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credit guarantee corporation: accommodating an expansion strategy

Shrestha Pratik and Tuhin Sengupta wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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In September 2011, K. Perbagaran, the chief risk officer of Credit Guarantee Corporation Malaysia Berhad (CGC), was mulling over a pressing problem related to the revision of business rules. CGC was aiming to expand its business in Malaysia from just providing guarantees to small and medium enterprises (SMEs) to granting direct loans (direct-lending products). To date, CGC had guaranteed financing to over 445,217 financing SMEs valued at over RM63.7 billion.[[1]](#footnote-1) The total revenue and net profit for fiscal year 2015 were RM116.276 million and RM190.699 million, respectively.[[2]](#footnote-2) However, to fulfil its new objective, CGC required a major overhaul in business strategy and expanded business rules.

CGC itself would be giving loans, so it would need to check all clients’ demographic and bureau data to assess whether they were creditworthy. Previously, most business rules (eligibility criteria) were checked manually by CGC for each client—a slow and unreliable process. With the addition of new direct-lending products, business rules and business strategy had to be altered in a rapid yet reliable manner. Furthermore, CGC had earlier used a qualitative model to assess the creditworthiness of SMEs for all guarantee schemes. The assumption behind the model was that all products were the same; if the client was not creditworthy for one type of guarantee, it was not worthy of any type of guarantee. The assumption needed to be revised, as the new direct-lending products differed from guarantee products. Given these recent developments, how could CGC revise its business rules to accommodate the new expansion strategy?

SME access to Finance

SMEs played a crucial role in shaping the overall economy of a region, especially in an emerging market context. Organized SMEs contributed up to 60 per cent of the total employment and directly influenced up to 40 per cent of the gross domestic product in emerging economies. It was logical for policy makers to deduce that these growth trajectory figures were meant to rise, considering the contribution of the informal or unorganized SMEs. According to World Bank estimates, SMEs generated four out of every five formal job positions. However, SMEs struggled to grow organically because of a lack of capital. Access to finance from lending institutions posed an enormous challenge for the future of SMEs. In fact, it was estimated that approximately 70 per cent of SMEs in emerging markets were not able to access credit to finance their operations. The current credit gap for both formal and informal SMEs was estimated to be more than US$2.6 trillion. This gap was more prominent in Africa and Asia. Therefore, according to a World Bank brief, the growth of SMEs was of utmost priority to policy analysts.

A World Bank Group study suggests there are between 365–445 million MSMEs in emerging markets: 25–30 million are formal SMEs; 55–70 million are formal micro enterprises; and 285–345 million are informal enterprises. Moving informal SMEs into the formal sector can have considerable advantages for the SME (for example, better access to credit and government services) and to the overall economy (for example, higher tax revenues, better regulation). Also, improving SMEs’ access to finance and finding solutions to unlock sources of capital is crucial to enable this potentially dynamic sector to grow and provide jobs.[[3]](#footnote-3)

Given the argument that SMEs needed capital to finance their operations, it was vital that emerging market banks and lending institutions always had lower loan-to-deposit ratios. However, in the presence of the tight monetary policy of developed countries and alterations in the regulatory landscape over the years, emerging market banks were facing more pressure to keep themselves profitable amid increased risk costs and competition in the retail market. As a result, risk mitigation had moved up to the top of the priority list for these institutions. Risk teams and departments were considering different ways to support effective decision making in their day-to-day operations. The institutions focused on devising customized analytical tools to aid their decision-making processes.[[4]](#footnote-4)

The biggest challenge of SME lending was the lack of information about the borrower. Hence, the lending institutions in emerging markets went beyond the standard risk model to assess credit risk. According to a McKinsey report,[[5]](#footnote-5) 72 per cent of the banks in emerging markets used a standardized credit-scoring model. This model incorporated traditional information sources such as evidence of cash flows, collateral, and credit bureau score. The report suggested that few banks were using psychometric testing for measuring an entrepreneur’s psychological profile, ethics and integrity, intelligence, and business skills. However, other banks employed qualitative credit assessment (QCA) for the following areas: SME management (identifying the strength and integrity of the entrepreneur); MSME features (such as ownership structure or relationship with the bank); SME competitiveness; and SME company operation (including relationships with suppliers and customers). Therefore, it was evident that emerging market lending institutions were employing complex analytical tools for assessing SME creditworthiness.

