

**FIDIC
YOUNG PROFESSIONALS
MANAGEMENT TRAINING
PROGRAMME 2005**

TYROS

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Summary

We have made a summary in a separate document. This document will be translated into Chinese.

This report gives a summary of the results of The TYRO's for the cases 1-4.

Therefore this is a working document for the team and gives background information for those who are interested.

CHAPTER

1 Introduction

The name TYRO stands for “someone who is still learning”. This is the exact discretion we as a team have been doing for the past 5 months, and aim to be doing for the rest of our carriers.

FIDIC provided us the possibility to share thoughts, express meanings and tell our story of our jobs with colleagues around the world. We became an international team, working on the same goals:

- Develop personal, professional, management and leadership skills;
- Active participation, communication and involvement from all participants;
- Build international relationships;
- Develop teamwork skills;
- Apply the acquired knowledge and skills set to real world applications;
- Have fun and enjoy the experience;
- Share knowledge and acquire useful information.

These goals have been defined by us during our first introduction. We are glad to say that we believe we have reached them. And probably we have reached a number of individual goals as well.

The report in front of you gives you an impression of the topics we have discussed.

The second chapter describes the different organisation structures, Human Resource approaches and the influence of sustainable development.

Chapter 3 the second case about organisational structures. The 4th chapter describes the different marketing approaches of consulting services.

The final chapter 5 describes the outcome of our vision about development, sustainability, cultural changes and globalisation.

CHAPTER

2 Case 1: Organisation, Human Resources and Sustainable development

2.1

THE CASE

The group was provided with basic information on general characteristics of the most common organisational models for engineering firms: The Traditional Organisation, The Matrix Organisation and The Flexible Organisation.

Taking these models into account, the students were asked to analyse the current situation in the engineering practice and to provide view on possible future developments in this respect. For analysis, the following eight questions were formulated:

1. What is the present situation in your country and what are the strong and weak sides of this?
2. How do you see the future development of consulting firms, small specialised, large multidisciplinary, large specialised or (...)? Analyse benefits and drawbacks.
3. Assess the present situation as regards human resources development and describe some likely future scenarios.
4. Has the requirement for delivering sustainable development to clients any impact on the options for organising a consulting firm?
5. How is all this seen from an employee's point of view?
6. What would be seen as an attractive employment as regards human resources development and is this conflicting with the employer's interest?
7. Is the flexible organisation a relevant response to the challenge of globalisation?
8. Prepare recommendations for improving the present organisational standards based on considerations of:
 - a. Developing expertise centres
 - b. Profit centre concepts
 - c. Efficiency in project delivery
 - d. Human resources development
 - e. Globalisation

2.2 ORGANISATIONAL STRUCTURES

2.2.1 PRESENT SITUATION

The analysis and contributions to question number one showed several similarities between the countries represented.

There is a wide range of organizational structures varying especially between traditional and matrix, but also some examples of flexible structures:

In Scandinavian countries, companies are mostly organized traditionally according to disciplines, but gradually some companies re-organize into matrix organization. The driving force for this may be the market requesting multi-disciplinary services. Matrix organization may also reduce the size of the departments and create a mixture of employees that represents a cross-section regarding experience/age, expertise, gender etc. Flexible structures appear on “over-seas” projects requiring variations in experience and willingness to change working location.

The traditional structure is also common in Mexico, but the small projects do not allow the companies to maintain a matrix structure. However, when a large project is won, each department will assign personnel. When the project is completed, people will go back to their departments and continue under the traditional organisation.

From the US and Canadian side the presentations focused on matrix structured based on business / market segments (Transportation, Buildings, Industry, Education, Health etc). Within these segments each is broken down into practice areas like i.e. structural engineering within Buildings. However, it was also stated that one could find examples of all structures.

In the Netherlands several companies are organised into Business Units and the matrix structure is common. Companies operating in niche markets (example from NACO, airport consultancy) used to be traditionally organised into Civil, Architecture, Mechanical & Electrical and Master planning, all specialised in Airports. Teams are composed according to project requirements, sometimes supplemented with the services from small, specialised independent companies.

In Romania companies also establish groups called “wildcards” consisting of experienced engineers and younger software specialists. The “wildcards” can make temporary contributions to projects. Younger engineers may be assigned to “wildcards” to broaden their experiences.

In Italy focus is put towards the market that is controlled by national legislation. The percentages of the total costs that will be spent on consultants are pre-determined and the companies offer competence, quality and capacity to be selected. Companies are relatively small sized.

Traditional organisational structures are the most established in an historical perspective. However, many companies with larger projects at hand (independent of country or location)

choose to organise into matrix structures. Flexible organisations are not that usual except within certain segments of a company based on traditional or matrix structures.

The traditional organisation forms a good and “secure” basis where hierarchy and the lines of command are quite visible and easily understood. Team spirit is high because one is surrounded by colleagues sharing the same pride in their discipline. This team spirit can be creative and benefiting to the company in total, or sometimes initiate competition between the departments, which will complicate co-operation on multidisciplinary projects. If the market demands multidisciplinary services a matrix structure can be the answer to avoid the above-mentioned problem.

The key words are transparency and information. As long as the employees know who is responsible for what, then any organisation can function as a base for accomplishment of strategic goals. Important issues that need to be handled with special attention are marketing and human resource development.

2.2.2

ENVISAGED FUTURE DEVELOPMENTS

The future consulting firms could probably be split along two lines; large (mid-sized), multidisciplinary that can provide most services to the client, and small-specialised that will fill specific project roles. Both large and mid-sized companies can be similar in structure, but depending of the size of the local market, firms will remain mid-sized or expand into larger sizes to accomplish a larger share of the current market (local or global).

Small, specialised firms will position themselves in certain niche markets and be competitive due to low overhead costs and dedicated staff. Small businesses may rely more on personal involvement and loyalty than the “cold decision making machines”.

Large companies suffer from heavy machineries (IT, admin, accounting etc) and have high overhead costs. Therefore these companies cannot compete on small market segments when competition is based on lowest price. However the benefits of the larger players are the ability to administrate and implement larger projects. They can also adjust to changes in demands and offer their employees a wide range of opportunities and challenges. Large specialised firms are very dependent on the market demanding certain services and therefore are more at risk than a multidisciplinary company that can rely on several markets.

Another variation which is can also be seen is the rising of network structures where smaller companies combine their qualifications and form a temporary “big firm” such as a consortium. These “flexible” organisations compete with the larger inflexible organisations.

Summary of benefits and drawbacks:

	+	-
Large multi-disciplinary (mid-sized operating locally):	<p>Pool of staff with a wide range of skills.</p> <p>Expertise shared between staff.</p> <p>Can handle larger projects and adjust to variations in demands and locations.</p> <p>Can handle international projects.</p>	<p>Large overhead costs.</p> <p>Not competitive on smaller, specialised projects.</p> <p>Large companies may seem intimidating (impersonal) on smaller local clients.</p> <p>“Cold decision making machines”</p>
Small specialised companies:	<p>Low overhead costs</p> <p>Dedicated staff</p> <p>Expertise on certain market segments.</p>	<p>Limited market</p> <p>Low variety on assignments.</p>

2.3

HUMAN RESOURCES

2.3.1

PRESENT SITUATION AND ENVISAGED DEVELOPMENTS

Human resource development is a very important factor for the consulting industry since our operation is based on providing knowledge. Lack of HR development can jeopardize the quality and reputation of the industry, and providing good services does our best marketing. HR development is also about developing and maintaining a culture or ensuring that new culture is accepted and embraced after company acquisition. The additional need for HR development will be important as companies grow, diversify and as so many cultures are coming together through globalisation.

HR development has a wide range of opportunities. An effective and less costly manner is transferring knowledge from older staff to younger, as well as allowing younger staff to contribute with new ideas and knowledge in new technologies and tools. In some cases development needs to be achieved through external training courses or seminars. When the market requires a different organisational structure, much is simplified if the staff is flexible and prepared to adjust. HR development is about satisfying your employees through good working conditions and opportunity to grow professionally.

Marketing towards students is also an important strategy to raise the attention towards certain disciplines. This will ensure availability of potential staff, and a continuous development and renewal of the sector.

Several future scenarios depending on the employee's general preferences are noticeable. The industry is experiencing the upcoming retirement of experienced post-war 'baby boom' generation engineers. These are the people with sometimes 15 to 25 years of experience abroad (in some cases all over the world) from whom the younger engineers can learn a lot. However, some companies experience a gap in personnel in age between 35 and 50 years old. For internationally operating companies, one of the reasons for this gap might be that it appears to be difficult for this middle age generation to adapt to a life abroad (for example due to having young children, etc.). The experienced elder generation is used to living this life they once chose for (40 years ago). The younger are still flexible and want to see the world. But as soon as the younger turn a bit older, start to have children and get married to a partner with an interesting career as well, it becomes much more difficult to give it all up and leave for a country far away. On the other hand, it becomes more and more clear that

‘expatriaty’ as we know it (living abroad for 2 – 3 years) becomes something from the past. Since local (engineering) knowledge has improved significantly, the need for a ‘Western’ specialist to be present for a continuous time is diminishing. Short expert visits will do. Also the very high cost of a complete expatriate family becomes hard to justify.

Consultancy is also gradually developing into a situation with increased Consultants and less permanent positions with benefits. Overseas acquisitions and growth can present some unique challenges. Firms in places like India and Japan often have many employees that are consultants (instead of full-time, salaried employees with benefits). As the costs of maintaining employees with benefits, such as health care increases, we may see fewer companies offering full time employment, both overseas and in their home countries. If some firms stop offering benefits to reduce overhead, other firms can use their benefits to attract employees. For example, engineers who have children and are posted overseas must consider the costs of their children's education. Firms that cover this cost are definitely more attractive to them.

If we take in account that our own network is already broadening far beyond country borders, it is likely that we won't consider ourselves working for a (international) company. Rather we will consider ourselves working on an international project together with multiple specialised companies from around the world. The incentives for working in an international organisation are gone. Other HR incentives have to be created. The Tyro's already did in the first assignment (top 5 learning goals). These will grow when working together within projects.

2.3.2

IMPACT OF SUSTAINABLE DEVELOPMENT

The wording “sustainable development” suggests that it refers to an end product. The idea of “sustainable design” is the process leading up to that end product. For an end product like for example a building, sustainability includes two key items: finding ways to reduce the impact of building construction and O&M on the environment; and improving the health, safety, and quality of life of the occupants of a building. It introduces lifecycle cost reductions and energy savings.

Sustainable design or engineering appears to be accomplished through increased environmental monitoring, local and state project reviews and increased oversight.

However, clients do not yet appear to be willing to pay additional design fees to specialists in sustainable design works. The biggest hurdle to date has been a perception that making buildings sustainable is too expensive, and that it increases first-cost design costs. Recent case studies are showing that sustainable buildings are not necessarily more expensive, and that the lifecycle cost reductions and energy savings outweigh the additional first costs. The (perceived) costs of sustainability (for buildings, not engineering) are its greatest challenge. Owners don't want to absorb these additional costs because they see no short-term benefit. Long-term benefits have yet to be proven because data supporting the benefits of sustainability is limited.

As long as a country's government put high emphasis on sustainable development by regulations and standards, the clients and the consultants have no choice but to deal with these requirements.

It creates new markets and needs for consultancy. Sustainable development requires more specialization from consulting firms, especially in countries where sustainable development is a new concept. More specialization requires more trained and capable resources, which are more expensive. Personnel cost for a consulting company may increase substantially. As all new developments, sustainable development requirements might force consultants companies to create strategic alliances among other consulting firms. This will mean that large, multidisciplinary, international firms are growing in size and expanding both geographically and in terms of capability. A flexible organisation can be a proper response to avoid the personnel costs, but still be able to offer the needed competences. The matrix organisation has to a certain extent been implemented, but most likely in a combination with traditional organisation.

Sustainable development according to environmental, economical and social aspects will to a certain extent put more pressure on the consulting industry to recruit staff with multidisciplinary competences. However, some of the demands seem to be met by the industry itself which gradually trains their original staff within the traditional organisation, i.e. engineers learn to address issues like life-cycle costs and risk management. This market requirement is met by technological institutes that offer education that combine economy and environment with the traditional engineering.

The issue of sustainable development is to provide economic works that take into account all effects of the project and balance those effects. This has been referred to as full cost economics, triple bottom line management or decision-making.

Internally we may set up a cross discipline protocol of requirements similar to a project management system. All projects require certain project management functions and actions to take place. Similarly all projects should be required to conform to sustainable development norms.

Externally, private sector clients need to be informed of the benefits that will accrue to them if they follow sustainable development practices. Many large companies of course are at the forefront of this. If we are at the forefront of this field we need to ensure that clients recognize this as well as recognize the benefits of using our services in that we provide a superior product to them. This may take the form of presenting papers at high profile conferences, applying for awards that are advertised and known in industry, other advertising and branding initiatives, and industry specific information brochures.

2.3.3

EMPLOYEE'S POINT OF VIEW

In times when conditions for consultancy are continuously changing the employees have to be flexible and often develop skills and adapt to new organisational structures. In the traditional organisation management, line of commands and human resource development are perhaps easier to grasp and employees are comfortable and well established with colleagues. Changing conditions can cause uncertainties and be challenging especially for managers that must provide proper and coordinated instructions.

The organisational structure shall provide the basis for success, and employees can adapt to any structure as long as it is well prepared and leaves few questions regarding responsibilities. This concerns both project implementation and other aspects like i.e. HR development.

In Italy, as well as in any part of the „old world“ the great part of people would be afraid about changing their job and maybe they wouldn't be so keen on a flexible system but if the global system will be organised to be flexible no one will lose his/her work but they will be employed where their work is more needed in that time.

In such a system importance of project managers will increase because the process has to be guided by someone who has a clear and complete picture of the situation he/she dealing with.

In Romania there are 3 kinds of employees:

1. Support staff unqualified, they handle the edition department, and some other support departments. The staff members are the most endangered of all because they can always be replaced.
2. Engineers with small experience, they handle small projects, small parts of big projects. They are the ones that grow to be an important part of the firm; in them most training is invested.
3. Experts (engineers or support staff). Best paid, best valued, and handled with extreme care because they tend to be irreplaceable.

