STRATEGIC MANAGEMENT PRACTISES IN CONSTRUCTION INDUSTRY: A MALAYSIAN EXPERIENCE

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Abstract:

This paper investigates the practices of strategic management by local construction companies in Malaysia. Strategic management is a concept that concerns with making decisions and taking corrective actions to achieve long term targets and goals of an organization. Although strategic management has until recently been a low-profile activity within many construction firms, it is now becoming more widely used by many large organizations that are allocating substantial resources to the task. Generally, strategic management practices can improve efficiency in various organizations - large and small, for profit and non-profit, private and public. Questionnaires were distributed to 300 large construction companies listed under G7 groups classified by the Construction Industry Development Board (CIDB). The response rate of the survey is 26% or 78 construction companies having replied. The findings of the research showed that most of the firms practicing strategic management have a clear objective, a winning strategy to achieve the objective and a sound mission statement to guide the organization towards success.

Keywords: **Construction Companies, Construction Industry, Malaysia, Performance, Strategic Management**

INTRODUCTION

The economic and business planning framework and priorities have shifted from the short term and tactical to the long-term and strategic (Betts et al., 1992) due to various factors including the particular challenges to the business environment (Benjamin et al., 1984) caused by the increase in global competition in various industries (Levit, 1993). Strategic management practice is an important practice as it gives a strong influence towards firms' success. The importance of strategic management in a firm can be answered by looking at the relationship between strategic management and organizational performance. Strategic management does give positive influence, especially in its profitability to the large firms (David, 1997).

In Japan, Japanese contractors have successfully out-thought construction firms in many markets in various parts of the world because of the attention they give to business strategy (Hasegawa, 1988). US banks show higher return on equity for banks which had both a strategic commitment to planning and provided regular strategic management training. Firms with good performance such as The Body Shop, Sony and Merck effectively exploit visionary strategies. Although strategic management has until recently been a low-profile activity within many construction firms, it is now becoming more widely used by many large organizations that are allocating substantial resources to the task (Price et al., 2003) and generally strategic management practices can improve efficiency in various organizations.

The application of strategic management in business for various sectors has long been adopted as a respond to market demand, variations in clients' taste and changing of technology. The adoption of a clear strategic perspective in organizations is one of the factors that affects the performance of these organisations. Having a good strategy is also one of the important factors that enable the organisations/firms to survive and go further. However, many large construction companies in Malaysia have yet to formalize the strategic process.

This paper investigates the practice of strategic management implementation in business strategies by the construction companies in Malaysia and its relationship with their company performance.

RESEARCH OBJECTIVES

The objectives of this paper are as follows:

1. to study the practices of strategic management in construction companies in Malaysia;
2. to determine how strategic management is being practiced; and
3. to study the impact of practicing strategic management by construction companies in Malaysia on their company's performance

STRATEGIC MANAGEMENT IN GENERAL

There are many definitions of strategic defined by various authors and according to Mintzberg et al. (1998) there is no single, universally accepted definition of strategy. The early definitions of strategy was provided by the American business historian, Chandler (1962) who defined strategy as a determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out those goals. In the context of construction, Channon (1978) defined strategy in terms of the extent of diversification, international activity and acquisition policy. Mintzberg (1994) portrays strategy as a plan – a direction, a guide or course of action into the future – and as a pattern, that is, consistency in behavior over time.

In terms of strategic management it can be defined as a set of managerial decisions and actions that determine the long-run performance of a corporation. It includes strategy formulation, strategy implementation, and evaluation and control (Wheelen and Hunger, 1984). It also can be defined as the art and science of formulating, implementing, and evaluating cross-functional decisions that enable an organization to achieve its objectives (David, 1997).

Strategic management has evolved into a more sophisticated and potentially more powerful tool (Stoney, 2001).The strategic management process requires competent individuals to ensure its success (Stahl and Grigsby, 1992). The top management of an organisation has responsibility to ensure firm success and overcome any competition that occurs. However, to be more effective, Wheelen and Hunger (2003) noted that people at all levels, not just top management, need to be involved in strategic management; scanning the environment for critical information, suggesting changes to strategies and programs to take advantage of environment shifts, and working with others to continuously improve work methods, procedures, and evaluation techniques.

