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Project Management Performance – *Organisational support in joint venture projects*

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SE-412 96 Gothenburg
Gothenburg, Sweden 2005:102
Master thesis 2005:102

PROJECT MANAGEMENT PERFORMANCE
– *Organisational support in joint venture projects*

Master thesis 2005:102

A master thesis within the education programme *Management of the Built Environment* at Chalmers University of Technology, Gothenburg, Sweden.

The thesis has been carried out in co-operation with E. Pihl & Søn A.S

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Master's Thesis in Civil Engineering and Construction Project Management

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Master's Thesis 2005:102

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Abstract

Why do a company continuously experience problems in a joint venture project? Information concerning a problematic project in Greenland was obtained, in order to clarify the root of problems occurring in the project. Different issues as logistics, culture, geographical aspects and management were investigated to establish if they had any affect on the problem. The problem was, by many, thought to be resting with the project manager/management, and initial interviews were based on this angle of approach. During the interviews an interesting finding however became clear. It showed that, even though all aspects of the project need adequate attention, it was at the parent organisation, the origin of the problem lied. The organisation has over the last 10-15 years expanded a lot. The company has tried to maintain their organisational structure thus preventing themselves from maturing the organisation accordingly to their growth in size. This has led to insufficient support towards their employees thus also creating unnecessary problems for the project manager. Interviews shows that employees are taking care of their projects, but however do not feel a sufficient connection towards the home office. Furthermore the knowledge and competence at the company is based on the human capital whereas the structural capital is non existent. The recommendation to the Company is that they develop a support system which could function as a tool in the organisation but also as a support in their projects. This report gives a specific suggestion to how this organisational issue could be solved. Our suggestion is a specific support tool which enhances the mutual understanding for project success.

Keywords: Management, Joint Venture, Organisation, Support, Project manager

Projekt Ledelse og Præstation

-organisatorisk støtte i joint ventures

Eksamensarbejde indenfor Management i byggesektoren

JACOB GADE & TONNY MADSEN

Afdelingen for bygningsøkonomi

Chalmers Tekniske Universitet

Sammenfatning

Denne rapport har taget udgangspunkt i et joint venture projekt på grønland. Forfatterne søgte at afdække hvilke faktorer der havde resulteret i at projektet var kuldsejlet. For at synligøre disse faktorer, blev der taget udgangspunkt i interviewere der havde til hensigt at afdække problemet. De initiale interviews havde fokus på projektlederen, logistik samt kulturelle problemer. Alle synes de at have båret deres del af årsagen til problemer i projektet med projektlederen som omdrejningspunkt. Yderligere var der flere medarbejdere, der gav udtryk for at han ikke var kompetent til at løse opgaven. Det blev efterhånden som studiet skred frem klart, at det ikke var projektet i sig selv der havde et problem. Det blev også klart at projektlederen ikke var den bedste, men at han var ny og ingen støtte havde fra sin hjemmeorganisation. Efter yderligere interviews fremgik det at det var hovedorganisationen der ikke havde været i stand til at modnes i takt med at organisationen over den sidste årrække havde ekspanderet kraftigt i aktiviteter og medarbejdere.

En årsag til firmaets problemer skyldtes at de i deres organisations model som de i en årrække har fundet velfungerende, ikke har tilstræbt at tilpasse den til deres vækst og deres nye antal medarbejdere. De har i stedet søgt at bibeholde deres horisontale organisations struktur hvor de har følt de har opnået den største flexibilitet. Dog har en meget stor tilgang af nye medarbejdere samt et stigende antal projekter gjort det svært for ledelsen at bibeholde overblik samt at støtte alle medarbejdere. Resultatet er blevet, at de erfarne medarbejdere med en årrække bag sig i firmaet føler at de kender organisationen. Dette gør dem kompetente til at udføre mere komplicerede projekter. Dette fungerer men med tanke på fremtiden kan man tænke sig at det kan få alvorlige følger for firmaet.

Studiet har vist at hovedorganisationens kompetence udelukkende baserer sig på human kapital og på ingen måde har nogen form for struktur kapital hvor medarbejderne kan søge støtte i rutiner og procedurer. Hvis man tager human kapitalen ud og der ingen struktur kapital findes, kan man kun forestille sig hvilke følger det ville få for firmaet. Forfatterne søgte derfor både i denne organisation samt i andre organisationer efter løsnings modeller til struktur kapital samt holdninger til dette. Dette har givet nogle konkrete forslag til støtte systemer i joint venture men disse er også anvendelige ved projekter i almindelighed. Der er ydermere udarbejdet forslag til fokus ved nyansættelse som både omhandler kompetencer og integrering.

Nøgleord: *Projektledelse, organisation, struktur, støtte, joint venture.*

Acknowledgements:

The authors would like to thank:

- Göran Lindahl, our examiner at Chalmers University of Technology, for supporting our work continuously and giving us good advice.
- Jens Kjærgaard our supervisor at E. Pihl & Son A.S., for giving us the opportunity to get access and to study an ongoing project within their daily activities, a true learning experience for us.
- Interviewees within E. Pihl & Son A.S, for taking the time to be interviewed and giving us an insight in the business within E. Pihl & Son A.S.
- Interviewees within Skanska Denmark A/S and Skanska Sweden AB , for taking the time to be interviewed and giving us a picture of the business within the respective companies.
- Interviewees within Rohde Nielsen A/S, for taking the time to be interviewed and giving us a picture of the business within the company

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Preface

The work is a Master Thesis concerning project management performance and organisational support. The project is carried out in collaboration with the Department of Building Economics and Management, Chalmers University of Technology, Sweden. In this study, interviews have been carried out with three different companies. The interviews have been carried out from July 2005 to October 2005. All interviews have been carried out at the offices at the respective companies. This project has been carried out with Civil Engineer M.Sc. Jens Kjærgaard as a supervisor, representing E. Pihl. & Son A.S., and Göran Lindahl as our examiner, representing the Department of Building Economics and Management at Chalmers University of Technology.

All involved parties are highly appreciated for their help concerning participation at interviews and sharing of documentation. We would also like to thank our employers for their co-operation and involvement, during this time demanding period.

Copenhagen, November 2005

Jacob Gade & Tonny Madsen

1 Introduction

Joint ventures can enable the participants to unify complementary technical and managerial capabilities to perform projects, whose requirements exceed the expertise and resources of any single firm. By facilitating the transfer of know-how and technology, joint ventures also can improve the skills of individual participants and thereby overcome barriers to entry and expansion in specific markets. Joint ventures also enable firms to spread the risk associated with financially ambitious projects. If channelled in this manner, joint ventures can increase output and lower costs and prices.

The studied joint venture project has participants from different countries which contributes to the project context, were several issues have to be recognized. Communication, geographical distance, national- and corporate culture are all aspects the project management is influenced by. Therefore this master thesis will have its main focus on the project management and organisational support.

1.1 Background

The studied company is the lead partner in a Joint Venture, constructing a hydroelectric power station, placed in the southern inland of Greenland. The work, which have to be carried out, concerns concrete civil work including drilling and blasting of a tunnel, and additional placing a heavy duty pressure pipe for providing water from a lake to the powerplant. The hydroelectric power station will be able to supply two small towns with electricity. Furthermore a 75 km long transmission line, with high tension cables carried on steel pylons among others crossing 3 fjords, will be constructed to feed the cities with electrical power.

The picture of the project visualise a construction project which can seem complicated, but through preliminary interviews and project information it appears that project outcome as such is not complicated. The construction methods are traditional but the management of the process is complex. This statement was formed during our first interviews, while a detailed insight and understanding of the project was obtained. It became clear that there were unsolved issues on project management level, especially communication and support issues between company organisation and the project management. During our interviews an interest was discovered, within the company concerning mapping and developing a support system on company level. The purpose of the system should be developing and supporting the project management in managing the complete construction process.

The need for support tools and guidelines has increased within construction industry and has become a necessity to operate within large organisations both national and international. The studied company has experienced a massive organic growth over the past 10 years, increasing the number of employees and organisational pressure on the flat organisational structure. This developed an interest to see if this was a

contributing factor to the lack of support from the management and organisation. Supplied with a formulation that the specific project is managed with a relatively new project management, give a reflection toward the rules of engagement and establishment of top management support of his organisation.

The study will emphasize that the organisation requires revitalisation and development.

1.2 Purpose

The objective with this master thesis is to obtain an understanding of which factors that are essential to project management in joint venture project groups. The study will examine what is required of a project management to support a joint venture project and to which degree the organisation has to sustain in general. Through literature review and experiences from large organisations, our intention will be to describe project management issues, and give suggestions for improvements in projects.

a. Main issue:

- Understand project management issues in joint venture projects.

b. Sub-questions:

- Which *support* from company level is required towards the project level in a joint venture project?

1.3 Scope

Problems often occur in construction projects due to lack of structure and support for the management. In joint venture projects there are often a lot of parties involved, which set even higher demands on management and requires extended dialogue. Due to this fact, experience-based project management in a specific joint venture in Greenland and joint venture experiences from three organisations will form the understanding for this matter.

The study will be supplemented with theory, case studies and experiences from other JV projects, through analysing the three organisations, which all have several years of experience with both national and international joint ventures. Hereby contributing with knowledge concerning which success factors, there is in a joint venture management process.

We concentrate particularly on the competences and support toward the project management and how the organisations adapt to the joint venture projects. Focus will not be placed on individual level, but on the organisational process and the character of projects and how the approach is toward communication and company support.

1.4 Methodology

To discuss and address project management issues in joint venture projects, both empirical studies and theoretical facts have been applied. Both empirical studies and theoretical facts are based on the term “grounded theory” where a systematic collection of empirical material is the foundation, and the collected information is based on actuality and time of the research, (Glaser and Strauss 1967). We believe that both the empirical and theoretical approaches are essential to identify the success factors, processes and support mechanism in joint venture and its organisation.

