# CHAPTER 4
# ISSUES IDENTIFIED IN THE SITUATIONAL ANALYSIS AND THE STRATEGIC RECOMMENDATIONS

In Chapter 3 above, all the pertinent weaknesses and threats have been identified in relation to the two engineering consulting firms' corporate and business environment. However, in this section we have pulled out only the important and pressing problems that affect engineering consulting firms in general, which need to be addressed urgently to sustain their competitive advantage, above-average returns and projected growth.

## 4.1 Impact of the Economic Crisis on the Engineering Consulting Industry and Methods of Rectifying the Situation

The 1998 economic crisis had the most impact on the construction industry compared to the other industries. This is mainly due to the slump of property prices and an over-supply of commercial building spaces during the economic boom. Many small firms were unable to maintain their profitability and were forced to close their business operations. Only the medium-sized and large firms are still able to maintain their existence in the consulting industry, with the objective of gaining a better market place when the economy improves.

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### 4.1.1 Securing Government – Funded Infrastructure Projects

Many large firms in Malaysia, such as Minconsult Sdn. Bhd. are still able to sustain their competitive advantage, even during the economic downturn. Large firms are able to survive because they target government-funded projects, such as highways and infrastructure projects. Therefore, the increased government spending on infrastructure construction during the economic slowdown was one of the important factors that managed to maintain profitability in some large consulting firms.

As most of the government projects are large-scaled, only large consulting companies have the ability to undertake such projects. Therefore, although many small firms are forced to wind-up their business during the economic slowdown, the large companies are still able to maintain their profitability.

The Malaysian government has played a very important role in helping the construction industry during the economic slowdown. The few large-scaled projects that the Malaysian government introduced are for example, the Putrajaya Project, New Pantai Highway, KL Sentral, KLIA and many more.

### 4.1.2 Rightsizing of Employees

Since the 1998 economic slowdown, most of the consulting firms that were effected by the slowdown had to reduce the number of employees, as a strategy to survive. The number of employees were reduced to a sufficient number to carry out the firm's ongoing projects. Nevertheless, many large firms were hesitant to carry out the retrenchment programmes as it will impose a bad mark on the firm's public image. The employees were given an option to choose the VSS (voluntary separation scheme). The retrenchment programmes however, reduced the level of job security to the remaining employees.

Nevertheless, this strategy is commonly used by large firms and is known as the main effective solution in a global economic crisis. The main goal of rightsizing by top management is to remain in the business.

### 4.1.3 International Ventures to Expand Marketplace

Large engineering consulting firms such as Minconsult and Ranhill Berhad have expanded their marketplace by venturing into countries like India, Indonesia, Nigeria, Vietnam, Laos, Nigeria and Egypt. This is because the local marketplace is insufficient to maintain profitability and sustain competitiveness.

Throughout the years, many public-listed construction companies such as Road Builders, Gamuda and IJM have undertaken infrastructure turnkey-contracts in India. Although America and Japan are undergoing a recession, there are still many developing countries that are able to maintain a positive growth in their country. For example, China will be experiencing the highest economic growth during the next few years, while preparing to host the 2008 Olympic Games. Therefore, many Malaysian companies are looking for opportunities elsewhere, since the local economy is not as promising as other Asian countries. The advantage of this international venture is that profits gained by local companies internationally will be channel back to Malaysia, hence increasing the national GDP.

### 4.1.4 Implementation of Quality Management System

The local newspapers are filled with news of many engineering consulting firms receiving the ISO 9001 certification. Even Minconsult Sdn. Bhd. had achieved MS ISO 9001 certification by SIRIM and the United Kingdom (UKAS) Accredited Certification in 1998. Nevertheless, there are still not many consulting firms that have been certified with ISO 9001, which is mainly due to the high implementation cost and the requirement of high participation from all levels of employees.

An average consulting firm takes about one to two years to obtain the ISO 9001 certification. The success of this pursuit would very much depend on the employees' contribution during the training process. Large firms such as Minconsult had decided to get the company certified with ISO 9001 during the economy downturn period. This is because, the company can use the human resources which is not fully utilised during the economy crisis, to implement the ISO 9001. By doing this, the company can save the human resources from being idle during the economic slowdown, and utilise the employees' commitment towards the training process because of their reduced workload.

