
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

L.C. Koo*, Hannah Koo and Lewis Luk

c/o Macau Quality Management Association,
10th floor, China Civil Plaza,
Macau, SAR China
E-mail: lckoo@stdmnet.com
E-mail: hkoo@macau.ctm.net
E-mail: lewis@lusignangroup.com
*Corresponding author

Abstract: This paper introduces a holistic approach to strategic formulation as practiced by a large consumer product manufacturer in China. This approach combines the application of a few powerful strategic tools to reap synergetic benefits. Innovative strategic approaches are regularly invented, introduced and adopted with mixed outcomes. It is important to be able to accurately, flexibly and systematically ascertain the internal corporate status and evaluate its business environment. Borrowing from the quality management practices, i.e., failure mode and effects analysis (FMEA), a parallel analogy termed success mode and effects analysis (SMEA) is introduced to supplement the scanning of external environment. Two indexes [i.e., risk priority number (RPN) and opportunity priority number (OPN)] are introduced in the strategic formulation process to estimate the quantum of favourableness or unfavourableness of various external factors. The holistic strategic formulation approach as adopted by the consumer product manufacturer deploys the application of SWOT, balanced scorecard (BSC) and blue ocean strategy (BOS).

Keywords: strengths, weaknesses, opportunities and threats; SWOT; failure mode and effects analysis; FMEA; risk priority number; RPN; success mode and effects analysis; SMEA; opportunity priority number; OPN; strategic formulation; balanced scorecard; BSC; blue ocean strategy; BOS.

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Biographical notes: L.C. Koo obtained his MBA and PhD from the University of Hong Kong in 1986 and 1994, respectively. His research interests include strategic management, quality management, human resources management, action learning and marketing. He is currently a Senior Visiting Scholar with the Beijing Normal University. He is the Assistant Director with the Macau Gaming Research Association and the Head of Performance Improvement Department of SJM, Macau. He is an Editor with *The TQM Magazine*, *International Journal of Contemporary Hospitality Management* and the *Asia International Open University (Macau) Journal*.

Hannah Koo is pursuing her Post-doctorate at Beijing Normal University, China and she received her Doctor of Management (DMgt) from the International Management Centres (IMC) in UK, a degree validated by Southern Cross University, Australia in 1999. She is a Visiting Associate Professor in Macao University of Science and Technology (MUST) and in Asia International Open University (Macau). She also supervises many MBA students. She is a Director of both Hong Kong Quality Management Association (HKQMA) and Macau Quality Management Association (MQMA) to promote continuous improvement in quality services in Hong Kong and Macau.

Lewis Luk is the Senior Associate of a local law firm. Prior to that, he was the Deputy Chairman of a publicly listed company. He has a Law degree from King's College London and is a qualified Lawyer in Hong Kong, England and Wales, Singapore and Australia. He holds a Juris Doctor from USA and an Honorary Doctorate from Lincoln University, USA. He is also an Adjunct Professor of both the City University of Hong Kong and The Hong Kong Polytechnic University and a Fellow of King's College London.

1 Strategic formulation approaches

The failure and success of an organisation are closely linked to how the strategies are developed and implemented. Accordingly, strategic development and implementation has become the important responsibility for the top executives of any organisation. Strategy development is about analysing existing and desired status and then deciding the most effective means to achieve the objectives. Wehrich (1982) alleges that strategy formulation is a complicated process which requires adopting a systematic approach to diagnose the external factors and to match these external factors with the internal capabilities of the organisation. Therefore, strategic management has become an indispensable agenda in any business administration curriculum. There are many different approaches to strategic development, e.g., profit impact of marketing strategy, BCG matrix, McKinsey's GE matrix, Porter's five forces, McKinsey's 7S, strengths, weaknesses, opportunities and threats (SWOT), quality function deployment (QFD), balanced scorecard (BSC), ADL life-cycle matrix, blue ocean strategy (BOS) (Kaplan and Norton, 1996, 2001, 2004; Crowe and Cheng, 1996; Feurer and Chaharbaghi, 1997; Wehrich, 1982, 1999; Ip and Koo, 2004; Koo and Koo 2007b; Kim and Mauborgne, 2005). There are occasional problems when relying on the use of a single strategic tool. Therefore, the combined and integrated use of various tools, e.g., BSC, SWOT and QFD can provide a more practical, comprehensive and systematic approach to diagnose the organisation and to build a holistic strategic framework (Koo, 1998; Koo et al., 2005; Ip and Koo, 2004; Koo and Koo, 2007b). A casual review on literature relating to BSC from EBSCO (<http://ejournals.ebsco.com/Login.asp>) in the recent five years revealed that BSC is taking an evolutionary modification to suit specific needs of individual organisations. BSC can be applied conjointly with SWOT, QFD, EFQM, Baldrige Award, value-chain analysis (VCA) and activity-based costing. Bassioni et al. (2005) suggested that the strategic formulation process can start by integrating the performance factors of the BSC perspectives and the EFQM and Baldrige criteria, into a comprehensive set of factors. Bell and Elkins (2004) contend that leaders must develop a

scorecard that constantly refers to the four primary directions of influence criteria to success. The criteria of performance excellence used within the Baldrige Quality Award contain useful reference frameworks for helping the leaders develop systematic indicators in each influence. Lusk et al. (2006) advocate that it is necessary to widen the scope of the BSC to translate financial performance into performance of the corporation at a broader level than just the interests of the stockholders and corporate management. They propose that at a minimum, a social responsibility performance perspective becomes part of the business scorecard. Tan et al. (2004) report that three techniques can be integrated to form the strategic planning framework. These three techniques are QFD, BSC and VCA.