The theoretical framework is based on literature review, papers, brochures and web based theory. The main keywords in our theory search were joint venture - management, - support, - and organisations. Furthermore we supplied our research by analysing delivered company documentation and manuals, which also have been a foundation for creating a frame work for our survey toward project management in joint venture organisations. The summarization of gathered information was the precondition for selection of the interview participants. Additional based on theory according to Björn Alarik(2004) which state that top management in an organisation, and what their responsibility is, regarding what will affect the company in the surrounding world.

The empirical research is based on qualitative data. To obtain qualitative data semi-structured interviews were chosen. According to Merriam (1994) semi-structured interviews are a mix of more or less structured questions that enables the interviewer to ask probing questions. Open-ended questions offer a rich source of data which provides an authentic understanding of people’s experiences (Silverman, 2001). In accordance with Holme and Solvang (1991), it is important to gain new knowledge during the interview, instead of simply verifying pre understanding. Semi structured interviews make it possible to respond to situations that come up during the interview, by asking the interviewee probing questions to develop or explain an answer.

A total of 21 interviews divided on 15 persons such as Project director, project manager, production manager, and process managers were interviewed, this to ensure a valid and reliable data collection.

The interviews were made at the Headquarters of the three organisations. Geographical were two of the companies placed in Denmark and the third were both in Sweden and Denmark. The choice of three organisations was to cover multiple information sources in order to view the situation from different angles. The use of multiple sources deals with the problem of construct validity, since it provides several measures of the same phenomenon (Remenyi et al, 1998).

All interviews were made individually, which should provide a more accurate picture of opinions as well as feelings.

Since the interviews were made at the location of the company, all of the interviews were conducted in confidential surroundings. In the confidential surroundings the interviewees were behaving calm and giving openly answers. The risk of affecting some of the interviewee's answers and behaviours in open surroundings was therefore avoided.

The interviewees were informed in advance about the main problem and got a more detailed description in the start of every interview. All interviews were about 30- 60 minutes long. The questions were specified according to the interviewee's position, still with the same focus on the project management and joint venture.

The structure toward the development of the interview questions and structuring of findings, the 5x5 model by Mikkelsen and Riis (2003) were chosen. The model made it possible to research on the project management and which interaction there is in areas affecting the management. The structure of the model made it possible to adjust the interactions and factors according to joint venture management.

1.5 Structure and content

The report consists of three main parts, which together will create a solid understanding and knowledge base for which success factors and support within the company- and joint venture organisation, which is needed. We have developed a "report cycle" which enlightened the development and structure of our report from literature review, toward the conclusion and recommendation within joint venture management. To retain focus on problem and not give the reader predetermined opinion of the individual companies, further in the report the companies will be mentioned as company A, B and C

Chapter two covers the grounded theory, obtained by literature review on how project management and company support is performed in joint venture organisations. The 5x5 model is explained and used to review and give an understandable and structured accession to the subjects. Hereby creating a foundation to the interview questions and structure of the findings

Chapter three covers the findings based on the experiences with the three large organisations working with joint venture constellations. All three organisations are working within the field of construction and have activities abroad, with both national and international joint venture, however the structure of the individual company organisation is different and their development of company organisation. This makes it possible to compare the result from the findings by looking at the advantages and disadvantages at joint venture processes, contemporary with different stages of organisational development

Chapter four covers a discussion based on chapter two and three. The findings are applied to company A, a Danish construction company which activities abroad, is a core competence and trademark. The organisation has in the last years been affected by massive growth, and forthcoming is a change in the organisation. These preconditions will affect the conclusion and determine the understanding of which success factors that is inevitable and followed by recommendation.

The foundation of the knowledge and research, gathered in chapter two, three and four, will outcome in a discussion and conclusion, presented in *chapter five*. Our opinions and suggestions to how the joint venture process is improved, is stated here and what support the organisation needs to assist the management.

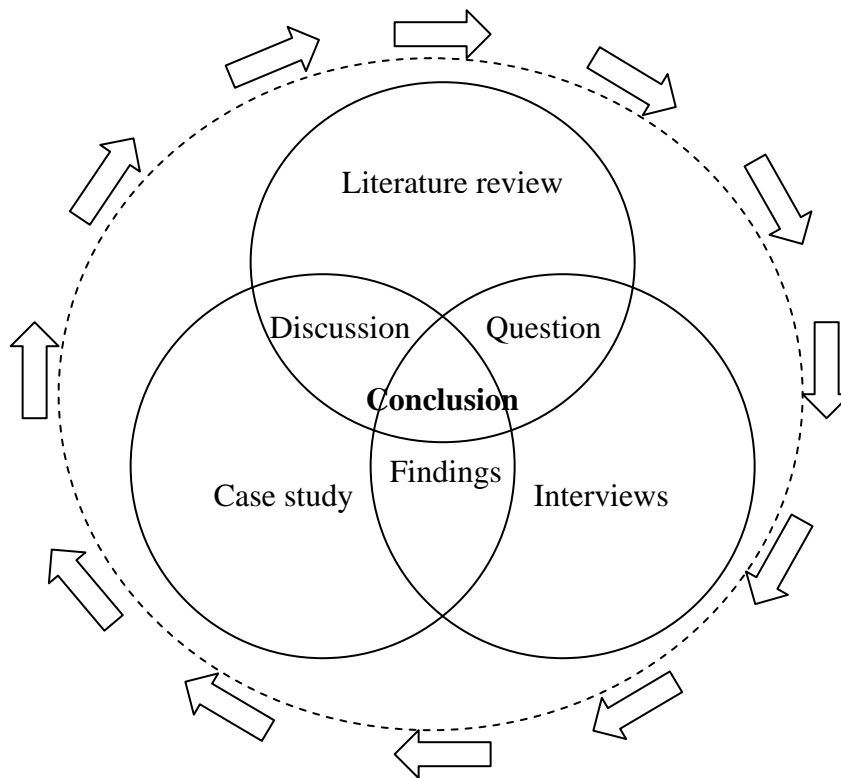


Figure 1. Report cycle, the accession to the report and structure (Gade and Madsen, 2005)

2 Theory

2.1 Organisation

According to Jacobsen and Thorsvik (2002) organisational theory is, from a historical perspective, a relatively new subject area. The interest for organisations and their structure began in the early 20th century, where also the first methodical investigations were carried out. Jacobsen and Thorsvik (2002) states that the rapid development in the world within especially three main areas; information technology, economical globalisation and more internationalised competition, are the driving forces behind changes, strategies, alliances and networks within organisations. In contrast to the earlier days' organisational forms which were more hierarchal structured, today's organisations more appears to be with a horizontal structure where network relations and self controlling teams are in focus. Mroczkowski & Hanaoka (1989), states that worldwide shifts in personnel practices are more and more evident.

The different types of organisational structures used today enhance flexibility, innovation and the ability to adapt in the organisation. Capelli (1999) also mentions that a trend within organisational structure is that the control over hiring, firing and pay levels appears to be increasingly decentralized to permit responsiveness to market conditions.

When looking at organisations structured to handle projects, the structure of the organisation can be different from project to project. In the construction business it often is teams/groups that carry out the construction/refurbishment of a building. To secure the best possible conditions the teams or groups usually are organised in a special structure, which is thought to be optimal for exact that specific project. In making your organisational structure more efficient, there always is the danger that you create too many routines, rules and guidelines, which can narrow the creativity and willingness to be inventive. However it is a risk to which you can pay attention and thereby also try to avoid it.

According to Jacobsen and Thorsvik (2002), there are different ways of structuring organisations. They mention two organisation structures which is the Functional based organisation and the Market based organisation. The choice of model is depending on which tasks the companies want to solve. Jacobsen and Thorsvik (2002), states that all organisations have a common feature, which is to take a coherent task and subsequent split it into minor parts and divide it out to specialists within the single subject. Splitting up the tasks, create the possibility to solve them on individual level or group level. When deciding on which level to solve the task, a choice between the Functional based organisation and the Market based organisation must be made.

Functional based organisation is the traditional industry organisation, where each unit has a function, (figure 2). Every function is divided into departments of specialty;

meaning they only handles one subject within the department. For example purchasing, has an advantage in creating specialised departments which are good at handling identical large scale operations. This type is by Haiwen (2005) described as the unitary organisational form (U-form). A firm organised in the unitary form is also organised by functions, such as e.g. production and marketing or sales. This form is therefore equal to the functional based. When looking at the disadvantages with the functional based organisation the risk is, that corporation and understanding between the departments is reduced to a minimum, resulting in department selfishness.

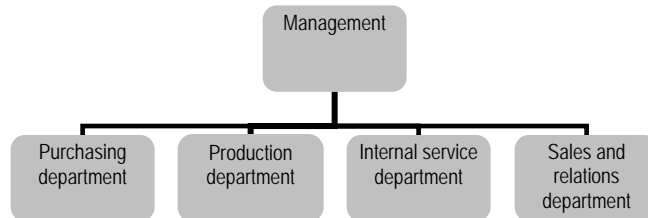


Figure 2. *Functional based organisational structure*, Jacobsen & Thorsvik (2003).

Therefore some companies choose the Market based organisation in order to be accommodating towards their customers. This is by Haiwen (2005), called the M-form and is, equally to the market based organisation, organised after product types. In the Market based organisation, all tasks, considering one product or business area, is gathered, (figure 3). The advantages with this model are more sensitive towards customers and attentive towards the market. On the other hand using this model can result in losing some of the advantages which the Functional based organisation model brings. These could be the ability to handle large scale operations and creating optimum conditions for competence in similar functions. Finally if it not is possible to obtain a satisfying result with any of these models, they can be combined in a matrix structure. The trend has however shifted from the matrix organisation to the team based organisation.

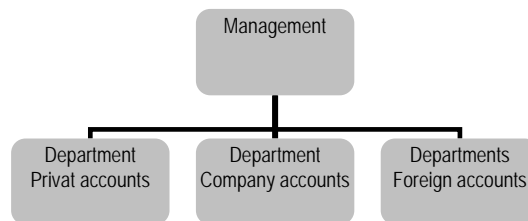


Figure 3. *Market based organisational structure*, Jacobsen & Thorsvik (2003)

2.1.1 Structure of Project organisation

Projects are put together to solve tasks. The number of companies using the project based form of work is increasing and today it is quite normal to work in projects or even to be employed on project basis. The projects can be of different variety and size and can be everything from implementing new systems in to companies to research and development of new methods or procedures within a company.