About CGC

Founded in 1972, CGC operations commenced with the intention of playing a pivotal role in developing and supporting Malaysia’s potentially viable SMEs. CGC’s primary focus was on SMEs that had no collateral or inadequate collateral to obtain funding from financial institutions. Through its guarantee schemes, CGC aimed to facilitate SME access to funds. In its early years, CGC aimed to assist small enterprises, especially in agricultural and industrial sectors. With the growth of the Malaysian economy over the years, CGC had to expand its range of products and services to cater to increasing demand from medium-sized enterprises. The support CGC provided was not only to guarantee loans but also to provide advisory services such as business development, credit information, and credit-rating services in collaboration with SME Corporation Malaysia and Credit Bureau Malaysia. With the help of the bureau, CGC assisted SMEs to improve their creditworthiness and enabled them to secure favourable credit terms from banks and other credit grantors on their own merit.[[6]](#footnote-6)

To provide new and innovative financing options, CGC forged alliances with banking partners. The alliances allowed it to enhance SME access to financing and provide a cost-effective delivery channel (see Exhibit 1). Since its inception, CGC had assisted in financing over 445,217 SMEs by providing financing valued at more than RM63.7 billion. CGC’s current shareholders were the Central Bank of Malaysia (Bank Negara Malaysia) and other commercial banks with a Malaysian licence, with 78.65 per cent of shareholding attributed to Bank Negara Malaysia.[[7]](#footnote-7)

Products and Services

CGC products were primarily divided into four categories: conventional schemes, Islamic schemes, government-funded schemes, and direct financing.

Conventional schemes included the BizMaju Scheme, BizJamin Scheme, Direct Access Guarantee Scheme Start-up, BizJamin Bumi Scheme, and BizSME. The BizJamin Scheme involved loan amounts up to RM10 million. The annual lending rate was up to 2 per cent above the base lending rate of financial institutions. The CGC guarantee coverage ranged from 30 to 90 per cent under certain conditions.

Similarly, Islamic schemes included the BizJamin-i Scheme and BizJamin Bumi-i Scheme. The BizJamin Bumi-i Scheme involved providing finance up to RM10 million. The annual financing rate was the base financing rate plus 2 per cent, which was the maximum amount provided to financial institutions. Institutions were free to quote the financing rate if the guarantee coverage was 50 per cent or less. The CGC guarantee coverage ranged from 30 to 90 per cent under certain conditions.

Government-funded schemes included the Flexi Guarantee Scheme, Green Technology Financing Schemes for Producers and Users, and Franchise Financing Scheme. The Franchise Financing Scheme was characterized as follows: “The existing total credit facilities of the borrower should not exceed RM7.5 million.”

Direct financing schemes included the Bumiputera Entrepreneur Project Fund-i, BizMula-i, BizWanita-i, and BizBina-i. These four schemes each had a specific focus. For example, BizBina-i was opened for CGC’s existing customers who were affected by floods and was available from January 16, 2017, to July 15, 2017, or until the exhaustion of fund allocation (whichever was earlier). BizWanita-i aimed to provide financing to women entrepreneurs, and BizMula-i primarily focused on financing new businesses.

The guarantee range mentioned in these different schemes aimed to link the credibility of the borrower in terms of risk rating with the pricing of the guarantee.

CGC’s Operational Structure

CGC’s unique position of being a guarantor for Bank Negara Malaysia meant that it had to cater to as many SMEs as possible with the objective of minimizing total risk. It had two major departments that focused on credit and risk management (see Exhibit 2): the credit department and the risk department. The credit department was headed by Abdul Talib Dewa, the chief credit officer, while the risk department was headed by K. Perbagaran, the chief risk officer. The credit department’s job was to provide as much credit to CGC’s customers as possible. The department launched better schemes that targeted specific customer segments, which in turn ensured focused marketing of these schemes backed by easy and fast loan disbursement to CGC’s potential clients. The risk department’s job was to assess the risk worthiness of the loans given by the credit department. Hence, the risk department, along with the credit department, came up with policies and business rules for new schemes and revised old schemes. The risk department further ensured that necessary compliance standards were fulfilled with each application.

challenges

The challenges that arose from the launch of new direct-lending products could be broadly divided into three areas: frequent changes in business rules, lack of automation, and expanding predictive models.

Frequent Changes in Business Rules

Business rules defined a business. They were the guiding ideas that aimed to bring structure and control to the business’s behaviour. A business rule was an if-then statement followed by a business as its core principle. The rules had true or false conditions that resulted in further actions. In CGC’s case, business rules defined the eligibility of an applicant (SME) for a loan and ultimately resulted in acceptance or rejection of an application (action). For example, one rule could be as follows: If a new borrower’s turnover for the current fiscal year was less than RM10,000, then reject the application. In this example, the rule says that the borrower’s turnover for the current year should be greater than RM10,000 (condition for true and false); otherwise, the application should be rejected (action).

