.

- **The key output required** is a comprehensive report which provides a well thought-out and accurate representation of the current environment for credit scoring in Kenya. The report should provide
 - A clear assessment of the existing situation for credit scoring as an aid in SME-lending decisions
 - The constraints to implementing credit scoring
 - Options for an implementation strategy
- **The basic rationale for the assignment** is to provide clarity to GrowthFin (and ultimately other stakeholders) on the feasibility and utility of credit scoring as a tool for SME lending in Kenya. The assignment should also clarify the best options for introducing scoring, recognizing that some larger lenders already have their own proprietary scorecards and there already are some other private scoring initiatives

1.4 APPROACH AND METHODOLOGY

To understand the situation surrounding credit scoring for SME lending, the inquiry was segmented into the key areas listed below:

1. The demand for the benefits of credit scoring
2. The business environment in which banks' SME lending operates and whether it is conducive to scoring-based decisions and risk management
3. The availability of efficiently obtainable, predictive, accurate, and reliable data at the time of underwriting, and whether that data can be used for scoring

4. The **policy** environment for scoring
5. The **skill sets** in the risk-management departments of a sample of SME lenders in Kenya. Do these departments have the data, systems, and expertise on hand to not only develop, implement, evaluate, and frequently validate a scorecard, but also to conduct on-going risk-management analytics to manage the business at a portfolio level?

1.41 The Stages of Inquiry

The inquiry has four stages:

1. Literature review
2. Field work and interviews
3. Analysis of data and report writing
4. Presentation of findings and receipt of feedback at a stakeholders' workshop.

The literature review covered the legal and regulatory framework and other documentation available locally, as well as a review of international best practice. The core of the assignment was interviews (in person, through a written survey, or by telephone) with key stakeholders in Kenya's SME market, as there is very little literature available locally on scoring for SMEs. A list of key categories of interviews is presented in Table 1.

The people interviewed, along with a guide of the type of questions asked and references used from the literature review, are presented in the Annex. A written survey was also sent out to nine SME lenders, representing a wide range of commercial banks with total loan balances outstanding at the end 2006 ranging from 3–70 billion Ksh (Oloo, 2007).

Table 1. Interview Categories

Interview Category	Key Players
Regulatory Environment	Ministry of Finance working with the Central Bank; Credit reference bureaus and rating agencies
SME lending practice	Banks, with a sample of large international banks and large, medium, and small local banks (five institutions interviewed in person, and nine—including the five interviewed in person—surveyed)
Other key informants	International Finance Corporation; Private sector development strategy secretariat; Kenya Institute of Bankers; Consultants involved in credit scoring; Sample of SME customers

Chapter 2

INTRODUCTION TO CREDIT SCORING

2.1 OVERVIEW

Before going into the specifics of the Kenya SME market and the potential for scoring there, it is useful to review the basics of credit scoring and to discuss a framework that encompasses the key prerequisites for scoring to work.

Credit scorecards are “tools used to predict the behavior of new applicants based on the performance of previous applicants” (U.S. Comptroller of the Currency, 1998). Scorecards can also be used to predict the performance of existing accounts, based on past experience of accounts with similar characteristics. Credit scorecards come in two basic types, judgmental and statistical. Judgmental (also known as expert-based) scorecards are essentially a set of formal, quantitative criteria developed by incorporating the best practices and the knowledge of senior credit officers. They are especially useful for standardizing, simplifying, and speeding up decision-making. Statistical scorecards are built with data from actual loans and applications, and they have the important added benefit of quantifying the probability of default.

Among statistical models, there are two basic types: generic (built with data from a variety of lenders and performance reported to a centralized repository such as a credit bureau), and custom (built with the performance data from a specific financial institution). A custom scorecard may use a generic score as one of its inputs.

The Benefits of Credit Scoring

There are a number of benefits that result from decisions and risk management that use an effectively developed, implemented, and managed scoring system:

- Objective, standardized, consistent, and transparent measurement of risk, resulting in all customers of similar risk receiving the same credit decision
- Enhanced automation in decision-making for credit requests that are obvious approvals or obvious declines, freeing up underwriters to focus their expertise on more complex cases. This not only lowers costs, but it also improves underwriting effectiveness

- Quantification of risk (probability of default), which permits:
 - Precise targeting of portfolio approval rates, loss rates, and pricing
 - Risk-based pricing, which help lenders compensate for the risk taken. Risk-based pricing can also lead to a lower cost of borrowing for the lowest risk customers, which in turn improves customer satisfaction, reduces rates of withdrawal and attrition, and improves portfolio quality. Higher risk-adjusted approval rates (either lower loss rates for a given approval rate, or higher approval rates for a given loss rate), can increase access to credit and can help the lender control portfolio risk.

Potential Disadvantages of Credit Scoring

Credit scoring models are like antibiotics; when used appropriately, they bring much benefit, but if not used and managed correctly, they may do more harm than good. Some potential disadvantages resulting from improperly developed, implemented, or managed scorecards and strategies are:

- The scorecards may rely on inaccurate or unreliable data
- The scorecards may not be adequately monitored
- Managers must provide effective training to users to ensure usage according to policy
- Managers must guard against a false sense of security and not use scoring as a crutch, because scorecards can lose effectiveness or be inaccurate for a variety of reasons.

(Source: *Comptrollers Handbook: Credit Card Lending*, U.S. Office of the Comptroller of the Currency, 1998)

2.2 PREREQUISITES TO SUCCESSFUL SCORING FOR SME LENDING: AN OVERVIEW OF BEST PRACTICE

Although scoring brings a number of benefits which can help improve access to finance for SMEs in Kenya, it is a technology and a system with a number of requirements. To realize the benefits fully, the right conditions for a scoring-based risk-management system must be in place. Four key areas are described below:

2.2.1 Demand for the benefits of Scoring

Demand (both from customers and from lenders) for the benefits of scoring is often assumed, but this assumption must be verified, as risk management that leverages credit scoring requires a heavy initial and on-going investment. The essential question for SME lenders is, “Do we really need credit scoring for our business?”

2.2.2 Business Environment

Credit scoring is best suited for business environments which have high volumes of applications and/or accounts, with standardized products, and where each credit request or account is a small percentage of the total portfolio exposure. Additionally, scoring lends itself to centralized underwriting and risk management.

2.2.3 Data

Scoring models require predictive data that can be efficiently obtained at the time of underwriting. For account and portfolio management, additional data is necessary on account performance after disbursement. The data used must be predictive of risk, verifiable, and accurate.

When sanctioning a loan request, underwriters traditionally evaluate customers considering the five C’s of credit (Character, Capacity, Collateral, Capital, and Conditions). Complex credit scorecards for SME lending also use most, if not all, of these factors,

either as inputs to the model (character, capacity, collateral and capital) or by factoring economic conditions into the strategy of how the model is used.

Generally speaking, scorecards should be kept simple, with indicators limited to the 10–15 that are the most predictive and that are efficiently available at underwriting. As Albert Einstein once said, “Make everything as simple as possible, but not simpler”. The same is true for credit scorecards and underwriting.

When considering what data are useful and predictive for underwriting and credit-scoring, it may help to segment applicants into groups (Table 2). The information necessary to comfortably extend an approval to a customer who is new to the bank can certainly be different from that required for sanctioning a renewal of an existing facility. A track record (either through checking and savings accounts or credit facilities) with the bank is directly related to how well the bank knows its customer and the customer’s risk.

Each lender should profile application volume and performance of each segment, stratified by the amount of the loan transaction and of the aggregate credit relationship. Strategies for development and implementation of scoring models can be phased in gradually, with perhaps scoring being applied initially to smaller transactions from the existing customer base, as these cases have a known track record which make it easier to predict their performance. This approach can be useful if existing customers account for a large share of applications.

Table 2. Some Key Predictive Information for the SME Credit Decision

Data category	New Customer w/o checking or savings account	New customer w/ checking or savings account	Existing customer: new request	Renewal
Premise visit	X	X	Optional	Optional
Years in business	X	X	Previously determined	Previously determined
Industry type	X	X	Previously determined	Previously determined
Collateral type and quality	X	X	X	X
Audited financial statements	X	X	Optional for best customers	Optional for best customers
Credit bureau performance data (both positive and negative)	X	X	X	X
Performance on current and savings accounts	None existing	X	X	X
Performance on existing credit facilities	None existing	None existing	X	X

Note: ‘X’ indicates the data should be mandatory for the decision.