STRATEGIC MANAGEMENT PROCESS

Strategic management is designed to effectively relate the organization to its environment. The environments include political, social, technological, and economic elements (Sharplin, 1985). Various strategic management models were introduced by Sharplin (1985), Greenley (1989), Certo and Peter (1991), Stahl and Grigsby (1992), David (1997), and also Hunger and Wheelen (2003). Table 1 shows some comparison of strategic management models by various authors. Even though it can be seen that each model of strategic management is different, the actions or activities that are involved are actually similar. Majorities of authors put strategy formulation, implementing organizational strategy and strategic control as focuses in their model. Planning strategy and environmental analysis phase are also important and most of the authors put this phase under the formulation phase (Stahl and Grigsby, 1992; David, 1997).

Generally, strategic management process can be divided into three phases, i.e., the formulation phase is a strategy that is aimed at ensuring organizations achieve their objectives (Certo and Peter, 1991). David (1997) stated that strategy formulation include deciding which business to pursue, how to allocate resources without hostile takeovers and whether to enter international markets. He also added that the strategy formulation phase comprises of development of a mission statement, identification of external opportunities and threats, determination of internal strengths and weaknesses, establishing long-term objectives, generating alternative strategies, and choosing the best strategy to be implemented. Secondly is the implementation phase that initiates activities in accordance to strategic plans (Sharplin, 1985). This requires firms to establish objectives, devise policies, motivate employees, and allocate resources to execute formulated strategies. Certo and Peter (1991) stated that without the effective implementation of strategy, organizations are unable to reap the benefits of performing an organizational analysis, establishing organizational direction, and formulating organizational strategy. Lastly is the evaluation and control phase that requires obtaining information on strategic performance and comparing it with existing standards (Certo and Peter, 1991). Evaluation is also done by reviewing current strategies, measuring performance and taking corrective actions. Strategy evaluation is needed because success today is no guarantee of success tomorrow. Success always creates new and different problems; complacent organizations tend to experience demise (David, 1997).

Table 1: Comparisons of Strategic Management Model by Various Authors

Phases	Authors					
	Sharplin, 1985 (Two Phases)	Greenley, 1989 (Four Phases)	Certo and Peter, 1991 (Five Phases)	Stahl and Grigsby, 1992 (Three Phases)	David, 1997 (Three Phases)	Hunger and Wheelen, 2003 (Four Phase)
Environmental Analysis		√	√			√
Strategy Formulation	√	√	√	√	√	√
Planning Strategy		√	√			
Implementing Organizational Strategy	√	√	√	√	√	√
Strategic Control Focuses			√	√	√	√

STRATEGIC MANAGEMENT IN CONSTRUCTION INDUSTRY

In construction there are many research carried out on strategic management practices including recent studies by Chinowsky et al. (2000), Dikmen and Birgonul (2003), Price et al. (2003) and Dansoh (2005). The traditional philosophy of management in construction emphasizes on the ability to plan and execute. According to Abu Bakar (2002) the management of the construction industry is important in order to improve its performance and increase the national Gross Domestic Product (GDP), since the construction industry contributes on average between 5 to 9% of GDP in developing countries. Stoner & Wankel (1987) stated that effective management must have a strategy and must operate on the day-to-day level to achieve it. Chinowsky et al. (2000) noted that while project management topics receive significant focus from construction professionals, less attention is paid to strategic management. However, according to Dikmen and Birgonul (2003), the need for a strategic perspective for construction companies has long been stressed by many researchers.

From time to time the ability of the construction industry to innovate and manage change has been widely debated by various authors including Lansley (1987), Gale and Fellows (1990), Betts and Ofori (1992) and Yisa et al. (1996). According to Yisa et al. (1996) the construction industry faces a continuous circle of changes in workload, work mix and the method of managing the change. Chinowsky et al. (2000) noted that the rapid advance of technology, communication, and market had made the global perspectives of time, distance and spatial boundaries changes. Betts and Ofori (1992) noted that while some construction firms have been very successful in responding to changing needs and opportunities, using technological innovation and contractual development to provide competitive advantage, others have failed by being static. Yisa et al. (1996) stated that the ability to distinguish between effective and ineffective construction firms in terms of how far management of change by any firm has enhanced the overall capability of the industry has been dependent on the ability of the clients. Furthermore, the desire for the firms to change has come more from a fear of being left behind by competitors than from a belief in the benefits of innovation (Burns and Stalker, 1961).