The companies also realised that when the economic improves, they will not have the time to implement the ISO 9001, because their employees will be too busy with their work and less committed to the ISO training process. This was a good strategy used by firms during the economic slowdown, because the firms were able to fully utilise the human resource for the benefit of the firms.

### 4.1.5 Outsourcing of Employees

Small and middle-sized firms depend on their anchor clients to sustain during and after the economic crisis. As an example, Ghazali & Associates director's had established good contacts with a few large government-owned firms to secure projects. Ghazali & Associates currently undertake projects from Kementerian Pendidikan Malaysia, Pewaja, and Lada (Lembaga Pembangunan Langkawi) to provide various kinds of consulting services. The services range from Ghazali & Associates' core business, that is civil and structural consulting, to mechanical and electrical consulting which very much depends on its associates and outsourcing of the services.

To undertake various kinds of projects and to obtain the relevant expertise at the right time, small and medium-sized firms adopt the outsourcing strategy. The benefits of outsourcing :-

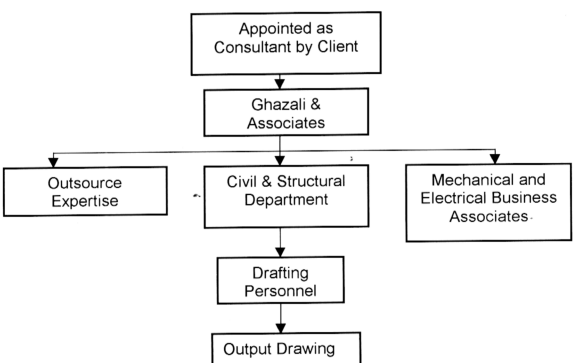
1. Reduce high fixed overhead cost
2. Diversify company at a minimum cost
3. Transfer of knowledge to permanent staffs and reduce the learning cycle time of the staffs

### 4.1.6 Increasing Key Personal

Ghazali & Associates comprises of many directors with various expertise. The company's founder took advantage of the economy downturn to invite professionals, who had permanent jobs in other companies, as the company's directors. This added value to the company, without having to spend much time and cost on hiring more employees. With this strategy, the business associates will be able to transfer knowledge to the employees, besides being an advantage and a value-added asset to the company for having experienced directors.

Small and new firms do not have adequate capital to maintain a high number of employees from various expertise. Therefore, this strategy is able to improve the human resources at a minimum cost.

**Figure 4.1 Ghazali & Associates Business Process Flowchart**



Ghazali & Associates only needs to maintain a small number of permanent employees to carry out their core business, that is the civil and structural consulting services. Its secondary consulting business such as mechanical, electrical and highway construction will be assigned to the associates, with profit-sharing upon completion of each project.

In term of profit-sharing, the associates will enjoy the benefits and profit-sharing upon completion of each project. By doing this, the firm will be able to minimise spending in the initial stage of the project and only have to distribute the profits when the firm receives the fees from the clients. It is extremely important for small firms like Ghazali & Associates to maintain and plan their cash flow. The management of human resources is a crucial success factor, since it is the most expensive fixed-cost for the company before gaining profit at the end of the project. Furthermore, this strategy is able to maintain profitability in the current economic situation.

## 4.2 Human Resource – Related Problems

Human resource management is a vital aspect of managing an engineering consulting firm. This is because the human resource which is viewed as the 'knowledge-worker', is the main asset to a service-based firm. There is a growing recognition that human resource should be regarded as a legitimate business unit, which would make it highly strategic in nature and increasingly critical in achieving corporate objectives.

Human resource involvement in strategy formulation is necessary to ensure that these functions support the firm's mission. An engineering consulting firm that is concerned with maximising its effectiveness, should have a human resource plan. Like other management plans, it should identify what is needed in the human resources area to help achieve the short- and long-term goals of the firm, and it should define the specific strategies selected to achieve those ends.

However, there are various problems which can affect the productivity and effectiveness of the employees. Due to these problems, the work flow will be affected as each employee is responsible for a portion of the project. If anyone does not perform his or her responsibilities in tandem with the goal, speed and efficiency of the organisation, hence the overall output would be affected.