Teams are essential to projects. The people involved will often work on a team basis and this mean that different people, with different backgrounds have to unite in reaching a mutual goal. Due to this, personal characteristic and some skills of corporation is necessary for the involved team members.

There are a number of project structures, which normally is used depending on the expected outcome of the project. According to Briner, Geddes and Hastings (1996), three types of project forms are used. These project forms are called *Firm, Random and Open*.

The Firm model is, among others, usually used by the building industry. When working in projects characterised as firm, the project organisation normally will consist of the same people. It is characterised by a well known organisational structure and even though the tasks can be different. The way of working as to organisation, planning, economy, bidding and control functions is more or less the same. For a project organisation working in these kinds of projects, it often will be easy to adjust to new projects, since the employees know each other and are used to work on project basis. The downside could be that people get stuck in old patterns and way of thinking; this removing or diminishing possibilities for creative thinking, both in developing new ideas but also when trying to solve suddenly occurred problems.

The Random model, is used for the kind of project there is “one of a kind” and that usually not will be repeated. These types of projects can be implementing a new system, f. ex. for purchasing, or doing research and/or development of new system respectively methods. This type has a less or no formal organisational structure and procedures. The most significant trademark for this model is that it is used on projects of a short duration. The purpose or goal is usually not as good defined from the start as in the firm projects. The disadvantages of this model could be that terms of the project will often be renegotiated and the people involved probably not have great experience of working within projects. The advantage with this kind of project is that the people involved normally have different backgrounds and the basis for an interdisciplinary work is present.

The last model is the open one, and as implied in the name everything is very loose or open. This kind of project can arise out of an almost nonexistent level and develop from there. In the open project, goals are unclear and the possibility for completion or the achievement of a certain goal is unsure. In an open project, there are no

procedures or experiences as to running a project. The strength in a project like this is that it will depend and be driven of the creativity and innovative thoughts of its members.

It requires no longer time for planning and is easy to start up; in other words it is very flexible. The downside could be that the great ideas and thoughts can't be followed through to real life, due to the lack of resources and maybe even lack of priority within a company. Over time some open projects may even grow to be firm projects.

A project requires participation of several parties. Users can be seen as the first party which in project context contributes with knowledge concerning the user situation. Other contributes with authority, technical knowledge, services and supplies of different kind. When looking at the broad spectre of professional and technical subjects which will be involved during the project it is essential to create a project organisation. The purpose of the project organisation is to attach the sufficient knowledge, authority and skill which are needed to be able to complete the project, by use of the project organisation. As stated by Mikkelsen and Riis(2003) you, metaphorically speaking, cut a peace of knowledge, authority and skill out of the existing organisation and place it in the project. Furthermore you add external knowledge, services and supplies to the company. When creating a project organisation you clarify management and responsibility in the project, thus sending a clear message to the client. According to Mikkelsen and Riis (2003) there are different ways of viewing a project organisation:

- As a row of organising units with assignments
- As a line of roles which must be taken care of by the project management and in the project work, with a specification of who has which roles. Some are awarded roles, others undertake roles themselves. One person can possess more roles
- As relations between project participants internally and between project participants and interested parties
- As communication and corporation between the organising units mutually and between them and the surrounding world (interested parties)
- As a pattern of contracts between a project owner, project manager, project workers, advisors and suppliers

This raises a string of questions such as; who “owns” the project...is it the company who wishes to build or is it the department or manager who are going to operate it afterwards? The project organisation which is created must be shaped particularly for the individual type of project and in doing so weighing in the demands and expectations that is current for this specific project. This leads to the definition who

defines the three types of projects, firm, random and open, set out by Briner et al. (1990). These types create the basis for determining the project structure and organisation.

When acknowledging the type of project which you work in, you will have to recognise the problem or challenge it is to create the project organisation in the right way. This will benefit the client, company, project and individual. The basic setup in a project organisation consists of seven parts, equal or similar to the tasks the organisation has to carry out, (figure 4).

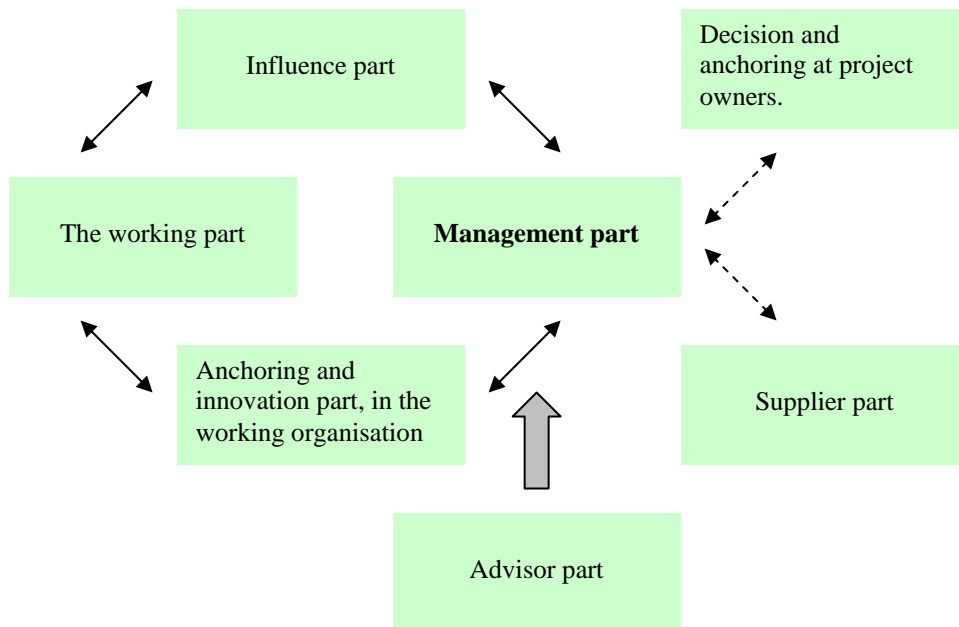


Figure 4. Basic setup of a project organisation, Mikkelsen and Riis (2003)

Figure 4, shows how many parties which is involved in a project and clarifies the many aspects which the project management has to take into consideration and nurture.

The interested parties which fall under the box named *-influence part-* is not as visible as the other participants in the project. These could be neighbours, future users or owners or even societies and associations which can have an interest in environment or other similar issues. This group is important since they often can decrease the popularity of a project or some times even cause delays or stops in production. It can also be stakeholders such as investors who not are the owners but which future investments depend on the open mindedness towards them and outcome of the project.

The *owner* is another party which must grasp the concept or content of the project. He must also be able to make decisions concerning the project which can be crucial to the outcome concerning time and economy but also to the design of the building.

Looking in the middle of the diagram the management part is placed. The project management is the turning point in a project, since they are securing the fulfilment of the project goal, general management, control of resources and control of the project. In order to achieve all of the above the management must be competent and willing to take initiative. When searching for a new project manager, companies often, according to Mikkelsen and Riis (2003), place weight on the technical skills rather than the competences within the area of business and as a leader. It of course will be the perfect situation to employ a manager which is able to overview all aspects of the entire situation.

Management and workforce are where the largest effort is put in, in the form of the actual work, (figure 4). Here it will be essential for the management to motivate, support and supervise. As other parties in the basic organisation setup is the supplier and the advisor. The supplier part covers the range of different suppliers delivering all materials, tools etc. to the project and the advisor can be both engineers, architects, installation specialists and others.

How much influence this group should be given or has, depends on their competence concerning the decision which must be taken. Some times they will function as advisors or sometimes even participate in some parts of the process. How their participation vs. their influence is divided is shown in figure 5. When obtaining the ideal position in this diagram, the interested party both is a participant and has influence on the project. If the interested party instead is a participant but without influence they become what Mikkelsen and Riis (2003) calls a hostage. This means that despite the fact that they are a participant in the project their opinion is indifferent. If the position is reversed so the interested party has influence but not is a participant they move into the category called the grey eminence. This often could be a member of the management in the company. He/she stands in the background and possesses a more observation like role and solitary takes action if a crucial point or emergency should occur in the project. It could also be a person from the municipalities or the Factories Inspectorate. These persons often have a significant influence but are not directly participating in the project.

		Has influence	
		YES	NO
Participant	YES	<i>Ideal</i>	<i>Hostage</i>
	NO	<i>Grey eminence</i>	<i>Out</i>

Figure 5. *Participation vs. influence* - Mikkelsen and Riis (2003)

An organisation is established to determine a clear division of roles/responsibilities within the project and Mikkelsen and Riis (2003) suggest that when establishing a project organisation the seven parts in figure 6, must be taken into consideration. Projects change during their existence from ideas and development, to execution. In these different phases different working- and organisational forms are needed. As Lawton (1995) states it is important with stability to secure consistency of service as to core competency investments, designated markets and career-paths. Rather than being rigid and changeable organisations needs to be both stable and flexible. Flexibility is also needed to achieve fast responsiveness to markets and management of large projects. When starting with an idea, trying to evolve it into tangible concepts you usually work in more informal, smaller groups. Here you will have an open dialogue and communicate with a lot of interested parties, possible suppliers and other contributors.

