



CONDUCTING A SME CREDIT RISK PROCESS REVIEW

> INTRODUCTION

This guide is designed to serve as a supplementary resource for experienced credit risk management practitioners who are engaged in conducting an assessment of a financial institution's (FI) credit risk management processes for lending to small to medium-sized enterprises (SMEs). The guide is not a stand-alone introduction to bank management or credit risk management, or to lending to SMEs. The guide aims to provide some insights and suggestions to help guide the planning and conduct of a credit risk management process review (CRPR) for SME lending.

It is an introductory guide outlining key concepts and elements of good practice in CRPR. There is an abundance of published material freely available on the internet on this topic¹, as well as variety of training courses² available for those of you who want to deepen your understanding of this aspect of small business finance.

¹ For example: CGAP Microfinance Gateway Library (<http://www.microfinancegateway.org/library>), SME Finance Forum (<http://www.smefinanceforum.org/library/publications>), Microsave (<http://www.microsave.net>), among others.

² A good general resource is the online training provided by the American Bankers' Association (<http://www.aba.com/Training/Online/Pages/default.aspx>)

About GrowthCap

Over the past few years FSDK has been at the forefront of SME banking development through conducting market assessments and studies in areas such as trade finance and SME equity funds, as well as supporting development of the credit reference bureau. Through its partnerships with its Action Research Partners (ARPs), FSDK's GrowthCap initiative is supporting adoption of SME best practices by individual financial service providers.

This paper is part of a series of Technical Notes and Resource kits that are being developed out of work with the ARPs. These provide detailed information about the best practices and are intended for use by financial service providers and those supporting such institutions which are entering the SME market.

Abstract

This guide outlines the key concepts and elements of good practice involved in undertaking a credit risk management process review (CRPR). It focuses, in particular, on the issues faced in serving the credit needs of smaller business customers.



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> THREE BASIC PILLARS OF CREDIT PORTFOLIO RISK MANAGEMENT

When conducting a credit risk process review (CRPR) of lending to SMEs, there are three basic pillars of credit portfolio risk management and SME lending that are taken into consideration.

- **The first is risk versus return**, which is a central concept in the field of finance. In credit risk management, the objective is not to eliminate risk, but to understand and quantify it and then to ensure that returns compensate for the risk taken. The challenge lies in accurately quantifying risk.
- The second pillar is **the credit portfolio risk management lifecycle**. As shown in Figure 1, the credit risk management process is an ongoing cycle of product and credit policy planning and development, customer origination and underwriting, account and portfolio management, collections, charge-off and recovery. Experience at each stage of the process informs further iterations of product, policy and process, which determine the volume, profile, and to a large extent, the performance of new account cohorts.
- The third pillar concerns **SME lending specifically**. In reality there is no such thing as a SME. There are micro businesses, and small businesses, and medium-sized businesses and large businesses. The distribution of businesses by size throughout the world is far from uniform. Typically, in most economies micro and small businesses account for up to 95% of total businesses. Large enterprises account for less than one percent of the total and medium-sized businesses account for the remainder.³

Figure 1: The Credit Portfolio Risk Management Lifecycle



The size of a business's credit requirements is usually directly correlated with the size of the business. For example, a rough rule of thumb is that a business requires a working capital credit facility equal to about one-month's revenue. Therefore, micro and small businesses require relatively small amounts of credit, and larger businesses require much larger facilities. The end result is that a typical financial institution may have a portfolio in which over 90% of its business credit customers are micro or small, but the majority of the credit exposure is accounted for by medium and large businesses.

In carrying out a CRPR for SME lending, the reviewer should take into consideration that the measurement of risk and the credit portfolio risk management lifecycle process should vary significantly by size of business and credit relationship. Therefore, solutions cannot be a one-size fits all, but should be designed for each specific segment.

When conducting any review and discussing it with stakeholders, ideally the use of the term "SME" should be kept to a minimum, because it is ambiguous and can lead to misunderstanding and confusion. For example, one financial institution may have a portfolio that consists of a relatively small number of medium-sized businesses with large credit relationships. An external consultant's experience may have been primarily with portfolios comprised exclusively of a very large volume of micro and small businesses. Each individual, in a discussion on SME lending, may have a different idea in his or her mind about what "SME" means. It is preferable to discuss the review in terms of unambiguously defined segments, such as based on the credit relationship amount or the annual revenue of the businesses.

Risk versus return, the credit portfolio risk management lifecycle, and the understanding and designing of appropriate processes for each SME segment all have one core and necessary element in common: data.

³ SME Banking Knowledge Guide. International Finance Corporation. 2010.

Effective risk management requires the capture and analysis of high quality predictive data across all stages of the credit lifecycle. Therefore, when conducting the review, the consultant should focus on determining the extent and quality of the data available, the management information system (MIS) and the analyses used to inform policies and processes within the institution under review.