CGC handled guarantees under many schemes, with each scheme having more than 50 such business rules. Some of the schemes, like TPUB-i, were targeted for contractors employed in Malaysian government companies and other reputed companies. Other schemes were targeted for women, who became entrepreneurs with their own business start-ups. Yet others were for companies that operated in disaster relief scenarios. Each scheme had its own set of rules or eligibility criteria that an applicant had to meet to get the guarantee.

New schemes were developed frequently and old schemes were closed. For this purpose, CGC had eligibility rules for each scheme in a printed checklist format. To implement a new scheme in the market, CGC would create a new checklist. Similarly, when discontinuing an old scheme, the customer relationship management vendor would be asked to disallow the options related to that scheme. For updating an existing scheme, the checklist was just updated and handed to all the team members.

This system had worked fine in the past; however, with the inclusion of the new direct-lending products, many problems had cropped up. CGC was looking for a computer-based tool to help manage its business rules in a single place. CGC’s information technology (IT) personnel were the only support staff, so they did not have much technical knowledge or skill to perform the required changes in the system. Previously, in most cases, CGC had hired vendors for any IT-related tasks, but with this business initiative, it wanted to handle all its business rules and strategies in house. Therefore, the tool had to be not only capable of modifying business rules quickly but also easy enough to be used directly by business users with little or no IT support.

Lack of Automation

Since CGC did business in different parts of the country, the end user interface was automated. All the data from the customer level were captured in computer-based online forms at different branches. The credit department was responsible for collating and handing over data to the risk department for onward processing of application forms. Here, all the data on the client were keyed in and later sent to CGC’s risk team for analysis. The data were then printed on paper, and the individual risk team members examined and matched the data with the eligibility criteria of the scheme to be applied. The risk department analyzed the data in accordance with policy and checked if the loan was to be authorized to the concerned individual or institution.

This process was tedious and time consuming, as there were many tasks involved in evaluating all the data. Some of the important tasks were associated with requesting and assessing bureau data, assessing demographic data, and approving authority.

**Requesting and Assessing Bureau Data**: The bureau data needed to be requested in a physical format; hence, time was needed to get the data to CGC’s premises, which resulted in a process delay. Another time- consuming challenge that CGC team members faced was compiling all the requested bureau data. The data were huge in size, containing not only all the financial historical data for the SME but also the details of all the key board members and directors. After the data were aggregated, they needed to be assessed for bureau rules to check the client’s eligibility for getting the guarantee. Going through this process and assessing the data manually required time.

**Assessing Demographic Data**: Similar to assessing all the bureau data for bureau rules, the demographic data, which came directly from CGC’s form-based system, needed to be assessed. This process required getting physical copies of all the data and manually assessing them against the demographic rules. As it was a manual process, the data assessment had to be done carefully; otherwise, there could be errors causing legal issues.

**Approving Authority, Computing Pricing and Type of Business**: After the assessment of demographic and bureau data, an initial approving authority was decided, based on all the available data and the business rules applicable for the particular application. The pricing of the guarantee and nature of business also had to be calculated using the data and rules.

When the whole process was complete, the application was signed off and the guarantee was provided to the client. Each step took significant time, which hampered the overall turnaround time for the application. Even with a digital system for the collection of data, CGC was unable to harness the power of automation during the decision-making process.

Expanding Predictive Models

Credit risk management had evolved drastically over the past two decades. This evolution was in response to a number of environmental forces that caused banks to consider risk management as an important business vertical. Among the major environmental forces[[8]](#footnote-8) that contributed to the shift in business strategy were: (1) an overall increase in the number of bankruptcies; (2) competitive margins on loans; and (3) declining value on real assets, which led to a decline in the value of overall collateral. As a result, banks and lending institutions developed numerous credit-scoring systems and tested various models related to price credit risk.

The Basel Committee on Banking Supervision ensured that banks made extensive use of internal and external credit rating for credit-risk forecasting. This process of credit scoring was important for banks, which had to discriminate “genuine SMEs” from “bad SMEs” in terms of their creditworthiness.[[9]](#footnote-9) For the purpose of credit-risk forecasting, institutions and researchers used complex predictive models such as decision-tree models, score models, neural networks, and the k-nearest neighbour algorithm.[[10]](#footnote-10) In certain instances, the probit algorithm was used to mitigate credit risks. These techniques were primarily used to analyze current and historical data in order to make predictions about the future.

Since CGC was adding new direct-lending products and wanted to bring in automation, it was looking for different models for different products. The direct-lending products could not be treated the same way as guarantee products, as they required different score models and business strategies.

CGC had previously used only one model to calculate the risk associated with each applicant receiving the guarantee related to a scheme. This model would classify an applicant as a green, yellow, or red business, according to some of the business rules based on pre-calculated demographic and bureau data. The model had worked well earlier, but with the addition of new direct-lending products, it needed to be changed. Another problem was that all the bureau data were in print format and not available electronically. This made it impossible to create new models for bureau data, which was a vital part of assessing a new or existing applicant. CGC’s objective was to come up with a standard model for estimating the expected losses from each application. This model was part of the regulatory guidelines for Bank Negara Malaysia and all financial institutions—to avoid a liquidity crisis or, in the worst case, a bank run.