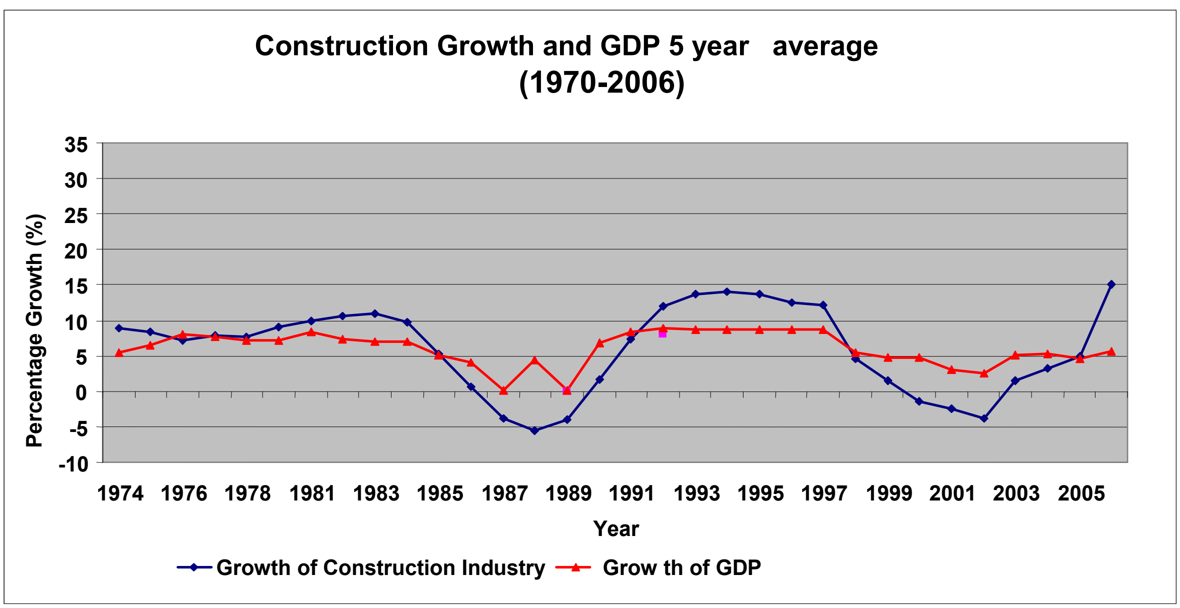
According to Prince and Newson (2003) to be successful, construction companies need to supplement their current short term approaches taken through improving organizational effectiveness with a more long term strategic approach. In his observation, Mulcahy (1990) found that a successful construction company is the company that applied clear objectives recognizing the markets' wishes to address, services it will provide, risks it will carry, structure it will use, the environment it will operate within, controls it will put in place and returns it wishes to achieve.

CONSTRUCTION INDUSTRY IN MALAYSIA

Generally, the construction industry is one of the world economy generators. It plays an important role in any country's development process and economic growth, especially for developing countries. As one of the developing countries, Malaysia has seen tremendous progress of the national Construction Industry since the 1980's in tandem with the growth of the National and World economy. This is inline with the Malaysian Government's endeavor to rapidly modernize the country to a fully developed status nation by 2020. Construction sector continues to be an essential element of the Malaysian economy, lending strength and capability to a host of economic sectors and supporting the social development of the country through the provision of basic infrastructure. However, various influencing factors have together presented sizeable challenges to the Malaysian construction industry's growth (CIDB, 2006).

The trend of growth (percent) for the Malaysian construction industry with economic growth (GDP) versus growth of the number of contractors can be seen more graphically in Figure 1 by taking 5 years moving average since 1970 until 2006. The growth of construction output generally follows the trend of the economy but the peaks and the troughs are more extreme. The output increase when economic growth strengthens and falls even lower when the economy weakens. Construction output is referred to as growth-initiating and growth-dependent (Drewer, 1980).

The construction industry grows at a faster rate than the economy during periods of rapid economic growth as seen in figure 1. During period of economic downturn the industry experience greater declines and remains in recession longer than the economy. This reflects the cumulative interaction of the multiplier and accelerated effects on demand for construction as a result of the changes in the economy. Hence, the construction industry's annual growth rates generally follow the growth trend of the economy, reflecting a positive correlation between construction output and GDP (CIDB, 2006). The return of a cyclical downturn in the business cycle is the second contributing factor to the industry's recent performance. While most businesses are subject to the ups and downs of a business cycle, the magnitude of the construction industry's fluctuation is almost typical.