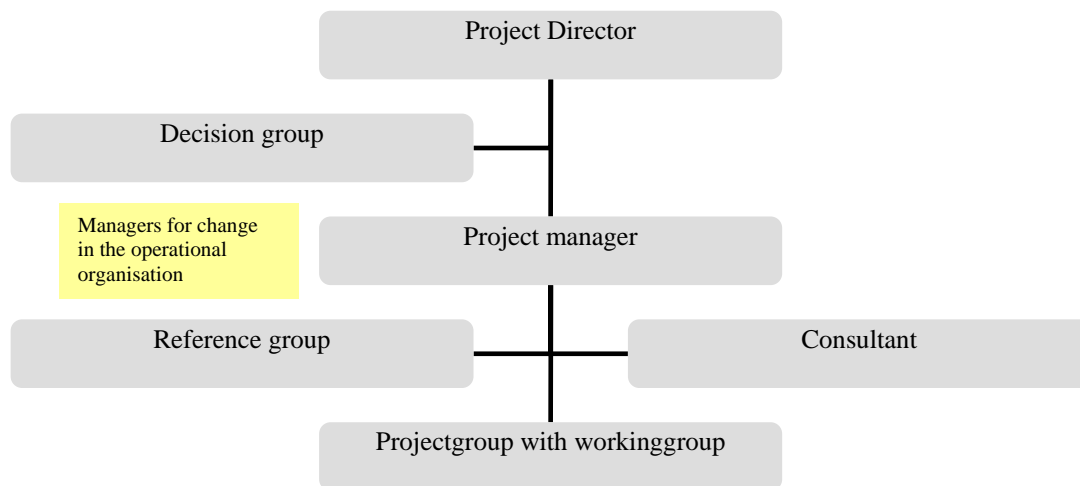


Figure 6, example of project organisation, Mikkelsen & Riis (2003)

The organic- and mechanistic organisations are two working forms described by Mikkelsen and Riis (2003) for organisational work. The organic is the most flexible and adaptive organisational form. Here variable distribution of responsibilities is used according to personal skills/competences. The employees or departments are coordinating their direct communication themselves and everybody must take responsibility. Obligations depend on the organisational attachment and information happens by all possible channels. The most valued attitudes are creativity, involvement, open debate and mutual loyalty. Here Lawton (1995) claims that organisations start out with minimum rules and structures, which ensures the best possible conditions for creativity, flexibility and energy. But as the life cycle of the organisation progresses the need for stability creeps in and is shown as description, routines and policies. The danger here is that the as Lawton (1995) mentions “freezes” the organisation. In worst cases to a degree where it almost “paralyses” the organisation, thus removing all initiative, flexibility and learning, giving bureaucracy the best possible conditions to take over in order to maintain status quo. The

mechanistic organisation is more controlling and based on a stable division of work. The various assignments are dispersed on the existing production areas or departments and tasks are coordinated down through the hierarchy. All responsibilities, duties, rights and methods are prescribed. Here the valued attitudes are sense of responsibility, obedience and avoidance of conflicts.

Lawton (1995), state that some organisational structures are outdated and needs to develop into more flexible structures. An example of a flexible structure is the soft matrix, figure 7. The soft matrix can best be described as an organisational structure which maintains its vertical hierarchical form concerning the one employee, one-boss approach. Flexibility is then introduced by temporary projects or teams which are formed with people from group drawn across from the vertical structure.

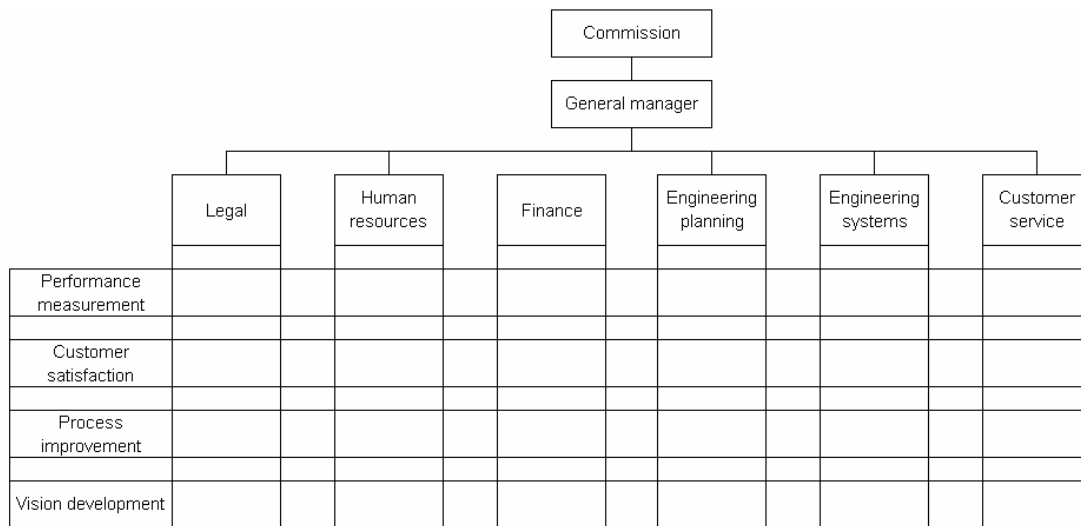


Figure 7, the soft matrix, Lawton (1995)

No matter which type of organisational form that is used, it is important when receiving new employees that there is paid attention to their preparation and commencement along with the reception from the existing staff. This requires skill and preparation since the project employees gathers and accumulates knowledge, which will be important to distribute to the new employee. The newly arrived employees also have opinions and experiences and therefore are likely to try and change solutions and methods.

Preparation for a new co-worker has to contain general information concerning history, status, organisational structure, staff and distribution of tasks. A proper introduction to new colleagues and an easy start to get a good hold of the situation will help the new employee to get a good start. The colleagues must also be instructed and prepared for the new co worker. To secure a good continuance in the project it will be an advantage that some of the involved employees will be attached to the project right until the end. Here it will be most advantageous to try and keep some of the key persons in a project such as the project managers, decision groups or similar.

2.1.2 Termination of project organisation

A project will have to be terminated. In most companies it will be possible for the employees to return to the basic organisation or maybe even move on to another project. The position the employee left in the basic organisation to join the project organisation will be occupied by another when they return. Therefore the solution sometimes will be that the employee which returns has to take another position in the organisation. In some cases people are employed directly for the project and therefore have to leave the company when the project finishes. The project organisation adapts continuously as the project progresses.

Usually at the end of a project a certain amount of project tiredness occurs. The reason for this is that the most challenging assignments have been executed and the remaining job consists of changes and improvements according to the new users of the building.

2.1.3 Collaboration - in project organisation.

The successfulness of collaboration in a project is determined of the open-mindedness and willingness of the employees attached the project group. The project objective must be clearly set out and all the group participants must experience that the project work has a high level of efficiency. The collaboration can be expressed by the five elements in the 5S – model, which Mikkelsen & Riis (2003) describes the five elements to be collaboration, co-ordination, communication, coalition and control.

The employees must contribute with an involvement showing interest in their work and performing their best in the common interest of the project. Initiative is also an important factor in trying to create continuance and workflow. Initiative is highly depending on the individual and when hiring new employees this must be brought into consideration as a crucial factor. In making the effort to create a better work environment the meaning of initiative also includes the willingness to help and motivate colleagues. The project manager here possesses the entire responsibility in trying to create openness, dialogue and affect on other parties in the project.

In the attempt to co-ordinate, the perception of the mutual goal or the project objective is in focus. It is essential that the project manager understands how to communicate the project goal to the project group and obtain a general understanding of what the project goal is. The words “mutual goal” can be ambitious since a project group consist of people with different backgrounds and opinions. The fact that people are different, trying to impose an opinion or way of thinking, can create some level of tension within the project group. Therefore as Mikkelsen & Riis (2003) suggests, the focus should lie on trying just to achieve, that all in the group understands the goal and accepts to work accordingly. It also is important when talking co-ordination to try and create a mutual connection and understanding for each others areas of work. In other words trying to gain some insight.

As a returning important factor is communication and the need for information is consistent. Active dialogue and communication concerning problems, ideas, solutions and progress is evident to achieve success. The group also has a need to obtain the sense of coalition so that every group member feels comfortable and can perform their best. This can be done by, as mentioned earlier, creating a mutual objective and in that way creating the feeling of togetherness or belonging. Sometimes visibility as a group also can be a factor to consider since this also will create the feeling of being a team member. This often is done by using uniforms, hats, business cards etc. As an example teambuilding is another way often used to create coalition between the group members. In letting the project group structure a set of rules for themselves or in some cases set up a framework of rules for the group can give a mutual set of values to work by.

It is the assignment of the project manager to act professional and to have control of resources and time. He/she must possess the ability to act when intervention is needed and dare to experiment and use methods to achieve the desired outcome. He/she or if several leaders - all of them, must appear clearly as leaders so that no doubt is occurring concerning who makes the decision. It is important that respect concerning agreements is shown.

If used correct, these elements can be used as efficient ways of controlling the project and project group. They can improve the strength and efficiency of the group and also create the dynamic way of working. This will improve the attempt in achieving the project goal. Other elements as complexity of the project and outside influences, also affect the collaboration in a project group.

A group has several phases which is must go through. According to Johnson & Johnson (2003) there are more than a hundred theories concerning group development. Most of these theories have taken one of to approaches (Hill & Gruner, 1973; Shambaugh, 1978). One is the *recurring-phase* theories, which concerns the issues which are dominating in group interaction and recur again and again. Here Johnson & Johnson (2003) states that Robert Bales (1965) means that an equilibrium must be present between task-oriented work and emotional expressions to build better relations between group members. Here the latter states that a group has a tendency to oscillate between the two concerns.

The other approach is the *sequential-stage theories*, which specify the typical order of group development. A group member according to Moreland & Lavine (1982, 1988) goes through some predictable stages of their membership. Prospective member, new member, full member, marginal member and ex-member. A group member always tries to live up to the needs of the group but in each stage the member is concerned about different things or aspects of group life. Johnson & Johnson (2003) states that the most famous and used theory was formulated by Tuckman (1965). He identified five stages: forming, storming, performing, norming and adjourning. At each stage the group will focus on different issues, which again will influence the group

members behaviour. Johnson & Johnson (2003) states that Tuckmans studies are carried out on groups with leaders not capable of taking control but when applying the principals to groups with competent leadership Johnson & Johnson (2003) identifies seven new stages which defines the coordinators role. There is no actual difference between the ideas of Tuckmans and Johnson and Johnson except the development of the seven new stages when applying these theories to a well functioning group with a well defined leadership.