> CONDUCTING A CREDIT RISK PROCESS REVIEW (CRPR) - THE PROCESS

A credit risk process review follows the general outline of the process flow shown in Figure 2 which highlights 5 key phases of work.

Figure 2. General Outline of a Credit Risk Process Review



i) UNDERSTAND THE BUSINESS

The review should begin by gaining a general understanding of the financial institution's (FI) SME lending business and an overview of the FI's reasons for carrying out the review. Starting sources for review are the FI's annual report and its website. A quick overview of the SME business can be obtained by analysing trends in the volume and performance of the portfolio, stratified by credit relationship size. In addition, key MIS reports used to monitor the business and inform decision-making should be reviewed.

The reviewer should keep in mind that recommendations and solutions will not only be unique to each business segment, but to each institution. FIs with a large volume of customers will have different options than FIs with smaller portfolios. For the review to be useful, conclusions and recommendations should be developed organically throughout the course of the review, and not based on preconceived notions or templates.

ii) DETERMINE THE OBJECTIVE

A lending business can have many different objectives, and depending on the specifics of the objective, the review will naturally vary. The specific objective of the review should be determined through discussions with the FI's executive management team. The reviewer should have the key questions in mind that he/she is seeking to answer, and review methods should be designed to answer those questions. For this guide, we will assume that the FI's executive management team is seeking to understand their SME lending operation's prospects for implementing more cost-effective, data-driven, automated, customer-friendly strategies. As a result, the review will engage in a number of activities and these are described below.



SME lending involves at least two distinct approaches to credit portfolio risk management and each involves different customer groups and different credit parameters to be taken into consideration



However, the first key consideration as a reviewer is to stand back reflect on the stated objective of the review and consider which client target segment is covered by this objective.

The objective is: Management is seeking to understand their SME lending operation's prospects for implementing more cost-effective, data-driven, automated, customer-friendly strategies. Data-driven strategies involving elements of automation relate to high-unit volume and small credit relationships which in turn means small business customers. It is not about medium sized businesses. Establishing this understanding up front helps to narrow the focus of the review. It is important because SME lending involves at least two distinct approaches to credit portfolio risk management and each involves different customer groups and different credit parameters to be taken into consideration when undertaking a review.

The two distinct approaches to credit portfolio risk management are as follows.

High-unit volume small credit relationships

This segment is most effectively served using a portfolio risk management-based approach, in which high-quality predictive data is used to segment customers into risk and relationship bands and standardised policies and strategies are applied to each segment. Decision-making and account ownership is typically centralised and depersonalised.

This, what is termed, 'portfolio approach' for small loans and is primarily data and statistics driven. It includes processes and strategies that are simplified and contain at least some amount of automation. In this model the aim is not to precisely measure and eliminate the risk of each business and achieve "zero" losses, but to accurately quantify risk at the segment level and price commensurately for that risk. The approach is data-driven, simplified and largely automated for a two reasons:

- 1) There is potentially a large volume of customers and data to build statistically valid tools for quantifying risk, and
- 2) It can be unprofitable to use a labour-intensive, individualised approach to account underwriting and management for customers with very small credit relationships.

Low-unit volume medium and larger relationships

For these segments, each business is understood and managed as a unique entity. A personalised 'customer relationship management' model is used which involves understanding and working with each customer individually and where credit and customer management decisions are made on a judgmental, case-by-case basis. Customer relationship management involves periodic face-to-face meetings between customers and relationship managers.

In these segments, unit volume is low and credit relationships are relatively large; therefore, statistics-based understanding of customer risk plays a less prominent role than in portfolio management. The typical goal is to ensure that each customer will repay their loan, and in the rare cases that they are unable to do so, that collateral is sufficient as a secondary source of repayment to essentially reduce net losses to near zero.

Hybrid Approaches

As discussed earlier, a SME portfolio is a spectrum, and risk management approaches are not a black and white dichotomy between two segments. It should not be assumed that one approach is purely about data and automation and the other approach is strictly about subjective, case-by-case, analysis and management. There are elements of each approach that can be employed across the segments.

For example, although score-based decision making is typically considered to involve transaction-based rather than relationship-based decision-making, it does not preclude the possibility of using scores to create customer relationship-friendly processes. For example, strategies can be designed where small business customers have a personal relationship with their banker, but their risk is measured by scores; pricing and account management strategies are risk-based, and the relationship manager is given enough flexibility and authority to override the system recommendation for selecting, justifiable cases. Another option is to use scores to further empower branch-based credit officers by helping them efficiently quantify customer risk. For underwriting, score-based decisions could be limited to automated renewals or approvals, and applications that the system cannot auto-approve would be routed to the branch credit committee or underwriters for judgmental decision making.

