回歸十年的回顧與展望

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Strategies for Macau's Development

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Abstract: Following the emergence of the financial tsunami in 2008, the world at large has experienced unprecedented turbulent challenges. In this respect, Macau has also been severely hit by the economic turmoil. Despite its spectacular economic growth led by the gaming industry since the sovereignty handover to China in 1999, it is time for Macau government administration to review its current situation and the surrounding environment critically and to formulate effective strategies for Macau's future development. This paper adopts a systematic and structural approach to examine Macau's strengths and weaknesses and to scan its external opportunities and threats. The Strengths, Weaknesses, Opportunities, and Threats (abbreviated as SWOT) analysis is a popular tool to formulate strategies for business organizations. SWOT analysis can also be adopted by the government to develop its strategies. An innovative way to quantify the extent of perceived opportunities and threats is introduced in this paper. This contemporary strategic formulation approach is modified from a well established quality management tool, i.e. the Failure Mode and Effects Analysis (FMEA). The internal factors i.e. its Strengths and Weaknesses are systematically and structurally gauged using a Likert scale of 0 to 10 (i.e. 0 representing least important or least well performed, … , 10 representing most important and best performed.). Following the matching of internal factors with the external factors in the SWOT analysis, a list of meaningful responses are identified as possible strategies for the Macau SAR Government. The SMART (acronym for: Specific, Measurable, Achievable, Result-oriented, and Time-bound) strategic objectives are devised accordingly. This SWOT analysis is simple to use and yet powerful and flexible in responding to changes in external environment and should be useful to organizations both in the commercial sector and government departments.

Key words: Macau; SWOT Analysis; Failure Mode and Effects Analysis (FMEA); SMART strategic objectives

Strategic formulation and implementation

Undoubtedly, successful strategic formulation and implementation are the key responsibilities for top executives in any business organization. The same is true for government officials who are responsible for setting policies for the well being of the people. Strategy formulation is about analyzing existing and desired statuses and then deciding the most effective means (hows) to achieve the respective objectives (whats). It is usually 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 organization (Weihrich, 1982, 1999). External factors are those issues that cannot be influenced by the concerned entity and yet the entity is being affected by them. On the other hand, internal factors are those issues that the concerned entity can change, control, and manipulate. The failure and success of an entity is closely related to how well the strategies are developed, implemented and controlled. No matter how well the strategies are, they are not worth the paper on which they are written unless they are implemented. Equally, it is important to monitor and control the progress of strategy implementation to ensure the strategies are not derailed, as the external and internal factors may change over time.

In the business sector, there are a wide range of different approaches to strategic development, e.g. Profit Impact of Marketing Strategy, ADL life-cycle Matrix, BCG Matrix, McKinsey's GE Matrix, Porter five forces, McKinsey's 7S, SWOT, Quality Function Deployment, Balanced Scorecard, Blue Ocean Strategy, BSQ Model; BSB Model (Feurer et al.,1997; Kaplan & Norton, 1996, 2001, 2004; Koo, 1997, 1998; Weihrich, 1982; Crowe et al., 1996; Kim and Mauborgne, 2005; Ip and Koo, 2004; Koo, Koo, and Luk, 2008). Feurer et al. (1997) define strategy as the determination of the basic objectives of an organization and the adoption of courses of action and the allocation of resources necessary for carrying out these objectives. Put simply, strategy is the means to achieve important and long term corporate objectives. It is vitally essential to set objectives for strategies. A meaningful objective has to be: Specific,

Measurable, Achievable, Result-oriented, and Time-bound (i.e. SMART). A good strategic formulation approach should be DIFFERENT, i.e.:

- **D**emocratic
- **I**nformative
- **F**lexible
- **F**ocused
- **E**fficient
- **R**elevant
- **E**ffective
- **N**ifty
- **T**imely

SWOT Analysis

Weihrich (1982) first introduced the SWOT analysis (or TOWS) in the format of a matrix which matches the internal factors (i.e. the strengths and weaknesses) of a German car manufacturer with its external factors (i.e. opportunities and threats) to systematically generate strategies that ought to be undertaken by the company. Some years later Weihrich (1999) applied the SWOT to develop strategies for Germany. Thus SWOT can be applied to develop strategies for the business sector as well as for the public sector. Internal factors refer to those issues that can be controlled or manipulated by the organization.