For an employee it is important to get in the 3-rd category. Globalisation will only make this category more valued if they have enough mobility.

Globalisation and sustainable development can be seen as a possibility to employees. He/she can concentrate on specialisation, or he/she can take part in different tasks in different projects and learn more from other colleagues. Of course all of this means additional education, hard working, open mind, and mobility. The employee must be able to move around as the market evolves.

2.3.4

ATTRACTIVE EMPLOYMENT

We all agree that there are many kinds of employees and their needs vary. Still there are some common needs among all of the engineers:

- Payment (all of them appreciate a good fat pay check);
- The chance to work on the best projects and best clients (all of us appreciate the chance to say that we did something big with our lives);
- That a good working environment (we have some old engineers, some of them retired that come to work with great joy because they have a chance to interact with young ones and give them some of their experience and expertise, we have some young engineers that come to work with pleasure because everyday they learn something new). Team buildings, firm barbeques, office parties all kind of such manifestations help bringing the morale up a little;
- Flexible working schedule is a condition, not everyone is a morning person, and not everyone is an evening person. All of our staff should work when they feel the most productive;
- Learning new things (all of the young engineers come to work because they have the chance to learn something new). At the old engineers it evolves in doing unique projects that demand a lot of thinking.

Perhaps we need to consider different types of employees. Some consulting engineers prefer to spend their careers on long-term, overseas assignments, moving from place to place. Others like to be in one location in order to provide stability for their families. They will have very different ideas about "attractiveness." Not everyone is built for fieldwork and moving around. Also not everyone is built for office work either. Overseas engineers want a challenge, and they want to know where their next project is coming from. Engineers operating from a base don't necessarily mind travel, but they will stay closer to home. Single engineers and engineers with families will see a firm's benefits differently as well.

The age factor in the HR is also an aspect. Young engineers look for training above all and are more suitable for travelling; older engineers look for fun or special projects, and are less mobile. Most of our older engineers will take advantage of every occasion to share some of their experience with colleagues so they should be spending most of their dead time in the offices with the younger staff.

It would be ideal to have a pool of experts that can take part different project in different combination. Between assignments or company should provide additional education or experience sharing sessions where they can teach the other staff members what they have learned. To run this economically, company should be a permanent employment for most of its engineers and only accidentally to have freelancers working for them. All the experience and training invested in freelancers is almost completely lost at the end of the project.

Training may be looked upon solely as "non profitable" time by many employers, but training can also be carried out in project. In the long run it will be expensive to not achieve projects due to lack of competence, or to hire sub-consultants. Training is profitable as it increases the value of the firm itself. We all have some dead times (from 1-2 days at the end of some projects to a few months in winter time at the field work), if we don't use those times to improve our staff we are non-profitable.

Training is a central point in every firm and especially in a consulting firm where "added value" is what makes the difference between companies. A firm's particular attention in developing training could be what makes an employment attractive. It is also quite important to train staff in a technical services company as the individuals strive for technical excellence and project work may not be enough. Training helps retain staff and increase the level of the company's competence.

Training seems to be a problem only with small firms or new ones. Large companies train staff constantly. A small four-person firm would have a problem with staff training but in larger firms it is a habit. However, all newcomers must be instructed on the Q.A., local filing customs, latest norms and laws and all the things an engineer must know.

2.4 CHALLENGES OF THE FUTURE

2.4.1 GLOBALISATION

A flexible organisation can easily adjust to changes in demands, but is rarely seen as a base for an organisation. This kind of structure dominates certain segments of a company for instance dealing with "over-seas" projects. Some clients have created a project delivery system that defeats a flexible firm. Projects require the "specialists" to be identified and kept on hand for months, until the local client selects and negotiates with the winning firm. The

technical scoring system also favours long-term, full time employees. This also prevents part-time consultants or specialists from participating.

Ramboll Finland has tested the flexible organisations in certain international projects. Project management staff handles the project and risk management and they require free-lance consultants to work on an interim basis. Normally this work quite well, but sometimes the decision making with clients take so long time that the company lost their expert before the project start. Especially this problem occurs with bureaucratic and slow moving international funding agencies, such as World Bank, EU, ADB, etc.

Another aspect dealt with is that clients often require so-called specialists on their project teams. Young professionals are interested and flexible, but will not be accepted by the client. Someone with between 5 to 10 years of experience may not be called a specialist, but still be very capable of taking upon international projects, or similar assignments that requires flexibility both professionally and private. It can often be difficult to provide the required specialist who is permanently employed in the company, and also flexible concerning tasks and location.

May be the best way to a make a young professional develop in an accepted qualified specialist is to fiancé him/her to an older known one for some time not only in developing projects but also visiting sites, looking upon complete works' development and last but not least knowing people (ref. to the statement by a Tyro member: "What you know", "Who you know", "Who knows you").

Both permanent and freelance staff is needed to have an independent structure that could be flexible and in the same time have a solid base of resources - also human ones - and know-how to face the market in a rapid and professional way.

It is all about finding a well-balanced combination between both categories.

Flexible organisations are responding to the requirements of globalisation meaning international activity, networking and changing demands from clients.

In terms of influence from globalisation on domestic activities, flexible organisations are fluent and lacking the proper support to staff on HR development, teamwork and interaction between colleagues. In summary, the flexible organization is an advantage only with select client types.

2.4.2

RECOMMENDATIONS

Develop expertise centres:

- Establish groups of experienced employees that can contribute where it is needed (referring to the description of “wildcards” under 2.1);
- Maintain and encourage employees through adequate workloads, challenging tasks and acceptable salaries and benefits;
- Opportunity to grow and develop professionally.

Profit centre concept:

- Ensure staff benefits of profit made locally, i.e. avoid that the profit centres are distant from the employees. For instance, a local office will be discouraged if an international owner requires good results, but also retains all profits.

Efficiency in project delivery:

- Well planned accomplishment of projects;
- Project management training;
- Establish a common comprehension of adequate and good quality.

Human resource development:

- Transfer of experience from senior to junior staff;
- Training courses;
- Developing strategies and measure outputs;
- Feedback to staff and yearly employee follow-up;
- Networking with universities and scientific institutions.

Globalisation:

- Increased knowledge on international standards and business integrity;
- Networking.

An improvement on the present standards may be to develop a structure that can obtain the above-mentioned ideas.

An organisation should be flexible depending on current market situation, available personnel, situation of competitors etc. Management decisions of engineering company should be based on that

CHAPTER

3

Case 2:
Organisational structures**3.1****THE CASE**

The group was provided with basic information on general characteristics of the different ownership structures for engineering firms: Partnership, Shareholding structures where shares are held by management and key staff and “sold” internally only based on an internally assessed value, Shareholding structures where shares are held by a foundation linked to the company and with its main purpose of supporting the company’s activities, Shareholding structures where shares are held by institutional investors and Shareholding structures with shares quoted on the stock exchange.

Taking these models into account, the students were asked to analyse the current situation in the engineering practice and to provide view on possible future developments in this respect. For analysis, the following seven points were formulated:

1. Assess the development in your country as regards ownership structure in consulting firms of varying size.
2. Discuss the key problems seen from a staff and management point of view.
3. Is a substantial management and key staff ownership a condition for successful development of a consulting business?
4. Should employee shares be purchased at “market” price or should they be used as bonus given on top of a “competitive” salary?
5. Is the inherent necessity for developing skills and technology compatible with the requirements for a commercial return on investments from professional investors or the stock market?
6. In case key staff is not “tied” to the company through shareholding, do you need other contractual ties in order to safeguard the know-how of the company?
7. Develop the future ideal ownership model for a medium to large sized company, say 3-400 staff considering the need to maintain your key staff, develop your technologies and expand the company either through organic growth or through merger/acquisition

3.2**PRESENT SITUATION**

The analysis and contributions describing present situation showed significant differences between represented countries.

We can find three groups sharing similar characteristics about ownership structure in consulting firms of varying size:

- Northern European countries (Finland, Norway, Netherlands, Estonia for some aspects),
- Canada and U.S.A.,
- Romania, Italy and Mexico (similar for some aspects).

About Northern European countries we can say that these last ten years external conditions for the consulting industry have changed rapidly due to globalisation, new technologies, and adaptation to EU regulations (as well as Norway which is not a member of EU, but cooperates through an economical agreement EEA). Companies have re-structured initially aiming from local to national markets, and some started considering the Nordic and northern European market equally as the domestic market.

Norwegian companies are increasingly controlled by foreign investments. About 50 % of the turnover in the consulting industry is from companies with international owners. Still Danish and Finnish companies have more international activity than the Swedish and Norwegian.

The Finnish consulting companies have looked growth and internationality by establishing branch offices abroad and by corporate acquisition. In other hand many international consultant company have done same in Finland.

Around ten years ago the situation was that the Finnish consulting companies were owned by Finns. Nowadays more than 10 membership companies of SKOL - The Finnish Association of Consulting Firms, which represents two thirds of the total consulting engineering capacity in Finland - are owned by foreign company and these companies employ about 2.000 people in Finland. And it looks that this trend will continue.

Most of consulting firms are organised as corporations, but with a wide range of ownership structures:

- Shares held by employees
- Shares held by a group of investors with financial perspectives
- Shares held by strategic owners with business interests

In recent times foreign companies have started to explore also Estonian consulting market. Some bigger players have already been bought by some Scandinavian or Finnish consulting firm.

Maybe this can be related with Estonian experience with the large Russian market.

Though, most of the foreign consultants work with Estonian companies as partners within some complicated project.

In the U.S.A. and Canada there a myriad of ownership structures used within the consulting industry based upon individual circumstance, we can find out these ones:

- sole proprietorships;
- partnership (two or more people share ownership of a single business) which can be of different kinds such as:
 - General partnership;
 - Limited Partnership and Partnership with limited liability
 - Joint Venture
- Corporation;
- limited liability company (LLD);

Despite other countries' scenario on North American one consulting companies with shares quoted on the stock exchange are much more common.

In “Latin language” countries as we can say Romania, Italy and Mexico we find that most consulting companies privately are owned by 1 to 5 partners who owned the 100% of the shares.

In Italy and Mexico some medium size companies have developed a shareholding system giving some shares to their key personnel under two schemes:

- Free restricted shares: participate of profits but have no risk in case of company losses.
- Sold full shares: employees buy shares and participate of profits and losses.

This doesn't take place in Romania maybe because of the perils of firms' irregular development (based on the state politics).

Something common to the whole market is that the vast majority of small businesses start out as sole proprietorships. These firms are owned by one person, usually the individual who has day-to-day responsibility for running the business. Sole proprietors own all the assets of the business and the profits generated by it. They also assume complete responsibility for any of its liabilities or debts. In the eyes of the law and the public, you are one in the same with the business.

Despite differences between different countries due to their history (development of public or private ownership i.e.), experiences and law systems, it might be useful to make a distinction - to be applied more or less in every country - between 'engineering companies' and 'consulting companies'.

The core business of the more general engineering companies is basically production of engineering work at the most competitive price. The core business of 'consulting companies' is regarded as more 'value driven'. It is therefore common practice for large, multidisciplinary engineering firms to raise capital from the stock markets.

Consulting firms on the other hand, are much less 'efficiency driven' and offer a tailor made product of relatively high added value. Growth is not essential for survival. The most important assets of these firms are their reputation in the market and their key staff. Reputation is to a very high extent linked to the key staff. Therefore it is much more common for consulting firms to be owned by their key staff and management to bind them to the firm. When a consulting firm like this is being taken over by a third party, it is therefore of utmost importance for the new owner to keep the key staff with the firm.

In the end, we can say that overall the specific business structure will depend upon a number of factors, some of which include:

- The vision regarding the size and nature of the business.
- The level of control desired.
- The level of "structure" desired.
- The business's vulnerability to lawsuits.
- Tax implications of the different ownership structures.
- Expected profit (or loss) of the business.
- Whether there is a desire to re-invest earnings into the business.
- Desires around sale of the entity.

We can report a summary of benefits and drawbacks of companies' different kinds of organizational structures:

Summary of benefits and drawbacks:

	+	-
Sole proprietorship:	<ul style="list-style-type: none"> · Easiest and least expensive form of ownership to organize. · Sole proprietors are in complete control, and within the parameters of the law, may make decisions as they see fit. · Sole proprietors receive all income generated by the business to keep or reinvest. · Profits from the business flow-through directly to the owner's personal tax return. · The business is easy to dissolve, if desired. 	<ul style="list-style-type: none"> · Sole proprietors have unlimited liability and are legally responsible for all debts against the business. Their business and personal assets are at risk. · May be at a disadvantage in raising funds and are often limited to using funds from personal savings or consumer loans. · May have a hard time attracting high-calibre employees, or those that are motivated by the opportunity to own a part of the business. · Some employee benefits such as owner's medical insurance premiums are not directly deductible from business income (only partially deductible as an adjustment to income).
Partnership:	<ul style="list-style-type: none"> · Partnerships are relatively easy to establish; however time should be invested in developing the partnership agreement. · With more than one owner, the ability to raise funds may be increased. · The profits from the business flow directly through to the partners' personal tax returns. · Prospective employees may be attracted to the business if given the incentive to become a partner. · The business usually will benefit from partners who have complementary skills. 	<ul style="list-style-type: none"> · Partners are jointly and individually liable for the actions of the other partners. · Profits must be shared with others. · Since decisions are shared, disagreements can occur. · Some employee benefits are not deductible from business income on tax returns. · The partnership may have a limited life; it may end upon the withdrawal or death of a partner.
Corporation:	<ul style="list-style-type: none"> · Shareholders have limited liability for the corporation's debts or judgments against the corporations. · Generally, shareholders can only be held accountable for their investment in stock of the company. (Note however, that officers can be held personally liable for their actions, such as the failure to withhold and pay employment taxes.) · Corporations can raise additional funds through the sale of stock. · A corporation may deduct the cost of benefits it provides to officers and employees. · Can elect "S Corporation" status if certain requirements are met. This election enables the company to be taxed similar to a partnership. 	<ul style="list-style-type: none"> · The process of incorporation requires more time and money than other forms of organization. · Corporations are monitored by federal, state and some local agencies, and as a result may have more paperwork to comply with regulations. · Incorporating may result in higher overall taxes. Dividends paid to shareholders are not deductible from business income, thus this income can be taxed twice.
Limited liability company (LLD)	<ul style="list-style-type: none"> - it provides the limited liability features of a corporation and the tax efficiencies and operational flexibility of a partnership 	<ul style="list-style-type: none"> - Formation is more complex and formal than that of a general partnership.