Anyhow, three major problems have been identified to be the main causes contributing to the overall workforce inefficiency. The problems are :

(a) High Staff Turnover Rate
(b) Absenteeism
(c) Lack of Motivation

### 4.2.1 High Staff Turnover Rate

#### 4.2.1.1 Current Situation

The staff turnover rate in both engineering consultants is exceptionally high. For the past few years, there are quite a number of extreme cases where an average number of years of a newly employed engineer to remain in the firm is about two to three years. However, there are engineers and other personnel who have remained loyal to the company for a number of years now. This high turnover rate is mainly due to disgruntled engineers leaving after serving the company for a few years.

#### 4.2.1.2 Causes and Methods of Combating Staff Turnover

There are various reasons for the high employee turnover rate. The main reason is because of the dissatisfaction towards the company's compensation policy. The employees are quite dissatisfied as they feel that they are under-compensated and that their counterparts in other firms or industry are being compensated better than them. When the employees feel that they can obtain better compensations elsewhere, they would make the decision to leave.

Besides that, there are many disgruntled engineers who feel that their performance and output is not being appreciated by top management. They feel that they have been taken for granted to produce the required output, regardless the situation, without being rewarded with the top management's recognition. Generally, good performance by the employees in a certain project, would bring about recognition and rewards solely for the General Managers and Managers, with the technical staffs being left out.

The organisation can retain employees by providing a great benefit package and boosting the employees' morale. This can be achieved by providing salary increments, promotions in status, bonuses and assorted fringe benefits, such as health plan, retirement plan and vacation. Morale boosters are in the form of activities such as designated parking spots and the ability to leave early on Fridays. These activities are designed to raise the morale of the employees so that they feel good about the organisation they work for. Used properly, the compensations are an effective tool for rewarding good employees and encouraging a continued pursuit of excellence.

However, fluctuations in a company's financial circumstances sometimes make it unwise and difficult to dispense bonuses, or big bonuses, even though they may be well deserved at the time. Special care should be taken to award the compensations in a judicious and equitable manner. Employees from all levels in the company should be equitably rewarded and appreciated, and their performance recognised by top management to prevent any dissatisfaction among employees.

The employees often view with anxiety the process of communicating with management about job performance and who are happy to settle for the least painful way of receiving their annual raise. Those who have clear career ambitions will usually pursue their own goals by changing jobs as necessary to move up the ladder – rather than challenging the employer to meet their needs.

Therefore, turnover is higher than it need be and growth – in capability terms – of the firm itself is limited by the lack of opportunity for people to grow. The 'personnel review' process is widely neglected in the firms, often mishandled and only rarely implemented at or near its potential as a vital management tool for developing the firm.

However, firms that have effective systems for the performance review and development have made great strides in individual proficiency, internal communication, teamwork, morale and consequently, overall performance of the professional organisation.

To have such a system, management should agree on three principles :

1. The goal for such a process is developmental – not judgement of the past. All people grow, and a process that encourages them to develop their potential is much easier to accept than one that is based on reviewing a report card of past performance.
2. It is essential that both managers and subordinates agree that the only significant measure of any working relationship is output. Such factors such as personality, attitude, appearance and lifestyle have no place in the performance review process unless they directly affect the output.
3. Compensation is a by-product of a development process, not the purpose of it.

Several elements are common to all effective development system, which, once they are incorporated in the agenda of performance review meetings with staff, can lead to dramatic results.

1. Define the key results expected from the role, not how to achieve them. Write down these key results in words that both parties understand.
2. List measurable objectives planned to achieve the key results. It is best that the subordinate generate the first draft of these events. But the events must be stated in terms that are measurable by future performance. The essential point is that work objectives must be measurable over a defined period of time, and must include the objectives of both parties for improvement.

3. Reach all clear agreement on what future compensation and rewards will be if performance is fully adequate as defined. It must also be clear that less than fully adequate performance may lead to postponement of that compensation and that better than fully adequate performance will be the basis for future advancement.

The trained professionals, especially the engineers, feel that their career planning and development become limited after a few years. There are not much opportunities to improve their skills, especially in fields outside their specialisation. Moreover, there is a condition such as 'plateauing' which occurs when the employee's job functions and work content remain the same because of lack of promotional opportunities within the firm. Furthermore, there is lack of support and guidance given by the management to guide the engineers towards the attainment of the professional certification. Majority of the engineers, even with the working experience required to obtain the professional certification, have still not done so, because of lack of guidance. They need to finance the mandatory courses required by the Board of Engineers, Malaysia, personally, which is by no means a small amount.