According to Johnson & Johnson (2003), when a constellation is formed, all group members has worries concerning what is expected of them in relation to the group work and group goals. Therefore it is desirable for the group members to know what is going to happen, if they are going to be accepted, what is expected of them, influences and so on. When the group members are introduced and have defined themselves accordingly they start to work, thus hopefully following the clarified procedures. They start to become acquainted and start to feel familiarised with the procedures. This continues until they can follow them easily.

When these basics are in place the group members start to feel some kind of mutuality and start to build trust. Here they will feel like a group and slowly start to take responsibility for each other. This includes both the other group members performance but also that they undertake an appropriate behaviour.

When the group has obtained some kind of mutuality and a feeling of trust between one and other they will start on rebelling and differentiating. This according to Johnson & Johnson (2003) is a normal occurrence and should be expected and accepted. This should be accepted for the sole reason that differentiating is important for the group members to establish boundaries and autonomy. Johnson & Johnson (2003) describes the final stages as the group committing to their mutual goals and procedures. Here they will act concerned about each other and rely on help from other group members, hence truly become friends. The group will accordingly act maturely and productively, thus working together in an attempt to reach the best possible outcome. Finally the group ends its life and the group members are walking separate ways perhaps to other new groups or other kinds of projects. These stages in a groups life do not all last for the same amount of time, but usually the group pass through first five stages fairly quick, spending a bit more time on productivity for then also fairly quick to end its life.

2.2 Characteristic of Joint Venture

In a joint-venture (JV) the organisational unit is created as an individual part. Above the project manager is the decision making group, who represent the parties, called the board. The organisation can either be a business or informal organisation carried by a voluntarily cooperation. The type of informal JV has different types of mechanism which is activated at conflicts but is not relevant in this dissertation, and will not be discussed further. The type of business relationships can be different but

normally will be a buyer- supplier relation or a joint venture / network structure with partners who contribute to a mutual result/project.

The basic concept of JV is that more parties joining together in solving a difficult assignment. They all contribute with their own expertise and the shape of the formal framework can vary. Most JV fall into two categories: integrated and non integrated (Sridharan, G.1992). In the integrated working form there is agreed upon a division of responsibility and economic involvement. The risk and possibilities are shared, and the risk of making fail or choosing the wrong partnership is successive the share of risk. Here we see a positive approach toward development of the organisation while the open structure makes is easily overview. The form in general could be perceived as similar to the concept called partnering.

When using the non integrated form the joint venture project will have an overall management but the work will be divided and every participant will take full responsibility for their own work. The non-integrated is more individual and each partner is individual responsible for the economical and administratively element of the work. Often this model is chosen where partners do not have achieved the mutual respect, but Sridharan (1992) and Deresky (2005) agrees about if this is the reason for the selection of model, then the JV is doomed from the beginning.

The parties in a JV create a contract which binds them together legally and economically. The contract is the foundation for regulating eventual conflicts and disputes. There are other kinds of joint ventures which can be based on voluntary corporation forms. Usually these kinds of contracts are politically and socially based. Other methods for dispute resolution are normally used here. Sridharan, G.(1992), claims that a problem which often occurs in joint ventures is that, when trying to reach a mutual understanding and goal the objectives of the individual organisations often turns out not to be the same as that of the joint venture.

Mikkelsen and Riis (2003) states that, the contract formulation must be according to the way of cooperating and the clarity and controllability of the project. Cooperation concerning deliveries in some kind of scheduled pattern is one thing but cooperating in a development project, working towards a mutual goal in a constantly changing surrounding, sets much higher demands to the involved parties.

Traditional contracts can be fully sufficient for a specified standard delivery where the risk is minimal concerning delivery time and changes in the project. But when risk are higher and changes maybe even can be considered inevitable, frameworks set up for partnerships can be an advantage. A lot used is the concept called partnering where the involved parties share risks and opportunities.

The different participants to both an internal and external project do not necessarily have the same attitude towards the final product. Interest conflicts and opposite opinions will always occur, even if there exist a coalition where all have interest in fulfilling the project. Thus the challenge is not to avoid or remove these problems but

to get an effective system of agreements which can handle these interest conflicts. (Mikkelsen and Riis, 2005). When projects have cooperation between several independent external parties, the relation form is centred on two combinations.

- Buyer- supplier relations
- Joint-venture or network of parties, supplying different performances or services toward a united result.

Mikkelsen and Riis (2003), states that when looking at the participants in a project they in general all has some kind of a project organisation. The organisation usually is responsibly anchored in the senior management of the company, but also with the project manager and different project groups. The different organisations will have to work together interdisciplinary, and here coordination are essential for a successful outcome. Here Mikkelsen and Riis (2003), talks about a joint organisation, due to the need for coordinating organs and paths of communication. A way of illustrating this “thought” organisation, is to visualise two parallel organisations which more or less is similar in structure and communicate across boundaries, just like one unit.

Sometimes in larger projects the parties involved unite, at management level, in one management/coordination group. This group consists of client, supplier and consultant, and form a united organisation group. This is according to Mikkelsen and Riis valuated to be a reasonable solution. The way of organising can support and strengthen the team spirit and at the same time be a tool for resolving more difficult conflicts.

This is seen as a coordination group, and do not have the role as the individuals internal cross-organisational decision groups, but every part has its own decision authority.

Normally in the buyer-supplier relation there is a project organisation for both buyer and supplier. The work of these project organisations must be coordinated by a common coordinating organ. This coordinating organ can be called a “joint” project organisation.

An important difference from the “joint” buyer-relation is that business based joint-venture parties are bound by juridical and economical contracts, which makes the foundation for regulation initiatives at conflicts. In general does joint ventures present considerable opportunities through new types of strategies, and with an international joint venture (IJV), another element is added. According to Deresky (2005) is an IJV a common strategy for corporate growth in a global perspective. The focus concentrates not only on development of a product but also factors as trade barriers and access to additional raw materials, which can be economical beneficial. Interesting is that this type of operations, IJV also give the ability to acquire the managerial and technologic skills toward the project. The important part in a joint

venture is that the partners work out a strategy and plan, where the level of ownership and specific contributions is determined.

Deresky (2005) say that an open organisation where partners share management and decision making is a critical success parameter in an alliance. This set high demands to the control of the organisation. Lacks toward sufficient control of the companies managers, may be the cause where it become unable to implement their individual strategies and ideas. This underlines the statement that 60 percent of international joint ventures fail exactly with the reason of an ineffective management decision system, the subjects of scope, duration and administration. Combined with a careless partner selection can a joint venture be a critical acquaintance. Sridharan (1992) support these statements and say that each involved party must understand its role clearly in the joint venture, but also the role of others and procedures if disputes should arise. Sridharan (1992) also set a time frame of 9 month to a year, to develop a JV organisation, which is suitable for closing an agreement.

Hasty agreements do therefore not contribute to the selection of the JV partner and will create problems later in the ongoing project. Generally are partners in the venture not of the same size, which therefore give can give an unequal negotiating power. The problem is that the smaller partners are placed as insignificant players by the bigger partner. The leading partner must therefore accommodate the need toward the smaller parties, and encourage the partner to trust, which increases the chances for success.

But is there a difference in managing a JV project versus a normal project? Rowan and Shaughnessy (2005) explain that first of all is the joint venture established with a steering committee. In order to avoid one party dominating the joint ventures, it is a good practice to establish an appropriate system of management. The management board is empowered to take action as appointing the project manager. Frequently the terms of the JV will prescribe who will/can be “nominated” as the leader of the JV and as such be empowered to select the project manager. Rowan and Shaughnessy (2005) continue their view on JV by stating that the concept of the leader explains the fact that one of the joint venture parties will have to be in a position of negotiating with the employer and/or other third parties. Having this power and authority toward a single member of the JV, makes it critical to all JV agreements that it contain provisions that specify the party that is the leader of the JV and provides a certain mechanism which point out the project manager. Common for both is that this must be defined in the early stages of the JV as a critical success factor. Mikkelsen and Riis(2005) say that the selection of the project manager is depended on the specific project demands to management, which therefore support the theory toward specific JV management. Going into the JV as a partner therefore highly is based on trust and can benefit the individual company and increase the opportunities.

2.3 Project management

In order to facilitate the understanding of project management issues in joint venture projects, an individual explanation of the general project management and organisation conditions is needed.

The intention is to openly display the grounds on which the “normal” project leadership strategies is adapted to joint venture organisations and what is essential to make successful project leadership in these joint venture projects. We use 5 primary elements (Mikkelsen and Riis, 2005) concerning project management with project management as the pivotal point, and hereby structure the interaction between the project leadership on project assignment, interests, surroundings and resources. The five elements can be divided in;

- Project management
- Project assignment
- Interests
- Surroundings
- Resources

Project management is the core of the model as this is based on controlling and planning activities. The other four elements are the influences from surroundings, interests and available resources. An organisation will be unified by interest which posses’ authority, drive and the ability to reach accept by all the involved parties. Project assignment is defined as co-operation of various parties/interests (Mikkelsen and Riis, 2005). We see that every project contain a certain amount of general principals, but because there exist many different types of projects, the general principals vary in their containment and process order. Even with the high deviation in projects, it is still possible to identify five primary elements which are an essential structure in planning, organising and managing the project.

Project Management

Project management is the shared characteristic for the terms concerning planning, organising, controlling and management. It links the former described concepts which enhances the understanding of the process in the model. It is important to understand who manages the process.

An important prerequisite is that project work set demands towards the competence, knowledge and ability which the involved interests procure. The basic responsibility form the management is to control and develop the project toward the agreed target.

The manning of a project including persons, groups and organisations are therefore all factors, which makes this an important subject. The use of correct project leadership will then be a necessity when several parties are involved. This is based on numerous people participating, combined with carrying out several activities placing

a great importance toward determining the procedure from the beginning, but also continuously controlling is valued as an important characteristic. Riis et al (2004)

Additional, project management covers a wide span of roles; management for changes, working, organisation etc. The question is, if project management demands a special way of management or is it equal to any other? According to Briner et al.(2002) former project management were traditional known within the construction industry, but “modern” project management is represented in various companies and organisations concerning economy and process management. There exist several similarities between the traditional construction projects and technical projects, while criteria toward time, cost and specifications are equal. Contemporary projects have more diffuse objectives, which have added new areas of focus and influenced the role of project management.