In order to quantify the extent of perceived importance and performance of each of these internal factors, they can be rated collectively on a Likert scale of 0 (least important or least well performed) to 10 (most important or best performed). The measurements on perceived importance and performance produce a useful by-product, namely "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 (i.e. important yet poorly performed internal factors) are the more urgent it is for the organization concerned to improve on those attributes. The perceived performance gaps are the "areas for improvement" with quantifiable priority.

In order to determine the perceived key success factors (KSFs) for the organization, we can discard those internal factors which are perceived to be

relatively less important. Those remaining "important" internal factors are naturally the perceived key internal factors for the entity. Those which are rated subjectively as well performed internal factors are the perceived strengths and those which are rated to be less well-performed are the perceived weaknesses. These structurally determined perceived strengths and weaknesses can be used in the subsequent SWOT analysis.

Through a brainstorming exercise, the external factors relating to the Social, Technological, Economic, Environmental, and Political (i.e. STEEP) issues specific to the organization concerned can be identified. Those external factors which are favorable are termed opportunities and those which are unfavourable 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(ibid.)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 0 to 10. Opportunity ranking scores (i.e. product of the perceived success probability and attractiveness) and threat ranking scores (i.e. product of the perceived probability of occurrence and seriousness) can computed and rank sorted.

Sample of respondents

The questionnaires were longitudinally administered in September, 2008 and in February, 2009 to many classes of university students pursuing bachelor or master degree programs in Macau. A total of 513 completed questionnaires were collected. The demographic patterns of these respondents are:

Gender: 45.7 % (Male); 54.3% (Female)

Job type: 0.8% (Manufacturing); 44.3% (Service); 3.4%(Utilities); 4.4% (Government); 47.1% (Others)

Age: 73.8% (Less than 25 years); 20.7% (25-35 years); 3.9% (35-45 years); 1.6% (Over 45 years)

Working Experience: 33.2% (Less than one year); 56.6% (1- 10 years); 10.2%(Over 10 years)

The sample for this empirical study is a convenience sample, which has the advantage of ease of administration, low cost and high efficiency. Although it is a biased sample, it should still serve some useful purposes and the data collected represent the opinions of the better educated group of citizens in Macau. Before the respondents completed the questionnaires, the concepts of SWOT analysis, FMEA and SMEA and the related RPN and OPN were explained.

Multiple Linear Regression Analyses

The design of first part of the questionnaire (Appendix) has adopted a crude form of Balanced Scorecard.

- F1 to F6 resemble the Learning and Growth perspectives for a business organization;
- F7 to F17 are similar to the Operations perspectives;
- F18 to F26 correspond to the Customer perspectives; and
- F27 to F31 represent the Financial perspectives.

The perceived performances of F27 to F31 are the outcomes of an attractive and successful Government. In the following Multiple Linear Regression analyses, the perceived performance towards F27, F28, F29, F30, and F31 are each used as the dependent variables (the outcomes) and the perceived performance of F1 to F26 are used as the independent variables. Stepwise regression is adopted to eliminate those irrelevant causes. It must be mentioned here that these regression analyses are based on subjective perception only. Thus interpretation of the analysis results has to be careful. The R-square values (i.e. the coefficients of determination) representing the percentages that the dependent variables can be explained by the various respective independent variables, are also reported.

F27 (Macau as a world class casino city) as outcome variable (Coefficient of determination = 0.415):

F27 = 0.899 + 0.402F26 + 0.137F7 + 0.131F22 + 0.119F19 + 0.12F25

F26 (Service standards of casinos)

F7 (Clear Government policy)

F22 (Ferry service between Macau and Hong Kong)

F19 (Quality of Tourism service)

F25 (Good hospitality service)

F28 (Macau people having high quality of life) as outcome variable (Coefficient of determination = 0.402):

F28 = 0.233+ 0.261F26 + 0.172F5 + 0.146F19 + 0.125F11 + 0.12F21 + 0.088F15

F26 (Service standards of casinos)

