Assessment of Business Competiveness (ABC) Scheme for SMEs in Macau

Fredrick Tao
Lewis Luk
Dennis Ng
Hannah Koo
L C Koo

ABSTRACT

Small and Medium-sized Enterprises (SMEs) are important contributors to the success of diversification effort in Macau. A SME is defined as an organization that employs less than 100 employees in manufacturing or less than 50 employees in non-manufacturing sector. One major difficulty the SMEs encounter is how to obtain finance for their business operations. Unfortunately, the banks have always been hesitant and tough in lending to SMEs because of difficulties in assessing their business competiveness holistically and reliably. This situation is aggregated by the financial tsunami. There is an obvious need for developing a valid and reliable Assessment of Business Competitiveness (ABC) Scheme, designed especially for the SMEs to evaluate their business performance fairly and objectively. Such a scheme when supported by some qualified, professional and independent consultants can help SMEs steer through the rough tides in the financial tsunami. SME owners should be encouraged and assisted to be independent and to become truly entrepreneurs capable to deal with the challenges that they are facing.

Keywords: SMEs, Diversification, Assessment, Business Competiveness, Financial Tsunami,

Key challenges that SMEs are facing

To a large extent, Macau's economic success in diversification and social harmony depend largely on the well being of the SMEs. Various schemes have been set up to help these SMEs which do not have the sophistication and financial strengths of the large business operators in the territory. These assistance schemes are provided by Resource Centres, quasi-government bodies, and professional associations. Some of their websites are listed in alphabetical order here:

~ 澳門特別行政區政府 Macao SAR Government http://www.gov.mo/egi/Portal/index.htm
~ 國際葡語市場企業家商會 International Lusophone Markets Business Association http://www.aciml.org.mo/eng/links.htm
~ 澳門特別行政區經濟局 Direcção dos Serviços de Economia http://www.economia.gov.mo/index.jsp
~ 澳門中華總商會 Macau Chamber of Commerce http://www.acm.org.mo/
~ Associação de Pequenas e Mẽdial Empresas de Macau 澳門中小企業協進會 http://www.sme.org.mo
~ The Macao Trade and Investment Promotion Institute (IPIM)澳門貿易投資促進局 http://www.ipim.gov.mo/
~ 澳門生產力暨科技轉移中心 Macau Productivity and Technology Transfer Center http://www.cpttm.org.mo/home_c.php
~ 澳門出入口商會 Macau Importers and Exporters Association http://www.macauexport.com/
~ 葡中工商協會CCILC-Portugal http://www.ccilc.org.mo/

Tao, F.; Luk, Lewis; Ng, Dennis; Koo, Hannah; and Koo, L. C. (2009) "Assessment of Business Competitiveness (ABC) Scheme for SMEs in Macau" Proceedings of The 3rd Pan-Pearl River Delta Quality Forum and The 13th Hong Kong Quality Management Convention. 24th-26th march, Macau, pp. 224-237

Difficulties that most SMEs are facing

There is a common consensus that the worst of global financial crisis has yet to come with no sign of worst scenario. Many SMEs are facing problems on poor cash flow situation, declining sales, shrinking profit margins and deteriorating competitiveness. The situation is further aggravated by the conservative attitudes adopted by the bankers. Many of these themselves are also badly hit under the prevailing crisis. The financial providers realize that collateral security of tangible assets like brick and mortar is no longer adequate and they start to look for better and safer way of lending to the SMEs. Inevitably many bankers have become extremely cautious in lending in general and to the SMEs in particular.

Assessment for Business Competitiveness

It is vitally important to know the determinants of good business performance for SMEs. These success criteria will help them to grow and achieve business excellence. Lascelles et al. (1996) suggest that business excellence require:

- Farsighted, committed and involved leaders;
- A clear understanding of critical success factors;
- Flexible and responsive process management;
- Employees with relevant know-how and skills;
- Continuous improvement;
- Assessments of current and future performance

Successful SMEs need to be effective learning organizations with a comprehensive and balanced business approach aimed to achieve customer satisfaction and innovative use of available resources and employee talents.

Measurement of business performance

Balanced Scorecard, a powerful strategic tool, emphasizes the importance of performance measurement in performance management: "If you can't measure it, you can't manage it" and "What you measure is what you get" (Kaplan and Norton, 1996; Kaplan and Norton ,2000; Bogan et al., 1994; Hitt, 1995; Koo, 1998a; Koo & Koo, 2007). Following these common sense arguments, one can claim: "If you are not measuring it (e.g. KPI), you are not managing it".