3.3

KEY PROBLEMS SEEN FROM MANAGEMENT'S EYE

The key problems seen from a staff and management point of view is not so much relating to the geographical location of the company. Main problems are similar within the companies which are same size and have same ownership structures.

From a staff and management point of view, it is much about how to support one's specific interests. Staff need to be motivated through a wide range of "incentives" whereas economical and the right to decide are some of them. Economical incentives to employees can be obtained by the attractive salary and bonus systems or by opportunity to buy shares or through bonus arrangements dependent on results at the end of a financial year.

Shares held by employees will limit the shares available to investors or strategic owners, and similarly bonus arrangements will limit the annual profit to these. Hence there is a challenge for management to find the balance between motivating your employees and attract capital from investors/strategic owners.

Sole proprietorship or single owner

Normally in these cases the owner is the management. Single-ownership of a company can isolate the "boss" from his staff, as they might feel all of their hard work only generates money for the owner.

Partnership

If a company is owned by its partners, problems occur when the firm grows over a certain number of employee's (say about 70 to 100 staff). The number of partner will have to grown accordingly. If not, it becomes difficult to find successors as the partnership becomes rather valuable and consequently costly. Elder partners might have a different agenda than younger partners. Partners just a few years from their retirement date might be less interested in long term investments in personnel. They rather cash a maximum profit. Whereas younger partners would like to invest profit into the company to let the company grows. When conflicts of interest like this occur among partners, it becomes increasingly more difficult to resolve them as the number of partners grows. This has been a common reason to transfer the company ownership from a partner structure into a foundation.

Another important reason to abandon the partnership owned structure is to limit the individual liability of the partner. When the number of partners in a firm increases, the mutual coherence between the partners decreases. Partners are less aware of the other partner's conduct, especially when different the partners each responsible for a different market segment. However, when things go wrong in a certain market and the company suffers for example from a large claim, all partners are liable. This could become an uncontrollable risk for an individual partner and good reason to bring the shares into a foundation.

If staff members own the company the problems appear when you have economical problems and you must do some cuttings, for example to fire someone. Then the staff might oppose. The solution is that the staff owns only a share of the profit but doesn't have a vote

in the management, somewhat as limited partners. In this case they owned on vote-less shares, but can get part of profit.

Corporation

The primary issue from employees within big corporation has been associated with not having the autonomy they may have in a small firm. The comment of being viewed as just a "number" within a large company has been a common saying. The issue is getting more adverse as corporation continues to grow. Employees from a lower salary and bonus pool feel that management and the CEO are drawing too large of a salary and little is left over for them. In reality, this does not amount to a significant amount based on the size of the company and would actually be more relevant in a smaller company.

The issue with management seems to centre on the "short term" attitude of investors. There are several examples of stock taking a nose dive following a quarterly investor release that displayed that the companies were about the same as the previous quarter. This is quite frustrating for management as companies have clearly identified the need for an investment for the long term strategic gain. Any investment will cost you in one way or another and is inherent in future growth. This issue has been somewhat diluted now there are over 5,000 employees and the investments in one area can be diluted by profits in another.

When shares are held by institutional investors or by a foundation personal involvement will decrease because you have just a formal participation but the real thing and basic decisions are in someone else's hands.

On the other end institutional investors could be a sort of "safe point" in case of short-term shortfall and with their structure and economical power can solve a lot of troubles which could cause a private's firm falling down.

The staff has 2 major problems in a public traded company:

1. The public shareholder doesn't care about the staff, only about the performances. He doesn't care about your health or problems.
2. The public shareholder usually doesn't care about long term development but more on the short term => faster management changes, faster staff changes, faster everything, less quality.

Most of larger companies are growing through acquisitions or buy outs. At the same time all units have their own financial performance targets and are financially independent. This means that cooperation within the company is not stimulated. The companies that are taken over have difficulty adapting, mainly because of the autocracy that emanates from the financial targets, e.g. systems are build such as SAP to measure the financial performance. For a consultant this means a shift from a loose creative registration to performance by the hour.

Share holders are obviously interested in the short term performance of the company. And because there influence is very big the focus of the company management is also on short term performance. Eventually (down in hierarchy) the focus of the consultant has to be as short as one hour. This hinders creativity and sometimes even passion for the job.

Management is also focused on short term performance. Most managers are chosen by their quality of financial management. One of the Tyro members referred to a few sessions about scenario planning (long term vision) completed within the company. For some manager this was almost liberating, for others it seemed a waste of time because the next day they just had to do their job.

On the other hand the trend seems to be shifting towards a more creative or innovative organization. Our clients also expect a company that is way ahead of them.

Internal shareholder ownership

In the internal shareholder scheme, from a staff point of view, most of the staff is more interested in owning shares from an economic point of view than from a decision making point of view. The "feeling" of owning part of the company and receiving more benefits when you do your work correctly can definitely be a motivating factor.

However, there are two critical issues:

1. How do staff members pay for the shares? Different schemes can be applied such as giving shares as performance bonus or selling the shares at the corresponding price.
2. What happens when the company is loosing money? The staff will always want to participate of the profits of the company, but having to sacrifice part of their income to pay for company loses could be quite complicated to execute.

From a management point of view, the internal shareholder scheme will provide no access to external capital, which is one of the advantages of other ownership structures. Also, in this scheme management carry all the responsibility in case the company is loosing money, which can be very risky for the company, its owners and its employees.

From the staff and management point of view it could be important to have a personal involvement - also from an economical point of view - in firm's activity; if you control some shares maybe you do your best to make it working well; of course not all people (nor all consultants perhaps) are good managers, and they haven't (maybe they don't want) to take part in managerial decisions as well as they are "owners".

If we think about staff ownership we much remember that some people are businessman and some are not. Managing a firm is not like football (soccer) where everybody is an expert.

Leadership transition

A long-term programme that allows staff to grow into positions of responsibility and leadership and maintaining ownership through stock, will ensure the best employees will make it to the top. They'll also be fully committed to the success of the company. For example, Stanley is a "promote from within" company that has had only 4 presidents in 91 years...all from inside the company.

Bringing in outside leadership to lead a company has risks. The new leader(s) know nothing of the existing company culture...and they may force changes to suit their personal style. They have no previous commitment to the company or its people. They might also require huge compensation packages that are out of line with the existing company compensation

scale.

In some situations, outside leaders may be needed to turn a company around. The personal experiences of members of the Tyro team allow us to comfortably state that growing talent from within the company is the most effective method of grooming leadership candidates for senior positions of responsibility. Regardless of the upward potential of staff members, it is helpful to company morale and esprit de corps when members are rewarded for their good performance, and the good performance of the company.

3.4 **MANAGEMENT AND EMPLOYEE OWNERSHIP**

3.4.1 **MANAGEMENT OWNERSHIP FOR SUCCESSFUL CONSULTING BUSINESS**

This is an issue that must be analyzed from different perspectives.

First of all, for small consulting firms, a single owner or a small group of partners can control an ownership, make a profit and be successful with their work. However, an important item to consider is ownership transitioning. Single-owner firms have to carefully analyze how the company will continue when the owner is ready to retire. If they did not provide enough incentives, motivation and training to at least one of their employees, the company will face the risk of disappearing. Thus, key staff ownership may not be a condition for successful development of the small consulting firm, but a condition for surviving through generations.

Moreover, the concept of key staff ownership becomes very important if the small company wishes to grow in size. At some point, key staff members should be allowed to buy into the firm and gain ownership. This will assure that the know-how remains within the company and will assure more compromise from the “sharing” personnel and a more motivating career plan for the new personnel.

Regarding medium and large consulting firms, it is generally believed that management and key staff ownership of the company should and will contribute to the successful development of the company. This statement is based on the following:

- Ownership in a company is a strong selling point to keeping talented staff. The idea of being an “owner” will help motivate and retain the good staff. It is important to remember that within a professional services firm, the employees are the backbone of the company and in the medium and long-term, it will be hard to make them stay if they cannot share the profits or have a say in the future direction of the company
- Ownership in a company, through stock purchases or partnership, is a commitment on the employee's part to the success of the firm. The better the employees do, the better the company will do, and thus, additional profits will directly reward the effort of the employees.
- Ownership in a company will also provide better management transition. A firm with many owners, as partners or shareholders, may have an easier time identifying candidates with management abilities for leadership transition. This will assure continuity of the company.

An important item to consider when analyzing ownership from key staff is the actual interest of the staff in becoming owners. In countries where the consulting industry usually provides very low profit percentages (around 5%), such as the Scandinavian countries, it is not surprising that employees would prefer to invest their money in other forms, instead of putting their job and their money in the same company. For these cases, bonus arrangements, competitive salaries and other benefits will have a much better effect on the employees.

As a simple conclusion to this point, the following can be said:

“When a company's leadership opens the company to key staff ownership, it can only contribute to the long-term success of the firm”.

3.4.2

ROLE AND VALUE OF EMPLOYEE SHARES

There was a general agreement on this subject throughout different continents, countries and company sizes. It is believed that if employees are going to be allowed to be owners of the company, they should have the possibility of acquiring company shares at preferable conditions, regardless if it is at special prices or as a bonus on top of their salary.

Depending on the type of ownership structure of the company, this possibility could be a general option for all employees or it could be used as an incentive for the key-staff or the top performers.

In order to do this, different mechanism can be used:

- Employees can automatically assign a percentage of their monthly salary to buy company shares at a lower price than “market” price. This scheme will not impact significantly the income of an employee and will give the opportunity of constantly acquiring shares at a price under the current “strike” value.
- Employees can have access to stock-options or share options. Stock option programs can give employees a very good opportunity to earn money if the value of the company share rises. These types of programs are now widely used in public traded companies. Stock options are given or sold at a certain “strike” price, usually under the actual market share value. If the company share value increases, then the employee can sell the stock options and make a profit on them. Usually stock options come with a certain period of time before you can exercise them (vest period). This is used for retaining personnel since leaving the company could mean that they lose the possibility of exercising their remaining stock options. This program can be made available for top management, key staff or all the staff of the firm.
- For privately owned firms:
 - A possible mechanism is to give top performers or key staff a yearly bonus of shares, instead of a cash bonus. The cash that would have been used for the bonus will go directly to the “senior” owners. This will allow employees to become owners without sacrificing any income/savings and also, it assures that top management receive a good payment for their shares, assuring the continuity of the company.
 - Another mechanism is to allow employees to buy stock at market rates and have the company top up on their personal contributions. This could be done at a 25, 50, 75 or 100% additional.

For a public company, allowing employees to buy shares at “market” prices does not represent any additional benefit for the employees, since shares are available for everybody. For a private company, allowing employees to buy shares could represent an incentive, even if it is at “real” value, but it will work better if the company applies one of the attractive mechanisms mentioned before.

One must not forget that offering employees the possibility of owning shares might not be attractive to them, even if it at reduced prices! As it has been mentioned in other sections of this case, there are countries where profit margins on consulting companies are so low, that an employee would not want to put more money into the company they work for. This situation represents an even larger challenge for these companies if they want to implement employee ownership structures.

As a general conclusion, it can be said that if a company decides to allow employees to buy shares, it is preferable to do it in a way which benefits employees the most. Buying shares at regular "market" prices might be attractive to top management, but for most employees, allowing them to buy or obtain shares at preferable conditions will reduce their cash expense, increase the benefit, and thus, make the "owning" program a more successful one.

Allowing employees to buy shares is a powerful mechanism for attracting and retaining good staff, but it depends on the company how they want to implement it and how attractive they can make it for their employees.

3.4.3

RELATIONSHIP BETWEEN THE NECESSITY FOR DEVELOPING SKILLS AND TECHNOLOGY

Companies have to develop technology and knowledge to maintain or expand their market share. The stock market will only reward companies whose bottom line continues to grow. As the company's value increases, so will the stock. While engineering stocks are not as popular as hi-tech or other more publicized company stocks, they may not be as vulnerable to fickle investors. In the US, some stocks actually go down if they beat their market forecast, but not by as much as the "market" expects them to (EBay and PalmOne are recent examples of companies that performed well, reported a great 1st quarter, and their shares dropped!)

Without taking actions to improve income, sales and profitability, a publicly traded or privately held consulting engineering firm can't maintain its value. Any activities that allow income, sales and profits to increase are valuable to the company.

It is quite important to develop the skills and technology in order to develop, maintain and sustain the financial returns on investments. This is especially important with professional services firms such as consultants as this is what we essentially "sell". One of our statements as a publicly traded company is "knowledge based solutions for infrastructure". The statement explains that we sell knowledge which is the result of developing skills and technology. This is great selling feature from our perspective.

However, in many situations it can be difficult to explain possible lack of financial results in periods with high focus on development. To keep the interest of investors and owners it is crucial to define strategies and long-term goals based on the efforts that are put into development. This can be easier comprehended by foundation and strategic owners rather than professional investors or the stock market.

The organizations have to try and focus on entrepreneurship using skills and technical development. The attitude now is stepping on the pebbles in order to get ahead. If you try to jump you will succeed. This can only be done if you invest in innovation. HP and Boeing seem to be doing this as well, and these markets are even more vulnerable than ours.

Everybody is interested in staff improvement and technology improvement. Development is the only thing that can keep a company competitive and maintain the quality of products. It is not useful in our market to have 300 persons that draw by hand the same thing that 100 persons can draw by AutoCAD and most definitely best knowledge generates usually the best solutions. Investment in staff and technology generates quality and that is the thing that makes the difference between most of the companies.

One of the benefits of becoming public: obtaining more capital that you can use for new technology and for developing skills of the employees, which will help you win more projects, developed them better and thus, earn more profit, which will benefit all shareholders.