CGC also wanted to use its own accounts to judge a pre-existing customer, where the pre-existing client’s behaviour pattern toward CGC was taken into account as part of behavioural data analysis. The behaviour of a client could be determined by factors such as payment of previous loans from CGC by the client and how long the client had been with CGC. These data could be useful for cross-selling new products (guarantees) and for repricing old ones. Since CGC had only used business rules as models to identify potential bad clients, it required more accurate models that would be easy to interpret and to use to create more new models in the future. Furthermore, CGC wanted to develop a strategy for the use of all the models (standard, demographic, bureau, and behavioural models) and not abandon any one model.

Decision Point

Perbagaran had to overcome all of these challenges related to changing business rules, keeping in mind two things: (1) compliance with global regulatory standards, and (2) efficient business rules with the objective of disbursing loans only to creditworthy customers according to the firm’s policy.

**Exhibit 1: CGC Delivery Channel**

Central Bank of Malaysia

Credit Guarantee Corporation

Borrower

Lending Institutions

1. Loan Application

1. Loan Application

4. Loan Disbursement

2. Guarantee Application

3. Guarantee Issuance

Report

Monitoring

Report

Fund and Monitoring

Source: “About Us: Overview,” Credit Guarantee Corporation Malaysia Berhad, accessed September 30, 2017, https://www.cgc.com.my/overview/.

**Exhibit 2: CGC Organizational Structure (Credit, Operations, and Risk only)**

Note: VP = vice-president; AVP = assistant vice-president.

Source: Created by the authors.

1. RM = MYR = Malaysian ringgit; all currency amounts are in RM unless otherwise stated; RM1 = US$0.23 on March 21, 2017. [↑](#footnote-ref-1)
2. Credit Guarantee Corporation, *Intensifying Development, Fostering Transformation:* *2015 Annual Report,* accessed May 30, 2017, https://www.cgc.com.my/wp-content/themes/crystalline/doc/2015.pdf. [↑](#footnote-ref-2)
3. “Small and Medium Enterprises (SMEs) Finance,” The World Bank, September 1, 2015, accessed November 13, 2017, www.worldbank.org/en/topic/financialsector/brief/smes-finance. [↑](#footnote-ref-3)
4. Omar Costa, Jawad Khan, Cindy Levy, Alfonso Natale, and Ozgur Tanrikulu, *McKinsey Working Papers on Risk, Number 56:* Risk in Emerging Markets—The Way Forward for Leading Banks, McKinsey & Company, 2014, accessed September 30, 2017, www.mckinsey.com/~/media/mckinsey/business%20functions/risk/our%20insights/rethinking%20bank%20risk%20in%20emerging%20markets/rwp\_56\_risk\_in\_emerging\_markets.ashx. [↑](#footnote-ref-4)
5. Mutsa Chironga, Jacob Dahl, Tony Goland, Gary Pinshaw, and Marnus Sonnekus, *Banking Practice,* *Micro-, Small and Medium-Sized Enterprises in Emerging Markets: How Banks Can Grasp a $350 Billion Opportunity,* McKinsey & Company, accessed September 30, 2017, https://www.mckinsey.com/~/media/mckinsey/industries/financial%20services/our%20insights/tapping%20the

   %20next%20big%20thing%20in%20emerging%20market%20banking/micro\_small\_and\_med\_sized\_enterprises\_in\_emerging\_markets\_exec\_summary.ashx. [↑](#footnote-ref-5)
6. “About Us: Overview,” Credit Guarantee Corporation Malaysia Berhad, accessed May 30, 2017, https://www.cgc.com.my/overview/. [↑](#footnote-ref-6)
7. Ibid. [↑](#footnote-ref-7)
8. Edward I. Altman and Anthony Saunders, “Credit Risk Measurement: Developments over the Last 20 Years,” *Journal of Banking & Finance* 21, no. 11 (1997): 1721–1742. [↑](#footnote-ref-8)
9. Dean Fantazzini and Silvia Figini, “Random Survival Forests Models for SME Credit Risk Measurement,” *Methodology and Computing in Applied Probability* 11, no. 1 (2009): 29–45. [↑](#footnote-ref-9)
10. Jorge Galindo and Pablo Tamayo, “Credit Risk Assessment Using Statistical and Machine Learning: Basic Methodology and Risk Modeling Applications,” *Computational Economics* 15, no. 1 (2000): 107–143. [↑](#footnote-ref-10)