F5 (Quality of higher education)

F19 (Quality of Tourism service)

F11 (Immigration policy against foreign workers)

F21 (Quality of infrastructure)

F15 (Social welfare system)

F29 (Macau being a renowned tourist city) as outcome variable (Coefficient of determination = 0.361):

F29 = 0.579 + 0.274F26 + 0.207F19 + 0.113F13 + 0.155F23 + 0.104F17

F26 (Service standards of casinos)

F19 (Quality of Tourism service)

F13 (Relation with Chinese Central Government)

F23 (Air service with other countries)

F17 (Order in the Society)

F30 (Macau as a city of business opportunities) as outcome variable (Coefficient of determination = 0.256):

F30 = 1.064 + 0.122F16 + 0.167F23 + 0.168F1 + 0.139F11 + 0.128F21 + 0.101F4

F16 (Effective use of land)

F23 (air service with other countries)

F1 (Quality of people)

F11 (Immigration policy towards foreign workers)

F21 (Quality of infrastructure)

F4 (Adaptability to different cultures)

F31 (People earn good income) as outcome variable (Coefficient of determination = 0.271):

F31 = 1.524 + 0.095F15 + 0.198F17 + 0.106F12 + 0.124F26 + 0.099F7 + 0.1F9

F15 (Social welfare system)

F17 (Order in the society)

F12 (Efficiency of Government Departments)

F26 (Service standards of casinos)

F7 (Clear government policy)

F9 (Appropriate tax system)

The foregoing multiple linear regression analyses provide much useful insight on the casual relationship between the significant leading indicators (screened from among F1 to F26) and the lagging indicators.(F27 to F31 individually). The various regression formulae can serve as useful reference information for the policy makers in Macau.

Extent of impact of external factors through FMEA and SMEA

In order to respond effectively to external environmental changes, we need to structurally and systematically ascertain the impact of external factors on the concerned entity. The Failure Mode and Effects Analysis (FMEA), a quality management tool used in manufacturing sector to predict and manage risks, is used in this study to estimate the extent of threats (i.e. an index known as Risk Priority Number (RPN) can be computed). For the measurement of extent of opportunities, an innovative parallel concept termed Success Mode and Effects Analysis (SMEA) is proposed with its related Opportunity Priority Number (OPN). Instead of simply identifying the opportunities and threats, Koo and Koo, (2007a) suggest to use FMEA to quantify the extent of perceived external threats and adopt the use of SMEA to measure the extent of external opportunities. FMEA and SMEA can quantify the magnitudes of impact of threats and opportunities to reveal the key external factors. In the context of quality management, FMEA is commonly used to identify potential failure modes in product planning and 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 product 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 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.

Risk Priority Numbers (RPN)

= Severity x Probability of Occurrence x Likelihood of detection

= SEV x OCC x DET

- *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 by Six Sigma experts, Koo and Koo (2007a) borrow the idea and applied this concept in estimating the perceived magnitudes of external threats and opportunities. The concept of Success Mode and Effects Analysis (SMEA) is Koo and Koo's 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 Success Mode and Effects Analysis (SMEA) approach for quantifying the opportunities, the Opportunity Priority Number (OPN) can be subjectively ascertained. 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

= ATT x OCC x D&C

- *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 advantages of RPN and OPN over the Kotler's approach are the addition of a third factor. In the case of RPN the inclusion of "Detectability" for risks (or threats) is obvious. The fact that many terminal diseases (e.g. cancer, heart attack, H5N1, 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 obvious 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). The third component 'determination and capability' is introduced to correspond to 'likelihood of detection'. The argument of incorporating 'determination and capability' in calculating the OPN is because opportunities are external factors. When opportunities occur (e.g. economic development, new government policies,...) all companies are equally aware of them and yet they have different degree of success in realizing these external opportunities. More often than not, the underlying reason is the degree 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.