It is clear that the development of skills and technology is absolutely necessary for each consulting company, because all around us are developing. And there's educating of people. Every investor has to understand that certain percentage of company's turnover goes to that. It is the only way that the stock is viable after years of activity.

Skills and technology are fundamental for consulting firms that want to survive in a global market, not to mention if they want to grow.

3.4.4

CONTRACTUAL TIES IN CONSULTING FIRMS

A different situation could be described for European and South American market and North American one, it seems that in Europe that professional staff members (engineers) are very attached to the Firm, and they are very resilient to change their workplace. As long as staff members are happy and have a competitive salary he/she will not leave the firm. In the USA and Canada the economists change their workplace every 6 months; in Europe the engineers change it once or twice on their entire career!

Maybe as a consequence of this behaviour, contractual ties don't exist in Europe and South America. Usual alternative ties are:

- competitive salaries,
- bonus arrangement,
- insurance and other benefits,
- opportunity to grow professionally,
- satisfaction about the job and happiness,
- opportunity to work on challenging and inspiring projects you would never be able to access as individual freelance consultant;

In the United States and Canada – where the consulting market is moving ahead at full force at a rate that seems faster than every 6 months (in Canada i.e.) – consulting firms require each employee to sign a contract at the beginning of employment that requires safeguarding of company information, and penalties for breaking these safeguards and in some cases to sign an employment agreement that states the individual will not approach any company clients or employees for a period of two years after leaving the company.

While these formal contracts make perfect sense for industries where secrets and R&D are very important, engineering "secrets" seem to be more about the delivery of services and client relationships than about new and unique ways of doing engineering work.

Nowadays companies could also use technology to maintain their know-how. Years ago, almost all know-how was in the head of a person. Today, with new technology, companies can do more trying to put in the computer all projects' details, creating large "knowledge" data bases that can be used for future project and retain some know-how

And last but not least we consider that some circulation between different companies is not always negative; in some cases it would be good to see how the others work and how the companies look after their employees. When you change your employer you don't need to reset your brains or to forget your personal experience, but you should not use your previous company's property (design systems, calculation systems, studies, reports, etc).

We still trust people's integrity and ethic of engineering!

3.5 CHALLENGES OF THE FUTURE

3.5.1 FUTURE IDEAL OWNERSHIP STRUCTURE

An initial remark is that the ownership structure must provide a base to accomplish strategic objectives.

- (i) If the main objective is to expand than investors will provide funds.
- (ii) If on the other hand the main objective is to develop into the preferred choice of the market then efforts should be channelled on development of staff (existing staff or by attracting potential key-staff) and technologies, then strategic owners might be more supportive.
- (iii) Last if the main objective is to be the preferred employer then i.e. employee ownership models and bonus arrangements are focus areas.

Of course all of these are the priorities for most companies, but one need to choose priority n.1 and choose model according to that.

We have found out three different hypothesis of the future ideal ownership model for a medium/large sized company:

1. the company will be 100% employee owned where every employee have the option to become an owner; (U.S.A., Canada)
2. only a defined part of company's shares will be owned by employees – around 30%; (Mexico, Norway, Italy);
3. one owner and a large network of friendly cooperating companies to develop greater and more complex projects with (Romania).

Before describing benefits and drawbacks of these different strategies it would be interesting to underline from which countries the purpose's came from since each one of us develops an idea linked and influenced by his/her country's situation (it couldn't be different! We are all a "product" of the world we live in).

Let's explain different solutions:

Completed employee owned company:

A first point to analyse is if ownership should only be given to senior strategic individuals as the profits of the company are clearly derived from them or not.

Maybe it would be important to control who gets ownership but at the same time if juniors and intermediates would be out of ownership they probably do not see a future within the group and go elsewhere; define a standard waiting period in order to buy shares with new employees could be a solution.

Only current employees of the company can own shares. When you leave, you sell your shares. A profit-sharing scheme can also be created that provides money for employees' retirement funds, additional stock purchases or another method that builds wealth for employees while keeping the profits invested in the company future.

Benefits

1. The company is financially conservative with leadership that actively looks for new markets for expansion.
2. The overall buy in and enthusiasm will potentially put the company in a strong financial position and some of the resources could be re-invested back into the staff in terms of developing technologies and career development.
3. Key staff is encouraged to own as many shares in the company as possible.
4. When the company makes money, profits are distributed to staff as "bonus shares" in the stock program...so everyone is an owner when the company makes money.
5. Enthusiasm for the company is effective and better yet contagious to future leaders.

Limited employee owned company:

This solution provides just a 30-33% of company's shares owned by employees.

It is not wise to have everybody as owner, since employees will not realize the value that owning shares could have. And of course some temporary personnel that will work on a project basis and then leave the company will not be owners of the company.

Shares could be sold to employees after a certain period of time with the company (i.e. 1 or 2 years) and based on performance evaluations. Also, more shares could be given to employees as part of their annual bonus.

If an employee with shares wants to leave the company, their shares should be valued at their current price and sold to other employees, maybe using company funds.

The company has to ensure a certain part of the profits are channelled into development (human resources, new technology or company expansion). To maintain staff, it is important to provide opportunities for ownership and incentives for retention...not only through access to company shares, but mainly through other benefits and bonuses.

Benefits

1. A limited employee ownership could be attractive to those employees who aren't owners and really want to make a career inside the company and become owners.
2. Senior employees hired for strategic purposes could be attracted by offering them some company shares.
3. Do not have everybody as an owner allows a company to bring new people and let go the ones that do not meet company standards.
4. Separate management and investors - through a limited ownership - ensures less influence motivated through increased return.

One owned company:

This is the scheme: one owner, 350 persons, from these 250 engineers (100 over 10 years of experience and 150 under 10 years of experience), 100 staff for administration, computer maintenance, AutoCAD training, software training. About 10 department managers and 40 project managers.

With a long list of friendly companies, available for contracting on larger projects; the firm can manage normal projects inside (about 90%) and hire outside help only occasionally and for cooperation on great or complex projects.

NOTE TO TAKE INTO ACCOUNT

"In practice there are no clear cases where ownership (share holders interest) and employee development are "alternative strategies". They have to be combined in an ideal compromise. In the real world all consulting is eventually done for a profit, if only to protect the financial health of the firm and its growth potential. It must be able to buy new equipment and pay for evolution.

The single ownership proposed at the end is not a valid long-term approach, unless some senior employees (who are the real assets) also have access to results based bonuses. The availability of "friendly firms" plays no role in the Case."

CHAPTER

4

Case 3: Marketing of consulting services

4.1**SECURE CLIENTS KNOWLEDGE**

What can be done to secure that clients have an optimal knowledge of service providers, their merits, their qualifications, their results, their reliability, financial standing, etc?

In the world of consulting engineering, it is very important for consultant to keep current and future clients aware of their capabilities. These capabilities often represent the “toolbox” a consultant uses to distinguish itself from his competitors. When a consulting engineer is successful at keeping his clients informed of his services, capabilities and ability to solve the client’s problems, it often results in new or repeat business.

The Tyro team has identified a number of important considerations that must be considered by a consultant. All of these considerations have a common tie: communication. Good communication with one’s clients will optimize the consultant’s chances of winning new work, maintaining strong relationships, and identifying new and creative ways of meeting the clients’ needs.

Communicating with clients so they have an optimal knowledge of the consultant’s services can be accomplished in several ways; a firm may adopt one or more of the following tactics to maintain hard-earned relationships, or win new ones. The consultant may have one or more staff members responsible for client support and maintenance. Once a client has been won, “client maintenance” and ongoing support of the client become very important to current and future work opportunities. Regular provision of information to clients is critical to ensuring they are aware of the client’s capabilities.

The size of the engineering market may also determine a firm’s approach to its clients; small national markets have a different dynamic than large national (US and Canada), international marketplaces (the EU) or even the global marketplace. Finally, the marketplace, and the clients therein, may require certifications and independently earned qualifications before they can be convinced of a consultant’s capabilities.

4.1.1**CLIENT SUPPORT AND CONTACT**

Most consulting engineers have an informal or formal plan that addresses the need to provide support and regular contact with clients. The purpose of these activities is to remind

the client on a regular basis of the consultant's capabilities, recent achievements, and to maintain a liaison to identify upcoming project opportunities.

This activity is managed in different ways. Often, the responsibility for client contact is shared in larger firms. COWI's strategy is to share this responsibility between employees in the same department. COWI will follow up with clients after the completion of a project in order to evaluate the team's effectiveness and client satisfaction. When this has been carried out it has been well received by clients, and provided valuable information to COWI about upcoming project opportunities. Additionally, it is viewed by clients as a professional courtesy, and it represents a willingness to improve COWI's customer service.

Ramboll Finland formally identifies a minimum of one directors or senior manager to keep regular contacts with the firm's important clients. This regular contact allows Ramboll to keep its clients informed of the company's skills. Project opportunities are also readily identified through these contacts. Ramboll's internal Quality System also requires senior staff to query clients on their opinions of Ramboll's services. This is done by sending a questionnaire once or twice a year to Ramboll's primary customers. In the same manner as COWI's follow-up after project completion, valuable client feedback is received about the company's service.

The systems for maintaining regular customer contact are easier in large firms where this task can be delegated to business development managers, or senior staff who are not responsible for spending all of their time on billable projects. In smaller offices, the task of regular client contact becomes more of a challenge. Fewer staff members are available for client contact and follow-up; this responsibility often falls on the shoulders of the firm's managing director or partners. Limited time means that the client contact activities must be carefully considered and chosen for maximum benefit to the firm.

Regardless of the size of the firm, all Tyro team members agreed that personal contact is the best way to obtain and maintain regular contact with clients. Personal, face to face time with clients is the most effective way to understand the clients' needs and make contacts with potential clients. Finally, personal contact is seen as very important to managing existing relationships and clients with the goal of winning repeat business.

4.1.2

ONGOING CLIENT MANAGEMENT

Several team members stressed the importance of regular contact with the client. Without regular contact and "client management," it is difficult to make one's clients aware of a company's new qualifications and services. Maintaining this relationship only begins with winning the project. Continuing a good relationship with a client, and building upon it over time, is important to the long-term success of any engineering firm.

Maintaining a strong, positive and professional relationship is important. One team member noted that it can take 5-7 successful projects to repair the damage from a single problematic project. Other team members noted that some clients will not give a consultant any more work after a significant mistake. Clients have long memories; some clients will not consider a client for a project even 15-20 years after the consultant unsuccessfully performed a project for that client.

All of the team's companies assign responsibility for client maintenance in different manners. This can occur as a business development activity or simply through regular interface of the project manager and project team with the client. In smaller firms where business development is practiced by a limited number of staff members, the daily contact of project managers and teams becomes very important to the consultant-client long term relationship.

As mentioned earlier, larger consulting firms have the luxury and ability to dedicate full-time staff to the maintenance of existing relationships, and pursuit of new work. Stanley Consultants utilizes business development managers, or "Project Principals," whose role is to win new business and to maintain the client relationships before, during and after a project. Once the project is won, the Project Principal gains the responsibility of maintaining the client relationship and maintaining an awareness of the next project opportunity.

Follow-up with clients after projects is another method for successful client management. It allows the company to receive feedback about the performance of its staff and to gain information to effectively serve the client in the future. COWI, Ramboll and Stanley Consultants both utilize formal procedures for contacting their clients after a project in order to learn more about the project team's performance, the satisfaction level of the client, and any strengths or weaknesses in the project delivery system. Other consultants have similar activities for following up with their clients.

There are many strategies for maintaining clients' interest and desire in working with a consultant. This contact and maintenance is important, regardless of whether it occurs before, during or after a project as part of a post-project discussion, all team members agreed that client contact and maintenance cannot occur without providing important information to one's clients.

4.1.3

PROVIDING INFORMATION

Presentation of information to a potential client is an important part of any marketing and business development activity. Once a client is won, the consultant's challenge is to ensure that he is aware of the consultant's latest projects, services and up-to-date information.

Many of the team's companies feel strongly that financial information should be provided to potential and ongoing clients. COWI and Ramboll both place importance on providing financial statements and detailed information to their clients. This is in contrast to the approach taken by Stanley Consultants. Stanley Consultants is a privately held company, and it closely guards financial information. This information is not provided to clients unless it is necessary to do so.

Providing the latest information is very important to many companies. This is especially true for company financial data, project information and similar data. For Ramboll and COWI, up-to-date marketing data is essential. For COWI, the annual report is distributed to clients in order to provide information on core disciplines and financial statements. These reports are detailed. Often this information is presented to clients at professional conferences, seminars and meetings in Norway. Ramboll's marketing material includes Annual Reports, Quarterly Reports and several different brochures. Ramboll's philosophy

of marketing is to meet with customers and provide the latest information about our company to them.

Other companies utilize a different strategy for providing information. Some companies such as Stanley Consultants provide more general information to clients, and much of the detailed company operational data is not part of the marketing material. In fact, Stanley Consultants does not release financial information to clients unless required to do so as part of a prequalification or auditing process.

Press releases and announcements are a tool used by many consultants. These releases often showcase a project or service that has been recently completed by the consulting engineering firm. The press release reaches a wide audience; current and potential clients are likely to see the release and learn more about the consultant's capabilities. The press release can be used by large and small firms. Larger firms with marketing staff have a slight advantage in their ability to package and market the successful completion of a "showcase" project or service.

4.1.4

CLIENT MARKETS

While the size of a consulting firm will impact its decisions on client marketing and maintenance, the size of the marketplace will also play an important role. In large markets such as the United States, it is possible that potential clients may not have heard of large firms such as ARACDIS, Stantec or Stanley Consultants. In smaller markets such as Norway, the circle of available clients is smaller. The market has developed certain expectations of the engineering community; in COWI's situation, the clients "may talk" if a consultant isn't present at a conference or professional event or if a consultant does not provide company information.

Large markets such as the United States and Canada also generate many tradeshow, industry meetings, and other professional events. Engineering consultants often attend these events to gain intelligence about their competitors, make themselves available to new and existing clients, and to discuss their services. The extent of tradeshow and industry presentations in smaller national markets has not been discussed, but it certainly exists in international markets such as the EU. These tradeshow represent good opportunities to make client contacts and showcase a firm's most recent projects.