If performance measures do not exist, critical management processes are likely not being managed (Kaplan and Norton, 2000). How many executives these days do know their genuine Critical Success Factors (CSFs) and their related Key Performance Indicators (KPIs)??? Failing to identify, review, and monitor the CSFs is a common negligence for the management executives in those ailing companies. Because of their small scale of operations and lack of adequate resources, the small and medium enterprises are particularly vulnerable to the adverse and rapidly changing business environment. They can survive easier and prosper better if they have an effective scheme to assess their business competitiveness acting as a navigational compass to steer their business venture through the rough waters towards success.

It is not uncommon for unsuccessful companies to seek financial assistance from the Governments. However financial assistance in whatever format can best be alleviation in the short term pain and cannot be a long lasting solution. SMEs should be encouraged and assisted to be independent and to become truly entrepreneurs capable to deal with the challenges that they are facing.

Application of Assessment of Business Competitive Scheme

There are many renowned quality assessment schemes in existence to help companies diagnose their performance. Notably these include the Malcolm Baldrige National Quality Award, European Foundation for Quality Management (EFQM), and the Deming Prize (Lascelles et al., 1996; Koo, 2000). Each of these

schemes has its own merits. However, they are too onerous and complicated for the SMEs who lack the expertise and resources to adopt these international quality requirements. There is an obvious need to develop a valid and reliable competitiveness assessment tool tailor-designed for the SMEs in Macau. It is necessary to establish the validity and reliability of the assessment instrument. Validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration. Reliability is about whether a particular technique, applied repeatedly to the same object, generates the same result each time (Babbie, 2004).

Apart from helping the SMEs concerned monitor and improve their business competitiveness, the scheme can provide the proper recognition and motivation for their achievements. One important and pragmatic application of the Assessment of Business Competitiveness (ABC) Scheme would be to use it as a third-party audited certification of good management competency of the SMEs concerned. When the ABC scheme becomes established and widely recognized by the industry and the banking sector, it will help boost the economy in Macau. The trading partners of the SMEs can more confidently rely on their competencies and business prospects as revealed by the ABC Scheme. Similarly, bankers will have something useful and relevant to refer to when providing finances to the SMEs. The ABC Scheme can therefore bridge the gap that may exist between the SMEs and their bankers. The concerned SMEs can also improve their business competitiveness from the ABC Scheme.

Application for bank finance

It is useful for the SMEs to know the usual lending criteria adopted by their bankers. The Trade Development Council in Hong Kong has released some useful and practical guidelines (http://info.hktdc.com/sme/bank.htm) for the SMEs in negotiating with their bankers for their finance requirements. The criteria are:

- Good cash flow
- Adequate shareholders' funds in the business
- Adequate security
- Experience in trading
- Good reputation and standing
- Specific purpose of the bank finance

Different banks adopt different lending policies and practices. Apart from reviewing the financial performance, most banks would require some forms of collateral and guarantee from the applicants. However difficulty arises when the applicant is new to the bank or the cushion of the collateral is thin. Unless the banker is convinced of the business prospects of the SME credit applicant, facilities are not likely to be granted. The banks inevitably would like to have a fuller and more balanced picture of the applicant before they are prepared to relax their cautious attitude. A neutral, professional, valid and reliable business competitiveness assessment scheme (e.g. the ABC) can create a win-win situation for the SMEs and their bankers and help facilitate bank finance negotiation.

Determinants of credit scorings

Many banks have developed their own credit scoring scheme to rank (i.e. ordinal data) the creditworthiness of their borrowing customers. These ordinal credit scores reflect the business performance of the borrowing customers in the eyes of the bankers. The following is a desk research using empirical data by ordinal regression.

Ordinal Regression

This statistical technique helps develop models, generate predictions, and evaluate the importance of various

predictor variables for the dependent variable which is ordinal in nature. This is an improved technique over the multiple linear regression which requires the dependent variable to be interval or ratio data.

Apparent continuous variables are sometimes treated as ordinal due to presence of threshold effects. A good example is years of education. Whilst years of education are continuous data, the educational 'milestones' changes the relationship between the time and corresponding educational achievement. The academic achievement of a two-year master degree is obviously greater than the two-year matriculation programme.