The SWOT matrix matches the external factors with the internal factors. Positive impact from favourable factors (S -strengths and O -opportunities) are maximized and negative influences from unfavourable factors (W -weaknesses

and T -threats) are minimized. These are depicted in Table 5 as: maxi-maxi SO; mini-maxi WO; maxi-mini ST; and mini-mini WT. It is better to label each strength, weakness, opportunity, and threat as S1, S2, S3, ... for different strengths; O1, O2, O3, ... for the various opportunities; and so on. In the maxi-maxi SO quadrant, S1S2S3S4S5O1 represents the outcome (i.e. action item that the Macau Government should undertake in the light of the prevailing circumstances) from matching strengths S1, S2, S3, S4, S5 and opportunity O1. This kind of matching continues for the remaining of all internal and external factors, with similar possible action outcomes generated in the respective quadrants in the SWOT analysis matrix. The reasons why SWOT matches internal factors with external factors are obvious. Firstly, matching external factors (e.g. opportunities and threats) are meaningless as both are beyond the control of the entity concerned. Secondly, internal factors (i.e. strengths and weaknesses) are not matched among themselves because in the absence of specific external stimuli, the improvement direction for future development is purposeless.

Survey instrument in this empirical study

The questionnaire comprises of three parts (see appendix). The first part contains 31 internal factors for the Macau Government. The 513 respondents are asked to rate their perceived importance of each these elements in making Macau an attractive and successful city on a Likert scale from 1 to 10 ("1" being the least important, ... , and "10" being the most important). They are also required to rate their perceived performance by the Macau Government on a similar Likert scale ("1" being the least well performed, ... , and "10" being the best performed). A useful by-product (i.e. the perceived Performance Gap) can be computed. The Performance Gaps are operationally defined as the difference between the perceived importance and the perceived performance. The larger the performance gaps (i.e. important and yet ill-performed issues) the more urgent is for the Macau Government to improve. The key perceived performance gaps are listed in Table 3 below.

The second part of the survey questionnaire consists of 13 external factors which may affect Macau. For each of these 13 external factors the respondents are asked to rate their perceived extent of impact on Macau as an attractive and

successful city. The rating scores ranges from -10 (i.e. most negative impact), ..., 0 (no impact at all), ... +10 (most positive impact). The second column of the questionnaire measures the perceived probabilities of the respective threats (negative external factors) or opportunities (positive external factors) from occurring. The third column is slightly more complex. The respondents are asked to rate on a Likert scale from 0 to 10 their perceived ease of detection for the negative external factors and the perceived determination & capability of the Macau Government in realizing the concerned opportunities. The original RPN in the FMEA has a range from 1 to 1000., with the lowest score of "1" for each of these three components. In this study a "0" score is allowed. The respective values from each of these three columns are multiplied together to derive the OPN and RPN which are illustrated in Table 4 below. Positive numbers in the last column in Table 4 refer to OPN (Opportunity Priority Numbers) and negative numbers refer to RPN.(Risk Priority Numbers). The larger the OPN the more likely they are 'genuine' opportunities for Macau (see bolded portion in table 4). Similarly the larger the RPN (in negative values) the more likely that these are the 'real' threats for Macau (they are italicized in Table 4). These structurally revealed Opportunities and Threats are used in the SWOT matrix (see Table 5).

The last part of the questionnaire is about the demographic details of the respondents. As the survey is done on an anonymous basis, details about some basic personal characteristics like gender, job type, age, and working experience are collected. These demographic data could allow further statistical analyses (e.g. Independent samples T-test or One-way ANOVA) to discern if different respondent groups have views that are different from the others.

Results of the questionnaire survey

Internal strengths and weaknesses of Macau

Table 1 depicts the summary results of the internal factors as perceived by the 513 respondents. Strictly speaking the Likert scales are ordinal data (discrete data) and statistical manipulation is restricted. In order that the results can be analyzed inferentially, they are treated as if they are continuous data. Table 1 lists the means of perceived importance in descending order together with the corresponding perceived performance and perceived performance

gaps. The top 12 most important internal factors are bolded and will be used in the SWOT analysis. The relatively less important internal factors are ignored in the SWOT analysis.