The data categories in Table 2 closely resemble the pillars of a solid underwriting foundation. For completely new customers, the predictive and strong pillars of performance on existing loans and on checking and savings accounts are not available; this therefore increases the burden on other pillars. On the one hand, the absence of internal performance data places ever more reliance on the validity, comprehensiveness, and reliability of data obtained through the premise visit, financial statements, and credit bureau. On the other hand, for an existing customer applying for only a renewal, the underwriting (scoring) decision could potentially be made simply through evaluation of a few very strong pillars: performance on the existing facility and on checking/savings accounts.

CREDIT BUREAU DATA AND BUREAU SCORES

In high-income countries, credit bureaus—both consumer and business—are critical in the cost-effective risk assessment of SME borrowers. For SMEs, the credit worthiness of the owner or guarantor is highly correlated with the business's credit risk.

Generic credit scores are usually built by the bureau based on the data they receive from many lenders, and lenders then purchase these scores on a case-by-case basis for use in underwriting, account management, and loss forecasting. Larger lenders with an abundance of data on their own customers may build internal scoring models, in which bureau scores may be one input.

Generic bureau scores do have many advantages, particularly for low-volume lenders who do not have the data or economies of scale to build and maintain their own custom scorecard. Therefore, all

lenders who opt to use credit scoring must decide whether it is more cost-beneficial for them to use a generic score or a custom score.

2.24 The Policy Environment

The ideal for credit scoring is that Kenya would have established and licensed credit bureaus that require the collection of standardized, accurate data from bank and non-bank lenders. This ideal data would include both negative (non-performing loans, defaults) and positive data (obligations repaid on-time). Effective credit bureaus are developed with the help of enabling regulations. Table 4 describes some of these key enabling regulations. The International Finance Corporation's Global Credit Bureau Program states, "The main objective of legislation to enable credit reporting is to balance the ability of institutions to exchange credit information in the normal course of business while simultaneously protecting individuals' rights to privacy."

JUDICIAL AND LEGAL FRAMEWORKS AND PROPERTY RIGHTS

Access to finance for SMEs, and credit scoring, can be facilitated by the existence of laws, regulations, or policies that provide confidence about the integrity of information used in underwriting. Appropriate frameworks and property rights can increase lenders willingness to lend (Malhotra et al., 2006) as well as also improve the integrity of data used in underwriting and credit scoring. Examples include policies that require financial statements submitted in credit applications to be audited by certified accountants, laws which ensure secured creditors priority in the event of default, and a system that permits efficient identification of title and ownership.

Table 3. Some Advantages and Disadvantages of Generic Bureau Scores

Advantages	Disadvantages
Available to all lenders	Available to all lenders; does not necessarily provide competitive advantage
Includes performance experience from multiple lenders	Not specific to one lender's customer base; can be less accurate than custom scorecards
Scores can be purchased on a transaction basis. For low-volume lenders, this can be less expensive than custom scores	High-volume lenders may find custom scores more economical
Supported by specialists; requires less in-house expertise	A "black box"; how score was developed may not be disclosed to the end user
Provides quantified risk, even for lenders without the data to build a custom score	

Source: Credit Scoring for Risk Managers: The Handbook for Lenders. Mays, Elizabeth. South-Western, 2004

2.25 Analytical Skills For Risk Management

Although the depth of skills required may vary depending on whether the institution will purchase generic scores on a case-by-case basis or whether the models will be built and maintained in-house (and whether the models are expert-based or data-based), an advanced risk-management department should have the skills to:

- Develop and implement a scorecard
- Develop, implement, and evaluate scoring-based policies, strategies, and pricing
- Evaluate model effectiveness
- Continuously monitor and validate the model
- Continuously monitor the bank's application and portfolio volume, customer profile, and performance
- Continuously monitor trends in application and portfolio risk, making strategy adjustments as performance indicates to ensure profits meet targets and are sustainable

Credit scoring is a sophisticated technology centred on data and a quantitative/statistical portfolio approach to risk measurement and management. In larger organizations that have fully developed risk-management and scoring infrastructures, a number of key personnel work together to use this technology to optimize business profitability. In the following section, we describe some of those key players and their respective perspectives and skills.

Portfolio Risk Management Team

- **Risk Manager:** Generalist. Focus is on the business, the portfolio, and the income statement of the loan portfolio. Needs not only to understand the business, processes and policy, but also analytics, and must understand how to use scorecards to achieve desired results
- **Modelling Manager:** Specialist. Expert in statistical modelling, predictive analysis, data mining, and data
- **Data Manager:** Database expert. Builds and maintains originations and performance databases

The Portfolio Risk Management (PRM) team in a successful scoring-based SME lending business will have the perspective and skill set to focus on the population of applications and accounts, that is, on *the portfolio*. This skill set differs dramatically from that of traditional risk credit officers in business banking who focus on specific applications, one at a time.

Portfolio risk managers are population analysts. They are constantly evaluating (usually by analyzing large portfolio performance datasets) how to move the portfolio as a whole in the desired direction. In contrast, traditional business banking credit officers are experts at underwriting and managing a single loan or customer relationship. Senior credit officers have the experience (gained one case at a time) to understand the nuances of the five C's of credit.

Table 4. Credit Bureau Enablers

Enabler	Description
Open system	Reporting and access from banks and non-bank creditors
Permissible purpose and borrower consent rights of individuals and firms to ensure that data are not misused.	Permits information sharing while also protecting the Requirements may include borrower consent prior to accessing bureau data
Authorized access to information	Only authorized parties may access information
Length of information retention	Specification of a cut-off date for information storage
Positive and negative information sharing positive information helps to identify lower-risk customers.	Negative information can be used as a decline rule, but
Consumer protection	Provisions to ensure that individuals have the right to check their own information and that bureaus have a process to correct errors
Licensing standards security, and governance standards.	Requirements to ensure bureaus meet certain financial,
Limited liability for credit bureaus	Protects managers and owners of credit bureaus from unreasonable liability
Unique Personal Identifier	Essential for collection and merging of data on a borrower

Source: *Credit Bureau Knowledge Guide*, International Finance Corporation, 2006

Portfolio risk managers, on the other hand, have expertise at economics, finance, and statistical analysis. Over time, portfolio risk managers may acquire some of the valuable knowledge of the senior credit officer, but their experience is not in underwriting or in understanding one customer or his/her business. For this reason, successful SME risk-management departments cultivate a healthy partnership between risk managers and analysts (who think about and analyze the entire portfolio) and senior credit officers (who know the fine details of credit policy, underwriting, and collections). It is rare to find both skill sets in one individual, or even in a single department, yet both perspectives are essential.

Lenders seeking to use credit scoring for SMEs should have a portfolio risk management team on board which has the portfolio perspective and who focuses on profit optimization rather than loss minimization. The PRM team will have a solid educational background in the quantitative social sciences (economics, finance, statistics), and will also have expertise in database creation, management, and computer-based data analysis. This skill set, however, on its own, will be sub-optimal unless the PRM team also

makes a concerted effort also to learn the business and processes of SME lending. The PRM team should be in routine contact with (and seek out the advice of) relationship managers, business banking managers, underwriters, and senior credit officers.

The required skill set for successful scoring extends beyond the risk management department. Operations—and in particular the underwriting centres—will need to be educated about scoring and trained in how to use it. When scoring is first introduced, some underwriters and credit officers will usually resist, as they rightly pride themselves on being experts at making individual decisions. They may focus on the inevitable imperfections of the scorecard and its inability to correctly identify low- and high-risk customers all of the time. It's important for the PRM team to develop a constructive relationship with the underwriters and credit officers, as these front-line staff is invaluable in helping identify the weaknesses of the scorecard (and their remedies).

Scoring, of course, also requires a strong IT department. IT will likely be responsible for either implementing the scorecard or setting up the infrastructure to report and receive data from the credit bureaus.

Chapter 3

ASSESSMENT OF THE KENYAN MARKET FOR CREDIT SCORING

3.1 DEMAND FOR THE BENEFITS OF SCORING

We reviewed previous research on the SME perspective and also surveyed several SMEs who were bank customers in downtown Nairobi. It was clear that effectively developed and managed credit scoring would help meet their needs in a variety of ways. For example, credit scoring can eventually:

- Reduce reliance on **collateral**
- As competition increases, lead to **risk-based pricing**, resulting in a lower cost of borrowing for the lowest-risk customers and potentially greater credit availability for higher-risk customers, who, without risk-based pricing, would simply be denied loans
- Additionally, **turn-around times** from application to approval and funding would likely decrease. And as lenders become more confident in scoring's accuracy, **risk-adjusted approval rates** may go up

There are a number of forces at work in the macroeconomic environment in Kenya that make credit scoring desirable for SME lenders. First, all lenders are facing common challenges:

- Increased capital requirements mandated by the Central Bank of Kenya
- The need to invest in technology
- Declining interest margins (Oloo, 2007)
- Increasing competition and consequent pressure to diversify

These challenges will push lenders to seek economies of scale, leading to further consolidation in the industry.