4.1.5

QUALIFICATIONS AND CERTIFICATIONS

For some clients, project showcases, personal contact and brochures are not enough. Many European clients require consultants to possess specific industry qualifications or certifications. These certificates are granted by independent agencies to a consulting firm. They represent the firm's achievement of a certain level of skill, competency, or quality system. ISO certification is the most commonly known independent quality system; several of the European Tyro firms are involved in developing or improving ISO systems within their companies.

Arcadis noted that their ISO Certificates and Qualifications are often used as marketing tools to demonstrate their competence and dedication to utilizing quality systems. ISO Qualifications appear to be more important in Europe than in North America. Both Stanley

Consultants and Stantec have avoided seeking ISO certification due to costs. Most US and Canadian clients do not require this certification; its value in these markets is therefore limited.

In Romania, Consis is one of the first firms to accredit its ISO 9001 program. Consis has found that regular use of a Quality Assurance program is not only important to improving ways of doing business, but ISO is often a requirement to bid upon public projects. This ISO requirement is also becoming more popular in Italy.

In Estonia, AS ETP Grupp noted that ISO is also gaining popularity. Most major design firms in the marketplace have achieved this certification. International tenders in Estonia, similar to Italy and Romania, often require ISO certification as a requirement to participate in the competition. Ramboll Group in Finland also confirmed the increasing use of ISO or another Quality System as a tender prerequisite.

Finland's consulting engineers are utilizing a different Quality System than any other country represented on the Tyro team. This Quality System is called the RAKLI-SKOL-ATL Quality System Certificate. The Finnish Association of Building Owners and Construction Clients (RAKLI) and The Finnish Association of Consulting Firms (SKOL) and The Association of Finnish Architects' Offices (ATL) signed an agreement on the certification of quality systems in 1994. The system is based on the ISO 9001 system, but it has been modified to meet the requirement of the Finnish consultants and architects.

Public companies that are listed on the US Stock Exchanges are now subject to a new law, the Sarbanes-Oxley Act. This law requires that the CEO of any publicly held companies personally certify and sign the financial statements of the company. Compliance with this act is a mandatory certification that publicly traded engineering firms must maintain. Failure to comply with Sarbanes-Oxley can result in fines and imprisonment for the CEO and other senior company officers. This requirement for public firms to publicly certify financial records can be a reason for privately held-firms to avoid the stock markets.

4.1.6

SUMMARY

Consulting engineers have a variety of tools with which they can approach clients, build and maintain relationships, and keep their clients informed as the consulting firm grows in capability and experience. Large and small firms must approach client building in different ways; the marketplace size will often dictate specific, mandatory requirements for professional behaviour with clients. Regardless of the activities a firm chooses to engage in, the most important single factor for success with clients is personal contact.

4.2

DRAWBACKS OF BRANDING

Would a specific branding limit your scope of projects to be undertaken, in other words can for instance low cost design be combined with high cost technology, within the same brand ?

Branding and advertising are two different yet important concepts that an engineering consulting firm must consider in order to successfully provide services to new and existing clients. In the opinion of the Tyro team, while the concept of market and advertising may differ from market to market, branding is an important concept that defines the services, quality, and uniqueness of each company. To this end, branding is not considered to be a limiting factor; instead, branding is the means a company utilizes in order to achieve separation and distinction within the consulting industry.

Several different aspects of branding were considered and discussed by the Tyro team. These include: trueness of marketing; the role and importance of branding; approaches to low cost/high technology design; advertising; and business integrity.

4.2.1

“TRUENESS” OF MARKETING

For the purposes of the Tyro discussion, “trueness” refers to how well the services marketed to a client match the actual quality and service provided by the consultant over the course of the project. One team member summed up this concept as, “Is the client receiving the service he or she thinks he is paying for?”

A difficult situation occurs in a company’s operational group when business development staff over promises service on low-budget projects, or when business development and operations do not agree on the level and scope of service to be provided to a client. No consulting firm wants to be associated with poor service – this is often worse than walking away from a project opportunity. Difficult decisions must be made projects when the available budget does not support the level of effort operational staff feel is necessary to perform the work in a satisfactory manner.

The issue of “trueness” also becomes important for companies that attempt to use low-cost design resources to complete design work for a client. Larger, internationally operating companies such as COWI, ARCADIS, and Stanley Consultants are examples of companies who have offices in countries where design labour costs are lower. At times, the decision to utilize these lower cost design centers must be considered based upon the scope of work or project fee available.

Under the “trueness” concept, a company that represents higher-cost resources (i.e. European or North American engineers and staff) to a client in order to complete his project should not use a lower-cost design centre (such as India, Egypt, Malaysia, Philippines, or other developing countries with established engineering talent). While consultants may decide to utilize these lower cost resources as subcontractors to assist in completing the project, the primary consultant is still responsible for the overall quality of the project. Certain clients may absolutely insist upon receiving a certain level of care from a consultant, or they may have specific restrictions on the staff that can be used. For example, some national governments may restrict consultants from using staff who are not nationals of their country on certain projects.

The issue of trueness seems to have a greater potential impact and importance in companies with larger numbers of staff. Small companies can only utilize the resources they have available to them unless they subcontract work to other, usually larger, firms. If a smaller firm will subcontract work, it is likely that the firm has already informed the client during

the proposal stage that work will be subcontracted and that the teaming arrangement will be used.

4.2.2

BRANDING

While the importance of “trueness” and representation of the consultant to clients is important to all firms, the importance of branding may vary. Many of the Tyro consulting firms consider branding as an important strategy to distinguish one firm from another in the global marketplace. Some markets, especially smaller ones, operate in ways that can reduce the impact of branding. Most importantly, branding a company can be a double-edged sword, as the consultant must accept responsibility in the marketplace for the performance of projects that have his name attached to them.

At Arcadis, there has been a great deal of recent discussion about the issues surrounding branding. The primary question appears to be, “can or should the firm attach its name to a project that did not go well?” One of the risks with strong branding is that the company’s name is associated with the final outcome of the project – for good or for bad. This risk is particularly important to firms operating in small national markets. If a project doesn’t go well, most potential clients will hear about it; the converse is also true – good projects are also well-known to the potential client pool.

The challenge associated with a well-branded company extends beyond the company’s performance. For example, consider a small, well-known company that is a subcontractor on a large project. If the overall project goes poorly, the subconsultant’s reputation may be hurt – even if the firm did an excellent job in its particular project role. All members of the team will suffer some damage to their reputations simply through their association with the project.

This risk appears to be outweighed by the importance of distinguishing one’s company in the marketplace. This desire is especially strong in companies moving into the international marketplace, or that operate in multiple locations. The desire to ensure clients are aware of the consistent quality of a consultant’s services, regardless of office location, motivates many larger companies to create strong brand images whenever possible.

One example of a growing firm’s struggle to present a strong brand image can be found in Stantec. Stantec is a North American firm founded in Canada. The firm had to change its name from Stanley to Stantec when it wanted to expand into the United States. Stanley Consultants was already in existence, and Stanley Consultants possessed the legal right to use the Stanley name throughout the United States. Stantec created its current name and identity in order to allow client to identify and separate Stantec’s services from Stanley Consultants. Stantec is a reference to the company’s founder, Dr. Don Stanley, and the technology services it provides.

When the Stantec name was adopted, the family of companies consisted of 20 different companies, all with different names. The concept of Stantec as the mother company, with 20 different “boutique” companies, was not successful in providing a single brand image to clients. It also created problems when Stantec pursued contracts with the assistance of the boutique companies; often, a client assumed the companies were all independent organizations. For these reasons, Stantec changed its operational identity in 1988 so that all

Stantec-owned companies utilized the same brand image. This approach has been more successful. Stantec effectively “branded” itself and its services in the minds of its clients.

Branding is an important concept for the future of Stantec. Stantec’s current goal is to become a top global provider of consulting services within the next five years. A singular brand name is a common characteristic of global design firms. For these reasons, the brand identity of Stantec will play an important role in the company’s growth. Stantec’s primary markets are Canada and the United States, and this approach has served them well in this area. When and if Stantec moves to become a global player outside of North America, the branding strategy may change, but it will certainly play a key role in this expansion.

This example of branding can be compared and contrasted with a European company that is already accepting the challenge of branding its identity in the international consulting arena--the Ramboll Group. The Ramboll Group was established two years ago by merging two companies of the same size together into one entity. Ramboll’s management adopted the vision of “One company – One family – One common brand” to maximize the opportunities of the merger.

In 2004, Ramboll implemented this vision and began to conduct business as one family of companies under the Ramboll name. A related initiative included the launch of a new common visual and graphic identity in order to strengthen our position and visibility in the competitive global market. The Ramboll Group contains 70 offices, including two in India. Resources of all companies are available to the entire Ramboll Group, but a single identity is presented to its customers and clients. In this manner, clients are encouraged to see the entire family of offices as a single company with a single purpose and standard of service.

Companies also work to promote the identity of their brand through providing good service over a period of time. FIDIC promotes guidelines for business integrity that can be adopted by Member Associations (MAs) as guidance for integrity and standards of service. By adopting these standards, a company will create a brand identity even as it performs quality work on engineering projects. The provision of continued good service to clients is also very important in small markets. While clients in larger markets may not know anything of a company’s reputation, most or all clients in small markets will be familiar with the performance of companies in the marketplace. In these markets, company branding can be accomplished through the simple provision of good service.

4.2.3 COMBINING LOW COST DESIGN AND HIGH COST TECHNOLOGY / OUTSOURCING

As companies grow into the international marketplace, the pressures of providing high quality engineering services at lower prices become a stark reality. In order to effectively compete in national markets where clients consider low cost more important than technical qualifications and quality of services, the issue of low cost design using high cost technology must be addressed.

The Ramboll Group utilizes its India operations as a resource for international projects. This low cost design resource cannot always be utilized because of language barriers, differences in design standards between nations, and the specific unique requirements that may exist on small projects in the home country or outside India. The attractiveness of the India resource is that hourly rates are low...often 20-30% of hourly rates of European and North American companies. Additionally, engineers and technicians in India are often very well educated and capable of using high cost technology, making their use an attractive option for clients seeking the lowest possible costs.

COWI also works to identify ways to utilize resources in lower-cost countries such as India. Several concerns about the use of the low cost resource include maintenance of quality, definition of services that can be provided without a loss of quality, and keeping clients informed of the overall team organization and who will actually perform their work.

Some team members noted that use of low-cost design resources have economic and social benefits for the country providing outsourcing resources, such as India. These benefits can also have negative impacts for the engineering community in countries where a great deal of work outsourcing occurs. The senior management of international engineering companies must carefully consider project performance, employment of staff, and the perception of the client when decisions are made to outsource or subcontract work to lower cost design centers within the company.

4.2.4 BUSINESS INTEGRITY

The issues of branding, trueness, and utilization of low cost centers are often difficult. Without guideposts for senior management to follow, it is possible for a company to stray into questionable activities or make poor decisions regarding the representation of the company before clients. To prevent these kinds of management missteps, most companies have created internal standards of quality and integrity for providing engineering services.

Ramboll Group has a Code of Conduct establishing the general rules to meet our ethical standards for business behaviour. This Code is designed to prevent involvement in corrupt and fraudulent practices. It forms an integral part of Ramboll's Business Integrity Management System (BIMS), which is under development and based upon the guidelines of FIDIC. This BIMS addresses agents, associated consultants and joint partnerships with other companies. From The Ramboll Group's perspective, their agents, consultants and partners should adopt similar standards and commitments to integrity in the marketplace.

Other companies have codes of conduct that are explicitly stated or implied as a part of doing business. At Stanley Consultants, senior management has created a series of core values that address the way the company treats its clients, employees, and conducts business. These core values are advertised to its clients, are posted on the company website, and are even printed on the back of business cards to remind clients of their importance to Stanley Consultants “We hold our clients paramount. We listen to them and strive...to exceed their expectations.”

Implicit business practices are often present in smaller companies. If a small company’s principal is primarily responsible for marketing, branding, and definition of company policy, his actions and decisions are signals to the rest of the firm regarding the types of activities that are acceptable in the company.

4.2.5

ADVERTISING

Regardless of how a company is presented to a client – through branding, personal references from earlier, satisfied clients, or other marketing techniques – the issue of advertising must be addressed. The Tyro team identified advertising and presentation of company credentials to clients as important to the livelihood of the consulting firm.

Presentation of credentials can occur in many ways. Some companies, such as Stantec and ETS Grupp, publish anniversary books highlighted the company’s quality service and projects throughout its history. Advertisements in engineering or client-related publications may also be used to expose a company to potential clients. Additionally, these advertisements may be focused upon staff recruitment. All team members would agree that people are the livelihood and lifeblood of a company. As the company grows, it is important to ensure that new, qualified engineers are brought into the company to ensure its future success.

4.2.6

SUMMARY

Presentation of a company’s credentials to potential clients must be accomplished carefully and with a strong strategy towards gaining work and completing it. While the Tyros agree in the importance of advertising and providing quality services to clients as a way to “brand” a company as a strong service provider, the importance of creating a clear “brand” may vary based on market and company size. The use of a strong company brand creates a clear advantage in the international marketplace, especially with clients may not have heard of your company. The risk to strong branding is that damage to the company’s reputation may occur when project performance is poor – even on large projects where the company performed well. Despite this risk, most Tyros agree that branding a company is important to its success, regardless of the market. Branding is not seen as incompatible with low cost design using high cost technology. While most companies able to take advantage of low cost design centers are large, international companies, the demands of the client require a high level of performance – whether the home company performs the work, a low cost design centre, or a combination of the two. In the end, good project performance is the best way to establish a company brand.

CHAPTER

5

Case 4: Development, sustainability, cultural changes and globalisation

5.1**THE CASE**

The group was provided with basic information on general characteristics of the development with overall references to sustainability, cultural changes and globalisation.