Table 1: Listing of Internal factors in descending order of perceived Importance

Descriptive Statistics	Importance	Performance	Gap
f17_i Order in the Society	**9.20**	6.76	2.44
f8_i Clean government administration	**8.86**	4.70	4.16
f24_i Transportation system within Macau	**8.80**	5.14	3.66
f14_i Government understands the needs of people	**8.66**	5.29	3.37
f12_i Efficiency of Government Departments	**8.59**	4.80	3.79
f3_i Quality of Macau Government administration	**8.59**	5.49	3.10
f19_i Quality of Tourism service	**8.58**	6.06	2.52
f31_i People earn good income	**8.55**	5.88	2.68
f13_i Relation with Chinese Central Government	**8.53**	6.72	1.81
f7_i Clear government policy	**8.52**	5.09	3.43
f25_i Good hospitality service	**8.36**	6.60	1.76
f29_i Renowned tourist city	**8.32**	6.00	2.32
f15_i Social welfare system	8.26	5.96	2.31
f16_i Effective use of land	8.25	4.86	3.39
f10_i Support from Government to promote business diversification	8.25	5.63	2.63
f18_i Adequacy of Tourist attraction	8.25	6.21	2.04
f1_i Quality of people	8.24	5.62	2.62
f2_i Friendliness of Macau people	8.19	6.04	2.15
f30_i A city of business opportunities	8.18	5.50	2.68
f26_i Service standards of casinos	8.17	6.54	1.63
f20_i Adequacy of infrastructure	8.16	5.73	2.44
f27_i World class casino city	8.12	6.65	1.47
f23_i Air service with other countries	8.10	5.90	2.20
f5_i Quality in higher education	8.09	5.43	2.67
f6_i Adequate supply of work force	8.04	5.24	2.80
f21_i Quality of infrastructure	7.93	5.82	2.11

f9_i Appropriate tax system	7.87	6.15	1.72
f28_i High quality of life	7.76	5.54	2.22
f11_i Immigration policy towards foreign workers	7.73	4.50	3.23
f22_i Ferry service between Macau and Hong Kong	7.61	6.88	0.73
f4_i Adaptability to different Cultures	7.12	5.51	1.61

Order in the society comes top on the list as the most important internal factor for Macau. This is natural as Macau did experience a period of social unrest and disorder prior to the sovereignty handover in 1999. For a tourist city, good order in the society is of vital importance and in this respect; it is encouraging to note that the perceived performance in this respect is also the highest. The other important internal factors for the Macau Government are: Clean Government administration; Transportation system within the city; Government understands the needs of people; and Efficiency of Macau Government Departments.

Table 2: Listing of Internal factors in descending order of perceived Performance

Descriptive Statistics	Importance	Performance	Gap
f17_i Order in the Society	**9.20**	**6.76**	**2.44**
f13_i Relation with Chinese Central Government	**8.53**	**6.72**	**1.81**
f25_i Good hospitality service	**8.36**	**6.60**	**1.76**
f19_i Quality of Tourism service	**8.58**	**6.06**	**2.52**
f29_i Renowned tourist city	**8.32**	**6.00**	**2.32**
f31_i People earn good income	**8.55**	**5.88**	**2.68**
f3_i Quality of Macau Government administration	*8.59*	*5.49*	*3.10*
f14_i Government understands the needs of people	*8.66*	*5.29*	*3.37*
f24_i Transportation system within Macau	*8.80*	*5.14*	*3.66*
f7_i Clear government policy	*8.52*	*5.09*	*3.43*
f12_i Efficiency of Government Departments	*8.59*	*4.80*	*3.79*
f8_i Clean government administration	*8.86*	*4.70*	*4.16*

Table 2 contains only those 12 perceived important internal factors. Those factors with means scoring over 5.5 (the neutral value for "Performance") are perceived to be relatively well performed are reckoned as Strengths (bolded in Table 2) of Macau and those which scored below 5.5 in "Performance are perceived to be relatively less well performed and are the weaknesses (italicized in Table 2). There are six strengths and six Weaknesses. They will be used in the SWOT matrix.