Over the past several years, interest rates have declined substantially and deposits have grown steadily (from 200B Ksh in 1997 to 600B Ksh in 2006). At the same time, banks are increasingly turning toward lending and away from investing in Government securities as a more profitable use of their customer's deposits. Loan balances outstanding, which declined industry-wide in 1998–2003, have increased by 76% in 2003–2006 (Oloo, 2007). Many banks are now interested in targeting credit for SMEs as a growth area. Higher loan volumes will provide reasons for banks to seek more efficient ways of assessing credit risk.

Furthermore, Basel II requirements and, per the Governor of the Central Bank of Kenya, the new "In-Duplum" rule, will drive banks to more accurately quantify the risk of their applicants and existing accounts (Oloo, 2007).

All lenders interviewed indicated a desire to simplify risk assessment at underwriting. In order, to meet their customer's needs, they would like to reduce turn-around times and like to increase the productivity of their underwriting departments. In particular, the banks with relatively high application volumes are seeking ways to quickly assess risk for small loans.

3.2 BUSINESS ENVIRONMENT

For all lenders, SME credit applications are typically sourced through a relationship manager in a branch. The relationship manager then submits the application to a centralized underwriting centre where it is sanctioned by an underwriter.

Of the surveyed SME lenders, monthly credit applications per bank varied from 30 to 200, with a median of about 60. The average number of applications sanctioned per underwriter per day varied from less than one to about three. Assuming an approval rate of 60% (Strategic Business Advisors (Africa) Ltd. – *SME Banking Sector Report, 2007*), this indicates that monthly booked volume per bank ranges from about 20 to 120 accounts.

Among the largest banks in Kenya, the average loan amount to registered SME's is about Kshs 5 million. The number of SME loans outstanding per bank ranges from about 1,000 to 4,000 (Strategic Business Advisors (Africa) Ltd. – *SME Banking Sector Report, 2007*).

3.3 DATA

When evaluating a loan request, SME lenders in Kenya employ a number of risk mitigants, including the common practice of requiring credit applicants to have had a checking or savings account with the lender for 6–12 months, verifying business existence and time in business through a review of registry records, and visiting the premise at origination. These practices, along with the requirement in most applications for audited financial statements and collateral, help control risk.

Nevertheless, there are many challenges in Kenya related to the availability of quality data for scoring. At present, these challenges are so acute that it is questionable whether any SME lender or credit bureau could develop a reliable data-based scorecard. This does not, however, preclude the near-term development of expert-based scorecards.

The credit rating agency, Metropol East Africa, recently developed a generic SME scoring model for East Africa. Metropol selected the scorecard indicators based on the input of more than 40 banks in East Africa. Metropol determined the application profile for several hundred performing and non-performing loans, and then built a data-based scorecard. Although the model was ground-breaking in its effort, the study revealed challenges with data quality and standardization across the participating banks (see Box 1).

All the banks who responded to the study indicated that they have databases for applications, account performance, and deposits, and that these databases can be linked with each other using a unique customer identifier. Therefore, the challenge is not that there are no data but rather that historical data quality, completeness, integrity, and standardization is inadequate for scoring.

Box 1. The IFC East Africa SME Score Tool Project

aimed to develop an SME scorecard and make it available to financial institutions for their loan underwriting processes. In the course of the project, it became clear that the available data was not adequate in quality or scope. As a result, the scorecard was not robust. The project partially achieved its objective in that it engaged banks in the process of extracting the necessary information and learning about the use of scoring. Even though the scorecard was not robust, it did succeed in identifying the data gaps in the lenders.

Workshops in Kenya and Tanzania also helped to focus banks' attention on improving data quality (Source: IFC).

3.31 Premise Visit, Industry Type, and Time in Business

Premise visits are a standard part of due diligence for SME credit applications from new customers. Industry type and time in business is determined and confirmed via Kenya's business registry.

3.32 Collateral Type

The vast majority of approved SME loans are secured by some form of collateral. Issues of concern include lenders' rights to collateral in the event of default (discussed later), accuracy and reliability of appraisals, and confirmation of lien position. In the interviews, lenders stated that lien position is not confirmed, and that title insurance is not purchased.

Kenyan lenders also rely on intangible "reputational collateral" in the form of the borrower's reputation. As Kenya is a relatively small and concentrated market (the vast majority of SMEs in Kenya are based in Nairobi), borrowers need to carefully preserve their reputation, as lenders will check with each other about performance. For example,

there is a regular monthly meeting among all credit-card issuers to share negative data. Reputational collateral is all the more important because there are no licensed credit bureaus.

3.33 Credit Bureau Data

As of July, 2008, there were no licensed credit bureaus in Kenya, although we did visit with two prospective providers, Credit Reference Bureau (CRB), Africa LTD and Quest Holdings. Both of these prospective licensed bureaus already have built some infrastructure in anticipation of enactment of bureau regulations and subsequent licensing. In fact, CRB Africa is already collecting performance data from 21 banks. Unfortunately, in the absence of finalized and published regulations, the data collected by CRB Africa suffers from the following limitations:

- It is negative only
- It is reported on a voluntary basis. As of June, 2008, 21 of the 42 commercial banks in Kenya were participating, and even for participants

- Not all customers with negative performance are reported
- There are no standards regarding definitions or data quality

A few of the banks interviewed were sceptical about the usefulness and quality of the data currently reported. Quality should improve once the government formalizes the regulations and the new credit-bureau system is in place.

As of July, 2008, the understanding is that the new regulations have been signed and are waiting to be printed in the *Kenya Gazette*. Once the regulations are formally enacted, it will likely take the licensed bureaus at least six to nine months to start collecting and reporting negative data from all banks, while the universal reporting of positive information may not occur for at least a few years. Given these realities, it will be at least a *few years* before credit bureau data can be reliably used to develop scoring models in Kenya.

As can be seen in Table 5, Kenya's draft Banking (Credit Reference Bureau) Regulations, 2008, address all broad categories of enabling legislation. The interviews made clear, however, that there is still uncertainty surrounding:

- Whether in addition to banks, non-bank lenders would participate in reporting and accessing information
- Whether the bureau would require the reporting of negative and positive data, or only negative data. Developments in July, 2008 suggested that the Central Bank may also require mandatory reporting of positive information, but to our knowledge, that requirement has not yet been finalized. During the interviews, bank representatives typically indicated that they were not averse to sharing positive information with the bureaus, provided that there are protections in place to prevent poaching of their customers by other institutions

3.34 Financial Statement Data

Some SME lenders are testing “no financials” products. The common practice for new loan requests, however, is to require audited financial statements from certified accountants. In terms of scoring, there are at least a few problems with SME financials. First, income and cash-flow can be understated, typically for tax reasons, with obvious consequences for the use of these statements in underwriting and scoring. On the other hand, in order to qualify for a loan, there are also incentives to overstate income. The team was told that “SMEs always have at least two sets of books”. Therefore, the data are not only unreliable but also can err in either direction. Because scoring relies on consistent data, and because cash flow may be understated or overstated, indicators such as the debt-service coverage ratio may not appropriately provide the scorecard with information about risk.

The SME lenders surveyed typically validate financial statement information by analyzing inflows and outflows from checking and savings accounts.

3.35 Data on Performance of Existing Facilities

All lenders surveyed indicated that data on performance of existing accounts is stored in a database and is used by underwriters when sanctioning a credit request.

3.36 Data on Current and Savings Accounts

Virtually all of the banks require credit customers to have had a checking or savings account with them for at least 6–12 months. One bank interviewed permits anyone with a Kenya ID to open a savings account, even with a zero balance, and for no cost. All lenders surveyed indicated that current and savings account information is available in a database and can be linked to application and performance data.