Also, there is no proper plan devised by the company for each engineer to undergo the proper training requirements to achieve this professional license. The training provided by the firm is usually insufficient and cover aspects which are more job-related, and not related to the attainment of the professional license. Therefore, they leave to other consulting firms that have good career planning and development programmes.

To improve the employee's career planning and development, and prevent 'plateauing', the firms need to reinvigorate diminished and demoralised ranks. They should try to spur productivity by offering employees a host of ways to spice up their jobs with additional training, lateral moves, short sabbaticals, and compensation based on a person's contribution, not title.

When an employee is moved laterally within the organisation, the employee is given the opportunity to develop new skills. The firms can also decide to solve this problem by utilising the job enrichment method, which is an approach that rewards, without promoting an employee, by increasing the challenge of the job, giving the job more meaning, and giving the employee a greater sense of accomplishment.

Management should motivate the employees to continue their engineering education. A 'mentor' can be assigned to a new technical staff. This 'mentor' would guide and advice the employee on the steps to achieve excellence toward the attainment of the professional license. An education programme can include in-house or external courses. The courses can be taught by experienced professionals within the firm or by instructors from external sources. The firm should pay for part or all of the cost of the continuing education for the employees.

Eventually, these training programmes will benefit both the company and the employees, by enhancing the organisation's capability and status and keeping the firm abreast with the newest advances throughout the engineering disciplines. Also, firms that give total support and guidance to the engineers to attain their professional certification, can be sure that the professional engineers will continue to render their services for the good of the company.

Finally, the firms should budget for continuing education activities as attending seminars, and should see that the right people find time to attend. For this investment to pay off, the attendee, upon returning, should report what was learned to a larger group and should recommend specific actions the firm can take to implement the knowledge.

### 4.2.2 Absenteeism Among Employees

#### 4.2.2.1 Current Situation

There is a trend for absenteeism among the employees in the engineering consulting firms. On average, the largest rate of absenteeism occurs during the festive seasons, especially Chinese New Year and during the week of Christmas and New Year. For example, during Chinese New Year, the firm would provide an additional day off and one day compulsory annual leave, unless otherwise requested. Additional to this, there are quite a number of employees, especially the Chinese employees who would take about two to three days of additional annual leave. This situation is similar to during the other festive seasons.

Besides these occasions, there are also times when the employees call in sick or take annual leave when there is a void of public holidays in that particular month. The employees would generally take leave on Friday or Monday to have an extended weekend. Nevertheless, employees taking leave during these times have been accounted for. Generally, absenteeism during these times do not affect the overall productivity of the company as this only happens on average, once or twice a year for each employee.

On the other hand, it has also been noticed that there have been occasions when selected employees call in sick or take annual leave when there is additional work pressure. Occasionally, an engineer or draughtsman would have a major project to complete within a short period. Due to this, the employee would have to work beyond office hours and he or she would be faced with tremendous work pressure to complete the project.

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Employees also tend to be absent when there are internal meetings with the management or external meetings with the clients. This generally happens when the project is incomplete or facing problems. These irresponsible employees are quite few and generally they know that their work can be handled by their colleagues or senior engineers or draughtsman. This act of irresponsibility tends to increase the pressure on the other parties such as the colleagues, and it also does not solve the problem but instead magnifies it.

There are also cases of selected employees being absent due to personal problems that they are facing in the organisation or at home. When this happens, the overall productivity of the employee reduces which affects his or her output.

#### 4.2.2.2 Causes And Methods Of Curbing Absenteeism

The problem of employee absenteeism is a problem that can be resolved by taking a few positive interventions versus taking a negative or punitive approach. The main step that should be taken is to change the management style.

The main reason employees are absent from work is because they are legitimately ill and are not in any condition to work. But, this is not the only reason for absenteeism. One reason, outside illness, that employees are absent is stress, and the number one reason employees are stressed has to do with the relationship with their manager or supervisor. Management style that are too authoritarian tend to promote high levels of absenteeism among employees.