Ordering of categories is important for ordinal variables. If two adjacent categories are merged into one larger category, models built using the old and new categorization should be very similar. This is not the case for linear regression which is sensitive to merging of categories. In ordinal regression model, the thresholds are estimated as part of the model and need not be specified a priori. The model predicts a link function of the cumulative probabilities of the threshold values. Various link functions are available in SPSS 16 (e.g. Logit; Complementary log-log; Negative log log; Probit; and Cauchit). The choice of the appropriate link function depends on the distribution pattern of the dependent variables.

Constructing an Ordinal Regression Model

The model construction entails several decisions. First, the ordinal outcome variable has to be identified. Then the predictors for the location components of the model have to be chosen. Finally the choice of the appropriate link function needs to be made. The selection of predictors, through theoretical and empirical considerations, for the location component of the (location-only) ordinal regression model is similar to that in a linear regression model.

SPSS produces pseudo-R2 measure to assess the overall goodness of fit of the model. This measure serves similar function as the coefficient of determination in linear regression models. This goodness of fit measure summarizes the proportion of data variability of dependent variable associated with the selected predictor (independent) variables. The value of Nagelkerke Pseudo-R2 (modified from the Cox and Snell's R2) falls in the range from zero to one.

The model predicts cumulative probabilities rather than category membership. Two steps are needed to get predicted categories. First, for each case, the probabilities are estimated for each outcome category. Then these probabilities are used to select the most likely outcome category for each case. The probabilities for each category can be computed by subtracting the cumulative probabilities for the group in order.

Results of the Ordinal Regression Analysis

A total of 767 cases were examined. Due to existence of missing values, only 565 valid cases were eventually used to develop the model. The dependent variable is a five point credit scoring assessed through traditional credit analytical approach. 21 independent variables were used in building the model. They are grouped into five categories, viz.

1. Management,
2. Facility & Security,
3. Banking Relationship,
4. Account Performance, and
5. Financial Performance.

Through successive screening processes, using theoretical and empirical judgment, five independent variables remain. The five key determinants for credit scorings are:

- reduction of credit lines;
- amount and duration of overdue;
- average utilization of credits lines;
- interest coverage; and
- retained earnings/total assets.

These five aspects are related to the lending criteria 'good cash flow' and 'experience in trading' outlined above. The Nagelberke Pseudo R-Square is 0.457. Some 46% of data variability of credit scorings can be explained by five independent variables.

Strategic formulation approach

The destiny of a company are closely linked to how the strategies are developed and implemented. Strategy development is about analyzing existing and desired status and then deciding the most effective means to achieve the objectives. The combined and integrated use of various tools e.g. BSC, SWOT, and QFD/Blue Ocean Strategy can provide a more practical, comprehensive, and systematic approach to diagnose the organization and to build a holistic strategic framework (Koo, 1998a; Koo et al., 2005; Koo and Koo, 2007b; Koo, Koo and Luk, 2008).

Balanced Scorecard

Balanced Scorecard (BSC) is a device to guide strategy formulation, implementation, and communication (Kaplan and Norton., 1996, 2000; Pandey, 2005). BSC helps track the performance and provide quick feedback to management for control and evaluation. An organization cannot be successful without a strategy and an effective strategic planning process. The balanced scorecard is a system of combining financial and non-financial measures of performance in one single scorecard. It includes performance measures for four perspectives: financial, customer, internal business processes, and learning and growth. Determining the Critical Success Factors (CSFs) is the most important aspect of the balanced scorecard implementation. By selecting and adopting appropriate performance measures that reflect specific departments' strategies, organizations can gain a competitive advantage. BSC emphasizes the importance of ensuring that performance measures are clear to all concerned and are used by individuals with similar roles to ensure that the criteria are interpreted in the same way. The balanced scorecard outlines both a firm's existing operating performance and future performance drivers by tracking and measuring the four dimensions of business (Hu and Huang, 2006). To implement the scheme successfully, it is necessary to develop the four BSC perspectives carefully with data designed to measure the factors necessary to achieve corporate objectives.

Kaplan and Norton (1996) advocate that the financial perspective measures in the BSC are the most important performance indicators for any business. They emphasize that the non-financial indicators are the 'causes (drivers)' and the financial indicators are the 'effects (outcomes)'. It is vital to establish the cause-and-effect relationship among them, which can clearly explain the rationale of the strategic thinking of the organization.