Table 5. Kenya’s Draft Regulations and Credit Bureau Enablers*

Enabler	Addressed by Kenya’s Draft Regulations?
Open system	Currently only banks are participating.
Permissible Purpose and Borrower Consent	Yes
Authorized access to Information	Yes
Length of Information Retention	Yes
Positive and negative information sharing	Currently negative data reporting is mandatory for banks; mandatory reporting of positive data is under deliberation
Consumer protection	Yes
Licensing standards	Yes
Limited liability for Credit Bureaus	Yes
Unique Personal Identifier	Kenya has a National ID and Tax Personal Identification Number (PIN)
Unique Business Identification	Registration No. and Pin No.

* Described in Table 4. Source: Kenya Draft Credit Reference Bureau Regulations, 2008.

Notes: The regulations requiring the sharing of negative information and encouraging positive information were launched on 22nd October 2008.

Box 2. A Small Bank Prepares for Data-facilitated Rapid Growth

As of the end of 2006, FINA Bank ranked 17th (out of 42) among commercial banks in Kenya in loan balances (4.8 Billion KSh) outstanding. The vast majority (> 75%) of their credit customers were medium sized enterprises (annual revenue above 45 million Ksh). However, recently FINA bank has shifted its focus to the smaller end of the SME market, targeting businesses that want to move up from microfinance institutions yet want a more personal relationship experience with their banker than the larger SME lenders provide. FINA aims to change the situation where SMEs are considered “too small and too costly” to merit their own relationship manager (RM). FINA aims to grow the smaller end of its SME portfolio by 100% annually (from a current account base of about 700 customers), and with this goal in mind, is laying the groundwork for a data-rich environment for use in management decision-making. RMs are all equipped with laptop computers, and encouraged to visit their customers at their place of business, and while visiting their customers, complete credit applications on a user-friendly yet very sophisticated Excel spreadsheet that collects all of the application and financials data and calculates financial ratios. The RM then emails the spreadsheet to a centralized underwriter, who then completes the sanctioning of the loan request, with offer letters completed within two days of application. The customers we met felt that their RM cares about them and is a partner in their businesses growth and success. The business model and data foundation FINA bank is laying now will reap significant rewards as it loans volumes grow in the years ahead.

3.4 POLICY ENVIRONMENT

For credit scoring, enabling policy environments:

- Promote and facilitate the collection and use of predictive data
- Protect lenders’ rights to collateral

The World Bank’s Doing Business, 2008 ranked Kenya 13th best out of 178 countries in enablers to access to credit. Enablers were divided into two major categories, a Credit Information Index describing the state of credit bureaus and credit information sharing and a Legal Rights Index measuring the extent to which lenders have the legal right to seize collateral upon default.

As discussed earlier, there are no published credit bureau regulations or licensed credit bureaus in Kenya to date. This is probably why Kenya received a low rating on the Credit Information Index, given that:

- It is not yet mandatory for institutions to report both positive and negative data
- There is a limited credit reporting history
- Private (unlicensed) credit bureau coverage is only 95,000 firms and 200,000 individuals

On the other hand, Kenya received a high rating on the Legal Rights Index, as Kenya’s laws permit such lender protections as:

- General descriptions of assets and debt, such that all forms of assets can be used as collateral, and all debt obligations can be collateralized
- A unified registry for all security rights in moveable property
- Secured creditors have absolute priority to their collateral both outside and inside of bankruptcy procedures

3.5 ANALYTICAL SKILLS FOR RISK MANAGEMENT

In the survey, the consultants did not directly ask about specific experience with credit scorecards, because we found very little such experience in Kenya’s SME lending market. Instead, the survey asked about related skills:

- When you review your credit policy for SME lending, does anyone in the Risk Department do portfolio analysis (by analyzing data in a database) to help make decisions on what the policy should be?
- Does Risk Management have analysts who can or have produced standard reports on application volume, profile, approval rates, and account performance?
- Is there anyone in the Risk management department with an educational background in quantitative analysis (Finance, Statistics, Operations Research, etc.), and can this person analyze large datasets of customer applications and account performance? If so, what software do they use to analyze the data?

All of the banks responding to our survey indicated “yes” to all of the above questions. The software typically used for analysis is Microsoft Excel. One senior risk manager from a very successful SME lender added, however, that “they [analysts] all need more exposure [to risk management analytics]”.

The team also inquired about whether there was senior management support for development and use of credit scorecards. Unanimously, the survey respondents indicated “yes”, and one senior risk manager added, “Industry in Kenya is behind in this regard”.

As mentioned earlier, there will likely be consolidation in the Kenyan banking industry in the next few years. Currently, there is a broad range of bank sizes and skill sets, and this has consequences for scoring options. The larger multinational banks not only have among the largest volume, but they can also benefit from home-office expertise and best practices. These banks are already well on their way to implementing custom proprietary scorecards.

Additionally, their risk management departments receive training on risk analysis and scorecards.

Some larger local banks are interested in introducing credit scoring models but are still in the early stages of development.

At the other end of the spectrum are the smaller banks, some of which, like FINA Bank, have a vision for developing a data-rich environment where data can drive decision-making in all aspects of the business. But other smaller banks are not there yet. Although all survey respondents indicated that they have databases for analyzing application and account performance and that they have analysts with the skills to conduct analysis, many of the smaller and even medium-sized banks will be faced with the fact that their volumes probably do not merit developing scorecards and a portfolio risk management infrastructure. It will likely be more cost-effective to wait until the credit bureaus begin producing and selling generic credit scores on a transactional basis.

Chapter 4

SUMMARY OF KEY CONSTRAINTS TO WIDESPREAD USE OF CREDIT SCORING

Table 6 summarizes the assessment of the key constraints impeding widespread adoption of credit scoring models for SME lending in Kenya.

Table 6. Key Constraints to SME Credit Scoring in Kenya

Prerequisite	Constraint	Reason
Business Environment	Low application and account volumes	Impacts ability to develop a scorecard (insufficient data) and the usefulness of scorecards for meeting business objectives
Data/Policy Environment	Lack of licensed credit bureaus with mandatory reporting of positive and negative information	Given the small SME account volumes, the solution for most lenders will be a generic, pooled-data scorecard. An established credit bureau is essential for creating this tool
Data	Lack of standardization across lenders	SME scorecards typically require more than just credit bureau information. If other key data elements (for example, debt-service coverage ratio) are not standardized across multiple banks, they cannot easily be used in pooled scoring models
Data	Lack of quality financial statements	Ideally, SME scoring models should include key information (cashflow, liquidity, leverage) from standardized, audited financial statements. Without confidence in financials, and without credit bureaus, two key components of an SME scorecard are missing
Skill Set	Scoring models require an infrastructure whose long-run benefits must exceed the costs	Smaller banks do not have the economies of scale to support the necessary infrastructure. The larger lenders and the multinationals can support the infrastructure or they can piggyback on existing expertise.

Chapter 5

CONCLUSIONS

Among the banks in Kenya in the near future, there will likely be credit scoring “haves and have nots”. Custom credit scoring is being developed and implemented by the larger SME lenders, but generic scores available to all lenders will not be available for at least a few years. For generic scores to become available, the credit bureau regulations must be gazetted, bureaus must be licensed, standards and infrastructure must be finalized, and sufficient positive and negative data must be collected to build a score that consistently rank-orders risk. All of this will take at least a few more years. In the near term, perhaps within one year, negative credit bureau data reported from all banks will likely be available and can be used in underwriting via decline rules. It is possible that the reporting of positive information will also become mandatory.

In general, for most lenders, the volume of applications is too low for the development of custom scorecards and the investment in the required risk management skills and infrastructure. Low volume impacts both the ability to develop a model (insufficient data) and the usefulness of the model in practice, because per-loan benefits accumulate across fewer loans. Therefore, we conclude that the smaller banks will probably not develop their own scoring systems. This means that they have the most to gain from fully operating and licensed credit bureaus. The larger lenders have more volume, but more important is their advantage in terms of a larger asset base to support an analytics infrastructure for risk management, and, for the

multinationals, the ability to benefit from expertise and scorecards developed in other countries.

There will be further consolidation in Kenyan banking, resulting in fewer, but larger, banks. There will be increased competition for the SME market, and further advances in technology and product offerings. To gain a competitive advantage, the larger lenders will further develop SME-specific strategies, including “no financials” underwriting and unsecured products for the SME market, along with credit scoring solutions. “No financials” products, however, are not a panacea for the problem of unavailable and unreliable financial statements. The five C’s of credit still apply, and, for small businesses, quality financial statements are one of the best to assess them.