2 Balanced scorecard

Pandey (2005) considers the BSC as a device to guide strategy formulation, implementation and communication. BSC helps in tracking the performance and providing quick feedback to management for control and evaluation. An organisation cannot be successful without a strategy and a strategic planning process. The BSC 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. It need not be restricted to four perspectives; more may be added and social responsibility and environmental concerns are two possible candidates. Determining the critical success factors (CSFs) is the most critical aspect of the BSC implementation. Haworth (2008) describes the BSC as a strategic management system by enabling companies to translate their missions, values, visions and strategies into groups of performance measures that fit within four domains. By selecting and adopting appropriate performance measures that reflect specific departments' strategies, organisations can gain a competitive advantage. BSC emphasises 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. Hu and Huang (2006) suggested that the BSC outlines both a company's existing operating performance and future performance drivers by tracking and measuring the four dimensions of business. The BSC is a management system, not a ready-made performance indicator. To implement the scheme successfully, it is necessary to develop the four BSC perspectives carefully with data designed to measure the factors necessary to carry out its vision and strategy.

Kaplan and Norton (1996) point out that the financial perspective measures in the BSC are the ultimate and most important performance indicators for any commercial business. They emphasise that the non-financial indicators are the 'causes (drivers)' and the financial indicators are the 'effects (outcomes)'. It is important to establish the cause-and-effect relationship among them, which can clearly explain the rationale of the strategic thinking of the organisation. However, Kaplan and Norton (1996) suggest the use of correlation to establish the cause-and-effect relationships among the various BSC measures. The correlation relation is only a necessary condition and not a sufficient condition to establish a cause-and-effect relationship. In this respect, Koo (1997) proposes the use of a statistical instrument like linear structural equation modelling (LISREL) to explore the cause-and-effect relationship. Koo and Koo (2007b) also

suggest the use of QFD as a tool to determine the casual relationship among the BSC measures using subjective judgement.

According to Pandey (2005), successful implementation of the BSC requires the following prerequisites:

- top management commitment and support
- determining the CSFs
- translating CSFs into measurable objectives (metrics)
- linking performance measures to rewards
- installing a simple tracking system
- creating and linking the BSCs at all levels of the organisation
- setting up a sound communication system to deploy advantages of BSC
- linking strategic planning, BSC and budgeting process for better allocation of resources.

BSC can be utilised to fulfil various strategic management objectives, viz., (Wang, 2006):

- helping management focus on specific strategic objectives
- promoting the integration of strategic objectives and organisational performance
- ensuring investment of time and resources in top priority activities
- highlighting the importance of engaging in the continuous process of change and learning
- ensuring the compatibility of goals and rewards within the organisation.

Gumbus and Lussier (2006) opine that BSC can help an organisation in the following ways:

- Promotes growth – focus on long-term strategic outcomes, not just short-term operational results.
- Tracks performance – individual and collective results can be tracked against targets in order to correct and improve.
- Provides focus – when measures are aligned to a few critical strategies, the BSC provides focus on what is important to the company.
- Alignment to goals – when the company measures what is truly important to achieve success, the measures become linked and support each other. Alignment occurs across the organisation.
- Goal clarity – the BSC helps respond to the question, ‘How does what I do daily contribute to the goals of the company?’.
- Accountability – individuals are assigned as owners of metrics in order to provide clear accountability for results.

Successfully implementing an integrated BSC should anticipate the following benefits (Hendricks et al., 2004):

- better management understanding of the linkages between specific organisational decisions and actions and the chosen strategic goals
- a redefinition of relationships with customers
- reengineering of fundamental business processes
- the emergence of a new corporate culture emphasising team effort among organisational functions to implement the firm's strategy.

BSC is widely regarded as a contemporary approach to measure and manage the performance of a corporation (Hepworth, 1998) and it can link up the strategies and vision of an organisation (Gadd, 1995). The corner stones of BSC philosophy lie in two common sense sayings:

- what you measure is what you get
- if you cannot measure it, you cannot manage it.

It is of paramount importance to be able to describe strategies. It has been argued earlier that what cannot be measured cannot be managed. Kaplan and Norton (2004) supplement this by saying: 'you cannot measure what you cannot describe'. The following five management principles help FOCUS the strategies of an organisation:

- formulate strategies in operational terms
- organise development efforts towards strategic objectives
- change through executive leadership
- use strategies as continuous processes
- set strategies in every employee's task.