According to Pandey (2005), successful implementation of the balanced scorecard requires the following practices (similar practices are also needed for the ABC Scheme) :

- Top management commitment and support
- Determining the critical success factors (CSFs)
- Translating CSFs into measurable objectives (metrics)
- Linking performance measures to rewards
- Installing a simple tracking system
- Creating and linking the BSC at all levels of the organization
- Setting up a sound communication system to deploy advantages of BSC
- Linking strategic planning, BSC, and budgeting process for allocation of resources.

BSC is widely regarded as a contemporary strategic approach to measure and manage the performance of a corporation (Hepworth, 1998). BSC helps organizations solve two key issues: an effective corporate performance evaluation and strategic implementation. BSC is strategic because it embraces the setting of objectives and the process involved in achieving these objectives.

Strengths Weaknesses Opportunities Threats (SWOT) analysis

SWOT is the acronym for Strengths, Weaknesses, Opportunities, and Threats and it can be depicted in the format of a matrix, matching the internal factors (i.e., the strengths and weaknesses) with its external factors (i.e., opportunities and threats) to systematically generate responses that ought to be undertaken by the organization. Internal factors refer to those factors that can be controlled or manipulated by the organization.

Internal factors — Strengths and Weaknesses

Koo et al. (2005) propose that the Checklist for Performing Strengths/Weaknesses Analysis' by Kotler (2000) can be used to determine the internal strengths and weaknesses of a company. The Kotler "checklist" is similar to the four perspectives under the Balanced Scorecard. New items specific to the organization concerned, can also be added to the checklist to reflect the reality. Collectively, the management team of the company rate their perceived importance and performance of each of these items on a Likert scale of 1 (least important or worst performed) to 10 (most important or best performed). If a large difference occurs among some of these perceived importance or performance scores, the concerned executives should clarify their views so that a compromise could be reached. The candid dialogue helps reduce misunderstanding among the executives and fortify mutual support in subsequent strategy implementation. The measurements on perceived importance and performance produce a useful by-product, viz. perceived performance gap. The perceived performance gaps are operationally defined as the differences between the perceived importance and perceived performance. The larger the perceived performance gaps are the more urgent it is for the organization to improve on those attributes (Koo and Koo, 2008; Koo, Koo and Luk, 2008).

It is always useful for the management team to know the extent of perceived importance, perceived performance and the perceived performance gaps of various internal factors. The next step is to eliminate those internal factors which are perceived to be less important. Then the remaining internal factors are naturally the key internal factors (i.e. Critical Success Factors). Those CSFs which are rated subjectively as well performed items are the perceived Strengths and those which are rated to be less well-performed are the perceived Weaknesses. The perceived performance gaps are the 'areas for improvement' with quantifiable priority.

External factors — Opportunities and Threats

External factors are those that any individual cannot change or influence and yet is being affected by them. The external factors affecting the SME can be explored through reviewing the five broad aspects (viz. Social, Technological, Economic, Environmental, and Political — STEEP). Those external factors which are favorable to the SME are "opportunities" and those which are unfavorable are "threats". In order to prioritize these subjectively determined perceived opportunities and threats, an opportunity matrix (success probability vs. attractiveness) and a threat matrix (probability of occurrence vs. seriousness) introduced by Kotler (2000), can be used in a modified form. Kotler proposes the use of a two-dimensional matrix. The modified approach is to calculate an index by multiplying the magnitude of impact by the probability of occurrence. The success probability and attractiveness for opportunities, and the probability of occurrence, and seriousness for threats are subjectively and collectively rated on a Likert scale ranging from 1 to 10. Similar to the earlier arrangement, if large differences occur among some of these scores, the concerned executives should state their supporting reasons for their scores. Opportunity ranking scores (product of the perceived success probability and attractiveness) and threat ranking scores (product of the perceived probability of occurrence and seriousness) can computed and rank sorted (Koo and Koo, 2008).