The traditional project is described by the model “project triangle” by Briner et al.(2002), but has been developed with new elements, (figure 8). The “new” elements always have existed, a high focus and development on the elements, have increased its importance in its unified whole. The new project triangle should be seen as a main focus with an invariably part which affect the project managers’ actions, both indirectly and directly. Because of the increasing focus on soft values and company questions, these secondary factors are placed in a higher perspective toward the project manager. Thus contributing this to the personal development, among team members, and should state the team spirit and not a hierarchy “position”

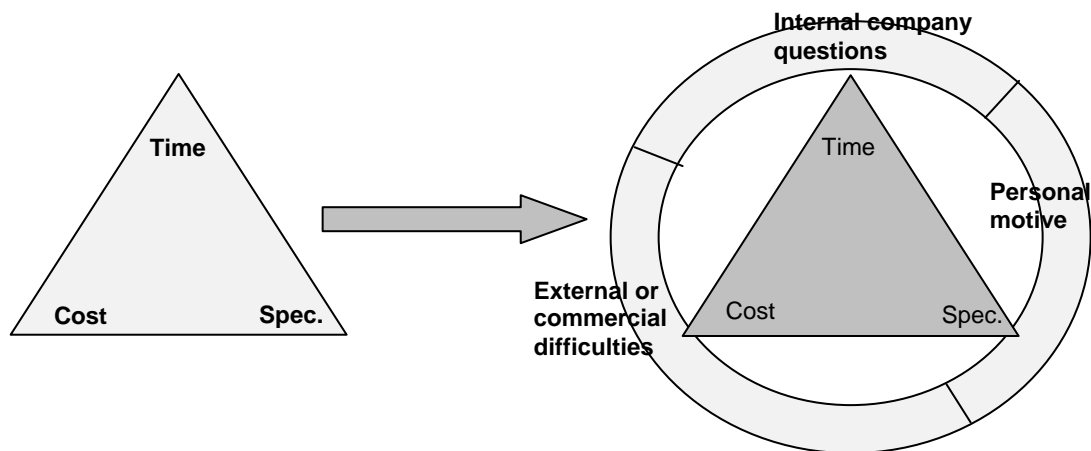


Figure 8: *The development of the “project triangle” Briner et al.(2002),*

Mikkelsen and Riis (2005) support their theory and determine the difference, especially concerns managing different professions and having a close relation toward the use of project product. The way to access and decode the line of focus toward the project is according to Mikkelsen and Riis (2005) the way to oppose a project valued toward the current situation of the project. A number of aspects can

influence on the choice of context, and they structure it by valuating according to competence of involved parties.

Competence of parties

Experienced and competently	- Thoroughly work through the concept and risk analyse. - Phased completion	- Draft a plan and carry out
New educated and lack of knowledge	- Get assistance at experienced players. - Develop interest competence by valuating toward "best in class". - Thoroughly work through concept and risk analyse. - Phased completion	- Gather assistance with focus on development of concept. - The use of a experienced "mentor" in the implementation process
	Complex project	Transparent project

Project complexity/challenge

Table 1: The considerations of approach model (Mikkelsen and Riis 2005)

In general project management is influenced by temporary effective project groups, which often have a high flow within accession and redundancy of employees. Projects do often have high impact from several interests and place the project manager in an extrovert position. The objective of an assignment or project is therefore a determining factor on how the structure, strategy and focus of problem are managed and rarely the starting point. Project management has to be characterized by an early focus on the entire process and decision-making with high consequence.

Project assignment

The project assignment is definite described as "why are we doing this or what is the objective?" According to Kerzner (2003) it is fundamental that a project have at least one objective. This objective must be known to all project personnel and all managers, at every level of the organisation. If this information is not communicated accurately, then it is possible that upper level managers, project managers and functional managers may all have a different interpretation of the final objective. This statement is supported by Mullins (2005) which adds that greater delegation and empowerment down through the hierarchy towards all staff members, should make the individual more aware of task and action, and minimize lack of information. Further more, will effective, organisational goals encourage the use of empowerment but still incorporate a traditional management measurement and control (Mullins, 2005). If management doesn't focus on these features from the preliminary phases the chance of conflicts arising in the project is extended.

Both Kerzner (2003) and Mullins (2005) therefore suggest several characteristics which can prevent or minimize situations which invite to conflicts. Projects have to be - and consist of:

- **Understandable** - specific, not general objective
- **Time schedule** - the objective should always contain a time element in order that those being empowered will know when their progress will be measured
- **Economy** – established within resource bounds, thus consistent with resources available or anticipated
- **Carefully drawn** - objective should be flexible enough to support an independent action, but not so broad that confounding factors prevent their achievement
- **Consistent** – Organisational plans, policies and procedures

Common for these characteristics is to make an understandable and specific objective which does not demand the individual to seek further input before acting. At the same time the specific objective may not be overly complex, while this can have the opposite effect and make impediment for adjustments. Further realistic and attainable goals supported by available or anticipated resources emphasize the objective. Unfortunately the above characteristics are not always permitted, especially if we consider that a project is unique to an organisation (Kerzner, 2003). However the characteristics show a static picture within the project, but according to Mikkelsen and Riis (2005) a number of dynamic processes runs continuously with the project assignment. The assignment processes distinguish between development and production, but still with the focus on the project result as one process. The production and the start-up of the project solution is the technical aspect running in the processes. Focus automatically also lies on the surroundings already from the beginning, looking at the interaction between production, project environment and management.

The interests

The interests do often have contributions or approvals which are necessary towards the completion of a project. In one direction there are persons, groups, departments and institutions, which have the request to carry out the project with their participation. In the other direction people see the project as unimportant and in worst case oppose the works which have to be carried out. Mikkelsen and Riis (2005) suggest that the management should evaluate if it would be possible to establish a stable “coalition” around a specific solution. Jacobsen and Thorsvik (2004) define a coalition as a union of different interest groups with coincident interest within a well-defined field of responsibility. In addition the interest groups are a fairly stable social group with common interest.

The interests can have one or several roles in the organisation, which make it an important part to map or structure the involved. By this means that some parties have

focus toward the utilization and ownership which is the “product” of the project, and other supply with knowledge and performance as the resource provider.

Jacobsen and Thorsvik (2004) look at an organisation as an “arena” where different internal and external coalitions compete about resources and influence. Every individual interest will often try to acquire as many of the advantages which will benefit the specific group. To simplify the interest parties in an organisation, Jacobsen and Thorsvik (2004) divide the internal coalition in 3 groups; the employee, the management and the owners. The external is divided in 4 groups; collaborator, public authority, particularly interest groups (consumer organisation etc.) and labour union, (Figure 9).

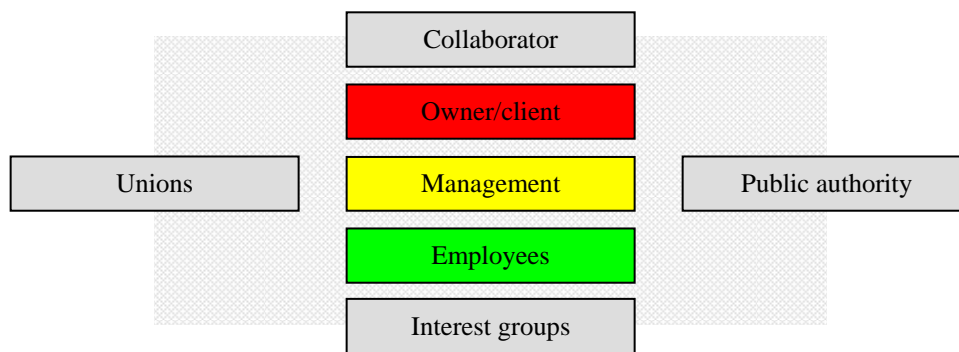


Figure 9: *The interest model (Jacobsen and Thorsvik 2004)*

The resources among the interest parties are often limited and affect the decision making and how the resources are distributed (Jacobsen and Thorsvik, 2004). This can result in conflicts between the interest parties and both Kerzner (2003) and (Jacobsen and Thorsvik, 2004) agree that conflicts are inevitable in a project. Bentley and Rafferty (1992) describe it therefore as mandatory factor to a successfully project management, to make well-defined goal and commitments. This prevail a shift in the interest groups and opaque decision processes which are influenced by conflicts and negotiation. Even though conflicts can produce a beneficial result in some cases, a way to control it must exist and can be through meetings, documentation and responsibility charts etc (Kerzner, 2003).

Coordinating and surveying the picture of the interests is an important element in project management. It is here every need for the individual participant is discussed and solutions are “sold” and “bought”. A project will often show that they do not have common goal and wishes. There will be tense situations where the different interests may have considered the solution and obtained a mutual solution. The project management must decode which power and influence from the involved and understand how it is handled in the project.

Surroundings

Surroundings are the matter which the product is influenced by and how this is adapted to the project. Several conditions both physical and norms are taken into consideration when a project is adapted. In the present situation could the market situation have one direction, while in a long-term project the conjecture will change and show tendency towards a situation which could affect the project, ex. political, trends or competition conditions. Further there is the consideration concerning the physical environment and which demands it places in different processes and phases

The boundary between the project, its products and surroundings may often be handled as a continuous assessment. The “outer” conditions are often mentioned as factors which can be controlled. There should always be a part in project descriptions where the conditions are stated if an eventual change in the present situation should occur. Additional this means, the conditions which is outside the reach of the project managers responsibility and influence. Mikkelsen and Riis (2005) divide the conditions and the way the project leader should react, into two scenarios.

- **Surveillance;** the management act on the conditions which can not be changed, but have to be adapted to.
- **Influence;** the management can act on conditions which can be influenced to fit the project

In general surroundings are all external conditions which have an influence on the organisation. According to Jacobsen and Thorsvik, (2004) there exist different levels depending on the relation to the organisation. The nearest is the domain relation. This is the environment where the organisation, have their own influence. This indicates the part of the surroundings, which have directly relevance for the work of the organisation and their area of action.