Thus, measurement and management aspects have become inseparable (Kaplan and Norton, 1996; Koo, 1998). The advantages of adopting BSC have been reported in numerous publications (Brown and McDonnell, 1995; Kaplan and Norton, 1996; Noci, 1995) (<http://www.bscchina.com/>; <http://www.bscol.com/>). A quadruple perspective approach to measure and manage corporate performance by BSC is more comprehensive and balanced than a mono-perspective approach merely using financial indicators (Hepworth, 1998). Financial measures are lag indicators, which are measures of historical performance. Non-financial measures are leading indicators which are the performance drivers (Kaplan and Norton, 1996; Beiman and Sun, 2003). BSC helps organisations 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. Kaplan and Norton (2001) argue that the essence of strategy is to enable the operations of the organisation to be different from its competitors with unique and valuable differentiation. A sustainable strategic position requires systematic activities and they are mutually reinforcing each other.

3 SWOT analysis

SWOT is the acronym for strengths, weaknesses, opportunities and threats. Its origin is 'SOFT' [another acronym for satisfactory (good in the present), opportunity (good in the future), fault (bad in the present) and threat (bad in the future)]. SOFT came from the research work on corporate planning conducted at the Stanford Research Institute from 1960–1970 by a research team comprising Marion Doshier, Otis Benepe, Albert Humphrey, Robert Stewart and Birger Lie. As the SOFT analysis was presented at a seminar at Zurich in 1964, Urick and Orr changed the F to a W and called it the SWOT (Humphrey, 2005). Wehrich (1982, 1999) modified SWOT (or TOWS) into the format of a matrix, matching the internal factors (i.e., the strengths and weaknesses) of an organisation with its external factors (i.e., opportunities and threats) to systematically generate responses that ought to be undertaken by the organisation. Internal factors refer to those factors that can be controlled or manipulated by the organisation.

4 Internal factors – strengths and weaknesses

The internal factors or KSFs can be determined by way of brain-storming. Koo and Koo (2007b) and Koo et al. (2005) propose that the checklist for performing strengths/weaknesses analysis of the marketing guru Kotler (2000) can be used to supplement the brain-storming exercise. The Kotler (2000) checklist is similar to the four perspectives under the BSC. New items specific to the organisation concerned can also be added to the checklist to reflect the reality. Collectively, the management team 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 state their reasons so that a compromise could be reached. The candid dialogue helps alleviate misunderstanding among the executives and strengthen mutual support in subsequent strategy implementation. The measurements on perceived importance and performance generated a very 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 organisation to improve on those attributes.

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. Those key internal factors which are rated subjectively as well performed items are the strengths and those which are perceived to be less well-performed are the weaknesses. The perceived performance gaps are the 'areas for improvement' with quantifiable priority.

5 External factors – opportunities and threats

The external factors affecting the organisation can be revealed through a brainstorming exercise or a focus group around the five broad aspects (viz., social, technological, economic, environmental and political – STEEP). Those external factors which are favourable to the organisation are ‘opportunities’ and those which are unfavourable are ‘threats’. In order to prioritise these subjectively determined perceived opportunities and threats, an opportunity matrix (success probability vs. attractiveness) and a threat matrix [probability of occurrence (OCC) vs. seriousness] introduced by Kotler (2000), can be used in a modified form. Kotler (2000) proposes the use of a two-dimensional matrix. The modified approach is to calculate an index by multiplying the magnitude of impact by the OCC. The success probability and attractiveness for opportunities and the OCC 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 OCC and seriousness) can be computed and rank sorted.

6 Quantifying extent of impact of external factors with FMEA and SMEA in ABC

To improve further 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 (SMEA) is introduced here with its related opportunity priority number (OPN). Apart from simply identifying the opportunities and threats, Koo and Koo (2007a) suggest to use FMEA to quantify more systematically the real extent of external threats and adopt the use of SMEA to measure the extent of external opportunities. FMEA and SMEA can structurally quantify the magnitudes of threats and opportunities for prioritisation 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. While anticipating every failure mode is not possible, the development team should formulate as extensive a list of potential failure modes as possible. Under the FMEA method, the extent of perceived external threats (i.e., risks) can be estimated by use of 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 organisation.

$$\text{Risk Priority Numbers (RPN)} = \text{Severity} \times \text{Probability of Occurrence} \times \text{Likelihood of Detection}$$

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 FMEA has been used widely in Six Sigma profession, Koo and Koo (2007a) borrow the idea and applied this concept in calculating the perceived magnitudes of external threats and opportunities. The concept of SMEA is Koo and Koo's (2007a) innovation. The SMEA is a method to more scientifically 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 SMEA approach for quantifying the opportunities, the 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 organisation.

$$\text{Opportunity Priority Number (OPN)} = \text{Attractiveness Rating} \times \text{Probability of Occurrence} \times \text{Det \& Capability}$$

Attractiveness (ATT) indicates how attractive the opportunity is perceived.

Probability of occurrence (OCC) indicates how likely the opportunity is to occur.