Quantitative risk measurement also can play a role in lending to medium and larger businesses. For example, credit ratings, like the Borrower Quality Rating (which measures probability of default), and Collateral Quality Rating (loss given default) are very useful for assigning risk-based pricing and loss forecasting. These ratings should be based on a combination of hard, predictive and verifiable data and subjective, qualitative assessment. The ratings should be validated through back-testing to confirm that they actually are predictive of credit risk.



Strategies can be designed where small business customers have a personal relationship with their banker, but their risk is measured by scores

iii) DESIGNING THE REVIEW

Given the management's team's objective, the focus of the review is now simplified and narrowed to assessing the FI's prospects for developing an effective data-driven portfolio risk management approach to lending to smaller businesses.

The reviewer should then structure the review to concentrate on looking for the presence of or potential for enabling elements, external to and within the organisation, that are needed for the successful implementation of more cost-effective, data-driven, automated, customer-friendly strategies. These elements include the likes of:

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| <ul style="list-style-type: none"> ✓ Credit market infrastructure which includes developed credit bureaus and ideally, collateral registries. ✓ An FI risk appetite that does not think in terms of risk elimination, but risk quantification and pricing for the risk. ✓ An effective credit administration process. ✓ Appropriate organisational structure to manage volume lending. ✓ Personnel with the skills required to implement a scientific approach to portfolio risk management. ✓ Sophisticated IT systems, including a loan origination system. | | <ul style="list-style-type: none"> ✓ Comprehensive capture and analysis of data for all key stages of the credit lifecycle. ✓ Quality control processes to measure the accuracy of the data collected. ✓ Tools to create a standardised quantification of credit risk, such as scores and ratings. ✓ Efficient and effective loan origination and credit underwriting systems/processes. ✓ Cost-effective collections systems and processes. |
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The reviewer will structure the review to assess for the presence and quality of the above elements, as well as any other areas he /she considers relevant to the inquiry.

iv) CONDUCTING THE REVIEW

Any process review will most likely consist of at least three forms of inquiry: the review of documents and literature; interviews with internal and external stakeholders; and observation of processes, systems, data and risk quantification tools in practice. Below is a short list of the types of stakeholders, processes, systems, databases, documents and risk quantification tools that should be included in the review:

Documents and literature review

This involves looking at:

- Annual reports
- Organisational charts
- Credit policy
- Credit process manual
- Product descriptions
- Operational MIS
- Portfolio quality MIS
- MIS tracking recovery rates and loss given default
- Publications concerning the FI and credit market (good sources are the Microfinance Gateway and SME Finance Forum)⁴

Interview key stakeholders

To speak with various staff internally and as well as external stakeholders

Internal

- Executive management and sponsor of the review
- Product management
- Credit risk management
- Teams developing and using scores and score-based strategies
- Branch managers and relationship managers
- Underwriting
- Loan disbursement
- Collections
- Information technology

External

- SME customers at their place of business
- Credit bureaus

Observe all stages of the credit process

As well as observing each stage, all the documents, systems, data and tools used should be reviewed then the bullet pointed text

Processes

- Origination
- Underwriting
- Disbursement
- Account management and monitoring
- Collections
- Charge-off and recovery

Systems

- Loan origination
- Collections
- System of record

Databases

- Originations
- System of record
- Enterprise data warehouse and data marts

Risk quantification tools

- Credit scores
- Credit rating matrices
- Borrower quality rating
- Collateral quality rating
- Scoring and rating documentation and validation reports

⁴ For example: CGAP Microfinance Gateway Library (<http://www.microfinancegateway.org/library>), SME Finance Forum (<http://www.smefinanceforum.org/library/publications>),

v) DRAFTING AND COMPLETING THE REVIEW

Once the above activities for the review are completed, the reviewer should develop a draft report with conclusions and recommendations and share this with FI senior management for them to check for accuracy and to gain their feedback more broadly.

Following this check, the reviewer should then work with the FI to finalise the recommendations and develop an action plan for implementation.

It is critical that the reviewer ensures that the FI has assumed ownership of implementation of the recommendations and has assigned a project manager or managers who will champion implementation of the key recommendations.

Once the conclusions, recommendations and action plan have been agreed upon, the reviewer should complete the final report for publication. See Annex 1 for the outline headers of a typical review report.



> FURTHER DETAILS ABOUT THOSE 'ENABLING ELEMENTS'



In discussing the process above, we referred to 'enabling elements' that are necessary/important for the successful implementation of more cost-effective, data-driven, automated, customer-friendly strategies. This section provides more detail on these enabling elements.

In many emerging markets, some or all of these enabling elements may not be present in or accessible to a FI. The question then becomes, whether it is possible for the FI to develop more cost-effective, data-driven, automated, customer-friendly strategies? The answer is –'it depends'.