Quantifying extent of impact of external factors with FMEA and SMEA

To improve on the foregoing approach, the Failure Mode and Effects Analysis (FMEA) is used to estimate the extent of threats (i.e. an index known as Risk Priority Number (RPN) can be computed) and for the measurement of extent of opportunities, an innovative concept termed Success Mode and Effects Analysis is introduced here with its related Opportunity Priority Number (OPN). Apart from simply identifying the opportunities and threats, Koo and Koo, (2007a; Koo and Koo, 2008) suggest to use FMEA to quantify more

systematically the real extent of external threats and adopt the use of Success Mode and Effects Analysis (SMEA) to measure the extent of external opportunities. FMEA and SMEA can structurally quantify the magnitudes of threats and opportunities for prioritization as key external factors. In quality management arena, FMEA is commonly used to identify potential failure modes in product development stage, and to determine their effects on the operation of the product, and identify actions to mitigate the failures (Crow, 2002). It can also be used to anticipate what might go wrong with the product. Under the FMEA method, the extent of perceived external threats (i.e. risks) can be estimated by use of Risk Priority Numbers (RPN) which can take a value from 1 to 1000 (Each of SEV, OCC and DET below can have a value from 1 to 10). The higher is the value of RPN, the more serious is the threat to the organization (Koo, Koo, and Luk, 2008).

Risk Priority Numbers (RPN)
= Severity x Probability of Occurrence x Likelihood of detection

Severity (SEV) indicates how significant the impact of the effect is
Probability of Occurrence (OCC) indicates how often the cause of the failure mode is to occur
Likelihood of Detection (DET) indicates how likely the current control is able to detect the failure mode

Since the Failure Mode and Effects Analysis (FMEA) has been used widely in Six Sigma profession, Koo and Koo (2007a; 2008) borrow the idea and applied this concept in calculating the perceived magnitudes of external threats and opportunities. The concept of Success Mode and Effects Analysis (SMEA) is innovative (Koo and Koo, 2007a; Koo and Koo, 2008; Koo, Koo, and Luk,2008). The SMEA is a approach to more structurally and systematically quantify the opportunities. The FMEA can be used in quantifying threats. SEV, OCC, and DET can be subjectively measured collectively by the management team on a Likert scale of 1 -10.

Similarly under the Success Mode and Effects Analysis (SMEA) approach for quantifying the opportunities, the Opportunity Priority Number (OPN) can be subjectively ascertained by the management team. OPN can have a value from 1 to 1000. The higher is the value of OPN, the more attractive is that opportunity to the organization.

Opportunity Priority Number (OPN)
= Attractiveness Rating x Probability of Occurrence x Det & Capability

Attractiveness (ATT) indicates how attractive the opportunity is perceived
Probability of Occurrence (OCC) indicates how likely the opportunity is to occur
Determination & Capability (D&C) indicates the degree of commitment and the ability of the firm to realize the opportunity

The improvement of RPN and OPN over the Kotler's approach is the addition of a third factor. In the case of RPN (a well established approach in Six Sigma) the inclusion of "Detectability" for risks (or threats) is obvious. The fact that many terminal diseases (e.g. cancer, heart attack, H5N1, AIDS, Food poisoning,…) become so serious is because they cannot be detected easily so that preventive measures can be taken earlier to mitigate the damage. Similarly the large casualty arising from natural disasters like earthquake and tsunami is also due to the difficulty in detecting or predicting the events early enough. RPN is used in product design stage to prevent product failure. No similar index was ever contemplated for the positive effect of product usage over time, since it is unlikely that improvement in product functioning could happen when the product is being used over a period of time. RPN is obviously applicable in strategic formulation process to determine the extent of threats. The opposite of Failure is Success. Thus the concept of Success Mode and Effects Analysis (SMEA) was created. The aspects on 'magnitude' and 'probability' have been dealt with in the previous approach (Koo et al., 2005; Koo and Koo, 2007b; Koo and Koo, 2008). The third component 'determination and capability' is introduced to match that of 'likelihood of detection'. The argument of incorporating 'determination and capability' in calculating the OPN is because opportunities are external factors. When these circumstances happen (e.g. economic recovery, new government assistance schemes,…) all

companies are equally aware of them and yet they have different degree of success in grabbing these opportunities. The underlying reason is the extent of 'determination and capability' of the concerned organization in taking advantage of the opportunity. In short, the FMEA and SMEA and their related RPN and OPN can be used to structurally determine the 'real' opportunities and threats for the SWOT analysis.

Conclusion and recommendations

The desk research highlights the key considerations for assessing business performance from the perspective of the bankers. The criteria used are still largely financial in nature and are not balanced or holistic enough. This should be supplemented by a checklist in the form of a questionnaire (see appendix 1). The questionnaire can be completed by the key employees within the SME and the results of the questionnaire can be used to develop the business strategies of the SMEs.