Determination and capability (D&C) indicates the degree of commitment and the ability of the firm to realise 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, HN51, AIDS,...) become so horrifying is because they cannot be detected easily so that medical treatment can be applied earlier. 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 new opportunities could happen when the product is being used. RPN is obviously applicable in strategic formulation process to determine the extent of threats. The opposite of failure is success. Thus, the concept of 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). The third component 'D&C' is introduced to match that of 'DET'. The argument of incorporating 'D&C' 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 degrees of success in grabbing these opportunities. The underlying reason is the extent of 'D&C' of the concerned organisation 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.

7 Case study of ABC

The case study of ABC in adopting the FMEA/SMEA in its strategic formulation process is reported here. With three manufacturing facilities in Guangdong province employing

over 20,000 people, ABC specialises in mass production of a wide range of consumer products for world leading brands on an original equipment manufacturing (OEM) model and occupies a prominent role in the world's largest consumer product export region. In the early 90s, the world wide economic growth led to a huge demand for consumer products and the market expanded rapidly. ABC was largely an OEM supplier to some of the world's leading brand names and niche players in the consumer product industry, offering a 'one stop' service from product development to production. Customers continue to be attracted by ABC's reputation for quality, timeliness in delivery, service and cost-effectiveness. The operation maintained close contact and communication with customers. This enabled ABC to maintain a relatively high and attractive profit margin at that time. ABC was high in competitive strength. The industry itself was very attractive at that time, i.e., 80s and 90s. As the business is becoming more competitive in the recent years, it is vital to perform regular and scientific analysis for its strategic planning. The FMEA/SMEA scoring sheet for RPN/OPN for ABC is shown in Appendix 1. The final results from a scoring exercise by 19 senior executives from various departments of ABC are summarised in Tables 1 and 2 below. Positive (*italics*) numbers are OPN scores and negative are RPN. These external factors are not uncommon for manufacturers in China.

Table 1 Quantification of external factors by OPN (opportunities) for ABC

<i>Ref.</i>	<i>Probability of opportunities happening</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean of OPN</i>
T4	Increase complexity of consumer product features	19	-105	560	188
T2	Electronic IC technology trend	19	-175	640	128
Other2	Consumer product of the year for the different consumer product categories	19	9	504	92
T3	Resin material technology trend	19	-336	448	81
PS4	Availability of substitute suppliers/materials	19	-576	405	26

Table 2 Quantification of external factors by RPN (threats) for ABC

<i>Ref.</i>	<i>Probability of threats happening</i>	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean of RPN</i>
P2	Transfer pricing regulations	19	-800	90	-244
EC7	High PRC inflation rate	19	-900	-64	-279
EC1	Raw material prices fluctuation (plastic/crude oil, metal/copper)	19	-729	-32	-334
EC3	Increase of RMB exchange rates	19	-1,000	-45	-342
EC6	Increase of labour cost (PRC wages increase, HK and PRC taxation policy, PRC social insurance policy, etc.)	19	-900	-64	-370

The management team of ABC also determines the internal strengths and weaknesses collectively and democratically in the form of focus group discussions. Using a Likert scale from 1 to 10 (1 being the least important, and 10 being the most important), the internal factors were scored by members of the management team in terms of importance. Those internal factors perceived to be less important are eliminated. Those remaining

are key internal factors. The team then rates the performance in a Likert scale of 1 to 10 (i.e., 10 being the best performed item). Those key internal factors which are perceived to have performed well are 'strengths' of ABC (Table 3) and those with low performance scores are the 'weaknesses' of ABC (Table 4).

The SWOT matrix matches the external factors with the internal factors. The positive impacts from favourable factors (strengths and opportunities) are maximised and the negative influences from unfavourable factors (weaknesses and threats) are minimised. Table 5 outlines the key strategies or tactics that ABC should adopt.

Table 3 Internal strengths of ABC

<i>Internal factors (strengths)</i>		
<i>KIF ref.#</i>	<i>Key internal factors</i>	<i>Performance mean score</i>
K01	Deliver products on schedule	8.0
L04	Provide customer quality products	7.7
Z01	Customer satisfaction	7.4
E01	Customer return claims	7.2
A01	Control the gap between estimated cost and product standard	7.1

Table 4 Internal weaknesses of ABC

<i>Internal factors (weaknesses)</i>		
<i>KIF ref.#</i>	<i>Key internal factors</i>	<i>Performance mean score</i>
J06	Optimise material authorisation (MA) balance	5.7
C03	Control of MA purchase consumption	5.7
P02	Control of NPAT budget	5.7
J02	Optimise the slow moving stock	5.4
J03	Material planning and control	5.3

Table 5 Strategies from SWOT analysis for ABC

<i>(Maxi – mini) strengths – threats</i>	
A	Reduce impact of inflation by good product costing
B	Reduce raw material wastage by good quality control and cost control
C	Reduce RMB impact by good product costing
D	Reduce overtime by good production planning
<i>(Maxi – maxi) strengths – opportunities</i>	
E	To strive for complex consumer product orders by good production planning, quality control, customer service and product costing
F	To strive for electronic orders by good production planning, quality control, customer service and product costing
G	To strive for consumer product of the year orders by good production planning, quality control, customer service and product costing
H	Use new resin material in view of the low customer return claims
I	Try out substitute suppliers/materials in view of the low customer return claims