The domain will be influenced by other players, which the organisation has to decide on and cooperate with. At every domain of an organisation it is vital that they understand to handle these relations and interactions to the external players.

The national relation is the overlap of the domain. Here the focus is the social relationship which all organisations have to decide on. This means the technological, political cultural and economical conditions toward the society. The influence of these characteristics can be within different proportions, toward the development of example the labour market.

The last relation is the international where the globalisation is the keyword. Jacobsen and Thorsvik, (2004) state that placement of production and general economical resources do not have the same boundaries as twenty years ago. The technological development and open borders have given a more dynamic marked. Though it is impossible to predict how this interacts in the individual organisation. Too many organisations make changes and automatically place pressure on the organisation by focusing on innovation and reorganisation.

Resources

The Resources can be explained as the knowledge and competences which persons, groups and organisations possess that are fundamental in project work. Combined with information which involved contributes with, human and manning become a major subject and gives procurement and exploitation of resources an essential assignment in project management. But a resource is also equipment, working facilities, machines etc. According to Kerzner (2003) the project manager control the company resources within time, cost and performance, and emphasize that companies have six general resources:

- Money
- Manpower
- Equipment
- Facilities
- Materials
- Information technology

According to Mikkelsen and Riis (2005) when the organisation are controlling these general resources they need to distinguish between the process resources which are used in the performance of the project work and product resources which are built-in the project product.

In combination with the limitation and arrangement of the procedure concerning the project, a valuation of which resources is necessary to a given assignment. The valuation is based on the need of competence to solve the specific assignment. Focus on persons which can contribute with knowledge, creativity, and involvement and will to obtain a success. This focus can be unequal divided, which will affect the accession to resources. Jacobsen and Thorsvik (2004) explain this by underlining the connection between organisation structure and compelling power, this leading to a favouring of specific project members. Therefore is the position in the hierarchy within great influence of the supply of resources. Jacobsen and Thorsvik (2004) continue by stating that, the higher in the hierarchy, the more control of the resources is established. This has affection on the influence on the accessibility of information, which increases proportional with the power within the hierarchy.

Mikkelsen and Riis (2005) underline the need to make a valuation of the needed resources in the early stage of a project process. This should strengthen and give a realistic judgement of the project assignment and the recourses.

The five elements from Mikkelsen and Riis (2003) theory visualize a statically picture of the project and represent the processes that are ongoing throughout the process of a project. Every project will include these elements which are essential to solve a project successfully.

Projects rise from the formulation of opportunities which in the beginning can be uncertain and indistinct. Therefore the project process will pass with partly clarifications, which will continue until the project is handed and operating. To avoid that this process loses its connection to every individual part, a line of decision point and adapted working phases is essential. According to Jacobsen and Thorsvik (2004) these decision points are important because the goal and project limits is concretized, which will lead to a reevaluation of a project milestone and foundation. Even if this study will not go into discussing various definitions of all the concepts, there is still a need for clarifying the conceptual connections.

To understand the processes and assignment in a project, it is necessary to clarify when a project begins, what are the goal and what it consists of. Kerzner (2003) support that and call it “life cycle phases”. Every project has certain phases of development known as life cycle phases. These phases can vary both in size and number depended on the job concept. According to Kerzner, is a construction project divided in 7 phases, which are; (1) planning, data gathering and procedures, (2) Studies and basic engineering (3) major review (4) detail engineering (5) detail engineering/construction overlap (6) construction (7) Testing and commissioning. In theory both Kerzner (2003) and Mikkelsen and Riis (2005) reduce the number of phases to 5 general, which are essential to common project work. The concept development and part of the implementation is the reduced parts toward Kerznerns phases, and consists of the elements for studying, reviewing and detail engineering. Figure 10.

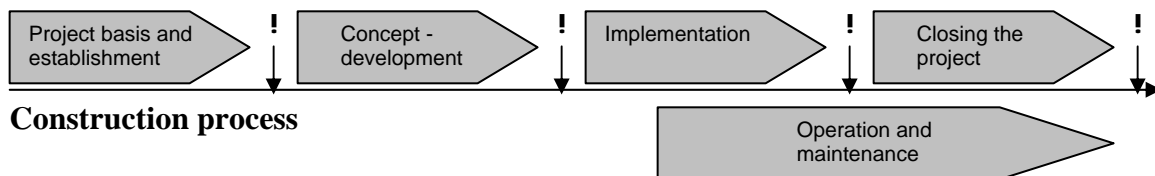


Figure 10. Construction process

As show on figure 10, is the project progress divided with an amount of decision-making points, with interval working phases. The decision-making points are vital within the process, because the goal and constraints are specified. The running process gives the opportunities to reevaluate the foundation of the project. Having these points can lead to radical change in project. This is based upon that a project often in the beginning is indistinct, but develop as an continuously through the project. This does not mean that the start of a project is a step into the unknown. But controlling a project consists of several controlling-functions or processes, which take basis in the 5x5 models different elements mentioned earlier.

2.4 Project Manager

The skills needed to be an effective project manager in the twenty-first century have changed markedly toward the skills which was essential in the 1980s. According to Kerzner (2003) were engineers the most potential profession, to attend a project management position in the 80s, while the belief that the command of technology was the most important ability. Projects have become larger and more complex, which according to Kerzner (2003) have placed the focus toward the abilities in different directions. Social competence and management is the keywords. Briner, et.al(2002). also support this theory through the project triangle, where the “limited” focus toward economy, planning and time, have expanded to higher focus against company values and employee management. Mullins (2005) says that management is task and discipline but underline the social position by bringing “people” in an important position.

The expression “project manager” covers a wide span of positions. Many project managers carry out the coordination and the administrative work in the project, while the project directors control the actual management. Mikkelsen and Riis(2005) state it is common that a project is temporary and specific and often runs parallel with the organisation normal line hierarchy. Nevertheless will the project managers place their focus in three dimensions – the interest, project life cycles and performances to obtain a successful situation. Mikkelsen and Riis mentioned 5 factors through the 5x5 model areas which affect a project, and Briner, et.al(2002) “transfer” these areas to the three dimensions. Handling the interest is the project managers first aspect. Looking backward and forward should result in development of control systems so project goals are achieved in acceptable time. Thus mistakes are invertible in projects it is the tools how to learn and locate the mistakes, there is within great importance. To obtain these conditions the goals have to be realistic and the resources to attain them should be sufficient. Rwelamila(1989) support the other dimension which is project lifecycles, and state that shared objectives and participation in decision making and management is the strongest motivation after money.

By letting specialists and involved parties contribute to the project, this gives a shared management, where the project manager attains knowledge concerning the individual and locate the limits in the organisation. Having this responsibility makes it important for the project manager to obtain the focus toward ones own performance, while the mistakes made by the project manager will have a high influence on the project. The look inside and outside the roll of the project manager is linked, while enthusiasm is good. However, too much can create a boomerang effect and make the project manager blind for his or her personal performances. The last dimension is mostly a sum of the result from the two other dimensions where the handling of the performances is analysed – focusing on the group and individual performance and how these is maximised to benefit the project best possible. Mikkelsen and Riis(2005) support the theory, but add that a project manager should understand to

exploit the professionalism from the multiple professions and secure that there is a bond between them.

The challenge is to interact with several professions and functions. The project type and size is therefore an essential factor which set the limits toward the project managers focus areas and own efforts. Earlier it was mentioned that the project manager often take the position of the administrator and coordinator than actual manager. Mikkelsen and Riis(2005) explain this by saying that project managers which are to technically orientated often tend to focus on project - and activity control tools, and therefore restrict oneself to the “administrator” and “coordinator”. To achieve success in project management is therefore also the use of your personality. Personality is used both toward the participants in the project, as the organiser and motivator, but also against the external interest where decisions, support and distribution of resources is the important element.

Like the normal phase deviation in projects, is the demand toward management also different in the projects. Mikkelsen and Riis(2005) state that the life cycles phase of the project also affect the management. A project place different demands whenever it is the outline or working phase. In the outline the need of a technical competence while the skills of an organiser is the preferred in the working drawing phase. To reach a continuous flow in the project, you do not change management according to the phase, but it is often difficult to find a project manager which posses the skills that cover all the phases. Experiences according to Mikkelsen and Riis(2005), show that the consequences with a project manager which do not understand to “span” within the whole of the life cycle phase, can be a to “ordinary” management style, with main focus on administration and finance qualifications. A solution can be that the management team support with their individual skills in the different phases. This also involves the statement by Rwelamila(1989) which say that the manager should stay abreast of major points of progress and keep project team specialists, informed through identification of problems and revisions of goals and schedules. Also by lending assistance when critical points, processes are essential to solve before the project can continue.

The fundamental part in every project is that the project manager handles several assignments at the same time, but also knows how to balance between several contrasts and the tension which should occur. Project managers have to control the project strict and controllable, but also letting it be possible to improvise. At the same time the management has to show a high profile and strong leadership, with the focus that the employees have the feeling of individual influence. This should result in carrying out the project within the limits and resources.

Kerzner (2003) state, that a project manager does not control any of the mentioned resources directly, except “money” based on the project budget. Line managers or functional managers are the controller of the assets and make it necessary for the project manager to consult the line managers to “loan” the resources. The line

manager expression is defining the organisational structure – as it is described he or she work in line with the project manager, while when we talk about the term, functional manager, it is more about the definition of the role.

The project manager is responsible for coordinating and integrating activities across multiple functional lines and set the constraints. Kerzner (2003) determine 6 “inputs” – capital, materials, equipment, facilities, information and personnel. These resources most be converted to outputs –product, service and profit. These in- and outputs show that the project manager have high responsibility but no authority. Everything seems to resolve around the project manager – both controlling a specialized task orientated organisation, supplied with the information flow to the traditional organisation.