*Note: No research in 1980
Source: CIDB 2000, Abu Bakar (1993)

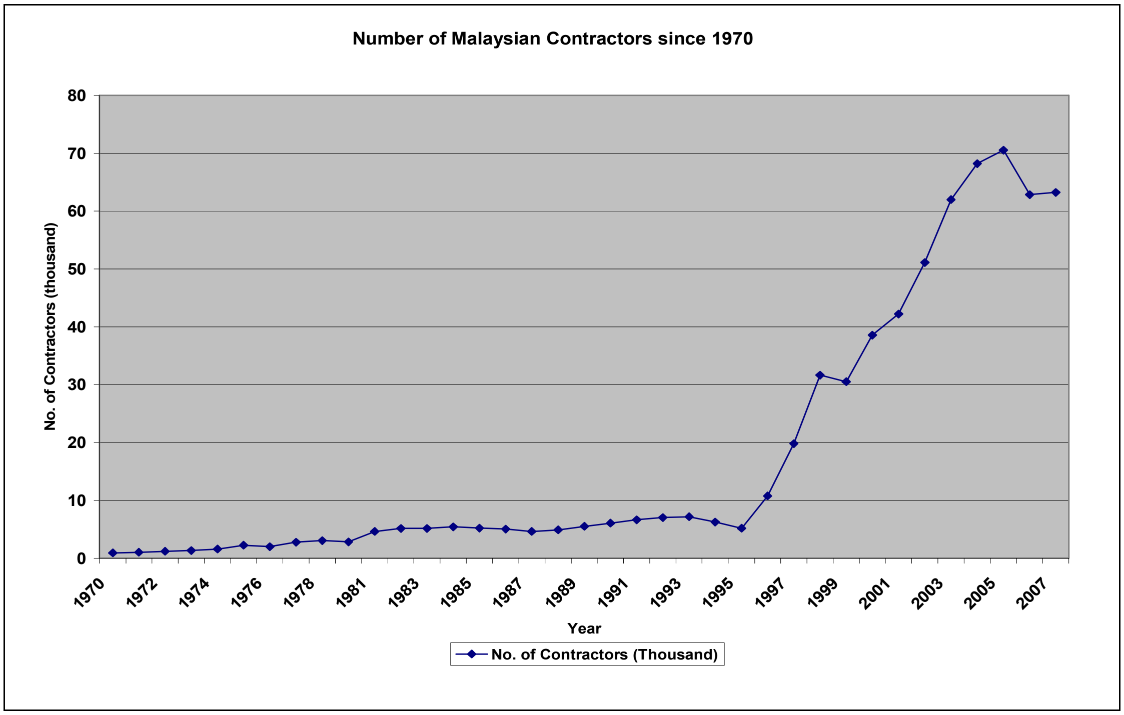
Figure 1: Graph of Construction Growth and GDP 5 years average since 1970-2006 (Malaysia).

The strong growth between 1981 and 1983 was sustained mainly by the public sector's expansion programmes in physical infrastructure and major policy transformations. (Abdullah et al, 2004). In stimulating the economy and revitalizing the construction industry, Abdullah et al (2004) found that the government promoted private sector investment in low-cost housing and revive housing projects which had been abandoned by the private sector during the recession.

MALAYSIAN CONTRACTORS

Statistic for 27 years show the number of contractors establishment in Malaysia increases by year as shown in figure 2. According to the Construction Industry Development Board (2001-2002), the total number of contracting firms active in the industry is very important because it determines the industry capacity. Based on figure 2 shows that the number of contractor has rising considerably. It can be seen that in early 70s there are around 1000 contractors meanwhile in 20 century the number increase about 50000.

From figure 2 also shows decreasing in the number of contractors due to the financial crisis in three economic downturns. For example, in 1999 the numbers of contractors decrease by 4%. This phenomenon could be due to the effect of financial crisis whereby registered contractors were dropping out and bankruptcy and also probably the contractor enter into other sectors.



*Note: No research in 1980

Source: CIDB 2000, Abu Bakar (1993)

Figure 2: Graph of Malaysian Contractors since 1970-2007

Recently, there were approximately 63,000 local construction companies in Malaysia that registered with CIDB. Generally, the lower ranking contractors, mainly G1, are very much driven by cost and have invested little to build up their specialization in niche areas. They mainly work as sub-contractors to the larger contractors. In the recent years, with the completion of mega-projects and subsequent economic prudence, local projects were insufficient to sustain the 70,000 odd contractors. Thus, many of the lower ranking contractors had left the industry (CIDB, 2006).