Table 5 Strategies from SWOT analysis for ABC (continued)

<i>(Mini – maxi) weaknesses – opportunities</i>	
J	To strive for complex consumer product orders so as to improve NPAT
K	Reuse the electronic IC in MA balance and slow moving stock
L	Use volume to request suppliers to implement vendor manage inventory (VMI) so as to reduce material purchase
M	Reuse Resin Materials in MA balance and slow moving stock
N	Use bargaining power to request suppliers to implement VMI so as to reduce our MA balance and material purchase
<i>(Mini – mini) weaknesses – threats</i>	
O	Review the transfer pricing structure in view of the weak NPAT
P	Review location of factories in view of the weak NPAT
Q	Minimise the purchase and control of in-house raw materials
R	Minimise material purchase in RMB
S	Review the business model of in-house production vs. outsourcing

8 Blue ocean strategy

BOS aims to help organisations create uncontested market space and to make the competition irrelevant. Kim and Mauborgne (2005) believe that in today's overcrowded industries, competing head-on resulted in a bloody 'red ocean' of rivals fighting over a shrinking profit pool. The 'ocean' refers to the market or industry. 'Blue oceans' are untapped and uncontested markets, which provide little or no competition for anyone who would dive in, since the markets are not crowded. A 'red ocean', on the other hand, refers to a saturated market where there is fierce competition, already crowded with companies providing the same type of services or producing the same kind of goods. An essential concept is that the innovation must raise and create value for the market, while simultaneously reducing or eliminating features or services that are less valued by the current or future market. Kim and Mauborgne (2005) argue that while most companies compete within such 'red oceans', red ocean strategy is becoming unlikely to create profitable growth in the future.

The strategy canvas is both a diagnostic and an action framework for building a compelling the BOS (Kim and Mauborgne, 2005). It helps capture the current known market space, including the understanding of:

- where the current competition is
- what the factors the industry currently competes on
- what customers can receive from the existing competitive offerings on the market.

The value curve, the basic component of the strategy canvas, is a graphic depiction of a company's relative performance across its industry's factors of competition. To fundamentally shift the strategy canvas of an industry, the company must start re-orienting its focus from competitors to alternatives and from customers to non-customers of the industry. Strategy canvas is a term coined by Kim and Mauborgne,

(2005) in developing a BOS. It is an analytic tool to visually highlight the values of key attributes among various competitors. Strategy canvas maps can:

- 1 depict factors (both existing obvious and potential hidden) that affect competitiveness and help portray the outline of strategic framework
- 2 display the strategic framework of current and potential competitors showing foci of strategic investments
- 3 illustrate the value curves and help suggest how resources should be deployed to enhance competitiveness.

Kim and Mauborgne (2005) developed the four actions framework to reconstruct a new value curve. The four actions are:

- 1 to reduce factors that are well below the industry's standard
- 2 to eliminate factors that the industry takes for granted
- 3 to raise factors that are well above the industry's standard
- 4 to create factors that are new to the industry.

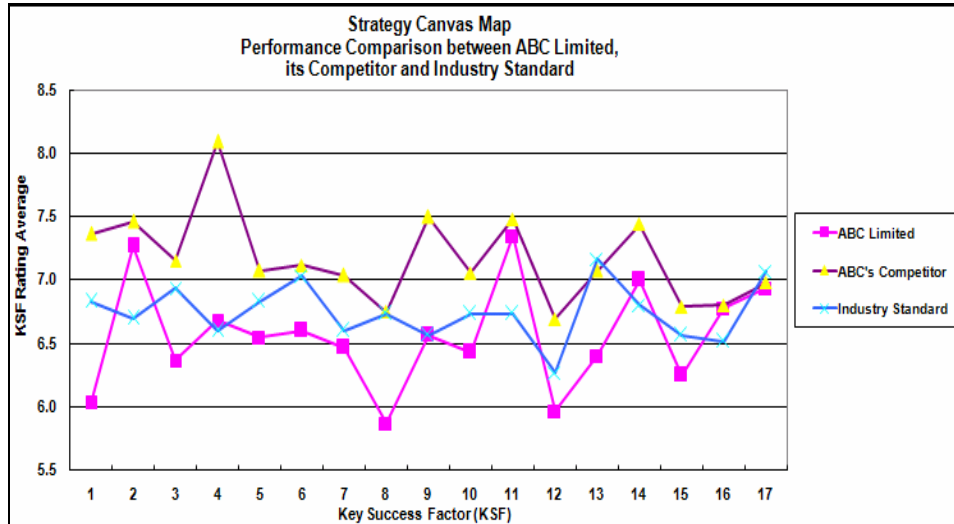
This is an approach used in the BOS formulation process. It addresses the following four issues:

- Which elements commonly reckoned to be important in the industry should be eliminated?
- Which elements should be reduced to be below the industry norms?
- Which elements should be increased to be above the industry norms?
- Which previously non-existent elements in the industry should be created?

The four action framework helps create new value curve in the strategic canvas. BOS provides a systematic approach to making the competition irrelevant. There are four principles that every company can use to successfully formulate blue ocean strategies:

- 1 to reconstruct market boundaries
- 2 to focus on big picture, not the numbers
- 3 to reach beyond existing demand
- 4 to get the strategic sequence right (Kim and Mauborgne, 2005).