The ABC Scheme has to be EFFECTIVE:

- Easy to implement;
- Flexible to adapt to environmental changes;
- Fair
- Ethical
- Comprehensive
- Trustworthy to all concerned
- Implementable
- Valid and reliable
- Economical

Due considerations have to be accorded to 'What to measure' and 'Why measure' (Crowther, 1996). It should be a process of assessing a SME against a model for continuous improvement, to highlight what has been achieved and what needs improving (Hillman, 1994). Key success factors may vary among different industries. The SMEs may have to be segmented into different sectors to reflect the changing business environment in various industries in Macau. The ABC Scheme once developed can be used for self assessment purposes to improve the business competiveness of the SMEs. Alternatively, this can be used as a certification scheme, audited by a neutral third-party, to provide evidential support of the competency and achievement of the SMEs concerned. The later approach can be of great assistance to SMEs in negotiating bank finance requirements from their bankers.

To conclude the development and launch of an effective, valid, and reliable ABC Scheme needs the support from the Macau SAR Government in giving due recognition to this ABC Scheme. The lending bankers can also help their SME customers enhance their business competiveness through this scheme. With adequate support from the Government, the data collected through the ABC Scheme can be used to develop an ABC Benchmarking Clearing House for SME Business Competitiveness. The data warehoused in the ABC Benchmarking Clearing House will be useful reference information for the individual SMEs and for the policy makers as well.

Bibliography:

[1] ____, (1999) SPSS Advanced Models 10.0 SPSS Inc., Chicago, ISBN 0-13-017890-X, 333 pages

[2] ____, (1999) SPSS Base 10.0 User's Guide SPSS Inc., Chicago, ISBN 0-13-017902-7, 537 pages

[3] Babbie, Earl (2004) The Practice of Social Research, 10th ed., Thomson Wadsworth, Australia, ISBN 0-534-62028-0, 493 pages

[4] Bogan, Christopher E., English, Michael J. (1994) Benchmarking for Best Practices: Winning through innovative adaptation McGraw-Hill, Inc., New York, ISBN 0-07-006375-3, 312 pages

[5] Crow, Kenneth (2002). Failure Modes and Effects Analysis (FMEA). Retrieved 6th December, 2008, from http://www.npd-solutions.com/fmea.html

[6] Crowther, David E. A. (1996) "Corporate performance operates in three dimensions" Managerial Auditing Journal 11/8 pp.4-13

[7] Hillman, G. Peter (1994) "Making Self-Assessment Successful" The TQM Magazine Vol 6 Issue 3 pp. 29-31

[8] Hitt, W. D. (1995) "The learning organization: some reflections on organizational renewal" Leadership & Organization Development Journal, Vol 16 Issue 8 pp. 17-25

[9] Hu, Q., & Huang, C. D. (2006). 'Using the Balanced Scorecard to Achieve Sustained IT-Business Alignment: A Case Study' Communications of AIS, Volume 17 (Article 8), pp. 2-45.

[10] Kaplan, Robert S. and Norton, David P. (1996) The balanced scorecard: translating strategy into action ISBN 0-87584-651-3, 322 pages

[11] Kaplan, Robert S., and Norton, David P. (2000) The strategy-focused organization: how balanced scorecard companies thrive in the new business environment, Harvard Business Press, Boston, Massachusetts, ISBN 1-57851-250-6, 400 pages

[12] Koo, L. C. (1998a) Building Balanced Scorecard on the House of Quality The 1st Industrial Engineering and Management (IEM) Symposium "Transformational Strategy Towards the 21st Century" 20-21 November, Hong Kong Section C pp. 177- 183

[13] Koo L. C. (1998b) Improving Quality Service through Balanced Scorecard Transactions of Nanjing University of Aeronautic & Astronautics Vol. 15. No. 1 pp. 147-153

[14] Koo, H., and Koo, L. C. (2000) "Quality Self Assessment Scheme for SMEs in Hong Kong SAR" The Fifth International Conference on ISO 9000 & TQM, 2000 Singapore (selected as the best paper under sub-theme: Business Excellence and Quality Awards)

[15] Koo, L. C., and Koo, Hannah (2007a) Evolution of a structural approach to scan external environment, Asia International Open University (Macau) Journal, Vol. 5, No. 2, December, pp. 68-74 ISSN 1727-4303

[16] Koo, L. C., & Koo, H. (2007b). 'Holistic approach for diagnosing, prioritising, implementing and monitoring effective strategies through synergetic fusion of SWOT, Balanced Scorecard and QFD'. World Review of Entrepreneurship, Management and Sust. Development, 3(1), 62-78.