The failure rate of the construction companies in Malaysia is also high. Statistics show that the majority of the 8,927 companies that have declared bankruptcy in 2001 are construction companies (Jaafar et al., 2003) and the number of the bankruptcies is increasing each year (Insolvency Department, 2006).

RESEARCH METHODOLOGY

This study used survey method for collecting data where questionnaires were distributed as a prime source of getting primary data. The respondents of this study were those at the managerial level from large construction companies listed in G7 group classify under CIDB. Questionnaires were sending to 300 respondents using mail service. From 300 questionnaires disseminated to large construction companies in Malaysia, 78 or 26% of the completed questionnaires returned. Data collected was analyzed by using relevance statistical method such frequency; cross-tabulation, correlations and regression were carried out to establish findings. Beside that, the data were also analyzed using Relative Important Index (RII) for ranking purpose based on *Equation* (1) (Tam et al., 2000)

$$RII = \frac{\sum w}{An} \qquad (1)$$

Where w is the weight given to each factors by the respondent.

A is the highest weight, in this study A=4

n is the total number of sample.

RII is relative important index, $0 \leq RII \leq 1$.

The questionnaires were divided into 3 main parts as follows:

1) Part 1: *Respondent's Profile.* Questions on the respondent's profile such as the respondent's age, position in the firm and the length of time the respondent has been working in the previous firm.

2) Part 2: *Firm's Profile.* Questions on the firm's profile such as the firm's status, ownership and age, annual work done value, net profit estimation and the respondent's personal opinion on the firm's performance

3) Part 3: *Strategic Management*. Questions are designed to identify the strategic management practices in local contracting firms. There are seven variables that have been used in these studies including mission statement, external environment, internal environment, objectives, strategies, policies and strategic planning.

ANALYSIS

Respondent's Background

From the analysis, the job designations of respondents are mainly managing director (36%), project manager (19%) and managing officer (9%). In term of status of firm of respondents, 82% were from private limited, 9% come from partnership and only 6% were from public limited. In term of value of firm's annual work of respondents, 78% of the respondents were involved in projects worth more than RM 5, 000, 000 and 13% respondents were from projects worth between RM 2, 000, 001 - RM 5, 000, 000.

Strategic Management

1. Firm's Objective

Objective is important element to be considered in organization's strategy toward success. It is important because objective provides a clear direction, aids evaluation processes, creates positive competition, identifies priorities, enables coordination and sets a basis for planning, organizing, motivating and controlling activities. From table 1, majority of respondents (95%) stated that their firm had an objective in running their operations. Only 3% of respondents claim that they did not have an objective and 1% respondents were unsure.

Table 1: Firm's objective

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	74	94	94
	No	2	3	97
	Unsure	2	3	100
	Total	78	100	

2. Firm's Strategy

Strategy refers to a complete program used to achieve the long term objectives of an organization. Different strategies are used in different situations and performances of the firm. According to table 2, 77% or 60 respondents state that their firm is equipped with the strategy to achieve its objective, while only 13% respondents stated that they did not have a strategy and 10% respondents were unsure.

Table 2: Firm's Strategy

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	60	77	77
	No	10	13	90
	Unsure	8	10	100
	Total	78	100	

3. Firm's Mission

Table 3 showed that most of respondents (78%) had mission statement. Only 11 respondents or 14% claimed that they did not have mission and 8% respondent were unsure of their firm's mission. This shows that almost all respondents were aware of the importance of mission in their firm. It also can be seen that the number of firm that has mission was similar with the number of firm that have strategy, this probably because the strategy cannot be formed without a proper mission.

Table 3: Mission Statement

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	61	78	78
	No	11	14	93
	Unsure	6	8	100
	Total	78	100	

4. Planning in Written Plan in a Firm

Table 4 shows the number of firms that had and did not have a written form of planning. Majorities of respondents (67%) claimed that their firm incorporates planning in written form. It also can be seen that 24 respondents or 30% indicated that they did not have written plan and another 3% respondents are simply unsure. This indicates that 52 respondents performed formal strategic management while the rest performed informal strategic management.