In the wake of sustained difficulty in the consumer product market, ABC decides to explore some innovative measure to breakthrough the prevailing doldrums through deploying BOS. The management develops a checklist (Appendix 2) to collect opinions and suggestions from the management team. Figure 1 is ABC's strategy canvas map depicting their relative positions vis-à-vis its key competitor and the industry norm.

Figure 1 Strategy canvas for ABC (see online version for colours)

9 Conclusions

The case example of ABC has been used to illustrate how three powerful strategic tools, viz., BSC, SWOT and BOS have been fused effectively and seamlessly as a new holistic strategic formulation technique which should have wide applications in many organisations. The BSC in its four perspectives (i.e., financial, customer, process and learning and growth) provides a framework to determine key performance indicators which is used to monitor strategic implementation. FMEA and SMEA are used to systematically determine the magnitude of external factors. The process of strategic formulation can facilitate innovation, enhance mutual understanding, bridge communication gaps and develop team cooperation. The process of discussion and deployment of scoring sheets are democratic and fair. The SWOT matrix is used to synthesise and analyse the internal and external factors. It is recommended that SWOT analysis should be conducted as least once every year. The SWOT analysis findings can facilitate budget planning and to provide an opportunity for the management team to critically review the business environment.

BOS should be adopted when crisis or major problem emerges and the company need to search for innovative ideas. The four action framework is a systematic way for the management team to rethink their situations by asking a series of insightful questions.

This new holistic model is called the 'BSB model' (acronym for the three traditional strategic tools that make up the model). The BSB approach has the following EFFECTIVE advantages:

- *Effective integration of BSC, SWOT and BOS to yield synergetic benefits*
- *Flexible to adapt to changes in external challenges*
- *Fair and open approach during the development stage*

- Easily understood by all concerned within the organisation
- Communication enhancement within the organisation
- Team-based approach to ensure smooth implementation of strategies
- Imbedded opportunities to clarify different views to avoid misunderstanding
- Very simple and easy to apply, as no sophisticated mathematics is needed
- Examining and quantifying the real internal and external factors systematically.

References

- Bassioni, H.A., Price, A.D.F. and Hassan, T.M. (2005) 'Building a conceptual framework for measuring business performance in construction: an empirical evaluation', *Construction Management and Economics*, June, pp.495–507.
- Beiman, I. and Sun, Y-L. (2003) *Balanced Scorecard and Strategy Execution: Applications in China*, China Machine Press, Beijing, ISBN 7-111-12911-3.
- Bell, R.R. and Elkins, S.A. (2004) 'A balanced scorecard for leaders: implications of the Malcolm Baldrige National Quality Award Criteria', *Sam Advanced Management Journal*, Winter, pp.12–17.
- Brown, J.B. and McDonnell, B. (1995) 'The balanced scorecard: short-term guest or long-term resident?', *International Journal of Contemporary Hospitality Management*, Vol. 7, No. 2, pp.7–11.
- Crow, K. (2002) *Failure Modes and Effects Analysis (FMEA)*, accessed on 26 March 2007 available at <http://www.npd-solutions.com/fmea.html>.
- Crowe, T.J. and Cheng, C-C. (1996) 'Using quality function deployment in manufacturing strategic planning', *International Journal of Operations and Production Management*, Vol. 16, No. 4, pp.35–48.
- Feurer, R. and Chaharbaghi, K. (1997) 'Strategy development: past, present and future', *Training for Quality*, Vol. 5, No. 2, pp.58–70.
- Gadd, K.W. (1995) 'Business self-assessment a strategic tool for building process robustness and achieving integrated management', *Business Process Management Journal*, Vol. 1, No. 3, pp.66–85.
- Gumbus, A. and Lussier, R.N. (2006) 'Entrepreneurs use a balanced scorecard to translate strategy into performance measures', *Journal of Small Business Management*, Vol. 44, No. 3, pp.407–425.
- Haworth, J. (2008) 'Measuring performance', *Nursing Management*, June, Vol. 15, No. 3, pp.22–28.
- Hendricks, K., Menor, L. and Wiedman, C. (2004) 'The balanced scorecard: to adopt or not to adopt?', *Ivey Business Journal*, November/December, pp.1–7.
- Hepworth, P. (1998) 'Weighting it up – a literature review for the balanced scorecard', *Journal of Management Development*, Vol. 17, No. 8, pp.559–563.
- Hu, Q. and Huang, C.D. (2006) 'Using the balanced scorecard to achieve sustained IT-business alignment: a case study', *Communications of AIS*, Vol. 17, Article 8, pp.2–45.
- Humphrey, A.S. (2005) *SWOT Analysis*, available at <http://www.businessballs.com/swotanalysisfreetemplate.htm>.
- Ip, Y.K. and Koo, L.C. (2004) 'BSQ strategic formulation framework a hybrid of balanced scorecard, SWOT analysis and quality function deployment', *Managerial Auditing Journal*, Vol. 19, No. 4, pp.533–543.