Supposing that banks overcome their reluctance to share positive information with credit bureaus, predictive generic scores will probably become available within the next three years or so. This improvement in risk assessment will result in more efficient and standardized underwriting. It will also allow risk-based pricing, leading to a lower costs of borrowing for the best customers and potentially greater credit availability for higher-risk customers.

The absence of standardized credit bureau data and robust credit scores does not rule out opportunities for even the smaller lenders to improve their efficiencies and risk assessment using internally available data, perhaps via expert-based scorecards.

Chapter 6

RECOMMENDATIONS

6.1 RECOMMENDATIONS TO THE GOVERNMENT OF KENYA

Kenya's 13th-place ranking for getting credit among 178 economies is encouraging; however, the single-most important credit scoring and access enabler for SMEs at this point is the establishment of licensed credit bureaus and mandatory reporting of both positive and negative information from all banks, an area in which Kenya rates low. As long as protections can be implemented to keep reporting lenders from having their customers poached, all lenders will benefit. A fully operational credit bureau will significantly improve risk-adjusted approval rates; therefore, licensed credit bureaus are a key ingredient to ultimately improving access to credit for SMEs in Kenya. Thus, the primary recommendation is to establish the licensed credit bureaus, develop standardized methods for reporting, and after sufficient reporting history is available, develop a generic credit scorecard for use by all financial institutions.

6.2 RECOMMENDATIONS TO THE FINANCIAL SECTOR DEEPENING TRUST (FSD)

Credit scoring is but one application of a broader approach to managing the business using data and analytics to guide decision-making. Most lenders do not have the volume, data, or risk management department skill set to justify significant investment in an SME scoring system. Therefore, we think that the best first scoring model for use by the smaller banks will be a generic score developed with positive and negative credit bureau data. Until this model becomes available, we suggest that FSD can have an impact by:

- Conducting targeted consultations with specific banks to evaluate their capacity for portfolio risk management and for the development of expert-based scorecards
- Initiating a broad-based project to standardize financial statement data collection and ratio calculations, collateral quality measures (type, loan to value ratio, lien position), and loan and deposit performance information. With this, eventually, a pooled scorecard can be developed which incorporates not only credit bureau data, but also the other key pillars of a robust SME scoring model
- Developing and promoting training programs in risk-management analytics for SME risk managers and analysts

6.3 RECOMMENDATIONS TO BANKS

Even if a lender does not pursue credit scoring at this time, it can benefit from developing the culture, skills, and practice of capturing and using data to guide management decisions throughout the credit lifecycle. A perfect example of this is FINA Bank, which, although does not yet have sufficient volume to make scoring cost-effective, is nevertheless laying the foundation for a data-rich business. Equity Bank is likewise building a strong data infrastructure.

In order to build a solid foundation around data for decision-making, like FINA Bank and Equity Bank are doing, it is essential to have portfolio risk management specialists and analytical specialists in the SME banking department. Portfolio risk management is a very specialized skill, and these highly skilled individuals are the most qualified to determine what kind of data and system is needed to answer the questions necessary to guide decision-making. Therefore, the first recommendation for banks considering credit scoring or greater use of analytics in credit decision-making would be to hire an experienced portfolio risk manager to assess the current situation in their bank.

The risk manager can then investigate thoroughly for which credit products, application channels, loan transaction amounts, and relationship sizes credit scoring would be appropriate. The risk manager would proceed to get a "lay of the land"; what is the volume of SME credit applications and accounts as stratified by customer type, product, channel, size, etc.? The risk manager will specify what data and data standards are needed, as well as how the data should be stored for later analysis. The risk manager will then work with a database expert to make sure that the application, performance, and deposit databases are end-user friendly enough to enable data analysis. When sufficient data is available to actually evaluate application and account volume, profile, and performance, the risk manager can design analyses to determine the best strategies and build models to predict outcomes.

In the absence of credit bureau information and generic scores, the smaller banks can still begin to harness their own data to standardize and automate decision-making and to improve their risk-adjusted approval rates. Virtually all of the banks interviewed require their credit customers to have a checking or savings account with their bank for 6–12 months, and virtually all use bank statements to cross-validate figures reported in financial statements. This is a very sophisticated risk-management practice.

The author of this paper conducted a simple analysis of SME unsecured existing loan performance in a bank in the United States. As indicated in Table 7, the simple demonstration analysis used two key variables (generic bureau score, internal checking/savings deposit score) with two possible values (above average/ below average) and found that these provided a very large differentiation in risk. Customers with below-average scores on both variables were more than fifteen times more likely to default over the following twelve months than customers who were above-average on both scores.

The results shown in the table suggest that simple, cost-effective strategies for small requests can be developed and implemented by all lenders, leveraging just a few key inputs, such as checking and savings deposit performance and average balances as percentage of total debt service, while using as a decline rule the near-term available negative bureau information and credit-card delinquency reports. For example, negative bureau information would be equal to the bars in the chart for “Below Avg. Generic Bureau Score”. An SME lender can then readily see that if checking and/or savings account performance is also not good,

then this customer is very high risk. If checking and/or savings account performance is very good, however, this provides quite a bit of risk reduction, even in the absence of positive bureau information.

Even without the use of credit scoring, data-driven strategies can be developed and implemented to simplify underwriting. Simplification strategies can be developed for each combination of transaction/relationship amount and customer type. Small requests from existing customers with solid performance would be good candidates for “no financials” or unsecured product strategies. On the other hand, for completely new customers to the bank, in the absence of generic credit scores, there are no suggested simplification strategies. The typical bank practice of requiring credit applicants to be bank customers for 6–12 months is a prudent and simple risk mitigant. By analyzing application and portfolio volume, and profile and performance by the above-mentioned segments, risk managers will be able to develop a data-informed sense of which segments should be prioritized for simplification strategies, and what those strategies should be.

Table 7. Relative Risk of Default, by Generic Bureau Score and Internal Deposit Score, Example Using Approximate Results from a U.S. bank

Score Profile	Relative Risk of Default
Below Avg. Generic bureau score/ Below Avg. Deposit score	15
Below Avg. Generic Bureau Score/ Above Avg. Deposit Score	3
Above Avg. Generic Bureau Score/ Below Avg. Deposit Score	3
Above Avg. Generic Bureau Score (No Deposit Score)	2
Above Avg. Deposit Score (No Generic Bureau Score)	2
Above Avg. Generic Bureau Score/ Above Avg. Deposit Score	1 (reference group)

Table 8. Underwriting Simplification Strategies for Lenders to Consider

Customer Type	Small request	Medium Request	Large Request
New customer w/o checking or savings account	Without generic scores, None	None	None
New customer w/ checking or savings	Approve based on checking/ savings balances and performance and negative bureau information	None	None
Existing customer requesting new credit product	Same as for new customer w/ checking or savings, but for higher relationships	None	None
Renewal	Approve based on checking/savings balances and performance, existing loan performance and negative bureau information		None

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ANNEX 2: LIST OF INTERVIEWS AND SURVEYED BANKS

Date	Institution	Interview Type	Interview Type
9 June 2008	Metropol East Africa, LTD	Meeting	n/a
9 June 2008	Kenya Institute of Bankers	Meeting	n/a
10 June 2008	Standard Chartered Bank	Meeting / Survey	Yes
10 June 2008	Quest Holdings	Meeting	n/a
10 June 2008	Equity Bank	Meetings/ Survey	Yes
11 June 2008	Barclays Bank	Meeting/ Survey	Yes
11 June 2008	Credit Reference Bureau Africa, LTD	Meeting	n/a
11 June 2008	FINA Bank	Meeting / Survey	Yes
12 June 2008	Ministry of Finance	Meeting	n/a
6/12-6/13/08	SMEs in Nairobi	Meetings	n/a
13 June 2008	ABC Bank	Meeting/ Survey	Yes
20 June 2008	IFC, Kenya	Meeting	n/a
24 June 2008	IFC, Washington, D.C.	Meeting	n/a
Week of June 16, 2008	Kenya Commercial Bank	Survey	Yes
Week of June 16, 2008	CFC/Stanbic Bank	Survey	No
Week of June 16, 2008	Commercial Bank of Africa	Survey	Yes
Week of June 16, 2008	Co-Operative Bank of Kenya	Survey	No

ANNEX 3: LIST OF KENYA CREDIT SCORING SCOPING STUDY INTERVIEW QUESTIONS

The following questions served as a guide for the interviews. A subset of these questions was also sent to the risk management departments of nine representative SME lending banks. We anticipated (and found) that not all of these questions would be answered, due to lack of information, time constraints and confidentiality issues.