The benefit of data-driven strategies is largely a function of economies of scale. Large FIs with the potential for development of significant economies of scale can benefit from making the necessary investment to put in place these enabling elements. Smaller FIs are likely not to have the scale of business to justify such expenditure and /or may not have the capacity to develop their own data-driven, streamlined processes. However, even smaller FIs can strengthen their credit risk management capabilities, and, depending on the market, potentially develop external partnerships to permit them to avail the benefits of data-driven decision-making.

i) CREDIT MARKET INFRASTRUCTURE

When the credit market infrastructure is less developed, as in Kenya, FIs aiming to implement data-driven portfolio risk management will need to rely much more heavily on internal customer data

A FI's prospects for achieving their goal of developing more cost-effective, data-driven, automated, customer-friendly strategies are dependent not only on the FI's internal characteristics, but also on the stage of development of the external credit market infrastructure. A credit market with an infrastructure in place to facilitate effective measurement of probability of default and loss given default will enhance a FI's prospects of achieving this goal.

For example, credit bureaus are the foundation of effective credit risk management in an economy. For small business lending, a major concern is the customer's level of indebtedness. Developed credit bureaus, which capture full-file data, can provide information on the customer's extent and history of credit within the formal, bureau participating financial ecosystem. Credit bureau data provide key variables for determining probability of default as well the borrower's level of indebtedness. Without credit bureaus, use of data-driven strategies can be like flying through the night without headlights or a compass. It would not be advisable to significantly ramp up lending to borrowers where it is not systematically feasible to determine a borrower's willingness and ability to repay. Therefore, in the process review, the reviewer should seek to gain a qualitative assessment of the existence, coverage and quality of credit bureaus for SME borrowers.

Collateral registries are another key component of credit market infrastructure. Credit loss rates are a function of probability of default and loss given default, which is determined by the collateral type, loan to value ratio and lien position. For small business borrowers, real property or fixed asset collateral may be unavailable, and therefore, the borrowers may need to pledge unconventional collateral, known as chattel. The challenge with chattel is that unless there is a functioning registry in place to accurately identify and record lien position on the chattel security, borrowers may pledge the same collateral to multiple lenders, thus invalidating the purpose of the collateral and making FIs less likely to lend to borrowers with only chattel collateral.

When the credit market infrastructure is less developed, as in Kenya, FIs aiming to implement data-driven portfolio risk management will need to rely much more heavily on internal customer data. For example, behaviour scores can be developed based on the customer's credit history with the FI. These scores can be strengthened by incorporating information on the customer's current and savings accounts with the FI. If effectively developed and validated, behaviour scores can be used for many data-driven strategies. The unknown about the borrower's overall level of indebtedness will persist, but close monitoring of behaviour scores and trends in the customer's financial situation within the FI can be used to develop early warning indicators of potential borrower financial deterioration.

ii) THE RISK APPETITE OF THE FI



Since the financial crises, FIs have developed 'statements of risk appetite', which specify and quantify the types and level of risks they are willing to accept. FIs should formally incorporate statements of risk appetite into their credit policy and implement processes to monitor levels of risk versus target benchmarks.

FIs that seek to develop more cost-effective, data-driven, automated, customer-friendly strategies for small borrowers need to take into consideration that data-driven, portfolio based strategies involve a trade-off.

Regardless of the institution, screening tools like credit scores are imperfect; they

result in a certain amount of misclassification. Credit scoring models assign probabilities of outcomes between zero to one. Because in reality the outcome either happens or it doesn't, the score will always be "wrong", in the sense that it did not assign a probability of zero or one. The important thing is to use models which have predictive power, and which minimise the misclassification rate. If effective models are used, the FI can accurately quantify risk at the segment level, and price for that risk. Therefore, the FI's risk appetite should permit "non-zero" loss rates, and focus more on the effectiveness of its risk quantification tools, and its ability to profitably price for that risk.

The process reviewer should assess, through review of historical portfolio MIS, as well as through interviews, whether the FI has a risk appetite which does not aim for zero losses. If historical performance shows loss rates close to zero, that is an indication that the FI has a very conservative risk appetite. In such an instance, key stakeholders should be interviewed to see whether the FI is willing to change its risk appetite, for example, to plan on accepting higher losses and quantifying and pricing for the incremental risk.

iii) CREDIT ADMINISTRATION PROCESS

Having an effective credit administration process, is fundamental to maintaining control of portfolio risk management and a critical factor for an FI wanting to successfully implement more cost-effective, data-driven, automated, customer-friendly strategies for small business borrowers.

The factors to look for in this respect include:

- The process for credit policy development, approval, implementation, and evaluation should be clearly defined and stated in policy.
- Credit authorities should be clear and implemented in the origination system.
- A formal process for determination and review of credit authorities should be incorporated into policy.
- Credit policy exceptions should be permitted, but codified, with exception authorities stated in policy and exception volume and performance routinely tracked.
- The credit policy should be up to date and the system should ensure that the same copy is available to all credit decision-makers.
- The process and frequency of policy review should be stated in the policy document, as well the composition of the committee responsible for review and approval of policy.