- Kaplan, R.S. and Norton, D.P. (1996) *The Balanced Scorecard: Translating Strategy into Action*, Harvard Business School Press, Boston, ISBN 0-87584-651-3.
- Kaplan, R.S. and Norton, D.P. (2001) *The Strategy-focused Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*, Harvard Business School Publishing Corporation, Boston, ISBN 1-57851-250-6.
- Kaplan, R.S. and Norton, D.P. (2004) *Strategy Maps: Converting Intangible Assets into Tangible Outcomes*, Harvard Business School Publishing Corporation, Boston, ISBN 1-59139-134-2.
- Kim, W.C. and Mauborgne, R. (2005) *Blue Ocean Strategy: How to Create Uncontested Market Space and Make Competition Irrelevant*, 1st ed., Harvard Business School Publishing Corporation.
- Koo, L.C. and Koo, H. (2007a) 'Evolution of a structural approach to scan external environment', *Asia International Open University (Macau) Journal*, No. 10, pp.68–74.
- Koo, L.C. and 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*, Vol. 3, No. 1, pp.62–78.
- Koo, L.C. (1997) 'Improving quality service through balanced scorecard', *The 2nd International Conference on Quality and Reliability, Transactions of Nanjing University of Aeronautics and Astronautics, China (TNUAA)*, Vol. 15, No. 1, pp.147–153.
- Koo, L.C. (1998) 'Building balanced scorecard on the house of quality', *The 1st Industrial Engineering and Management (IEM) Symposium, Transformational Strategy Towards the 21st Century*, Hong Kong, 20–21 November.
- 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.
- Kotler, P. (2000) 'Marketing management: analysis, planning, implementation and control', Millennium ed., *International Series in Marketing*, Prentice-Hall, Englewood Cliffs, NJ.
- Lusk, E.J., Halperin, M. and Zhang, B. (2006) 'The balanced scorecard: suggestions for rebalancing', *Problems and Perspectives in Management*, Vol. 4, No. 2, pp.100–114.
- Noci, G. (1995) 'Accounting and non-accounting measures of quality-based performances in small firms', *International Journal of Operations and Production Management*, Vol. 15, No. 7, pp.78–105.
- Pandey, I.M. (2005) 'Balanced scorecard: myth and reality', *VIKALPA*, January–March, Vol. 30, No. 1, pp.51–66.
- Tan, B.L., Tang, N.K.H. and Forrester, P.L. (2004) 'Application of QFD for e-business planning', *Production Planning and Control*, December, Vol. 15, No. 8, pp.802–818.
- Wang, J-C. (2006) 'Corporate strategic management and business reengineering effort analyzed by the balanced scorecard model', *The Journal of American Academy of Business*, Cambridge, September, Vol. 10, No. 1, pp.102–109.
- Wehrich, H. (1982) 'The TOWS matrix – a tool for situational analysis', *Journal of Long Range Planning*, Vol. 15, No. 2, pp.54–66.
- Wehrich, H. (1999) 'Analyzing the competitive advantages and disadvantages of Germany with the TOWS matrix – an alternative to Porter's model', *European Business Review*, Vol. 99, No. 1, pp.9–22.

Appendix 1

Input sheet for RPN and OPN calculation

1	Rate opportunity's attractiveness on a +1 to +10 scale: (e.g., '+1' is least attractive, '+10' is most attractive) or Rate threat's severity on a scale -1 to -10 scale: (e.g., '-1' is least severe, '-10' is most severe)	(1) Rate opportunity's attractiveness (+1 to +10) or threat's severity (-1 to -10)	(2) Rate probability of occurrence (1-10)	(3) Rate capability to realise opportunity (1-10) or rate difficulty to detect threat (1-10)
2	Rate probability of 'occurrence' on a 1-10 scale: (e.g., '1' is least likely to occur, '10' is most likely to occur)			
3	Rate commitment and 'capability to realise' on a 1 to 10 scale: (e.g., '1' is low capability, '10' is high capability) or Rate 'difficulty to detect threat' on a 1-10 scale: (e.g., '1' is not difficult to detect, '10' is very difficult to detect)			

Macro-environmental factors (STEEP)

Social factors

- 1 Shortage of PRC labour supply
- 2 Higher consumer sentiment/expectation (US, PRC, EU, Japan)
- 3 Labour's better knowledge of legal rights

Technological factors

- 1 Instability of PRC electricity supply
- 2 Electronic IC technology trend
- 3 Resin material technology trend
- 4 Increase complexity of consumer product features

Economic factors

- 1 Raw material prices fluctuation (plastic, crude oil, metal/copper)
- 2 Increase of PRC electricity prices
- 3 Increase of RMB exchange rates
- 4 US Consumer Pricing Index
- 5 Increase of logistic cost
- 6 Increase of labour cost (PRC wages increase, HK and PRC Taxation Policy, PRC Social Insurance Policy, etc.)
- 7 High PRC inflation rate

Input sheet for RPN and OPN calculation (continued)