Authoritarian managers are managers who have poor listening skills, set unreachable goals, have poor communication skills and are inflexible. In other words, they yell too much, blame others for problems and make others feel that it must be according to their way or nothing else.

Authoritarian managers tend to produce high absenteeism rates. By identifying managers who use an authoritarian style and providing them with management training, this will not only reduce absenteeism, but also reduce turnover, job burnout and employee health problems, such as backaches and headaches.

Another positive intervention would be to change the working conditions. This condition refers to co-workers relationships. Not only does relationship stress occur between the employee and manager, but also exists between employees. Hence, employees who are fearful or angry with another employee would try to avoid the other person by being absent from work. The organisation should adopt policies and values that promote employee respect and professionalism and promote an internal conflict resolution procedure. Hence, the organisation would be able to reduce employee stress, thence reducing employee absenteeism.

Employers could also provide incentives as a mean to curb absenteeism. An incentive provides employee with a boost to their motivation to avoid unnecessary absenteeism. There are many types of incentive programmes, for example allowing employees to cash-in unused sick leave at the end of the year, giving employees bonus for every month of perfect attendance and providing employees with lunch or a certificate of achievement as a token to curb absenteeism.

The type of incentive programmes should be tailored to the organisation culture and employee's preference. The duration of the incentive programmes is also important. The general rule is to reward the employee more frequently the younger they are and the more difficult the work is.

A final positive intervention would be to develop an attendance policy. An attendance policy allows a manager to intervene with an employee who is frequently absent. Besides stress as a primary reason for employee absenteeism, other causes relate to alcoholism, domestic violence and family problems. If a manager confronts the employee about his frequent absenteeism, and he is informed that it is due to family problems, the manager could try to give sound advice or refer the employee to the relevant agencies or social groups that can help solve any of the problems faced. Early identification of these employees will get them back to work as fast as possible.

By incorporating the strategies into the organisation, the manager would not only reduce absenteeism, but also reduce employee burnout, turnover, poor morale and workplace negativism.

Employees should also do their part by keeping their employer informed about their whereabouts. Employees who are frequently absent without a good cause are generally absent due to numerous frivolous reasons. Employees who are absent for good cause have legitimate reasons, for example sickness or family member illness and hence the employees need time off to resolve their personal problems. Most employers generally understand the need to be gone from work due to legitimate reasons. Therefore, it is most important for the employee to communicate clearly and accurately so the employer does not assume that the employee is absent due to frivolous reasons.

### 4.2.3 Lack Of Motivation Among Employees

#### 4.2.3.1 Current Situation

There is a serious motivation problem among the employees. Probably the main reason for the lack of motivation among employees that is observed in the organisation is due to the employees feeling that they are not properly compensated for their work in terms of salary and bonus.

During the past few years, the organisation has been affected by the economy crisis. Hence, the management had taken a step to minimise the compensation scheme. The employees receive the minimal increment or bonus. Therefore, the employees are quite dissatisfied. This is also because the employees believe that the company can afford to improve their compensation, but prefer not to do so. They feel that there is some injustices because there are a lot of new projects obtained by the company, and hence a heavier workload.

This has not only caused motivation problems among the employees, but has also increased the job turnover, with a lot of employees leaving to seek greener pastures in other organisations.

#### 4.2.3.2 Causes And Methods Of Motivating Employees

Management should take a serious step in improving the compensation policy. The employees are quite dissatisfied as they feel that they are under-compensated and that their counterparts in other firms or industry are being compensated better than them. Nevertheless, this situation could be improved if the management informs the reasons behind the compensation plan and guarantees better compensation to each employee when the company's cash flow improves. Thus, the employees will get a salary increment and bonus that would reflect their contribution to the organisation for the past few years.

Besides the compensation and benefit plan, there are various problems and negativity in the organisational behaviour that has reduced the motivation of the employees. There is an atmosphere that is constantly full of organisational politics and internal competition between employees. This generally occurs among the lower level staffs.

For example, in one of the divisions, there are two typists in which each is given the responsibility of handling separate projects. If any one of the typist is overloaded with work, the other typist will be very reluctant to help because she is not handling that particular project, hence it is not her responsibility. She would only be forced to help, although very reluctantly, if ordered by the manager.