A key area of consideration is to what extent policies are informed by empirical analyses. MIS should be comprehensive and permit risk managers to clearly understand trends in origination volume, credit risk profile and portfolio performance, both on a point in time snapshot and vintage basis. Risk analysts should have the skills and tools necessary to conduct a variety of ad hoc analyses to further understand drivers of portfolio risk.

iv) ORGANISATIONAL STRUCTURE AND PERSONNEL

The lending operation's structure should be designed for lifecycle credit portfolio risk management, with appropriately skilled personnel to undertake these tasks.

The data-driven, portfolio approach to risk management requires a different type of organisation than the judgmental, case-by-case approach used for medium and large businesses. The skill sets and experience of the personnel involved in this work also needs to be different.

The group responsible for developing, implementing, evaluating and managing standardised data-driven strategies to serve the high-unit volume, small credits should:

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| <ul style="list-style-type: none"> ✓ Be composed of specialised risk managers and analysts who primarily analyse volume, risk profile and performance at the portfolio and segment level. ✓ Have processes that are essentially scientific in approach, with ongoing engagement in development and testing of hypotheses about the drivers of risk and return. ✓ Have key members of the team with graduate degrees in | <ul style="list-style-type: none"> business and/or quantitative disciplines and expertise at analysing problems at the portfolio level. ✓ Have dedicated IT and MIS specialists with education in those areas. And ✓ Have its own dedicated quality assurance unit, which conducts samples of loan decisions to ensure the quality of data and credit decisions are as intended. |
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However, purely quantitative and technical skills are not sufficient; the team should learn the credit business and process so that analyses are relevant and effectively developed and applied.

Credit officers responsible for low-volume, large credit relationships typically have a very different skill set. Many would start at the bank after completing an undergraduate degree in a business related subject, beginning as a branch credit relationship officer, and working with individual customers for at least a few years before moving into increasing levels of credit-decision-making authority, such as to branch manager, senior credit officer or credit manager. These credit officers typically do not conduct relationship and credit risk management from a scientific approach, but are experts at subjective, judgmental assessment and management of the customer.

v) INFORMATION TECHNOLOGY: LOAN ORIENTATION SYSTEM

Loan origination processes that are largely paper-based, where credit files move from one stage to the other in hard copy binders, and where the application data are never entered into the origination system, are incompatible with effective data-driven portfolio risk management.

To effectively scale up a SME lending business, the organisation will need an effective loan origination system. The loan origination system should ideally be equipped for a number of tasks in being able to:

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| <ul style="list-style-type: none"> ✓ Efficiently customise a digitised loan application and loan process workflows. ✓ Electronically capture, store and manage all key origination documents. ✓ Implement checklists and logic to prevent omissions and errors. ✓ Efficiently implement and modify scoring models, decision rules and risk-based pricing. ✓ Automatically retrieve and store credit bureau reports where they exist. ✓ Customise financial statement analysis worksheets. ✓ Capture and retain collateral data. ✓ Implement policy rules, user roles and approval | <ul style="list-style-type: none"> authorities. ✓ Have decision override and policy exception storage and tracking. ✓ Automatically generate credit proposal summaries and other credit documents. ✓ Implement rules-based checklists. ✓ Analyse turn-around times (TAT) across all stages of the origination process. ✓ Link to the core banking system and enterprise data warehouse. ✓ Produce standardised reports. ✓ Make modifications and adjustments without relying excessively on external support. |
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vi) CAPTURE AND ANALYSIS OF DATA

To effectively automate and simplify credit processes, it is necessary, ideally, to have comprehensive, high-quality, predictive data. Data must be as accurate as possible. Therefore, there should be adequate processes in place to confirm the accuracy of data used in decision-making and entered into the system.

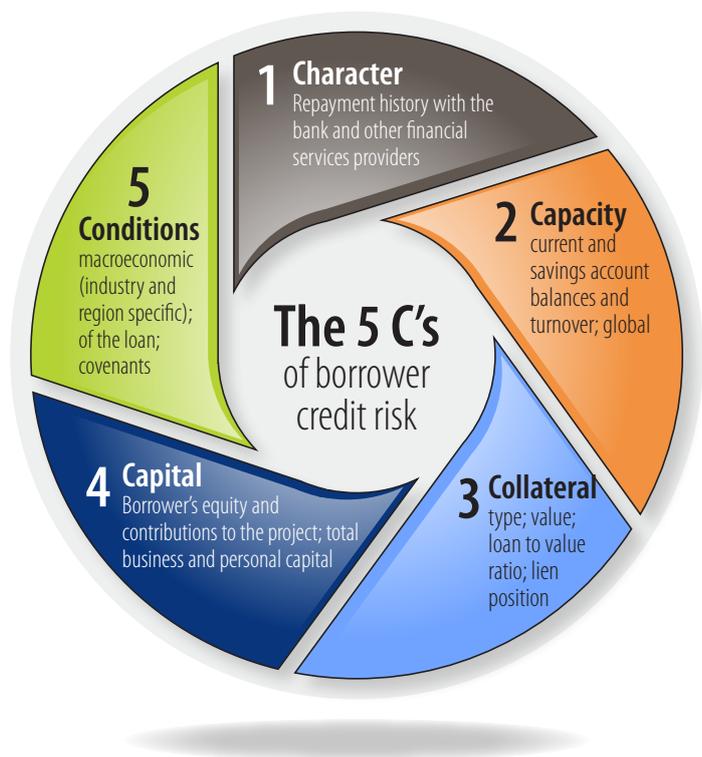
Data should be captured at all stages of the credit process, and permit the organisation to analyse outcomes stratified by:

- The Five C's of borrower credit risk, including:
 - ✓ **Character** – repayment history with the bank and other financial services providers;
 - ✓ **Capacity** – current and savings account balances and turnover; global (business and personal) cash flow;
 - ✓ **Collateral** – type; value; loan to value ratio; lien position
 - ✓ **Capital** – Borrower's equity in the business and contributions to the project; total business and personal capital
 - ✓ **Conditions** – macroeconomic (industry and region-specific); of the loan (product; term; interest rate amount and type); covenants
- Loan and credit relationship amount
- Customer type (e.g. new versus existing credit customers)
- Channel and branch
- Officers responsible for the credit decision, account management, and collections
- Other entities involved in the credit process, such as real estate appraisers
- Policy exceptions (type and performance)

Outcomes to be routinely analysed would include:

- Approval and booking rates
- TAT from application to approval, lien perfection, and disbursement
- Delinquency and loss rates, on a point in time, lagged and vintage basis
- Collections activity and effectiveness
- Recovery rates
- Profitability

The reviewer should inquire about the existence of an enterprise data warehouse (EDW) or data mart and determine what type of data is housed in such databases.



vii) DATA QUALITY CONTROL PROCESSES



The accuracy of data-driven risk management relies fundamentally on data integrity. At a minimum there should be a unit within the risk management team that conducts random samples of credit originations and compares the information entered on the credit application and credit proposal with both the source documents as well as the information in the system. The accuracy rate of this data should be tracked and evaluated by officer and variable.

Harder to verify, but even more important, is confirmation of the accuracy of information used in the credit decision-making process. For example, random sampling auditing processes should be established by the quality control unit to verify the reasonability of reported financial ratios and collateral appraised values.

viii) TOOLS FOR QUANTIFICATION OF RISK: SCORES AND RATINGS

Credit scores, which are appropriate for smaller business borrower credit decision making, measure an individual's relative and absolute (probability of default) risk of becoming severely delinquent on loan repayment. Effectively developed and managed credit scoring models⁵ bring a number of benefits to the portfolio risk management process, including:

- **Standardised decision-making:** Customers of the same level of risk are assigned similar decision treatments.
- **Transparency:** With traditional credit scores, the drivers of the score are typically intuitive and the reason for a high or low score can be relatively easily explained to customers and auditors. This is not necessarily the case with scores built for some types of alternative data.
- **Operational efficiency:** scoring can permit automated decision making of obvious approvals or declines, permitting underwriters to focus on gray-area applications, making their process more cost-effective. Scores can also be used to empower lower level credit committees to make approval decisions beyond their traditional credit limit, reducing any potential bottlenecks of loan decision making in higher-level credit committees.
- **Risk-based pricing:** Since scores quantify risk, they are the foundation of risk-based pricing.

Statistical scores are built by comparing the credit risk profile at a specific point in time of those customers that have paid as agreed versus those that defaulted on their loan. For application scorecards, the customer's credit risk profile is at the point in time of application. The application score predicts the probability that a customer will default over a specific follow-up period, such as the first 12 to 24 months of their loan history. Behavioural scorecards analyse the credit risk of existing borrowers and each account is scored periodically; for example at the end of each month, over the life of the loan, based on that customer's credit and deposit behaviour up to that point. Behavioural scores predict the probability that an existing customer will default over a specified time period, such as the following 12 months.

Because behavioural scores are built with "hard", verifiable credit and deposit history, they are typically more accurate at predicting risk than traditional application scores. Behavioural scores can be used to inform credit application decisions to existing credit customers.

⁵ For further information on credit scoring for SMEs in Kenya see: a) GrowthCap Technical Note 'Credit Scoring for SME banking' by Jamal E. Rahal and Grace Mungai July 2015.
b) GrowthCap Technical Guide 'Getting started with credit scoring' by Dean Caire Aug 2015. Both can be downloaded from <http://fsdkenya.org/resources-for-smes/>



Credit ratings are similar in concept to scores, but have a few fundamental differences. Ratings are typically ultimately judgmentally assigned and are applied to medium and large credit relationships. Ratings are determined by a combination of quantitative (financial ratios) and hard, objective data and qualitative, subjective assessment of the borrower or collateral. Ratings are not used for automated decision making, as they are assigned to medium and large borrowers, for whom judgmental; case-by-case credit decisions are made. Ratings can be used for risk-based pricing, portfolio monitoring and loss forecasting.