Table 4: Written planning in a firm

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	52	67	67
	No	24	30	97
	Unsure	2	3	100
	Total	78	100	

Table 5 shows the cross tabulation analysis between firm's annual work done and written planning in a firm. From the table it can be seen that among the firms that had performed written plan, 45 or 87% of respondents were from projects more than RM 5 million. Also it can be seen that 6% of respondents that have a written plan involved in project between RM 500,001-2,000,000 and RM 2,000,001-RM 5,000,000. Among the firm which did not have written plan, 16 or 67% of respondents were from projects more than RM 5 million and 21% of respondents were from project 2,000,001-RM 5,000,000. On the whole, firms that practice written plan tend to involved in an annual work done average of more than RM5 million. It can be conclude that a firm that practices strategic management will receive contracts of higher values which generate higher profit for the firm.

Table 5: Cross tabulation between firm's annual work done and written planning in a firm

			Value of Work Done Annually				**Total**
			unsure	**RM 500,001-RM 2,000,000**	**RM2,000,001.00-RM5,000,000**	**More than RM5,000,000**	
Practice any form of written planning	Yes	Count	1	3	3	45	52
		% within Practice any form of written planning	2%	6%	6%	87%	100%
		% of Total	1%	4%	4%	58%	67%
	No	Count	3	0	5	16	24
		% within Practice any form of written planning	13%	.0%	21%	67%	100%
		% of Total	4%	.0%	6%	21%	31%
	Unsure	Count	0	0	2	0	2
		% within Practice any form of written planning	.0%	.0%	100%	.0%	100%
		% of Total	.0%	.0%	3%	.0%	3%
Total		Count	4	3	10	61	78
		% within Practice any form of written planning	5%	4%	13%	78%	100%
		% of Total	5%	4%	13%	78%	100%

5. The Firm Management Planner

Table 6 shows list of people that involve in management planning that can be divided into 4 main categories, which include self-planning, financial planning, employees and others. Based on table 5, most of respondents (41%) stated that the firm's plan was designed by their own. These respondents hold the position of managing directors and thus are in charge of the firm's planning. Besides that, 26% or 20 respondents stated that the management plan of their firm designed by financial planning, while 18% of the respondents claim others as planner.

Table 6: The Firm Management Planner

		Frequency	Valid Percent	Cumulative Percent
Valid	Self-planning	31	41	41
	Financial planning	11	15	56
	Employees	20	26	82
	Others	14	18	100
	Total	76	100	
Missing	System	2		
Total		78		

6. The Accuracy of Planning with the Firm's Real Operations

To measure the accuracy of planning with the firm's real operations, 4 categories were taken into consideration, that are 100% accurate, more or less 75% accurate, more or less 50% accurate and unsure. From table 7 it can be seen that most of respondents (64%) stated that the accuracy of their firm's plan with firm's real operation are more or less 75% accurate. This shows that planning in most of the firms is in line with the firm's operations, even though it is not 100% accurate. This is followed by more or less 50% category (28% respondents) and 4% of respondents were unsure. Three respondent or 4% claimed that their planning is 100% accurate with the firm's operations.

Table 7: The Accuracy of Planning with the Firm's Real Operations

		Frequency	Valid Percent	Cumulative Percent
Valid	100% accurate	3	4	4
	More or les 75% accurate	50	64	68
	More or less 50% accurate	22	28	96
	Unsure	3	4	100
	Total	78	100	

7. Firm sensitive to changes in its surroundings which creates the need for an internal and external analysis (SWOT)

According to table 8, most of respondents (68%) claimed that their firms were sensitive to the changes in their surroundings and regularly carried out a SWOT analysis. Besides that, 17 respondents or 22% stated that their firms were insensitive to the changes in their surroundings and did not perform a SWOT analysis, while 8 respondents or 10% were unsure.

Table 8: A firm is sensitive to changes in its surroundings which creates the need for an internal and external analysis (SWOT)

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	53	68	68
	No	17	22	90
	Unsure	8	10	100.0
	Total	78	100.0	

8. Firm's Strength

Table 9 shows the strength of the firms participated in the survey. By using Relative Important Index (RII), the strength can be rank accordingly. In term of importance, good client relationship ranked 1. Follow by excellent image and reputation, strong financial position, efficient organization structure and so on as shown in table 9.