[17] Koo, L. C., and Koo, Hannah (2008) Developing strategies for the Government of Macau, SAR with SWOT analysis 澳門特別行政區政府行政暨公職局舉辦的第三屆 "21世紀的公共管理：機遇與挑戰" 國際學術研討會 10月14-15日

[18] Koo, L.C., Koo, H. and Luk, L. (2008) A pragmatic and holistic approach to strategic formulation through adopting balanced scorecard, SWOT analysis and blue ocean strategy — a case study of a consumer product manufacturer in China, Int. J. Managerial and Financial Accounting, Vol. 1, No. 2, pp.127—146.

[19] Koo, L.C., Tao, F., Koo, H., Chan, Y.K., Ip, P. and Chau, G. (2005) 'The BSQ strategic model — a case study of HKQMA', Asia International Open University (Macau) Journal, June, Vol. 5, pp.1—17, ISSN 1727-4303.

[20] Kotler, P. (2000) Marketing Management: Analysis, Planning, Implementation and Control, Millennium ed., International Series in Marketing, Prentice-Hall, Englewood Cliffs, NJ.

[21] Kotler, P. (2000) Marketing Management: Analysis, Planning, Implementation and Control, Millennium ed., International Series in Marketing, Prentice-Hall, Englewood Cliffs, NJ.

[22] Lascelles, David and Peacock, Roy (1996) Self-Assessment for Business Excellence McGraw-Hill Book Company, London, ISBN 0-07-709186-8, 186 pages

[23] Li, Vinent (2000) "The SME Support Network" Company Secretary, Volume 10 No. 1 pp. 16-18

[24] Pandey, I. M. (2005). 'Balanced Scorecard: Myth and Reality' VIKALPA, Vol. 30(No. 1, January - March), pp. 51-66.

Appendix 1

Assessment of Business Competitive Scheme (Change requirements)
業務競爭力評估（變革須要）

你覺得公司須要作出些什麼巨大變革

What major changes that you think the company should require? ：

a) 須增加什麼（即應做而未做的）Things that ought to be added

b) 須刪除什麼（即不應做而有做的）Things that ought to be eliminated

你覺得公司須要作出些什麼調整

What minor changes that you think the company should require? ：

a) 須强化什麼（即多做些什麼）Things that ought to be increased

b) 須減少什麼（即少做些什麼）Things that ought to be decreased

Appendix 2

Assessment of Business Competitive Scheme (Internal Factors)
業務競爭力評估(內部因素)

設要把公司打做為一個行業中表現最好的企業，請把以下公司各項內部因素的重要性和表現水平評估。
In order to make the company the best in the industry, please rate the Importance and Performance Standard of the following internal factors

評分由1至10，1分為最不重要或最低表現水平，…..，10分為最重要或有最佳表現水平。“1”represents least important and worst performed, … , and “10” being the most important and best performed.

	公司內部因素 Internal Factors	重要性 Importance	表現水平 Performance Standard
F1	一般員工的工作能力 Working ability of staff in general		
F2	一般員工的積極態度 Positive staff attitude		
F3	公司的員工績效評審制度 Staff performance appraisal system		
F4	擁有良好的企業文化 Having a good corporate culture		
F5	有良好的員工培訓計劃 Having good staff training plan		
F6	有效的招聘制度 Effective recruitment system		
F7	清晰的企業策略 Clear corporate strategy		
F8	合理的薪酬福利 Reasonable Salary and Welfare Benefits		
F9	公司有能幹的領導班子 Having competent leader		
F10	公司的運作有高的效率 High operating efficiency		
F11	公司有良好的質量管理系統 Good quality management		
F12	公司有完善的操作設備 Good operating facilities		
F13	公司有良好的成本控制體系 Good cost control system		
F14	公司有良好的操作程序 Good Operating procedure		
F15	公司都能清楚了解顧客的要求 Understanding customer needs		
F16	公司能滿足顧客要求 Satisfying customer needs		
F17	公司的產品或服務比競爭對手更好 Competitive products/service		
F18	公司會對市場的變化而作出有效的回應 Fast response to market		
F19	公司有很好的市場策略 Effective marketing strategy		
F20	公司有很好的營業利潤 Good operating income		
F21	公司有理想的市場份額 Good market share		
F22	公司有良好的財務政策Good financial policy		
F23	公司成為顧客在選擇的首選 Being the first choice by customers		
F24	公司有為社会作出很大的貢獻 Contribution to the society		
F25	公司有很高的顧客滿意度 High customer satisfaction		
F26	公司有最好的成本效益 High cost efficiency		
F27	公司有讓員工參與決策 Staff participation in decision making		
F28	公司有在持續優化方面作出改善 Continuous improvement in Quality		
F29	公司有很高程度的公正及誠信 High degree of integrity		
F30	公司有很好的管理人員 Good maangement		
F31	公司有足夠的資產作為銀行的抵押 Adequate security for banks		
F32	公司與銀行有良好的關係 Good relationship with the banks		
F33	公司有良好的會計表現 Good accounting performance		
F34	公司有良好的財務投資管理 Good financial management on investment		
F30	**公司的整體表現： Overall performance of our Company**		