Table 3: Listing of Internal factors in descending order of perceived Performance Gaps

Descriptive Statistics	Importance	Performance	Gap
f8_i Clean government administration	8.86	4.70	**4.16**
f12_i Efficiency of Government Departments	8.59	4.80	**3.79**
f24_i Transportation system within Macau	8.80	5.14	**3.66**
f7_i Clear government policy	8.52	5.09	**3.43**
f16_i Effective use of land	8.25	4.86	**3.39**
f14_i Government understands the needs of people	8.66	5.29	**3.37**
f11_i Immigration policy towards foreign workers	7.73	4.50	**3.23**
f3_i Quality of Macau Government administration	8.59	5.49	**3.10**
f6_i Adequate supply of work force	8.04	5.24	**2.80**

Table 3 outlines the perceived key areas for improvement (i.e. the perceived Performance gaps) for Macau Government. The performance gaps are listed in descending order. More in-depth studies should be made to diagnose each of these gaps. Top on the list is the demand for a clean Government with performance gap as large as 4.16! This empirical finding echoes the report by The Macau Post Daily (24th September, 2008) that Macau's perceived corruption level is worsening. Xia (2008) quoted Transparency International that while Macau's economy had grown explosively, its corruption perception index (CPI) score declined in 2008, meriting special attention. The Government should deploy independent agency to study if corruption is a factual issue or if this is merely a misconception by the people in Macau. In the latter case, more promotion of clean government image will be needed. Efficiency of Government departments and transportation within the city are also perceived

to be important issues to address seriously and urgently. Fourth urgent area for improvement is about clear government policy.

External opportunities and threats of Macau

Table 4 below describes the results of the second part of the survey questionnaire. The last column depicts the Opportunity Priority Number (OPN) shown in positive values and the Risk Priority Number (RPN) shown with negative values. The four external factors with the largest OPN are the "Opportunities (bolded in Table 4)" and the four external factors with the largest RPN are the "Threats (italicized in Table 4)". These Opportunities and Threats are then used in the SWOT analysis in Table 5.

Table 4: Listing of OPN and RPN in descending order

	A_ Impact	B_ Probability of occurrence	C: Detectability or D&C	*OPN/ RPN*
a_e2 Facilitated Individual Traveling (FIT) Scheme	**6.46**	**7.71**	**6.22**	**310**
a_e4 Economic development of China	**6.61**	**7.18**	**6.08**	**289**
a_e1 CEPA arrangement	**6.30**	**6.60**	**5.88**	**245**
a_e5 Economic development in Hong Kong	**4.52**	**6.16**	**5.33**	**149**
a_e6 Economic development in Taiwan	2.79	5.25	4.86	71
a_e7 Relationship between China and Taiwan	2.02	5.60	4.93	56
a_e10 US presidential election	0.93	5.79	4.46	24
a_e12 Appreciation of RMB	-1.28	7.26	4.96	-46
a_e11 Terrorism	-4.85	3.36	5.13	-84
a_e8 Oil price fluctuation	*-2.65*	*7.15*	*4.98*	*-94*
a_e9 Global warming	*-2.82*	*6.97*	*4.87*	*-96*
a_e3 Financial crisis due to sub-prime mortgages	*-3.97*	*6.30*	*5.20*	*-130*
a_e13 More regional countries liberalize gaming operations	*-5.48*	*6.55*	*5.13*	*-184*

SWOT analysis for the Macau Government

By now the needed ingredients for the SWOT analysis are ready. The internal factors (i.e. strengths and weakness from Table 2) and the external factors (i.e. opportunities and threats from Table 4) are description of the internal statuses and external situation respectively. The results of the matching are listed in the four separate quadrants (i.e. Maxi-Maxi SO; Mini-Maxi WO; Maxi-Mini ST and Mini-Mini WT). The outcomes are a list of action items.