Table 9: Ranking of Firm's Strength

Variables	$\sum$w	RII	Ranking
Good client relationship	230	0.737	1
Excellent image and reputation	218	0.699	2
Strong financial position	207	0.663	3
Efficient organization structure	201	0.644	4
Dynamic management skills	197	0.631	5
High profits	176	0.564	6

From the table 10, it can be seen that the correlation for the performance multiplier and identification of the strengths of the firm are positively related to each other. An efficient organization structure and the excellence image and reputation are the strongest factors influencing an organization's strength, compared to other aspects such as dynamic management skills, strong financial plan, high profit as well as good client relationship. Excellent image and good client relationship must have a strong link due to the nature of both aspects that largely deals with client. These two factors recorded a correlation value of 0.70. Beside that, dynamic management skills and efficient organization structure also have a strong link due to the nature of both aspects that largely deals with employee management, recorded an acceptable correlation value of 0.61

Table 10: Correlation of the firm's performance with the identification of the firm's strength

Variables	Performance & Progress	Strong Financial Plan	Dynamic Management Skills	Efficient Organization Structure	Excellence Image & Reputation	Good Client Relationship	High Profit
Performance & Progress							
Strong Financial Plan	.40(**)						
Dynamic Management Skills	.44(**)	.51(**)					
Efficient Organization Structure	.56(**)	.43(**)	.61(**)				
Excellence Image & Reputation	.45(**)	.53(**)	.52(**)	.61(**)			
Good Client Relationship	.38(**)	.40(**)	.36(**)	.57(**)	.70(**)		
High Profit	.33(**)	.54(**)	.30(**)	.39(**)	.42(**)	.37(**)	

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

FINDINGS

There are several findings that have been established in this study. First, the findings of this paper have shown that most of large construction companies in Malaysia are practicing strategic management in one way or the other and majority of these companies had clear objectives, winning strategies to achieve the objectives and a sound mission statement to guide the organization towards success. Most large construction companies claim to have some form of written planning system that is mostly formulated by the managing director without the involvement of other employees. Secondly, the study also found that most construction companies in Malaysia are able to identify the strengths and weaknesses of their firm which influenced by management skills, organization structure, client relationship, image and reputation and profit. Thirdly the study also found that the large construction companies that implemented written planning system gained higher performance, which further consolidates the fact that strategic management, is crucial in order to succeed. Even though construction companies that do not practice strategic management are a minority, but these companies generate a lower performance and receive limited contractual works annually.

CONCLUSION

Strategic management is a management process that was developed specially to increase the performance of an organization's operations and administration. The application of strategic management practice in organizations can help the organizations to enhance their performance through improved effectiveness, efficiency and flexibility. This study had proved that the effect of strategic management is positive, allowing organizations to increase profits while accommodating customer needs. However, in order to improve the performance, the implementation of strategic management shall be conducted properly. It shall analyze the external environment to obtain information in term of threats and opportunities, and carry out the internal environment assessment to evaluate the firm's strengths and weaknesses in order to cope with the threats and opportunities.

REFERENCES

Abdullah F, Chiet.V.C, Anuar K and Shen T.T (2004). An Overview on the Growth and Development of The Malaysian Construction Industry. Workshop on Construction Contract Management, UTM.

Abu Bakar, A. H., (2002). The Construction in Developing Countries in the Nineties: Some Issues on Indigenous Construction Companies, *Journal of HBP*, vol. 9, pp. 21-44. Publisher: School of Housing, Building and Planning, University Science of Malaysia.

Benjamin, R.I., Rockart, J.F., Morton, M.S.S., Wyman, J. (1984), "Information technology: a strategic opportunity", *Sloan Management Review*, No.Spring, pp.3-10.

Betts, M. and Ofori, G. (1992), Strategic Planning for Competitive Advantage in Construction, Construction Management and Economics, E. & F.N Ltd, Vol 10, Pg 511 – 532.

Burns, T. and G. M. Stalker (1961). The Management of Innovation. London, Tavistock

Certo, S. C. and Peter, J. P. (1991), Strategic Management Concepts. Application, McGraw – Hill, Inc, USA.

Chandler A.D. (1962). Strategic and Structure, MIT Press, Cambridge, MA

Channon, D.F. (1978) The Service Industries. Macmillan, London.

Chinowsky, P.S. and Meredith, J.E. (2000), Strategic Management In Construction, Journal of Construction Engineering and Management, Vol. 126, No 1, Pg 1 – 9.

CIDB (2006), Malaysia Construction Industry Master Plan.http://www.cidb.gov.my/cidbweb/bin/corporate/cimp/CIMP_Fwd.pdf

Dansoh, A. (2005) Strategic Planning Practice of Construction Firms in Ghana, Construction Management and Economics, Vol.23, pp. 163-168.