There are also rules and regulations for employees to follow that has disturbed the routine and culture of the organisation. These rules are perceived by some of the employees of reducing their source of creativity and hindering their freedom. Nevertheless, these rules are viewed by the management to control and maintain a pleasant and responsible situation among the employees.

For example, it is a norm for the engineers to leave the office ever so occasionally to attend meetings with the clients and contractors. It has been noticed that some irresponsible engineers leave the office, in the pretext of attending a meeting, but are actually attending to their personal work. To curb this, the management has made it a rule that engineers have to inform their supervisors and log their movement and reason in detail, every time they leave the office. This rule is generally accepted by the engineers who do not take advantage of their freedom to leave the office, but are viewed by the irresponsible engineers as restraining their freedom and that the management does not trust them. This has indirectly affected their productivity which is linked to their motivation to perform.

However, management could prevent any dissatisfaction by having some flexibility in working hours, when personal obligations require some time off. The management could lay out a policy explaining the provisions for taking time off from work, as well as any requirements for compensating for this time. Satisfied employees will be happy to work after normal working hours or at special time to repay their firm for the time taken off for personal reasons.

The managers are also the cause for the reduced motivation among employees. They are known to have developed unclear expectations regarding their employees' performance and withhold critical information from the employees. Besides that, the managers treat the employees unfairly and under-utilise their capabilities. Hence the employees feel resentment and are not able to utilise their capabilities to the maximum. The major habit that is apparent among the managers is that the managers provide criticism instead of constructive feedback. This has caused the employees to become unmotivated, hence reducing their performance and output.

Due to these problems that are occurring in the organisation, the employees are less motivated than they used to be. They do not perform as well as they can and should, though it is a known fact that the employees are capable of an unlimited supply of motivation.

The organisation has provided a great health plan, retirement plan and vacation which are great benefits, but these are not human motivators. Benefits, vacation and salary are employee retainers and not employee motivators. An organisation offers these benefits in order to attract and retain talented workers. On the other hand, there are also activities such as designated parking spots and the ability to leave early on Fridays, which are called employee morale booster, and these will not motivate the employees any more than the employee retainer package.

These activities are designed to raise the morale of the employees so that they feel good about the organisation they work for. Morale boosters do not increase motivation because they are not directly tied to an increase in performance. An employee with good morale is not necessary a motivated worker.

In order to motivate the employees, there is a choice to either change the employees or change the organisation in which the employees works. Changing the individual takes too much time, effort, doesn't help any other employees and is not likely to produce any long lasting effects.

The employees who work for an organisation are naturally motivated. The management should try to utilise their natural ability to increase their performance. The first step in utilising the employees' motivation and performance is to eliminate the organisation's practices that reduces their natural motivation.

A step should be taken to reduce the organisational politics and internal conflict among the employees. This can be handled by encouraging teamwork and co-operation among the same level and different level employees when performing their duties. The employees should be made to realise that it is their responsibility to uphold the integrity of the organisation and hence the output produced, and not only the employee designated to the particular duties and projects.

The second step is to develop true motivators which can spark all the employees into being motivated. By reducing negative de-motivators and by adding true motivators, the organisation can tap into the employees' natural motivation. The employees' natural motivation relies on the fact that all people have human desires for affiliation, achievement and for control and power over their work. In addition, they have desire for ownership, competence, recognition and meaning for their work.

The organisation should develop true motivators that will help the employees tap into their natural ability to be motivated. The managers should add some fun and variety to the employees' routine work to enhance creativity and performance. The mangers should therefore, guide the employees by providing input and choice in how they can perform their work better. The management should also encourage responsibility and leadership opportunities within the organisation, while tolerating learning errors by avoiding harsh criticism and providing constructive feedback.

Social interaction and teamwork between employees should be promoted to achieve a friendly and relaxed atmosphere. Job ownership should be promoted among employees while developing goals and challenges for employees so as to increase the employees' need for achievement. The managers should provide a lot of encouragement and appreciation towards the employees for a job well done. Once the employee is recognised for his contribution, this will increase the employee's confidence level and encourage the employee to strive harder to produce better performance.

The management should also develop a fair and just measurement technique that will be able to detect and show the change in performance, whether increasing or reducing. Hence, the employee will be able to monitor his or her performance.