Table 5: Proposed SWOT matrix for the Macau Government

SWOT	***Internal Strengths:*** **S1: Order in the Society** **S2: Good relation with Chinese Central Government** **S3: Good hospitality service** **S4: Good quality of Tourism service** **S5: Renowned tourist city** **S6: People earn good income**	***Internal Weaknesses:*** *W1: Unclean government administration* *W2: Inefficiency of Government Departments* *W3: Unclear government policy* *W4: Poor Transportation system within Macau* *W5: Government does not understand the needs of people* *W6: Poor Quality of Macau Government administration*
External Opportunities: **O1:FIT Scheme** **O2:Economy in China** **O3:CEPA arrangement** **O4:Economy in Hong Kong**	**Maxi-Maxi SO** S1S2S3S4S5O1 Establish a designated Office to promote FIT S2S3S4O2O3 Introduce incentive scheme to promote CEPA S1S5S6O2O4 Attract quality people from China and HK	**Mini-Maxi WO** W2W4O2O4 Invite investment from China and HK to improve transportation in Macau W1W2W6O2O3O4 Adopt Quality Management practice within Macau Government
External Threats: ***T1:Gaming liberalization in the region*** ***T2:Global Financial crisis*** ***T3:Global warming*** ***T4:Oil price fluctuation***	**Maxi-Mini ST** S1S2T1T2 Introduce policy to enhance diversification S2T3T4 Source energy supply from China S2T3T4 Review energy policy S3S4S5T1 Harmonize the gaming operations through facilitating competition	**Mini-Mini WT** W2W3T1 Review gaming policy W2W3W4T3T4 Review environmental legislation

Proposed strategies for the Macau Government with respective SMART objectives

The following are a list of possible strategies that the Macau Government can and should take. Without the support and participation of the senior government officials from the Macau Government in the strategic development, the following is still an academic exercise.

- Designated Office to promote FIT (Develop a marketing plan acceptable by the Macau and Chinese Governments to attract targeted FIT visitors by mid of 2009)
- Incentive scheme to promote CEPA (Establish a designated CEPA Unit to assist businesses to explore new opportunities under the CEPA scheme by second quarter 2009)
- Attract quality people from China and HK (Review existing expatriate policy to attract talents from Hong Kong by end of 2009)
- Invite investment from China and HK to improve transportation in Macau (Study the feasibility for attracting investment from China and Hong Kong by Sep. 2009)
- Adopt Quality Management practice within Government (A quality unit to be established within the government machinery by Sep., 2009)
- Policy to enhance diversification (Retain a consultant to study the issue by Oct., 2009)
- Source energy supply from China (Start the negotiation by mid of 2009)
- Review energy policy (Form a task force to review the energy issue by end of 2009)
- Harmonize the gaming operations through facilitating competition (Establish a statutory Gaming Association with representatives from all six concessionaries and the Government, by Mar., 2009)
- Review gaming policy (A comprehensive report to be completed by end of 2009)
- Review environmental legislation (A comprehensive report to be completed by end of 2009).

Should we first start with the some "predetermined" objectives and then work out the SWOT analysis under the constraint of the need to achieve these objectives? Or should we work out the SWOT analysis first under no predetermined constraint at all and then develop the SMART objectives for the strategies revealed from matching the internal and external factors? A pragmatic and rational approach should be hierarchical. For the strategies at the top level there should not be any pre-determined objectives which may otherwise restrict the needed organizational transformation in response to the changes in external environment. However when the top level strategies have been determined by the SWOT analysis, the subsequent SWOT analyses at lower levels should be guided by the top level strategic objectives. This will help align the efforts from all units within the entity to yield synergetic benefits. In conducting SWOT analyses at the lower levels, due considerations must be given to the top level objectives, i.e. in supporting the achievement of top level goals what internal strengths and weaknesses would the concerned units have and what external opportunities and threats would they face. Using this hierarchical approach, the utilization of resources and employee efforts can be aligned to reap synergetic benefits (Koo, 2007).

Conclusion:

This empirical study involving 513 respondents clearly illustrate the feasibility of deploying the concept of FMEA and SMEA in systematically and structurally prioritizing the Opportunities and Threats. The internal strengths and weaknesses can be similarly screened by means of a questionnaire. The rating of perceived importance and perceived performance of internal factors also produced a useful means to identify the performance gaps. SWOT was used by Weihrich (1999) as a tool to develop strategies for Germany. In this paper the Macau Government is the focus of study and the SWOT (or TOWS matrix as described by Weihrich, ibid.) has been quite substantially revised. The respective internal and external factors are carefully and structurally revealed. Ideally the strategic formulation exercise should involve the senior government officials. In addition to the quantitative analysis, some quality discussion sessions are desirable to enrich the quantitative findings. The SWOT (inter alia with the FMEA and SMEA, and the Importance vs.