In evaluating credit scores and ratings, some questions for the reviewer to consider are:

- Does the line of business use credit scores and/or ratings?
- If not, are they planning to do so?
- Given the line of business's strategy and account profile, would scores/ratings be potentially useful tools for portfolio risk management?

If scores/ratings are being used:

- What are the data sources for the scores/ratings? Scores that use hard, verifiable behavioural data, such as credit history from the credit bureau report or the FI's system of record, and deposit history, will typically be more powerful and predictive scoring models.
- On which customer segments are these tools applied, and for what are they being used?
- Have the scores/ratings been independently validated and back-tested on out of time account cohorts? What is the monitoring and validation process?
- If the scores/ratings have been validated, do these tools rank-order risk, and is the rank-ordering statistically significant?
- In addition to the score, what other information is used to assess the borrower's capacity to repay?

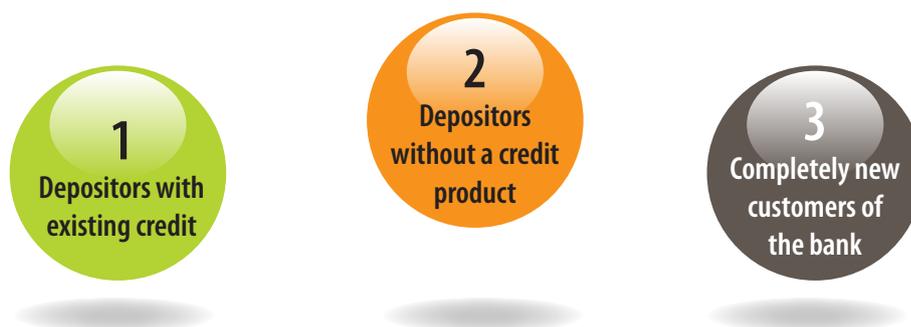
ix) CUSTOMER ORIENTATION, CREDIT UNDERWRITING AND LOAN DISBURSEMENT

How does the line of business source its credit customers? A FI can know much more about the credit risk of an existing customer than of a non-customer. Therefore, efforts should be made to focus on sourcing new credit customers from the FI's existing customer base. The reviewer should determine whether the line of business has any analytical processes for developing leads lists from the FI's existing deposit and other product customer populations.

Small business credit customers may have a variety of needs, but common ones include simple credit application processes, credit products and amounts that meet their borrowing needs, quick TATs from application to approval and loan disbursement, and competitive pricing. The consultant conducting the credit process review will aim to determine opportunities to develop more customer-friendly policies and processes.

The reviewer should create a credit process map⁶ to understand the flow of decisions and documents across various stages of the loan underwriting and disbursement process. One purpose of creating a credit process map is to understand the key factors determining TAT. The time from application to approval could be a function of the number of credit committees required to review the application. The more committees required the longer the time to approval. One way to reduce TAT would be to reduce the number of committees required for application review.

It is useful to determine whether the line of business has different decision making processes based on customer type. For credit underwriting, it is very useful to segment the applicant population into at least three different groups:



It is not uncommon in small business lending, for the vast majority of credit requests to come from existing customers with both a deposit and credit relationship with the bank. If the decision making process does not vary by customer type, then the FI will likely have the opportunity to create process efficiencies by streamlining the approval process for existing customers.

The FI should focus its efforts on developing more simplified, automated and customer-friendly underwriting processes on the customers they know most about, which are depositors with an existing or recent credit product with the FI. Behaviour scores can be used to rank-order risk in this customer segment, and strategies such as auto renewal, auto top-up, automated line increases, score-based branch approval authorities and others can be developed. On the other hand, the FI should focus on more labour and information intensive processes to assess the credit risk of completely new customers to the FI, or customers who do not yet have a credit history.

It is also important to understand the drivers of TAT from approval to loan disbursement. Typical factors determining TAT are the collateral type and delays due to missing information, often a result of the customer not supplying the necessary documents in a timely manner.

Collateral type can make a big difference in TAT. Loans secured by real estate will tend to take much longer to complete the lien perfection than unsecured loans or loans secured by chattel. Therefore, the reviewer should evaluate options for developing policies which optimise the use of collateral.