### 4.2.4 Summary

In any organisation, there will always be various problems that will hinder the productivity and efficiency of the organisation. The problems could be linked to the management style, organisational culture and the employees. Whichever the cause is, steps should be taken to eliminate the various problems in order to enhance the capabilities and productivity of the management and employees.

Attention should be given to the type of management style adopted and ways to improve it to produce managers who will be able to encourage and maximise the employees' performance. The organisational culture that promotes internal conflict and competition should be changed to promote teamwork and co-operation among the employees.

Employees should be viewed as assets and not liabilities. Hence, steps should be taken to enhance the employees capabilities and skills. Besides that, the employees should be motivated by providing a proper compensation plan besides promoting a good organisational atmosphere and management style. This will result in employees performing their responsibilities diligently and earnestly to produce effective and efficient output.

## 4.3 Competitive Advantage Factors : Firm's Size and Experience

### 4.3.1 Issues of Large and Experienced Firms in Achieving Competitive Advantages

The basic differences between large and small firms is not just a matter of scale. They are different in design, purpose and effectiveness. Difference also exist in structure, policy making procedures and utilisation of human resources. Size and experience are important factors for achieving success for engineering consulting firms. Size governs the amount of specialisation to be achieved by a company. A larger size enables more disciplines for specialisation.

For instance, Minconsult Sdn. Bhd. has fifteen specialised divisions. With more specialisation, the company can ensure that the employees are more well-versed in their field of expertise and hence be able to provide to the clients the most amount of knowledge, even on complicated and challenging issues.

Moreover, the larger size of a company permits more projects to be handled, which is proportional to profits. Another reason to increase firm size is to increase market power. Many firms have core competencies, but lack the size to exercise their resources and capabilities. Market power is usually derived from the size of the firm and the firm's resources and capabilities to compete in the marketplace. Increasing the size also entails the development of new specialisation or services, thus allowing diversification.

Many firms that choose to concentrate and expand their business in single areas of engineering have done so because they have gained a reputation for doing superb work on certain types of projects early in their history. Consequently, the same firms may deliberately solicit similar projects in ever-widening geographic range. In such firms, marketing efforts are often based primarily on the premise that the organisations are well-known experts in their chosen line of engineering.

Through experience in multiple projects, opinions will be formed by clients and potential clients regarding the qualification, capabilities and resources of the company based on its performance. The prospective client's main concerns about most job will usually be in terms of the cost-effectiveness, work performance and the ability of obtaining a satisfactory end result. Experience will entail that the employees have the knowledge and expertise in these core areas. Experienced companies also attract experienced and knowledgeable personnel.

Vast experience and large size permits international venture. For example, Minconsult has plenty of projects overseas, such as in India, China and in South East Asian countries. Companies that have international experience would be able to use the knowledge gained and apply it in local projects to obtain more competitive advantage. Moreover, a local developer developing a multibillion project would prefer to solicit an engineering firm with vast experience including international projects, so as to ensure that only the best decisions and applications are applied to the project.

Management of large companies controls the overall plans and direction of the organisation, frequently with the aim toward enlarging the staff and diversifying the work that is to be produced. This sort of emphasis may require considerable financial sacrifice and the devotion of large amount of time to ensure that the organisation will stay healthy, even during periods of industrial difficulties and slumping economies. Therefore, these companies would ensure that they have a large pool of projects that would enable them to sustain an economic slowdown.

However, during the economic slowdown, there is a possibility that these companies would subsequently venture into smaller-scale projects, due to the reduction and unavailability of large-scale projects. Because of its resources and capabilities, these companies would be able to bid for small-scale projects to sustain their profits. This would affect smaller companies as they would lose their market share to big companies. When these small companies are not able to obtain adequate projects during and after the economic slowdown, they would not be able to survive in the long term.

Large companies have easier access to new technologies because of their financial capabilities. They would be able to purchase or lease these innovations and utilise them in their services to provide above-average quality services. These companies also have good connections with the government authorities because of the vast and frequent involvement in projects that would require interactions with the government authorities. Consequently, these companies would find it easier to fulfil the government policies and requirements.

However, large companies do have their limitations. The management of employees, projects and strategies would become more complicated and tedious. The management would need to delegate responsibilities to individual members of the firm, so that they can devote their time and energy to functions such as marketing, arranging contractual matters, financing and dealing directly with past, current and prospective clients. They have to ensure that they have qualified and reliable personnel to handle the production of the engineering work.