Performance questionnaire) coupled with team discussion approach should have the following EFFECTIVE advantages:

- Effective use of massive public opinions using a questionnaire survey;
- Flexible to adapt to changes in external environment;
- Fair and open approach during the development stage;
- Easily understood;
- Communication enhancement for all concerned;
- 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.

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Appendix

Please rate the Importance and Performance standard of the following internal factors ofr Macau as a city of attraction / success on a scale of 1 to 10.

"1" denoting the least important and worst performed,...
and "10" denoting the most important and the best performed by Macau Goverment.

	澳門內部因素 Internal Factors	重要性 Importance	表現水平 Performance Standard
F1	市民的素質 Quality of people		
F2	市民的友善程度 Friendliness of Macau people		
F3	澳門政府機關的素質 Quality of Macau Government Administration		
F4	市民適應不同的文化的能力 Adaptability to different cultures		
F5	高等教育的素質 Quality of higher education		
F6	充足的人力資源供應 Adequate supply of work force		
F7	清晰的政府政策 Clear government policy		
F8	廉潔的政府 Clean Government Administration		
F9	適當的稅制 Appropriate tax system		
F10	政府對多元化發展的支援 Support from Government to promote business diversification		
F11	外地勞工的政策 Immigration policy towards foreign workers		
F12	有效率的政府 Efficiency of Government departments		
F13	與中國中央政府的關係 Relation with Chinese Central Government		
F14	政府了解市民所需 Government understands the needs of people		
F15	社會福利系統 Social welfare system		
F16	有效的土地資源應用 Effective use of land		
F17	社會治安穩定 Order in the Society		
F18	足夠的遊客景點 Adequacy of tourist attraction		
F19	旅遊服務的素質 Quality of tourism service		
F20	足夠的基礎設施 Adequacy of infrastructure		
F21	基礎設施的素質 Quality of infrastructure		
F22	港澳間的渡輪服務 Ferry service between Macau and Hong Kong		
F23	航空服務 Air service with other countries		
F24	市內交通 Transportation system within Macau		
F25	酒店的接待服務水平 Good hospitality service		
F26	娛樂場的服務水平 Service standards of casinos		
F27	世界級的博彩城市 World class casino city		
F28	高的生活質素 High quality of life		
F29	出名的旅遊坊市 Renowned tourist city		
F30	充滿商機的城市 A city of business opportunities		
F31	市民有理想的收入 People earn good income		

Please rate the following external factors that may affect Macau:

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

B: **Porbability** of enent 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**).

	影響澳門的外部因素 External Factors that affect Macau	**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 impactt (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
	評分的全區 Range of Scores	-10, -9,...,0, +9, +10	0, 1,....., 9,10	0, 1,.....9, 10
E1	緊密經濟合作協議安排 CEPA arrangement			
E2	自由行政策 Facilitated Individual Traveling (FIT) Scheme			
E3	次按引起的金融風暴 Financial crisis due to sub-prime mortagages			
E4	中國的經濟發展 Economic development of China			
E5	香港的經濟發展 Economic development in Hong Kong			
E6	台灣的經濟發展 Economic development in Taiwan			
E7	中國與台灣的關係 Relationship between China Taiwan			
E8	油價的波動 Oil price fluctuation			
E9	全球氣候的暖化 Global warming			
E10	美國總統大選 US presidential election			
E11	恐佈主義 Terrorism			
E12	人民幣升值 Appreciation of RMB			
E13	更多的國家開放博彩業 More regional countries liberalize gaming operations			

性別 Gender: **男 Male [ ]；** **女 Female [ ]**

工作類別 Job type: **制造業 Manufacturing [ ]；服務業 Service [ ]；**
公共事業 Utilities [ ]；政府部門 Government [ ]；其他 Others [ ]

年齡 Age: **Less than 25 yrs [ ]；25 - Less than 35 yrs [ ]；35 - 45 yrs [ ]；Over 45 yrs [ ]**

工作年數 Working experience: **0 - Less than 1 yrs [ ]；1 - 10 yrs [ ]；Over 10 yrs [ ]**