Questions pertaining to the demand for the benefits of credit scoring from the target market and the Bank/Financial Institution

- How are SME's defined (micro, small, medium)?
- Who is the target market? (Business size, industry, geographic location).
- What are the major issues voiced by SME regarding their credit and banking needs?
 - Application requirements (collateral, financial statements, etc.)
 - Length of time from application to funding
 - Pricing
 - Need for a relationship manager who is their partner
- Who are the bank's competitors, and what is the market share of the major competitors? What is the extent of competition? What are the trends in SME market share?
- How is risk of non-repayment currently assessed? How does this impact approval rates and pricing?
- Are there external forces (for example, Basel 2 or increased competition) which are making realization of the benefits of scoring increasingly necessary?

Questions pertaining to the right business environment for credit scoring

- What types of credit products are offered (secured/unsecured, lines, loans, etc.) and planned?
- Per transaction, what is the range (min, median, max) in loan amount, and aggregate credit relationship?
- What is the historical trend in volume, profile and performance of SME loans? Is this expected to change?
- What is the relative percentage of small shilling/simple product requests versus total requests
- Which distribution (branch, broker, direct mail, internet, phone) channels are used?
- Are SME underwriting centers centralized or decentralized?
- What is the number and location of SME underwriting centers?
- For banker submitted applications, are applicants pre-screened? If so, what are the criteria used for selection? Does the business

anticipate changing pre-screening practices in the future?

- What is the complete credit origination, underwriting and approval process?
- What is the volume of credit requests per underwriter; time to decision?

Questions pertaining to the availability of efficiently obtained predictive, accurate and reliable data at the time of underwriting

- Is the application data entered into a database?
- How is application data validated and tested?
- Does the bank have databases with information on:
 - Originations
 - Account performance
 - Deposits
- And can these databases be linked with each other?

PREDICTIVE DATA CATEGORY #1: INFORMATION ABOUT THE BUSINESS

- At underwriting, is information on the following captured and used in decisioning?
 - Type of business
 - Years in business
 - Number of employees
 - Annual revenue
- How are business existence, ownership and date of establishment verified?

PREDICTIVE DATA CATEGORY #2: CREDIT BUREAU INFORMATION

- Do established credit bureaus currently exist in Kenya? Are they reporting on consumers, small businesses, both?
- Does Kenya have a unique identifier for individuals and businesses
- What is bank management's perception of credit performance sharing via credit bureaus?
- What type of credit bureau and data-sharing enabling legislation exists, and does it address:
 - Which institutions (banks, non-banks) can report to and retrieve information from the bureau
 - Consumer rights and permissible purpose
 - Confidentiality of data

- Type of data collected (negative, positive, both)
- Oversight of bureaus
- Data quality assurance
- Prevention of using credit bureau data to poach other banks' customers
- Length of data retention
- Limited liability for credit bureaus
- Regarding existing or upcoming credit bureaus:
 - How is (will be) bureau data stored?
 - How will financial institutions obtain bureau reports?
 - When will financial institutions actually be able to start receiving standardized credit reports on their customers which contain negative/positive/both information?

PREDICTIVE DATA CATEGORY #3: RELIABLE INFORMATION ABOUT THE CASH-FLOW, LIQUIDITY, LEVERAGE AND PROFITABILITY OF THE SME

Business Financials

- What percent of SME customers have financial statements available for use in underwriting?
 - How are business financial statements prepared (self, chartered accountant)?
 - How is data accuracy verified?
- What percent of SME customers file business tax returns, and are these used in underwriting?
- Are financial statement data stored in a database, and can this data be linked to origination and performance data?

Checking and Savings Deposit Customers

- What percent of your SME credit customers have a checking/savings account with your bank?
- Is information from checking/savings accounts used in underwriting or account management?
- Is checking/savings information stored in a database, and can this data be linked to origination and performance data? Is there data on:
 - Balances
 - Deposits
 - Withdrawals
 - Overdrafts, insufficient funds

PREDICTIVE DATA CATEGORY #4: SME CUSTOMER PERFORMANCE ON PAST OR EXISTING OBLIGATIONS

- What type of performance data is stored in a database? Does the following data exist?:
 - Product type

- Total commitments
- Balances
- Utilization
- Behavior scores
- Delinquencies
- Default
- How many years of performance information are available?
- Is there a unique identifier to link performance data with origination data?

Questions pertaining to the Risk Management Department skill set

What policy criteria do you use to sanction a loan? Do you have policy rules regarding:

- Performance on existing facilities?
- Performance on current and savings accounts?
- Minimum years in business?
- Minimum time as customer to apply for a loan?
- What percent of your SME facilities are secured by collateral?
- Do you use financial statements for underwriting? If so, how do you verify accuracy of the data?
- Do you use credit bureau reports from CRB for underwriting?
- When you review your credit policy for SME lending, does anyone in the Risk department do portfolio analysis (by analyzing data in a database) to help make decisions on what the policy should be?
- Does Risk Management have analysts who can or have produced standard reports on:
 - Application volume
 - Application profile (customer type, years in business, annual turnover, etc)
 - Approval rates
 - Total amounts booked
 - Average approval amounts and interest rates
 - Performance of loan portfolio (percentage of loans that are non-performing and default rates)
- Is there anyone in the Risk Management department with an educational background in quantitative analysis (Finance, Statistics, Operations Research, etc.), and can this person analyze large datasets of customer applications and account performance? If so, what software do they use to analyze the data?
- For SME lending, are credit scoring models currently being used or under development? If so,
 - What are they used for (underwriting, account management, collections)?
 - Are they statistical or judgmental?
 - Do you have scorecard monitoring and validation reports and process?

- How are score cut-offs established, reviewed, and adjusted?
- What is your policy on score and/or policy overrides?
- Are volume, profile and performance of the override population monitored?
- If you have not implemented credit scoring for decisioning, do you have rules-based (example: Debt-service coverage ratio should be ≥ 1.2) underwriting and is data available to automate decisioning?
- For personal loans, are scoring models being used?
- What are the major barriers to implementing credit-scoring for SME lending?
- Is there senior management buy-in for developing a scoring-based underwriting and portfolio risk management system?

ANNEX 4

STAKEHOLDER WORKSHOP REPORT

The Stakeholder Workshop Report (pages 21 through 26) contains notes taken on some of the topics, questions and answers raised at the meeting held on July 21, 2008.

1.0 INTRODUCTION:

The study, "The Potential for Credit Scoring for SME Lending in Kenya" was commissioned by GrowthFin, a programme of the Financial Sector Deepening Trust (FSD), Kenya. FSD aims to play a catalytic role in expansion of access to formal financial services for SMEs. Within this context, GrowthFin instituted the inquiry into the state of affairs of SME credit-scoring in Kenya, specifically, the current use of credit scoring to aid in the SME credit decision, constraints on the implementation of credit scoring, and options for an implementation strategy.

The consultants, facilitated by the GrowthFin, supported a stakeholder workshop in Nairobi, July 2008, to present the draft final report and receive comment from stakeholders.

1.1 Methodology:

This report serves as a record of the stakeholder workshop discussions. The structure of the report is as follows;

- (i) An overview of the general proceedings of the workshop.
- (ii) A transcript of workshop discussion: The transcription follows a question/answer format and notes comments as they were made during the discussion.
- (iii) Outline of the main points arising from deliberations.

1.2 OVERVIEW OF WORKSHOP PROCEEDINGS:

The stakeholder workshop was held on 21st July 2008, at Fairmount Norfolk Hotel, Nairobi. The event had in the region of over 25 attendees who participated fully in the workshop, interactive question and answer, and feedback sessions. The attendees included representatives of various banks, credit reference firms, and government agencies, among others. A list of attendees is presented in section 1.8 of this workshop report.

After welcome remarks from Mr. David Ferrand, Director of Financial Sector Deepening, Mr. David Snyder, of Micro Risk Management working in concert with their local in-market partner Strategic Business Advisors delivered the presentation on the findings of the study outlined in the draft final report.

The presentation took stakeholders through the following items;

- (i) Introduction to the Study
- (ii) Introduction to Credit Scoring
- (iii) Prerequisites to Successful Scoring
- (iv) Assessment of the Kenyan Market for Credit Scoring
- (v) Summary of Key Constraints to Use of Credit Scoring
- (vi) Conclusions
- (vii) Recommendations

After the presentation an interactive question and answer session was held and moderated the consultants. In addition to these feedback sessions, a case study was presented to attendees by a local firm, Metropol, which is involved in the development and implementation of a credit reference model.