The most effective way to develop competitive pricing is to implement risk-based pricing, where the lowest risk customers receive the lowest rates and the highest risk customers receive the highest rates. The reviewer should determine whether the line of business is using risk-based pricing, and if so, understand how risk is quantified and how the pricing model is validated. If the FI is not using risk-based pricing, the reviewer should investigate options for implementing this approach.

x) COLLECTIONS SYSTEMS AND PROCESSES

Small business lending will also need effective collections systems and processes. These systems should permit development and testing of sophisticated collection strategies and measurement of collector and centre performance. A system that permits use and testing of "champion-challenger" strategies is preferred. The system should be able to incorporate predictive models which categorise customers by likelihood of repayment. Because most customers with early stage (less than 30 days past due) delinquency eventually repay their loan, strategies should focus on identifying and working actively with customers who are least likely to repay. Once customers are in late stage (≥ 30 days past due) delinquency, the strategy should focus on identifying and working closely with the customers most likely to repay.

⁶ To learn more about the specifics of credit process maps, here is a useful reference Baron C. Introduction to Process Mapping. The Seep Network. October 2004 <http://www.microfinancegateway.org/sites/default/files/mfg-en-toolkit-introduction-to-process-mapping-oct-2004.pdf>

The effective evaluation of collector performance is key to collections success. Collectors should be assessed in terms of quality and productivity of work performed. Outcomes tracked would include, but not be limited to:

- Number of accounts called per day, and the percentage successfully reached.
- Number of accounts which have made a promise to make a payment.
- Number of accounts where the promise to pay was kept. And
- Total amount of cash collected as a percentage of delinquent balances.

Collections units also measure their effectiveness by the level of portfolio delinquency and loss rate. The assumption is the lower the rate, the more effective the collections effort. However, these analyses should control for:

- **Portfolio growth.** Rapidly growing portfolios can mask high delinquency rates. To control for this effect, delinquency rates should also be analysed on a lagged basis.
- **Origination credit quality.** Portfolio performance is mostly determined by the customer credit risk profile. If the credit quality of newly booked accounts varies significantly from that of previous cohorts, then portfolio performance can improve or deteriorate, simply because new account credit quality has changed. This is why it is essential to capture the customer credit risk profile in a database and conduct routine analysis of performance by profile.

> CONCLUDING THOUGHTS ON CRPR

In this guide we have discussed three basic pillars of credit portfolio risk management for SME lending and the enabling elements that support effective risk management.

The extent and quality of predictive data available in an FI is fundamental to effective risk measurement and management.

Although not all FIs will have the capacity to develop data-driven, streamlined strategies, all can benefit from establishing processes to ensure the comprehensive electronic capture of accurate data. Without the ability to accurately measure and manage risk, FIs will need to remain in the default position of restricting lending and requiring an overabundance of collateral coverage.

This guide is not an exhaustive or definitive guide but it outlines and discusses the core aspects of a good credit risk process review and good practice in credit risk management more generally.

In undertaking any CRPR consultants should consider the following:

- **Change requires resources.** That the successful implementation of more cost-effective, data-driven, automated, customer-friendly strategies is challenging, requires a significant and sustained investment, and this is not attainable for all FIs.
- **Solutions cannot be “one-size fits all”.** Recommendations and solutions should be “right-sized” for the specific FI being reviewed.
- **Start with an open mind.** You will need to be adept at problem solving and creative thinking. You should not enter an institution with a preconceived idea or template about what will be the right solution for that FI. Useful conclusions and recommendations will come from conducting the process review with an open and enquiring mind. There is usually a very good, prudent reason why policies are what they are, or why things are done a certain way. Therefore, you will need to carefully determine whether any recommended changes actually represent an improvement over the existing situation.
- **Focus on what is realistic.** It is relatively easy to recommend something, but much more difficult to successfully implement and sustain a beneficial solution. In FIs across the world, there are likely many cases of discarded reviews and partially-implemented recommendations. You must be keenly aware of what is realistically attainable and sustainable for the FI you are reviewing. In credit risk management, it is much more important for FIs to understand their limitations and prudently manage risk within their own capabilities than to try to take on ambitious innovations that are beyond their ability. In credit risk management, it is always best to err on the side of caution.

> **ANNEX**

OUTLINE HEADERS FOR A TYPICAL CREDIT PROCESS REVIEW REPORT

The contents of the final report will reflect the precise terms of reference for the assignment and the nature and scale of activities undertaken by the organisation under review. Nevertheless, the headers in any CRPR report will typically include the likes of the following.

	Starting Page
Contents	
Acknowledgements	
Glossary of acronyms	
Executive Summary with Recommendations This provides a 2 to 3 page summary of the key findings and recommendations	
Sections	
Section 1 Introduction and background Provides a background to the client organisation and the context in which the review is taking place	
Section 2: Terms of reference and method of approach Discusses the terms of reference for the assignment cross (full ToRs in an appendix) and how the assignment was undertaken (often people interviewed are listed in annex	
Section 3 Findings The main 'results' from the assignment are discussed typically under a series headers covering the key aspects of the work undertaken	
Section 4 Recommendations Presents the conclusions and recommendations from analysis of the findings and outlines an action plan for next steps	
Tables and Figures	
Figure x.	
Table x.	
Appendices	
1 Terms of Reference	
2 People Consulted	
x	