These personnel should be given adequate empowerment to make vital engineering decisions in the works. At the same time, the management would need to spend adequate time with these personnel so that they can be updated with the projects happenings, to ensure that the decisions taken comply and are streamed towards the company's policies and procedures.

The management should devise strategies for the growth and sustainability of the whole company. These strategies should not only focus in one particular area, but on all aspects of the company. Hence, devising such strategies would cause changes which will affect other areas, which would need to be accounted for. However, devising strategies for a large company is not a simple issue, because there are a lot of matters that should be taken into consideration, for example, the reputation of the company, policies and procedures, human resource, financial aspects and the viability and feasibility of the strategies.

Large companies have more moral and ethical responsibility to the society and environment as their decisions could affect the balance of nature. The outcome of each project in terms of its cost, social and environment impact can be balanced by the engineering firms. The consultants should ensure that all design and construction works that are carried out comply with the rules and regulations, are not detrimental to society and the environment, and follow all safety precautions. Therefore, the consultants should also ensure that there is sustainable development in all the projects that they are involved in.

### 4.3.2 Issues and Recommendations for Small Firms to Achieve Competitive Advantages

Small firms have different practices and problems that need to be dealt with by their management and managed differently from large firms. To be able to manage the small business effectively and efficiently, the owners must be aware of the firms' strengths and weaknesses. Small firms normally have some inherent weaknesses such as financial limitations, manpower problems, higher cost of operations (both in marketing and production), inability to diversify to reduce risk, and lack of acceptance of their services by clients.

Their strengths lie in their ability to provide personal touch to the clients, greater motivation to succeed as most of the firms are managed by their owners, greater flexibility to adapt to changes in the environment, and a more compact organisation structure which facilitates communication within the organisation. This is the case of Ghazali & Associates Sdn. Bhd.

Success and failure of a small consulting firm is normally dependent on the ability of the owner-manager. The owner-manager in a small company should be prepared to be a generalist manager and cease being a specialist in his own area of interest and competence.

The generalist manager should have conceptual skills which enables him to analyse the total solution, detect problems, determine causes and bring about effective solutions. The owner-manager should not try to do all the business functions himself but rather to manage his business. Managing means getting things done through people. In order to manage his business effectively, the owner-manager should perform basic managerial functions of planning, organising, motivating and controlling.

Small firms, due to their limited financial resources, should be more flexible and responsive to changes than their larger counterparts. Being more adaptable to the changing environment, these firms may be able to carve out their own niche in the market. Faced by increasing competition, the larger firms would be expected to exert more intense pressure on their smaller competitors. However, as demands become more customised, fragmentation of the markets tend to increase and niche markets will tend to surface. It is vital that the small firms take initiative to pre-empt these changes by engaging on the search for these new opportunities.

Competitive strategy could be formulated to adapt to the environment or as a shaper of the environment. A firm can elevate or lower its position within the industry by its choice of strategy. Being small players, these firms should try to identify which larger firms are shaper of the industry and avoid imitating the strategies of these larger firms.

To gain competitive advantage, small firms should not be concentrating to beat the competition, but to serve customers' real needs. It is important to take competition into account in making strategy but it cannot be a priority. The first priority should be the needs of the clients. Then, a close analysis of a company's real degree of freedom in responding to these needs, followed by the willingness to rethink, fundamentally, what their services are and what they do, as well as how best to organise the business systems that designs, delivers and markets them. Rapid response to competition is largely reactive in nature. Strategy should be able to create values for clients and, at best, to alter the basis for competition. They should also be market-oriented in their management approach.

Small firms should identify niche markets through market segmentation. Probable segmentation variables include type of client (e.g. private individual, corporation, public agency), type of assignment (single/multi-family housing, institutional), type of construction (new, repair/renovation) and size of contract (< RM 50 000, RM 50 000 – RM 100 0000 etc.).

Small firms could grow and compete with large firms through the formation of permanent consortiums. With the increase in collective size, they will have the necessary manpower and resources to bid for large projects. However, this might be difficult to implement as most of the partners in the firms will be reluctant to give up their effective control for higher profitability. Therefore, the partners would need to strike a balance between control and profits.