The workshop was officially closed by Mr. Jared Getenga, of the Financial and Legal Sector Technical Assistance Program (FLSTAP). A vote of thanks was accorded to the consultant for the report and the presentation and to the all the workshop participants for sharing their time and experiences.

1.3 WORKSHOP DISCUSSION:

There were two questions and answers sessions held; one immediately after the presentation of the draft final report and the other after the coffee break immediately following the case study presentation. The following is a representation of the question and answer sessions and the case study presentation;

1.3.1 First Question and Answers Session

- In terms of the profile of financial sector, there are the corporate, SMEs and micro sectors. The SACCO's have their own models, characteristics and information, such as group lending and group pressure to not default, and information on individual member SACCO contributions. Where do the SACCO's fit in, have their circumstances been related to this model?
 - The focus of this study was on the SME sector not the micro sector as a result not many SACCOs were approached during the consultations. However, the issues talked about in the presentation will generally be the same across these

different entities but each market segment will have its own particular challenges and differences. Perhaps there is need to examine how credit scoring can influence the micro sector as well.

- What is the relevance of applying to credit scoring to micro sector? Do the regulations for the micro sector provide for participation in credit scoring?
 - The regulations in the micro framework do provide for borrowers participating in credit information sharing mechanism. But it seems that there is a degree of separation regarding the information that can be shared between micro and banking sector within the legal framework. The challenge that remains is in linking what has been done for the banking sector to the micro finance sector.
- What was the definition of SMEs for the purposes of this study?
 - There is no universally accepted definition for SMEs, however, for this study SMEs were considered as those businesses that are too large for micro but are still not able to access appropriate services from formal institutions.
 - In terms of turnover the definition of SME varies between banks but the general range we found is turnover of Ksh 4 million to Ksh 100 million with a workforce of 5 to 50 employees.
 - The size of the facility is also a measure of SMEs, loan sizes typically vary between Ksh 50,000 to 150,000 for micro enterprises and I businesses and Ksh 400,000 to even as high as 20-30 million for mid sized firms.
- In a mature market such as the US market where credit scoring has been used for many years now, is there a tendency towards a particular approach; the generic versus the customized, the judgmental versus the statistical? Where has the market progressed?
 - This varies by lender, the size of the bank, and the size of the business. For instance larger banks tend to have custom statistical models, whereas micro, small to mid banks use generic model more. Small banks use generic scores on a transaction basis and/or they offer SME businesses simplified products. Some small banks use judgmental models or they get into a partnership with larger banks, where they are the origination channel, and they on-send the application to the large bank that then owns the account.
 - In the micro sector over the last 15 years they have been leveraging generic scores and building their own custom scores. The micro businesses are typically “owner-manager” businesses hence lending firms leverage credit bureau information, industry and “firmographic” information to come up with simplified strategies. The micro businesses in the US are \$2 million in annual revenue and the SMEs are \$2 – 25 million. They also make up a large percentage of the

population with a large number of accounts, and they carry out many transactions but in small amounts. Simplified automated models and strategies have worked best for this sector.

- SMEs are more challenging, even in the US. There is the challenge of financial statements, low volume of transactions though the transaction amounts are higher than the micro sector and a wider loan range. SMEs loan amounts range from \$100,000 to \$1,000,000 as compared to the micro sector which are about \$100,000. Micro sector loans are primarily unsecured with prevalent use of business credit cards. The US is still struggling with the question of how to develop robust models on limited volumes and what transaction and relationship amounts will the models be used for.
- The banks in East Africa have the majority of their lending as lines of credit. And they don't give fixed loan terms. How are lines of credit factored into the score card when a lending facility is never fully repaid but is kept perpetually outstanding?
 - Revolving lines of credit do have default rates as well and models can be built around the borrower's performance within a certain time period. Therefore you define a performance and a default definition and follow it across time. For instance in the US credit card portfolios, during the first few months there is virtually no default, but as the portfolio ages, default rates increase and tend to peak around 18 – 24 months after booking. Therefore, the scorecard looks at the probability of the customer defaulting within the first 18-24 months from the time of application. It varies, for a mortgage it may be a period of 36 to 60 months.

1.3.2 Metropol Case Study Presentation

A local firm, Metropol, was asked to give a brief presentation of their experiences in the development of their credit scoring system. The case study provided for a better understanding of the issues surrounding credit scoring, the requirements of developing a credit reference model, lessons learnt and the practical benefit of adopting a credit reference system.

- The concept was motivated by the SME baseline survey done by USAID, the government and K-Rep done in 1999. The survey showed that out of the estimated 1.3 million SMEs, less than 5% had access to credit from the formal financial institutions. Metropol, a credit information company, was started to partly address this issue.
- The first step in designing the score card was to determine the reasons as to why SMEs don't access finance. A survey was carried out with the assistance of the Kenya Institute of Bankers and identified five key reasons why SME don't access finance. These are listed below;

- (i) *SMEs are high risk*: SMEs suffer from a high mortality rate this is largely as a result of low capitalization and asset base.
 - (ii) *Information asymmetry*: limited availability of data and where the data is available it is often not reliable.
 - (iii) *High transaction cost*: the cost of making a loan to an SME in a low data environment is much higher relative to the cost of lending to a corporate in a high data environment. A cost-benefit analysis favours lending to the corporate rather than the SME.
 - (iv) *Low potential of long term profitability*: business relationships cannot be established due to the high mortality of SME businesses.
 - (v) *Corporate mind-set within banks lending to SMEs*: banks had a corporate mindset in terms of their lending models and did not have the skills to be able to assess penetration with in a small enterprise as compared to what would be seen for a large enterprise.
- The key hypothesis put forth by Metropol in developing their system of assessing the credit worthiness of SMEs was that “the SME is owner managed” and it is this person who must be scored.
 - Metropol then went on to develop 56 attributes based on the character and nature of owner manager and the business itself. This number was reduced to 36 attributes and spread over the five Cs of credit: character, capital, condition, collateral and capacity.
 - A workshop was held with bankers operating in the region, Kenya, Uganda and Tanzania, with the objectives of determining a common definition of SMEs and development of an expert model.
 - Essentially the company was working in a low data environment because most banks are reluctant to share good applications and but even gaining rejected applications was challenging as most banks shred rejected applications. To build a statistically reliable score card the minimum data requirement is 250 good applications, 250 bad applications, 150 rejected applications.
 - The company next had to decide which type of model to develop, an application model or a behavioral model. Where the application model is reject - accept model as opposed to a behavioural model that is positioned in ones’ systems and tracks the patterns of an account and can aid in determining the next course of action to be take with the account. The firm decided on developing an application model.
 - After developing the expert application model the next step was to validate the model. The target was to collect 5000 applications, but the firm only managed to collect a data base of 1800 applications of which 1500 were useable.
 - To validate the model, statistical analysis based on discriminative analysis was used on the applications, first with bi-variate and then with multivariate analysis. Bi-variate analysis charts the statistical significance of one attribute against the population, whereas the multivariate analysis charts the statistical significance of all attributes against the population simultaneously. The bi-variate analysis identified 17 key attribute were predictive and able to determine default rates apriori. The multivariate analysis identified 5 key predictive attributes. Of the 5 attributes identified by the multivariate analysis credit history which took 40% of the weight of the distribution was the most significant.
- The expert model was recalibrated with the 17 attributes which included the 5 attributes identified during the multivariate analysis. 300 files were collected from various banks and were subjected to the developed model and the model was found to have an accuracy rate of about 80%.
 - How does this model compare to others in the world?
 - During the development of this model it was ascertained that scorecards are as effective as in the market in which they are developed. Factors that could carry more weight in another market would not be significant in the market which the score card was developed. The scorecard was developed taking into account the 5 Cs of credit but in the final model collateral received a rate of zero. Therefore collateral requirement in Kenya becomes a policy matter by the lending bank as it does not affect the predictive outcome of default using the developed model.
 - There were also overriding factors (such as the lack of trading licenses or the lack of a NEMA licenses and so on) that affect decision making have been developed using derivatives and had to be included to enhance scoring capability of the model.
 - The Metropol scorecard needs customization taking into account the bank’s internal environment. Currently fifteen banks have been furnished with the scorecard to test the model, with five banks having currently customized the scorecard for their own use. There are also several non-banks using the system as well.
 - SME are being sensitized to the advantages of credit scoring and are being encouraged to directly seek scoring from the firm. The data provided by the SME is verified, site verification is performed and the character of the main driver of the business is assessed. Thereafter a score and a certificate are issued to the SME. This certificate can then be used by banks as part of their appraisal process.