1	Rate opportunity's attractiveness on a +1 to +10 scale: (e.g., '+1' is least attractive, '+10' is most attractive) or Rate threat's severity on a scale -1 to -10 scale: (e.g., '-1' is least severe, '-10' is most severe)	(1) Rate opportunity's attractiveness (+1 to +10) or threat's severity (-1 to -10)	(2) Rate probability of occurrence (1-10)	(3) Rate capability to realise opportunity (1-10) or rate difficulty to detect threat (1-10)
2	Rate probability of 'occurrence' on a 1-10 scale: (e.g., '1' is least likely to occur, '10' is most likely to occur)			
3	Rate commitment and 'capability to realise' on a 1 to 10 scale: (e.g., '1' is low capability, '10' is high capability) or Rate 'difficulty to detect threat' on a 1-10 scale: (e.g., '1' is not difficult to detect, '10' is very difficult to detect)			
<i>Macro-environmental factors (STEEP)</i>				
<i>Environmental factors</i>				
1	Non-phthalate compliance			
2	WEEE and RoHS compliance			
3	Air pollution treatment			
4	Water treatment			
5	Implementation of new environmental regulation: European Union (EU): registration, evaluation, authorisation and restriction of chemicals (REACH)			
6	Implementation of new environmental regulation : EN-71 Part 9 (meeting of hazardous organic chemical compounds requirement)			
<i>Political/legal</i>				
1	Physically Handicapped Employment (Head tax)			
2	Transfer Pricing Regulations			
3	Implementation of 3C certification for consumer products in PRC			
4	List of prohibited/restricted category of processing trade			
5	Adjustment of the Tax Rebate Rates for certain goods			
6	Custom requirement on mould control			

Appendix 2*Input sheet for blue ocean strategy*

<i>The Four Actions Framework</i>	<i>Please select two factors as your answers to each question</i>
1a Which factors should be REDUCED well below the industry's standard?	
1a.1 The reporting system for some areas too complex	
1a.2 The expensive ERP system	
1a.3 Quality control (over-engineered)	
1a.4 HK Office facilities (too luxury)	
1b Which factors should be INCREASED (RAISED) to well above the industry's standard?	
1b.1 Cost control	
1b.2 Inventory control	
1b.3 Production planning	
1b.4 Actual cost analysis	
1c Which factors should be CREATED that the industry has never offered?	
1c.1 Products that help people at work	
1c.2 Products that help people at home	
1c.3 Products that help people at school	
1c.4 Products that help people while travelling	
1d Which of the factors that the industry takes for granted should be ELIMINATED?	
1d.1 Material authorisation (MA)	
1d.2 ODM business model	
1d.3 Free mould storage	
1d.4 Close out discounts	
2a What are the alternative industries available to our business?	
2a.1 Low price consumer electronics (LPCE)	
2a.2 Household products, e.g., RB	
2a.3 Industrial Park/Estate focus on providing services	
2a.4 Premium (non-consumer product)	
2b What are the other strategic groups available to our company within the consumer product industry?	
2b.1 OBM business model	
2b.2 Video games	
2b.3 Industrial Park/Estate – competitors as customers	
2b.4 Remote control cars/planes	

Note: The original form used by ABC is more detailed. Only four options under each heading are selected here below for illustration.

Input sheet for blue ocean strategy (continued)

<i>The Four Actions Framework</i>	<i>Please select two factors as your answers to each question</i>
2c	What are the other buyers group available to our business?
2c.1	Retailer from electronic industry
2c.2	Second-tier brand owner
2c.3	Licensors
2c.4	Schools
2d	Can we expand the scope of our products and/or services?
2d.1	Expand our product range to LPCE
2d.2	High tech
2d.3	OBM
2d.4	Branding/image building for customers
2e	Can we change the functional and/or emotional content of our products or services?
2e.1	Increase the functional content of our products – LPCE
2e.2	Design capability (build image/emotional content)
2e.3	Branding building as an emotional content for customers
2e.4	One stop service as an emotional content
2f	Instead of adapt to external trends, can we participate to shape the external trends?
2f.1	Introduce a new product like iPod, Wii, etc.
2f.2	Cooperate with local movie producers
2f.3	Consumer products for adults
2f.4	Cooperate with technology company for consumer products
<hr/>	
<i>Reach beyond the existing demand</i>	
<hr/>	
3a	Who are the border line customers in our business?
3a.1	Fxxxxxxx
3a.2	Bxxxx
3a.3	Wxxxxxx
3a.4	Rxxxxx
3b	Who are the reject customers?
3b.1	Mxxxxxx
3b.2	Wxxxxx
3b.3	Txxxxx
3b.4	Exxxxx

Note: The original form used by ABC is more detailed. Only four options under each heading are selected here below for illustration.

Input sheet for blue ocean strategy (continued)

<i>The Four Actions Framework</i>	<i>Please select two factors as your answers to each question</i>
<hr/>	
<i>Reach beyond the existing demand</i>	
<hr/>	
3c	Who are the undiscovered customers?
3c.1	Middle East market
3c.2	Competitors
3c.3	Bxxxx
3c.4	Hxxxx

Note: The original form used by ABC is more detailed. Only four options under each heading are selected here below for illustration.