Taking these issues into account, the students were asked to analyse the current situation in their area and to provide views on sustainability. For analysis, the following five questions were formulated:

1. Describe the most important constraints and the most promising opportunities for development of your business in your country.
2. Is sustainable development a necessity, an added benefit or an extra cost to projects?
3. Analyse key elements in managing the change process.
4. Discuss different models for globalisation, considering staff resources, cultural conflicts, and differences in national identities.
5. How can FIDIC assist to support such development?

5.2**CONSTRAINTS AND OPPORTUNITIES FOR DEVELOPMENT****5.2.1****CONSTRAINTS AND OPPORTUNITIES IN YOUR COUNTRY**

Developing your consulting business consists of creating new and improved “technology based intellectual services”. The key resource in this process is the members of the company. This simple fact means that developing your business means developing and/or changing your staff members. Development is driven by society and consultants play an important role in shaping the development and direction of society, its infrastructure, and the built environment. Consultants play this role in two ways: one, as creators of ideas and opportunities; and secondly, as service providers enabling the implementation of new ideas and new demands. The same change process is required for staff resources, either by training your present staff or employing new staff with the required skills. Training your own staff in new technologies is time consuming and costly, on the other hand it is essential for maintaining a good working environment and supporting fundamental social responsibilities. The temptation is to recruit new staff with the required skills and thereby

shortcutting the development process, at the expense of working environment and staff relations.

In this section of the report, the most important constraints and the most promising opportunities for development of the business in various countries are analysed. Individual responses are organized based on the respondent's country of origin as follows:

ROMANIA

Constraints:

- Romania is generally considered a poor country.
- Limited financial resources limit the amount of projects and work. The good part is that the sustainability is a must. Only the projects that make the community prosper are approved, we cannot afford to remake a bridge every 20 years, so design must last a lifetime.
- All the buildings are designed to last 200 years with minimum maintenance.

Opportunities:

- European Union integration provides community funds for improving the infrastructure.

NORWAY

Constraints:

- Traditional market where it is difficult to diverse your services from other companies ("branding").
- Regulations that enforce price competition on the domestic market (price dumping). Fewer resources are available for research and development.
- High cost country that makes it difficult to compete on the international market.
- Traditional "slow moving" organisation.

Opportunities:

- Mergers and acquisitions open up new markets and competences.
- The government's effort to support international development. Companies can support the country's activity abroad.
- Globalisation has put the focus on new markets and market segments.

Sustainable development enforces new approaches to project implementation, i.e. extended requirements for consulting services.

THE NETHERLANDS (FOCUS ON AIRPORTS)

Constraints:

- The Netherlands is small: there are only a few airports (but one large one: Amsterdam Airport Schiphol), we work or have worked for all Dutch airports, so there are no potentially new clients.
- Environmental conditions are limiting the growth of the existing airports making development of new infrastructure extremely difficult (this, however, could also be regarded as a challenge).
- The introduction of new ultra long haul aircraft used global point-to-point connections may threaten the position of Schiphol (our biggest client) as transfer hub between USA-Asia flights.

Opportunities:

- Aviation is still growing and more sophisticated and sustainable infrastructure solutions are required to construct an airport that can cope with the increasing traffic demand in the future.
- Small, regional airports and former military air bases have been discovered by the new 'Low Cost Carriers' since they are cheap, not congested and efficient to use for a no-frills operation. This trend creates a lot of work such as: overlay and reconstruction of existing but aging runways and aprons, new 'low cost' terminal building facilities, landside retail and real estate facilities, etc.
- Congestion at the major national airports (Schiphol, Rotterdam) may cause the airport authority to study alternative locations (additional capacity at other existing airports, a new airport in the sea, etc.).

FINLAND

Constraints:

- As Finland is a rather small market area, we have difficulties to grow and expand our market share within domestic markets. We must try to diversify our services from other companies by better quality and "branding". In short term it can mean even lower prices, but that is not the solution for the long run.
- We are still recovering from a long recessionary period and our main clients, the municipalities, have limited possibilities to fund all necessary infrastructure investments.

Opportunities:

- Government is outsourcing a lot of services and that creates new opportunities to private consulting companies. New tendering practices (Design-Build and BOT) and new approaches to project financing (PPP) open a new world for consulting companies.
- Globalisation and especially expansion of EU have created a wider market area for us to provide our services. We can say the same about the opportunities in the Russian market which looks quite promising.
- Sustainable development gives new aspects to consulting companies and in this way we can widen our services to new segments.
- A change in our firm size now gives us the possibility to participate in large multidiscipline projects. Of course we could do the same by partnering or joint ventures, but it's easy to contact your colleagues within your company and then try to build up the best possible team for the project.

THE NETHERLANDS

Constraints:

- There are no large infrastructure projects or building projects because of the poor economy and difficulty with current building laws.
- The amount of technical skilled students is declining.
- There are more competitors on the market since the European Union (less borders for economic activity).

Opportunities:

- The phenomenon of unsolicited proposals gives new opportunities. The market is held partly responsible for social development. This way you can define your own projects and develop them on a “standard” way or by PPP constructions.
- New types of contracts such as DBFM contracts (design- build- finance- maintain) or a contract given on the basis of functional specifications rather than that of technical specifications.
- European Union gives new opportunities. We can use our specific national knowledge for international projects.

CANADA

Constraints:

- Low confidence in the publicly traded stock market.
- Outsourcing of work to India and other countries that exhibit significantly lower charge out rates.
- Increased environmental regulation (both a constraint and an opportunity for Environmental Management firms or multi disciplinary companies).
- Low cost small consulting companies.

Opportunities:

- The overall market in Canada is very strong and all industries are moving full steam ahead. The consulting industry is strongly tied to the overall market place. If there is a demand for infrastructure there is a demand for consulting.
- Constant influx of people to Canada is creating additional opportunity for infrastructure requirements.
- Acquisitions of engineering firms throughout Canada are creating more opportunity by reducing competition. Several firms are in a growth mode and purchasing small to medium sized firms.
- Globalization of consulting organizations.
- Sustainability, LEED, etc.
- Technology is quite strong in Canada, which opens up international opportunities.
- Increased environmental regulation (both a constraint and an opportunity for Environmental Management firms or multi disciplinary companies)
- Alternative project delivery services – DB, DBO, P3, etc.

ITALY

Constraints:

- Small dimension of our structures/firms.
- No attitude/use to think as a group or company but as a single unit.
- Amount of technical skilled students declining.

Opportunities

- Being more in contact with abroad realities (European Union) will allow us to develop different skills we are not used to have (or to consider important).
- New markets due to environmental attention/sustainability.
- Necessity to develop multidisciplinary firms in order to face problems in a complete prospective (not only technical).

UNITED STATES

Constraints:

- Adversarial relationships between pro-development and pro-environmental groups.
- Excessive litigation and lawsuits.
- Government is slow to pass legislation that will positively impact transportation and energy sectors.

Opportunities:

- Constant innovation in technologies and project delivery systems.
- Strength of LEED and green project delivery opportunities.
- Strong housing and construction markets.
- Strong university research programs in engineering.
- Urban renewal and infill projects in cities.
- Growth in "ex-urbs".
- Laws requiring increasingly clean power production - both for new power designs as well as environmental controls.
- Strong private development markets throughout the country.
- Laws requiring federal government to select engineering based on quality of the firm; policies also require project set-asides for small businesses, woman-owned business, disadvantaged businesses, and minority-owned businesses.

ESTONIA

Constraints:

- Small market, it means further growing for companies is rather limited, unless the European market is considered (which is already divided by major players).
- Engineer's occupation is not well acknowledged; therefore the salaries are pretty much lower than in the construction business.
- Public bidding regulations favours low cost (as well as low quality) tenders, that tend to require extra investments in the future.

Opportunities:

- Lower costs comparing to nearby neighbours (i.e. Scandinavia or Finland) could offer possibility to do subcontracting work outside the local market.
- Increasing real estate sector.
- Constructing of new and reconstructing of old environmental and energy facilities (landfills, purification and power plants etc).
- Increasing demand from industrial sector (new investments for factories and ports). Five years ago, this sector, once been main market for our company, was practically dead.

MEXICO

Constraints:

- Lack of Mexican well trained capable engineers.
- Large competition from foreign consulting firms, offering experience in countries all over the world with new technologies.
- In the public sector, large competition from small consulting companies offering low cost but bad quality services.
- Lack of support from the Mexican government to encourage exporting Mexican consulting services to other countries.

Opportunities:

- The participation of foreign firms in the private sector has increase the value of engineering, increasing the hourly rates.
- A new law requiring engineering services to be qualified based on quality and not cost.
- Large investments in Mexico from multinational industrial companies in the petrochemical industry.
- The possible opening of the energy sector to foreign private investment.
- An explosive growth in the housing investment market.
- The “financial” power of the Euro is making Europe very expensive, thus, the tourism industry in Mexico is experiencing an important growth.

The above analysis shows that the primary opportunities and constraints are closely tied to the local economy, for example, there are several opportunities within countries that are experiencing good financial times. This is quite intuitive since engineering, architecture and construction companies are closely fixed to the economy through infrastructure work. It should be noted that the economies are in a constant state of flux whereas one country may be a high cost country now but was not several years ago and may return to a low cost country in the future.

There is a trend within the responses that suggest that there are a shortage of engineers in countries that are undergoing poor economic times whereas there is an overwhelming demand for engineers within countries that are experiencing good financial times.

The overall concepts of globalization and sustainability were regarded as significant opportunities in almost all areas.

Several constraints for some companies or countries can also be another opportunity at the same time. For example, increasing environmental regulations could hinder or delay infrastructure development whereas this could be a huge opportunities for consulting companies that have an environmental management practice area. Kyoto is also another example of this how it may hinder industrial expansion but could also provide opportunities for consulting companies that have specialists in air quality management or modelling.

Generally speaking the common themes for constraints were:

- Poor economies or market conditions.
- High cost countries.
- International competition.
- Branding and diversification of services.

Generally speaking the common themes for opportunities were:

- Globalization.
- Formation of the European Union.
- Sustainable development.
- New project delivery methods such as: DB, DBO, PPP, etc.
- Good economies or market conditions

5.2.2

LONG TERM PROJECTIONS

It was mentioned above that countries are in a constant state of flux where the constraints and opportunities change with time. The following summary lists the perceived long term future market conditions over the next 10 Years:

Romania	
Norway	<p>Market projections for Norwegian consulting companies will vary in regard to which market the company operates in. Within the next 10 years there will be an increased privatisation or establishment of State Owned Enterprises of resented public services. I.e. water supply, road construction and maintenance. Experience show that these structures are more “commercially” driven and have increased resources with regard to funds and human resources. Hence, they will demand more specialised services like LCC, risk management, new technology and innovative solutions. This puts an increased pressure on the traditional “slow moving” organisations to renew themselves. New project delivery methods will also be of increased interest (DB, DBO etc)</p> <p>The current level requiring public bidding will probably increase from 25,000 to 62,500 EURO. This may be a positive development to avoid price dumping. Today extensive recourses are spent among clients and consultants to prepare and calculate bids on quite small projects. This will however also put more emphasis on client relationship and marketing.</p>
The Netherlands (Focus on Airports)	
Finland	
The Netherlands	
Canada	<p>Market projections for Canada are strong for the long term with some minor fluctuations. The ever increasing price of oil could lead to difficult market conditions moving forward. The focus on sustainability and alternative project delivery methods will continue to grow and prosper.</p>
Italy	
United States	<p>Recent passage of large federal programs for transportation and energy in the United States (\$286.4 billion USD and \$12.3 billion USD, respectively) will provide improved opportunities in these market sectors. The recent Base Realignment and Closure review (BRAC), combined with repositioning of US military forces throughout the US and world, will provide more opportunities for engineers in the military design and construction sector.</p> <p>Sustainability in building design and construction is gaining more popularity through programs such as LEED and GreenGlobes. This market sector will continue to grow.</p> <p>The housing and development sectors may experience a slowdown at some time 5-10 years from now; short term activities in these areas, especially mixed-use commercial/residential community planning, are very strong and growing.</p>
Estonia	
Mexico	

5.3 SUSTAINABLE DEVELOPMENT

5.3.1 NECESSITY, ADDED BENEFIT OR EXTRA COST

In this section the question is discussed whether sustainable development is a necessity, an added benefit or an extra cost to projects.

Sustainable development should ensure the basis for further development, which is a necessity. Focus on energy economisation, LCC and risk management opens up new markets and extended service requirements, however, regulations to ensure sustainable development can, on smaller projects, be exaggerated and costly.

Airport Development

In airport development, it is international common practice that an airport has a Master Plan at its disposal. This master plan describes the size and location of all airport and airport related facilities 20 years from now. The associated land requirements are described in the related 'Land Use Plan'. In many countries it is dictated by law that all construction projects at the airport should be in accordance with this master plan. This is to ensure that tomorrow's construction project will be sustainable and still be useful in the future when traffic increased. In this way, sustainability of the possibility for growth is guaranteed.

Of course circumstances may change and this may have its effect on the required airport facilities. Therefore it is common practice to review and update the 20-year master plan every 5 to 10 years. During such a review, starting points and assumptions used as basis for the existing master plan are reviewed against an updated traffic forecast. If required, the master plan may be changed and adjusted to the new forecasted requirements.

A sustainable solution (in this case, a solution that will last for at least 20 years and beyond) is not a static issue. It should frequently be updated and when necessary be modified every 5 to 10 years.

During the master planning process, it often occurs that conflicts arise between short-term benefits and long-term solutions. It could, for example, be quite attractive to build an air cargo facility at a certain available location in the short term. However, this area might be reserved for a future second runway that eventually (when traffic keeps on growing) will have to be built. Consequently the new cargo building will then have to be removed. When it remains uncertain that this second runway will ever be built (if at all), this could be a difficult discussion. After all, if the second runway will be built in the far future only, there is a point in time for which it can be calculated that the Net Present Value (NPV) of demolishing and rebuilding the cargo building may be less than the additional direct cost that will have to be made today when the cargo building is being built at an alternative, less favourable location outside of the future runway area. So this example brings up the issue of Net Present Value of future projects versus the additional direct cost of a (more expensive) sustainable solution.