Appendix 3a

業務競爭力評估（外部因素）

請把以下會影響公司的外部因素評分:

A： **影響的程度**（不利的外部因素用負數表示，利好的因素用正數表示）

B： **發生的機率**

C： 針對不利的外部因素（**威脅**）而言，有關威脅的容易被**偵察到的程度**
針對利好的外部因素（**機會**）而言，公司管理階層對實現有關機會的**決心和能力**

影響公司的外部因素	A: **影響的程度** （由 -10至 +10 … -10 =最壞的威脅 0=沒有影響，…, … +10 =最有吸引力的影響）	B: 發生的機率 （0=發生機率極低, ….. 10=發生機率極高）	C: 針對不利的外部因素（威脅）而言，有關威脅的**容易被偵察**到的程度 （0=最易被偵察出來, … 10 =最難被偵察出來） 針對有利的外部因素（機會）而言，公司對實現有關機會的**決心和能力**（0=最沒有信心及能力實現機會, … , 10=最具信心及能力實現機會）
評分的全區	-10,-9,..,0,.. ,+9,+10	0,1,…….…, 9,10	0,1,……..…,9,10
E1 與行業有關的新科技發展			
E2 行業間的競爭情況			
E3 全球性的的金融海嘯			
E4 中國的經濟發展趨勢			
E5 全球的經濟發展情況			
E6 澳門政府對本行業的政策			
E7 澳門的經濟情況			
E8 外國的保護主義措施			
E9 顧客要求越來越高			
E10 中國政府對澳門的支持			
E11 國際間原材料的供應			
E12 人民幣升值			
E13 澳門的交通運輸設施			

Appendix 3b (English)

Assessment of Business Competitive Scheme (External Factors)

Please rate the following external factors that may affect the company:

A: **The extent of impact** (Unfavorable factors are denoted by **negative** scores and Favorable factors are denoted by **positive** scores)

B: **Probability** of event happening, and

C: The ease to detect (for unfavorable external factors (i.e. **Threats**) **or** the extent of willingness and ability to realize the favorable external factors (i.e. **Opportunities**).

External Factors that affect the company	**A: Extent of Impact** ranging from -10 to +10. **-10** = most unfavorable impact, **0** = no impact, , **10** = most favorable impact	**B: Probability** of factors happening 0 = most unlikely to happen, ⋯, 10 = most likely to happen	**C:** For Negative impact (threat) the **extent of ease to detect the threats** 0 = most easy to detect, ⋯ , 10 = most difficult to detect) For Positive impact (Opportunities) **the extent of determination to realize the opportunities** 0 = most unwilling to take the opportunities, ⋯, 10 = most willing to take the opportunities
Range of Scores	-10, -9,..,0, +9, +10	0,1,⋯⋯.⋯, 9,10	0, 1, ⋯⋯⋯⋯ 9, 10
E1 Development of technology relating to our industry			
E2 Competition within our industry			
E3 Global financial tsunami			
E4 Economic development in China			
E5 Global economic development			
E6 HK Govt. policy to our industry			
E7 Economic development in Macau			
E8 Protectionist measures by other countries			
E9 More demanding customers			
E10 Chinese Govt. support to Macau			
E11 Raw material Supplies			
E12 RMB appreciation			
E13 Transportation within Macau			