1.3.3 Second Question, Answers and Comments Session

- Most small banks do not have sufficient data to develop custom scorecards, whereas larger banks have sufficient data to create their own scorecards. However, these custom scorecards developed by large banks will be biased towards the institution’s policies. An option for smaller banks is to develop a shared platform and use a pooled scorecard.
- It is important to study the SME sector and come up with appropriate financial products. For example credit cards and unsecured personal loans are now being issued on the basis of cash flow. These facilities however are issued on the basis of pay

- slips' unfortunately this makes most SMEs ineligible for such instruments. Perhaps the wider adoption of credit scoring will open such instruments to SMEs with good scores.
- Credit reference systems should be linked or synchronized with each other to reduce information searches from multiple sources by users.
 - The company registry becoming computerized and used linked to credit reference bureau will be beneficial.
 - Accountants should be engaged to develop a system that captures SME information in a simplified manner.
 - The amount of research done in developing the Metropol model and the learning attained becomes a good foundation to build upon.
 - Credit scoring models need standardized data that is efficiently obtained and predictive. Credit bureau information being reported from all lenders is a great source of information. Another source of information for a model would be current and savings account performance.
 - The scoring model itself is really the starting point of a portfolio risk management system for SME lending. Once the scoring model is developed it requires constant evaluation and monitoring of the population to ensure the model is working as expected. An understanding of how to use the model and analytics, working with polices to build strategies and pricing, will also need to be developed and these will also require constant re-evaluation.
 - The intended use of a model an application model or a behavioral model will impact on the costs. Therefore cost benefit analysis needs to be carried out based on the volume of business, the cost savings from applying the model and the cost of personnel maintaining the model before the financial service firm invests in it.
 - Is the kind of information developed by Metropol or another generic scoring model something that can be adopted?
 - There needs to be testing between banks and resources provided for a test project. This test period will validate the system for banks. The system also needs to package the software in a user friendly manner.
 - Barclays developed a custom model for the SME sector based on their client base and SME strategy. Barclays also has different models used for different customers based on their business and their location. If a scoring model elevates any individual banks' SME strategy then the banks will adopt it.
 - Banks build custom models but also use information from generic models. Using both systems makes credit scoring system they employed that much more robust.
 - The amount of due diligence done for ratings is proportionate to the transaction size. The question then becomes what is the value of that additional information from generic scores given the business size.
 - Generic models may be more widely adopted if a clear and generally accepted definition for SMEs is established.
 - There is a direct correlation between personal credit history and business credit history. If the business owner is not good with his personal money management then they will not be good with business management.
 - Hopefully in several years there will be added data from real estate, telecoms etc, that will enable the building of a clearer financial picture for SMEs.
 - Citigroup uses a global scoring model that applies 60% of the weight to financial ratios. This model was applied to Kenya it did not take into account the local situation and 90% of the portfolio resulted in a negative score. The decision was then made by Citigroup global not to enter into the Kenya SME sector. The SME division in the bank was closed down despite the SME businesses being well performing. How much does the financial element affect the score?
 - Models perform best in the population from which they were built. It is critical to continually monitor and evaluate the model. Models must be able to rank order risks; that is ensuring that those businesses which the model predicts as high risk are in fact high risk, and ensuring the same goes for those that are low risk. If the model is not rank ordering risk and shows inordinate preference for one outcome then there is something wrong with it and it needs to be adjusted.
 - The general principal for emerging markets is that quantitative data should not be greater than 30% of the weight. The Metropol model divides SMEs into two categories; those with functional management and those without functional management. In the non-functional management category qualitative data takes up 70% and quantitative data 30%. The proportionate scoring for the functional management qualitative data takes up 60% and quantitative 40%.
 - When applying the ratios and weightings industry based factors such as growth oriented SMEs or SMEs that are part of the supply chain also need to be taken into account as the growth paths of these two will be different.
 - Typically scoring is done on low value high volume transactions and the ratings are done for high value customers. If there is a clear definition on who exactly should be scored financial service institutions will find it relevant to carry out scoring.
 - There needs some support from policy makers, for example a credit guarantees scheme that would provide fall back to the banks that are underwriting the SMEs much like in the US in Small Business Administration guarantee scheme would accelerate adoption of credit scoring. Introduction of a similar program will not only accelerate the adoption of credit scoring in Kenya but also benefit other existing development funds such as the Youth Enterprise Fund and the Women's Development Fund.

- The bottom line is to improve SME access to credit. To what extent are we bringing in the local context in place? The Kenyan context is not the same as the in the west, here we have low data environment and about 70% of economy in the informal sector. Is Kenya in a position to adopt Western models?
 - The models coming from the US or the UK cannot be adopted wholesale. The models must be developed for the market they are to serve. For large international banks it is possible to some extent to adjust models that are used in other countries to work well in Kenya. The development, implementation, evaluation, and risk management processes are what can be adopted universally. But the developed model will have particular characteristics related to each population.
- In developing these credit scoring models to what extent were the SMEs consulted?
 - Many international organizations are afraid of working directly with these MSME businesses. It is important to work with the SME businesses to construct a data base and build human capacity to work with SMEs.
- Do these scores take into account the macro-economic environment? For instance if one is in agriculture or exporting services is currency risk factored into the model.
 - Of the five C's of credit, scoring models do not factor in economic conditions very well. This must be factored into the strategy by the risk manager of how the model is used. The score versus default rate can change; therefore it is important for the firm to change its strategy (not necessarily the model) to suit the prevailing market conditions.
- Different sectors have different risk profiles for instance manufacturing versus trade or services, do credit scoring models take this into account?
 - There is no model that can be suited to all industry segments. It becomes a decision by the firm based on their clients which industry models to invest in.
 - Underwriters tend to have different policies for different sectors. The model will provide guidelines and the bank will then determine the extent to which it wants to expose to certain industry risk.
- Are we codifying what banks already do and entrenching a lending approach that already excludes SMEs? How do we ensure that we are reaching those businesses that are not being looked at by banks and are by their very nature informal businesses?
 - If credit scoring essentially institutionalizes what is happening in banks for the SME sector it will be of no help. The banks need to be taught how to work with SMEs and move away from the practice of having bankers with corporate mindset heading SME department. A person with such a mindset is unlikely to see opportunities in an SME business.
- There is a bank in Kenya that is permitting anyone to open a savings account even with zero balance in their account. This

particular bank will ultimately build a wealth of data that is predictive of credit risk.

- Once there is confidence in quantification of risk by score it then becomes possible to test into populations in which beforehand you've not been approving.
- Full implementation of Basel II may deter lending to SMEs. Some banks have implemented it but partially.

1.4 WORKSHOP FINDINGS:

Outlined below are the main points the workshop participants recommended be included in the final report;

- **Availability and reliability of data:** Financial services institutions have been urged to share positive data not only negative data. Sharing of positive data will increase the robustness of credit scoring models. The government has the infrastructure throughout the country where all this information can be collected. There is a possibility of creating a pool of data which credit bureaus and even banks can access and data mine. Linking the company registry and with credit bureau information will also help in data collection.
- **Define who should be scored:** Credit scoring should be used for high volume low value transactions whereas credit ratings should be used for high value, low volume. Training for bankers and SMEs on credit scoring, and who should be scored and the benefits of scoring will accelerate the adoption of credit scoring in Kenya.
- **Other policy - credit guarantee:** In other countries such as the US, UK and India the government has instituted credit guarantee schemes for the SME sector. Introduction of a similar program may accelerate the adoption of credit scoring in Kenya
- **Process of model development:** Models are only as effective as the environment in which they are developed. The development, implementation, evaluation, and risk management processes are what can be adopted universally.
- **Linkages between Micro-finance and Credit Reference Bureau regulations:** There was noted a need to harmonize regulations that pertain to credit referencing, micro-finance institutions and banks.

1.5 SUMMARY:

The recommendations, comments and questions given in the workshop collated and will greatly enhance the final report. Recommendations will be considered with respect of which give the best returns in terms of resource allocated and who should be held to account. It is the consultants' intention to use the workshop data to address the key gaps identified during the workshop and incorporate them in the final report.

1.6 TABLE OF WORKSHOP ATTENDEES

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