Sustainable Development - Redefined

Shall we assume that a sustainable project has three components that must be improved by the project?

1. Social Component: A sustainable project requires participation by communities/stakeholder groups, and it improves the lives of those affected by the project.
2. Economic Component: A sustainable project improves the economic livelihood of peoples affected by the project, provides opportunities for jobs and new companies.
3. Environmental Component: A sustainable project improves/protects the environment in the region affected by the project. Some projects incorporate renewable, recyclable or reusable environmental components.

The challenge has several parts:

1. Cost - Who pays for the upfront costs of sustainability?
2. Education - Clients must understand that sustainable projects bring intangible benefits, including goodwill of neighbours and environmental groups; good Public Relations; and long term life cycle costs may be lower than a non-sustainable project.
3. Consultancy for Sustainability - In a few years, many clients will consider sustainability to be mandatory as part of the engineering consultancy, this may not be a value-added service. Engineering firms need to be aware of this possible threat.
4. Measurement of Sustainability - it is difficult to quantify the sustainability of a project, especially when benefits may not be realized for years. Short term profit is something a client understands very well, as do developers.

The difficulty within a project might be to find the right balance between these three components. Some infrastructure projects for example can have huge social and economic benefits but are disastrous for the (local) environment. However, extensive (and expensive) environmental mitigation measures might challenge the economic feasibility of the project. The project might also have negative (local) social impact (such as community protests that may be made by NIMBY-ists ("Not In My Back Yard"). This raises the question, "How far should a consultant-client team go in order to make a project sustainable?"

Most future benefits of a sustainable solution are quite difficult to measure in today's money (if measurable in money at all). 'Soft benefits' like goodwill and public relations are not easy to quantify. However, long-term life cycle costs can be calculated and estimated for any sustainable or traditionally delivered project solution. When these calculations are performed, it is important to consider that the Net Present Value of future financial benefits may be limited and should be balanced against higher upfront costs. The conclusion could be that what initially seems to be a clear benefit in the future, actually is not so advantageous when the Net Present Value of this benefit is calculated in today's money.

Consultancy for sustainable solutions does add value, even if it is made mandatory by the Client. Providing insight in the consequences (pro and cons) of building in certain features that will provide benefits in the future could be valuable service. These future benefits should be made measurable in one way or another.

It is clear that sustainable development is must nowadays. The problem is how to calculate or define the sustainability of the project.

Green movement has done great job when they have promoted these matters and it seems that the public awareness of sustainable development is increasing. It is axiomatic that engineers are the best group of professionals to deal with these matters, especially with economic and environmental dimensions. For social dimension we might need still additional schooling and training.

In short-term the sustainable development can mean extra cost to projects, but in long run it would be everybody's benefit. Sustainable thinking has reduced the price of some projects. We have developed methods to improve unsuitable materials so that these can be recycled on the site and we don't need to use so much imported materials. This mean lover transport cost and saving of non-renewable materials.

Short term, sustainability is more expensive for the consultants and clients; primarily this is due to the additional expenses incurred investigating solutions and building a body of research and projects that can be used as case studies for future work. The costs of social and economic evaluations are costs that may not have been previously considered as part of an engineering work, they may have been separately incurred in the past. The future client expectation will be to include all sustainable project investigations; engineering, environmental, economic and social, into one project.

The long term sustainable solutions will be the best for everyone: client, environment, end users, etc. While there is a belief in many circles that sustainable projects are more expensive, this is not always true. As engineers perform more sustainable work, they'll find new and creative solutions that reduce project cost.

Measuring short term sustainable development is difficult, but we can all use the same indicators. The economic growth plays a big role in these indicators and does not always plead for further development.

The three pronged approach to sustainability being the social, environmental and economical aspects of projects seems to be the industry norm. It is a good description that is easy to have a general understanding of, at the same time it can be quite general and very difficult to measure as we have all identified. The balance between these three prongs will ultimately be dependent on the project, the location, the culture, etc.

The concepts of sustainability, whatever the specific definition will be, will be a matter of when it will be fully implemented on projects and not if it will be. As mentioned previously, the costs may be high on small projects and will not reduce costs on long projects in the short term.

European Perspectives

Having a look to European legislation this topic will be no more of a necessity, an added benefit or an extra cost only but just something you have to consider as an indispensable part of your designing process.

A recent European Union conference stated:

- Sustainability is not a new step in the project or a new control you have to pass through after your design activity, it is something which evolves with the project (or plan or

programme in the case of 2001/42/CE), is as much complete and global way to face the problem and its solution.

- All stakeholders' participation is fundamental (in accordance with Aarhus Convention) to develop sustainability (which means social, environmental and economical sustainability).
- In order to paint a complete picture of the problem you're dealing with and to do a good choice, you have to study various alternatives in order to find the one that maximizes different requirements satisfaction.
- After the project's realisation or plan's application you have to follow its development and make sure it answers at the requirements it was designed to satisfy - also from environmental, social and economical sustainability point of view; alternative solutions have to be studied if something seems not to work.

Economic growth in some European countries is quite low at this point. An unusual aspect of the business is that the awareness of sustainable development among clients is rising. It may be due to the economic crises of the governments have made public and private clients alike more conscious of how they want to spend their money to realize engineering projects.

Regulatory Context

The question mixes the view somewhat with the perspective of the regulator or government. We need to look at the regulatory context in which a particular project is being developed. In a non-regulated open market such as what we see in some projects in developing economies maximum financial returns to a project are often obtained by a design and operation that excludes the cost of avoidance or mitigation of externalities. An example of this would be a coal mining project in China. Little cost, time or effort is spent on worker safety, on site and off site toxic effects, strategic macro issues associated with the extensive use of dirty coal technology for power and other thermal needs.

In this unsophisticated economy the single basis of measurement is short term financial profit. However, there is often a narrow distribution of benefits and the individuals gaining the benefits are often different from the people bearing their social and environmental costs. In the longer term this distortion leads to socio-political instability and a decreased productivity in the economy. Current research conducted by the World Bank and others "Extractive Industry Review 2004" indicates that economic productivity and growth, (standard of living) is highly dependent on good environmental and social management practices. Environmental and social management, along with education are key requirements for the alleviation of poverty.

In more sophisticated economies such as in Canada, the US and the EU, the distribution of the costs and benefits associated with environmental and social risk are governed by regulation, protocols and practices. These are legislated requirements that are put in place to improve the productivity of the economy and the standard of living of the population. The strong enforcement ability of modern developed states provides confidence that an individual's assets, health and associated ability to earn a living will not be diminished by the actions of another.

Is sustainable development a necessity? From a societal and economic view point it is key to obtaining a higher standard of living and to provide a method of continuing to increase the

productivity of the economy. So from the governments, regulators point of view sustainable development is a necessity.

Is it an added benefit or an added cost? From the project developer's point of view compliance with environmental and social regulations may provide nothing more than an added financial cost. That is where we as consultants come in. By using our expertise we can decrease the cost of compliance or hopefully through our incredible innovative abilities make the design such that we can actually turn the results of compliance into a benefit. For example, we can design to take advantage of energy saving other such cost reduction and pollution reduction features.

5.3.2

SUMMARY

Sustainable development is a subject that has been constantly discussed during this programme, and it could be a common subject in other countries, however, unfortunately in some countries in the world it is something new where it wasn't until last year that sustainable development was even discussed with a client.

Neither federal nor local authorities require companies to comply with sustainable practices and thus, no official benefits are offered for doing so. Will this continue to be the case? Fortunately no! As an example, a large pharmaceutical project is being designed where environment protection through water treatment and energy savings through solar energy will be a key issue in the development of the engineering.

What is happening then? Local industrial societies, with the influence of multinational foreign companies, are becoming aware that sustainable development is a necessity. The growth of cities around industrial areas, the existing pollution in industrial cities, the damage to the national environment from past years, the good results from sustainable projects in other countries and the new available technologies and innovations that can be applied into projects, are all factors that are contributing to creating a conscience about the potential benefits of sustainable development.

Is this enough? Definitely not! Return on investment will always be a key decision factor in an investment process, and thus, the higher the initial cost, the less attractive a project can be. And sustainable development usually involves more initial costs.

What can be done? Innovation from the consulting side is quite important, but some help from governments is needed. If local laws and norms not only become more strict but also offer benefits to those projects involving social, economic or environmental sustainability, then it will not be long before we hear this concept in every project.

For the time being, sustainable development should be considered an aggregate value for a project and it is up to the engineering design if it could be an additional cost or a cost saving opportunity.

5.4

MANAGING THE CHANGE PROCESS

The changes required by development will not only be changes to technologies, but also changes to the way services are provided, the way services are integrated and changes to

client types and project locations. The change from the traditional project designer to provider of sustainable solutions including not only the technological problem solving, but also adaptation of the project to the needs and requirements of the public, the environment and the economy means a fundamental change to the perception of a consultant's role. The change of responsibility being not only connected to technology but also to being responsible for sustainability and fitness for purpose is a dramatic change.

In this section of the report, key elements in managing this change process are analysed.

Components of Change

In the analysis of the key elements in this change process, reference is made to Case 1 (organisational structures) of this Training Programme, where organisational development towards matrix and flexible organisations was discussed. It was mentioned in Case 1 that companies need to follow the market and adjust to changes in demand. This can only be successful if the companies' members understand and adapt to the development. Key elements are therefore: information, transparency and human resource development.

Managing the change process also means focusing to the needs of the clients, changes to technologies, and development of staff by training or take on new ones. It means significant participation of stakeholders in all phases of project delivery. That can be achieved by increased transparency, improved communication, and greater public awareness.

Meeting this challenge comes under the general heading of targeting, resourcing and monitoring. Stakeholders must have a good understanding of the targets. For a company it is essential that management and staff understands and adapts to the development. A wider approach to the projects means development of human resources and changes to technologies.

The clients' needs, technological development and staff development are essential focus points for change processes. Using information, transparency and HRM could be means to reach these goals.

In a broader perspective internal and external management of expectations is becoming more relevant within the engineering consultancy. External clients know and depend on our expertise. This expertise is no longer a unique selling point. Clients tend to focus on different expectations such as creativity in advice, the capacity to tackle integrated Design Build Finance Maintain (DBFM) contracts etc. In other words; clients want to give integrated assignments to a company and know what they are getting at the end. Therefore it is essential to know what Clients want and incorporate this in the internal organisation as part of project/client management (external management of expectations).

At the same time, consultancy companies would like to be the best engineers and therefore need to attract the best qualified employees. Companies have to find new stimuli to keep their employees happy and interested in the work they do (stimuli such as management training programmes, promotions, extra free time etc).

Management of expectations both internal as external can only be done when there is:

- Strong, committed and inspiring leadership;

- Incorporate learning of this change programme within the organisation;
- Sharing of findings with both employees as clients;
- Knowledge of what clients and personnel really find important.

The 7S-model of McKinsey gives a quick insight in the status of the strengths and weaknesses of the internal organisation. The focus on most engineering companies lies on the first 3-4 'S's instead of the last 3-4 'S's.

7-S-model:

- Strategy;
- Structure;
- Systems (quality systems etc);
- Staff (development of staff, HRM etc.);
- Skills (education);
- Style (cultural aspects);
- Subordinate goals.

For changes, the focus needs to be on the "softer" goals like the last 4 'S's in order to have more continuance in our organisational development leading to more profit and satisfaction.

5.4.1

SUMMARY

The three major change components are:

1. Changes in client expectations/needs.
2. Changes in technologies.
3. Changes in staff development.

Client expectations are continuously changing and consultants must adapt to this change on an ongoing basis. Clients are clearly the most important aspect of the consulting business and they must be treated appropriately.

Part of managing the change process is setting of a company vision and goals. When companies are beginning a growth phase, it is important to have some idea of how the company will grow, what new capabilities it will take on, and how senior leadership will direct the company towards meeting these goals.

Another important change item is leadership succession (reference is made to Case 1). This is similar to staff development. Leadership succession allows the company to continue its existence over a long period of time. If done properly and smoothly, the transition to new leaders is smooth and does not impact clients' perception of the firm's abilities and commitments.

Perhaps "managing the change process" refers to changing from traditional project delivery to sustainable project delivery processes. If so, this change process really isn't different from any new technology or process that has ever impacted the consulting industry. Sustainable project delivery has the potential to create a change in project delivery methods similar to the changes CADD made on the drafting industry; once the benefits of computerized drafting were widely known, most firms made the change to electronic drafting. Today it is nearly impossible to find an engineering firm that does not use a CADD system.

Since managing the change process is very similar to several other concepts that discussed previously, Clients, employees and other stakeholders are required to be educated in areas prior to any initiating change; otherwise there will be negative results. The need to understand and comprehend issues is inherent for individuals to adopt any change.

Consultants have to be innovative; not only on the solutions that they offer clients, but in the way they manage the company and execute projects: we have to be consultants within our companies. A flexible company that easily adapts to an ongoing change process will always obtain better results.

The change process is clearly a multidimensional and multidisciplinary issue with two primary drivers being cost and differing views of developers and the general society. Continued education and engagement by the engineering community will aid in bringing these two views closer together.

In order to manage the change process, the following activities could address this issue:

- Education of sustainability to employees, clients, government, etc.
- Incorporate the concepts of sustainability in corporate planning activities.
- Gain a stronger understanding of the needs of clients and end users, and identify design and planning strategies that allow the use of sustainable delivery methods to meet their needs.
- Evaluate new technologies, as they appear in the marketplace, for their ability to create “value-added services” for clients

5.5

GLOBALISATION

5.5.1

MODELS FOR GLOBALISATION

Globalisation of services is an important challenge requiring development of staff and procedures. Expanding activities to other countries require changes to your own staff and often also to the staff recruited elsewhere. The success of associations, joint ventures and mergers is dependent on the parties’ abilities to develop cooperation and a common culture. In emerging economies consultants are at different stages of evolution in management and ownership, and quite often representing a fairly new industry in their country. Consulting firms in developing countries often face considerable obstacles to their development in terms of inefficiencies in project delivery, discrimination in selection procedures, poor technology transfer, lack of legal, insurance and contract infrastructure and corruption.

Globalisation of trade is a reality, but has some controversial aspects including impacts on labour practices and the natural environment. For consultants sustainability is a must. Consultants from a highly industrialised, high salary costs country will over time loose jobs to companies in low cost countries or have to involve their business with theirs.

In this section, different models for globalisation are discussed, considering staff resources, cultural conflicts, and differences in national identities.

Different Models

There are several different models for sustainable development/globalisation.

One area for consideration is that engineering firms may have to develop "soft science" skills in order to remain competitive on sustainable projects. These projects may require economic evaluations, social specialists, health specialists, and other non-engineering specialists.

Comprehensive projects with many different sectors will require different approaches than purely engineering works.

Another important aspect of globalisation, especially through acquisition, is that company cultures shall contribute with complementing skills. Meaning that knowledge of local conditions can be provided by local representatives, if they are given the opportunity to do so.

Globalisation is one of the key words nowadays. However, there are different basic models for globalisation in the Consulting Engineering Industry. You can:

1. Work globally by yourself.
2. Extend your business to different countries.
3. Build-up a network or alliances with the other companies.

If a company wants to do everything independently, it needs well trained and motivated staff. In some cases it might be a problem to find these kinds of musketeers who are willing and capable to work abroad constantly. In these cases there is greater risk to cultural conflicts as well, especially with clients and other counter partners.

When the company decides to extend their business to a new country by establishing new companies or offices, it is essential to find good personnel that are motivated to work with you. For that reason it is important to tell them where you are coming, who you are, what you can offer and what is your future plans in that specific country. All this you should do by keeping in your mind differences in national identities, but in same time you should strengthen the necessity of feeling to belong to one big family, even it is global. Otherwise there is no reason to extend your business in the long run.

If the company goes to the global market with a well known partner, the risk for failure is much lower. Networking gives certain flexibility to the company; you can always build up a best team to the assignment, local partner gives you local knowledge (to avoid cultural conflicts), and during economical backlash, it is easier to move to another market area. This is the most common way to work globally, especially in international funded projects.

Local Partners

Working globally can in many cases be done through or with a local partner. However, there could be different models for the distribution of workload and responsibilities between your own company and the local partner. Let us assume two models at the far ends of the scale:

Model 1) work is carried out abroad with 100% own staff from your company;

Model 2) work is carried out abroad with 100% staff from a local partner.

Model 1 (100% own staff)

Pros of this approach could be:

- Low technical risk (you know exactly what your own staff can do);
- Known good quality of the output (methods, style and production speed are known).
- Easy communication between field and head office (no cultural differences or language barrier).
- International profile to the Client.

Cons of this approach could be:

- High cost for expatriates ('western' salaries, cost of living, etc).
- Cultural differences and language barrier between field office and Client.

On the other end of the scale, we'll find an approach where 100% of the staff members abroad are local professionals carrying out the entire project.

Model 2 (100% staff from local partner)

Pros of this approach could be:

- Significantly lower cost (local salaries, no cost additional cost of living, etc.).
- Local partner has local networks and knows its way around.
- No cultural differences or language barriers between local partner and Client.

Cons of this approach could be

- Less known quality of the output (approach, speed of work, style and business ethics might differ from what your company would like and what the Client might expect).
- Higher failure risk due to lesser control from your company over the above mentioned.
- Possible cultural differences or language barriers between local partner and your company.

Of course many projects are carried out as mixture of both models in an attempt to combine the strengths of both models and to eliminate the weaknesses and risks. Finding the right partner is therefore of great importance, followed by finding the right balance between foreign and local input taking into account: cost, skills, know-how and the availability of staff.

From the point of view of a company in a developing country such as Mexico, globalisation finds expression in:

- International companies that come to Mexico usually try to find a local partner.
- It is not common for an international company to buy a Mexican company.
- It is also not common to have an international company try to carry out a project in Mexico by themselves, at least not the first project.
- It is common that after an international company has executed some successful projects with a local partner; they will "divorce" from the local company and continue operations alone, taking some staff from their former local partner.

This scheme has been followed by the two of the largest engineering companies in Mexico, which are both from the US.

The key issue is: can a company from a developing country become global in the so-called "first world"? It seems to be possible; however, no Mexican consulting company has been

able to do it successfully. It requires a mixture of experienced staff, low rates, and a local partner willing to team with a “developing country” company.

Requirements from Donor Organisations

Many donor agencies that fund projects in developing countries (WB, ADB, CIDA, and USAID) continue to push the requirement for developing the capabilities and skills of local staff and local companies during the project. This has a couple of interesting results. Ideally, the local company should be better able to do consulting work after engaging with international engineering firms. Taken to an extreme, eventually the engineering market in a developing country should be self-performing, and international engineering firms will not be needed except for large and complex projects.

This "effect" means that a firm entering a developing market can theoretically put itself out of business in that market in the future through project-mandated capacity building, technology transfer, etc.

The results of the ‘knowledge transfer’ policy are visible today. For example: when NACO did airport projects in Taiwan or Malaysia 10 to 15 years ago, NACO was lead consultant supported by local professional firms. Today, these local firms have gained a lot of experience on airport projects as well, both through working with us 10 to 15 years ago and subsequently keeping close (local) contact with the client, delivering some small airport projects. For large projects in Taiwan or Malaysia today, NACO will not be asked to be lead consultant anymore. The former local sub-consultants are now in the lead and have asked NACO to tender for specialised services in competition with other specialised international airport consultancy firms. In this method the firms will be competing on price, a position that they do not prefer of course.

Of course, purchasing a company in a developing market is more sustainable to remaining in the market over the long duration. What it doesn't provide for is developing project work for Western staff members who work outside of the developing country. Again, taken to an extreme, it may not be possible for a global company in the future to develop project opportunities in developing nations unless local offices are used in those developing countries.

Cultural Differences

An important reason for significant problems in the international market is many times the overall issues of culture and national identities as they may be vastly different than those of North America, Europe, or any other place in the world.

The concept of branding and adopting a common culture could also be a difficult to initiative through the firms that are acquired abroad or even nationally. Sometimes, companies have even completely lost acquired companies in their own “backyard” due to these issues. Acquisitions of international firms would therefore be quite difficult to build a model for globalisation. The concepts of partnering with firms with little to no overlap in geography, services, clients, sectors, etc. seems to be a more efficient and effective model.

The local partner can provide in many cases better overall quality because he knows the local requirements, customs and common practices. Still there is a need for international

experts because some of the projects are large that the locals don't have capacity or knowledge to manage these along. And in many cases the client wants to have at least some international players on the market only to keep the market prices at a tolerable level. Most international clients such as WB, ADB, UN, etc. have such comprehensive requirements that even the international project manager must have extensive experience to be able to handle them. Yet they also require that the predominant number of person-months shall be local staff. Sometimes it is more challenging to adapt to the donor/client culture, more than the local culture.

Network Manager

Building up a flexible network of (strategic) partner companies could be the way to go. Good technological development, ICT development etc is essential. But also knowing each other competences is important. In future, maybe new job descriptions arise, such as 'network manager': someone who knows a lot of different organisations, people etc. This is something different than account management or sales management.

A comparison between "old" structures and "new" structures:

- From Hierarchy, to Networks.
- Delegation and control, to Contracts.
- Total business approach, to Competition based cooperation.
- Structured solutions, to Flexible patterns of collaboration.
- Push-orientation, to Offering solutions together.

In his book 'The Tipping Point', Malcolm Gladwell mentions different types of people-Mavens (information collectors);

- Connectors (the 'people who know everyone' and get you connected to them), and
- Salesmen (pretty obvious what these folks do).

It may be difficult for a company to employ someone who is a Connector as their only skillset. Perhaps only business development may require the "connectedness" of "who knows who" to be successful in the future of consulting. Part of business development is doing just that: knowing who the right teams/people are to partner with, and making yourself known to them for future opportunities. Perhaps the methods of information gathering will change so much in the future that the specialized "consultant knowledge broker" will be effective in the company of the future.

China

Presently, many Western firms are working on acquisitions in China. Not only because China is the fastest growing market in the world, but more importantly because their main clients are moving to China. Globalisation is important for these consultancy firms because it's important for their (multinational) clients such as Shell. In China, Western companies tend to focus only on adding expertise instead of obtaining knowledge that is already exploited locally by China.

Many Western companies start with a small office with both international and local staff and it should grow. The culture is mixed. Growth through acquisitions could take longer than expected. However, after acquisition of a specialised local firm, it remains uncertain whether

local clients are willing to pay the higher fee to what they still regard as a local firm, even though this local firm is now part of a global alliance and has therefore access to internationally renowned specialists.

Multinational clients such as Shell or others investing in China today, are more likely willing to pay the higher fee of an international engineering consultant for their plants and facilities. This is the market many international consulting firms with offices in China work for.

At present, law and legislation prohibits non-Chinese companies to work in China on Chinese projects. In other words it is not possible to do standard business in China for the Chinese government (as client) as an international company. Therefore many Western consulting companies only work for international companies in China. They are the clients. Western companies can only work for the Chinese government if they do not have the tools or technical expertise available in China.

5.6 THE ROLE OF FIDIC

5.6.1 HOW CAN FIDIC ASSIST TO SUPPORT SUCH DEVELOPMENT

What is FIDIC?

Most of our participants agreed the fact that they knew little information about FIDIC prior to joining this program.

During these discussions it was noticed that FIDIC is not a well known brand. And it is shameful because the basic idea behind FIDIC is to promote the Consulting Engineering Industry. How it can do that if nobody knows what is FIDIC? That's why FIDIC should promote itself first, raise its own profile, and make itself well known.

In the United States and Canada, the majority of the engineering community knows nothing about FIDIC. Similar conditions are present in Europe, most of our colleagues had hardly heard about FIDIC until we were introduced to this training. The exception is if anyone works on international projects (sometimes not even then), or if they are involved actively with the local FIDIC Member Association (MA).

FIDIC is normally known only by the Conditions of Contracts (Red Book, Yellow Book etc), since there are a lot of international contracts executed by using these conditions. However, as we know, FIDIC contains a lot more.

It appears that FIDIC should work harder in promoting FIDIC, so we as a member could have an important advantage from being a member.

In order to find more acquaintance with FIDIC, local FIDIC Member Associations should better introduce the entity of FIDIC.

Sustainability

FIDIC represents a good basis to be a forum for discussing issues like sustainability, to develop a common approach, and to be in the leading edge of development. FIDIC should promote this approach to non-engineering international agencies, but from that point and

forward the members (member associations) represented in each country can also approach the general public and clients. An important issue is to have a common approach and to have a clear understanding of our role in sustainable development.

Sustainability is something that must cross technical disciplines. Sustainability can't be pursued in isolation by engineers, social scientists, environmentalists, architects, builders, etc. Perhaps FIDIC could partner with non-engineering agencies or bodies that have more influence with the general public to raise the profile of sustainability (World Bank, for example).

Cultural changes and globalisation

FIDIC can offer us something that we can not do ourselves because we are (and in the future even more so) each others competitors. This is why knowledge is kept within our own company and isn't shared within the industry. FIDIC can give us (Engineering industry) a playing field without conditions for us to discuss with each other, get to know each other, and are able to build our own network/ partnerships.

In the Netherlands, the approach of transition management is a steering model to organize and structure transition management activities in so-called Transition-Arenas. The transition-arena is best viewed as a virtual arena or network, which provides room for long-term reflection and prolonged experimentation. Through the use of different steering instruments, ranging from scenario studies, participatory methods and regular instruments such as pricing, subsidies and regulation, the initial arena has to evolve into a growing network based on a mutually defined direction for the future (definition professor Rotmans).

More information can be found from an English website:

<http://www.drift.eur.nl/research>.

Other tool what came up during discussions was Knowledge Management.

This is mainly a tool within the organisation. Almost every large organisation has a view or a programme about Knowledge Management. It looks like in the future we work differently using more flexible constructions. When we do so, a flexible way of work is necessary. When you want to "find your working partners" you can do this in a "transition arena". FIDIC can fulfil this need and make sure that partners have the right knowledge level.

Training

We think that one important role for FIDIC is to harmonize the engineering practises. In this way it can assist the Consulting Engineering Industry to work together to find sound solutions that are in same time sustainable. This can be catch up by organising extra training and seminars not only for the members, but for cross technical disciplines and for the clients and investors as well.

Being a FIDIC-member should be an international quality warranty that should allow anyone to work abroad with maximum flexibility.

Some of us would like to see FIDIC to support more research works. It should help implement technologies, techniques and strategies. A FIDIC- engineer should have a

superior education, and superior technologies. FIDIC should release a weekly report or something by mail explaining any new technology or solution discovered.

FIDIC should provide help and support for post university studies. Even the opportunity of exchanging young engineers for masters and doctorate degrees.

FIDIC should help with information and with exchanges of engineers.

In same time FIDIC should promote the Quality Based Selection (QBS) for the clients and investors, because they must realised that normally the lowest price don't give the best result.

FIDIC has to start by marketing itself. If nobody knows FIDIC it is hard to obtain results. The next president of FIDIC will be from Mexico, so Mexican firms are looking forward to having plenty of participation from FIDIC in obtaining the following:

- Quality Based Selection for consulting services instead of Low Cost Selection.
- Information on best consulting practices
- Training on sustainable development practices
- Globalisation of Mexican consulting firms. Who knows, maybe one day my company will be looking to partner with a local company from Canada, US or Europe!

5.6.2

SUMMARY

How can FIDIC support this change:

- Being more present and significant in everyday practise.
- Supporting/promoting specialist skills development.
- Uniform engineering practises in the respect of each other country and evaluating typical skills.
- Developing a permanent network of contacts within the whole "designing/consulting" world (project managers, consultants but also the other stakeholders such as institutions and producers).

To sum it up, we think FIDIC should be:

- A Specialist (researches and education programmes).
- A Broker (matching and sharing knowledge).
- A Spin-doctor (issues that can and stimulate discussions).
- A Watchdog (guarantee quality of advise Quality Based Selection).

FIDIC needs to be more engaged with the global engineering community and increase the level of promotion of the group. FIDIC can only do this when they promote themselves more.