2.5 Summary theory

Either if an organisation is joint venture or “normal” organisation, the common aspect is that support and a mutual understanding are essential to obtain a successful project. Being in a joint venture organisation can increase the focus on the different aspects, during a joint venture process, but theory show that acting toward this type of organisation is very similar to ordinary organisation.

Referring to earlier management performances, modern management is based on trust and the capability to use and exploit the competences of every interest of the organisation. Hereby securing and obtaining the focus on process from an early stage. Looking at the lifecycle in its whole based on the organisation and the management, it is essential that the organisation understand to supply correctly support which both parties understand to implement within the project organisation.

3 Findings

A string of interviews were conducted at some of the leading contractors in Scandinavia. The aim was to establish which approaches they had to subjects as, joint venture, organisational structures and management support. In uncovering different opinions along with gaining a broad view of the employees situation, questions concerning project management and project leaders were asked. All of the interviews were emphasizing on Joint Venture and potential problems within this subject. The interview results did show some differences of opinion and changed the authors approach to the main issue.

3.1 Three Organisations

The primary company studied in this report has during all of its existence been working with an organisational structure which is considered to be horizontal. To understand the ideology behind this structure a view of the company's development has to be established. First of all the company in question has experienced a massive growth during the last 10-15 years. It has been dealing with all kinds of assignments such as construction of houses, bridges, dams, power plants etc. All which have been controlled or supervised by one managing director. He has through weekly reports from his projects managers been able to create an overview of how the projects were progressing. An essential part in his ability to have a "hands on feeling" with the projects is the organisational structure, which allows a short chain a command (figure 8). Thus giving all employees, with exception of the actual craftsmen on site" the possibility to go directly to the managing director and present problems or opportunities. For many years this has been the strength of the organisation but, as mentioned earlier, the massive growth has raised the question concerning the need for an organisational change. As another interviewee from a different company stated; the reason to aim for a flat organisational structure is being that the responsibility and decision making provided out to the employees along the lines of this structure makes the individual much engaged and committed to the daily tasks.

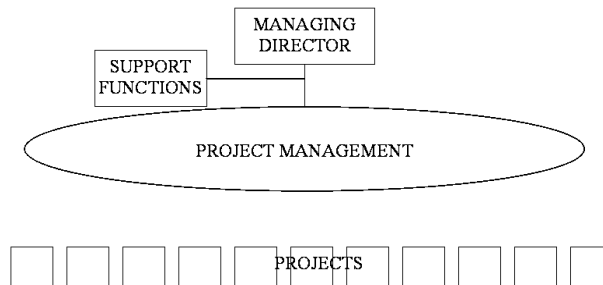


Figure 8, Organisational structure, Company A, 2003.

The managing director which also has founded the company is reluctant to make larger changes since he understands the present structure also is a competitive advantage for the company. This is also stated through the interviews where all the interviewees within the studied company claim that there is not made any steps towards improving the organisational structure. Saying this they however also in between the lines mention, that despite all of this, some changes are undergoing, and during the last couple of years two more management levels has been implied, (figure 9).

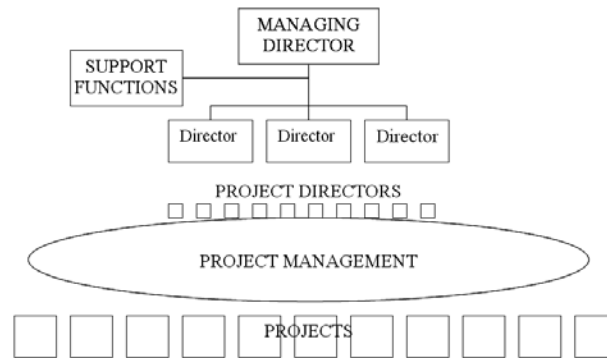


Figure 9, *Organisational structure*, Company A, 2005.

Four department directors have been appointed. One has the responsibility for the national business two the responsibilities for the international markets and the last one is in charge of the financial department. The appointed persons were also before, they were appointed as directors, a part of the management but acting more informal without existing in an actual organisational diagram. Now it is made visible and project directors have also been appointed to try to assist in controlling the still increasing amount of projects in the company.

However, in the projects a more hierarchal structure is used due to the placement of responsibilities and assignments. Usually the size of the project organisation is decided by the size of the contract. These units are self controlling and act under supervision of the project director which is placed at the home office.

When choosing the right persons for the right positions in the home- and project organisations, it is a puzzle which has to be solved by the Managing director, department director, project director and project manager. In first hand the managing director together with the department director chooses which project director that must be in charge of a specific project. When the selection has been made all three operational directors decide on which project manager is suitable to solve the task.

When the management for the project is decided, the Project director along with the project manager chooses the rest of the organisation. Sometimes the managing- and department director even participates in this selection. When it is decided which persons there is desirable to attach to the project organisation, it not always is

possible to get the first choice, due to other ongoing projects. This results in a second- or third choice of person.

In the event that it is a special, large- and complex project for which they need the best employee, it can occur, after careful evaluation that they have to take the wanted person from another project and transfer them to the new project. Should it happen that it is impossible to find the person which is needed, the management can be forced to go out and find someone externally. Another interviewed company has a saying which goes:

“Do not attempt to change the project to fit the people and the equipment; instead make sure that you choose the right people and equipment for the task at hand”.

The latter company hereby directly says that; to choose a way where you find the project and equipment for then later to fit the organisation to support the “second choice” of persons, would be considered to be negligent. Then they would wait or all together avoid making a project.

There is also another danger involved in doing this. When choosing a new person which don't know the organisation and vice versa, it can be difficult to get the support needed from the organisation. The new employee is also unfamiliar with the routines and systems used in the company, thus creating another pitfall. Therefore it is essential when hiring a new person, that the individual responsible for introducing new employees understands which task it is to take care of- and welcoming them. It is important that he understands to introduce and integrate the new individual so they know how and what to do, hence avoiding the pre-mentioned pitfalls.

3.2 Approach to Joint Venture

There are different ways of working in a joint venture. Company A usually participates in either a regular joint venture as a partner or in what is called a split joint venture. In the regular joint venture two or more partners go together in solving a project. The main idea is that they all contribute with different competences or specialties within their field of work. Depending of their size of work compared to the entire contract a percentage, which determines their influence on the total contract, is awarded the parties involved. The partner with the biggest part of the contract usually is called the lead partner. Company A usually tries to obtain the position as lead partner in joint venture projects in which they participate. This is to be in control of the development of the contractual works, hence ensuring that they do what they can to minimize the risk of participating in a Joint Venture project. Another contractor which has been working both as a lead partner, regular partner and in split joint venture as a kind of sub- contractor does not see the difficulties in not being the lead partner. This is due to the reduction of risk and responsibilities, brought upon the contractor by other partners in the joint venture.

When working in a joint venture there is an organisation from each of the partners which has to go into the joint venture and work together with the other partners. The importance of this cooperation being successful depends on the involved persons. Both Company A and a second contractor stress the importance of trying to create the feeling of team spirit before entering a joint venture organisation from other organisations. The second interviewed contractor even states that he tries to engage all of the parties already in the tendering process. He states that this time being together before there even has been made a draft for a contract, tends to provide a united focus on achieving the mutual goal. The contractor's experience is that, when these people meet for the actual execution, they will know each other including their concerns and through this show a remarkable capability of working together. Sometimes even to a degree where they solve problems which would have been the problem of only one party. But according to all the interviewees there is a lot of ways on which the bonding in a joint venture organisation could happen. Attending some social activities before starting the construction phase could be one way of creating a connection and team spirit between the team members.

General for all contractors is that they would sit together at the same offices and work during the execution. This can however not always be possible since some projects can be placed at locations making it more difficult for all to be present and participate in the daily production. In such cases it will be even more imminent that the social aspect in the start of the project plays a bigger part than usual to try and make a connection between the members. Even despite they maybe could be thousands of miles apart.

A joint venture has an organisational structure with a normal project organisation. The organisation is however consisting members from all the parties involved in the project. Should there appear a problem it has to be solved by the project manager. Should a problem occur which the project manager can not solve he will have to turn to the steering committee. The steering committee usually consists of senior managers from the parties in the joint venture contract. It will then be up to the steering committee to try and solve the problem. They will be presented of the problem and then by a dialogue try to reach a reasonable solution. Depending on the form of contract the influence concerning the project as a whole can be differentiating. As mentioned earlier there can be a lead partner which percentage of the contract is bigger than the others, which will, if the contract is structured in such a way, provide more power as a decision taker. This can sometimes also create problems for the steering committee, thus it can be difficult for other parties to accept that their opinion and wish for outcome of the situation maybe is neglected. Should the steering committee be in a position where they not can come to an agreement, the directors of the respectively companies has to find a solution.

The reasons for conflicts or problems in a joint venture can be many. Corporate culture and communication is seen as two large reasons for these conflicts. But as one contractor mentions a simple thing as pricing a little item or problems with getting

equipment brought to site on time can start what he calls the “blame game”. With this he means that one party tries to blame another party for his own shortcomings. One contractor states that more and more contractors, after winning a joint venture project, seem to be under the impression that they are going to “declare a war”. He claims that a lot of contractors already from the beginning start try to gain the upper hand. To put one in the eye on the bigger contractors, he claims that the larger partners seem to form the joint ventures with the sole intention of skinning the smaller partners. He further states that this tendency which by some contractors has been used in normal contracting appears to have become the “normal way of thinking”. He however simultaneously points out that there of course also are a lot of good fair working companies. But as he states:

“The list of reasons can continue with ones imagination being the only limit”.

Trust and honesty are two factors which all of the interviewees puts as the main objects in trying to keep and maintain a good relationship between the joint venture partners. If the right spirit of cooperation and openness is present the trust will be a natural beneficial with ripple effects.

As an answer to the authors question concerning the present focus within project management in joint ventures the authors got some different answers. Some of the interviewees mentioned the focus towards the human characteristics. They claim that the trend concerning leadership in joint ventures at the present time turn a lot towards the human characteristics of the project manager, meaning that he must have good social skills and be able to motivate and create team spirit, but not limited to this. He must also be able to sense if any of the employees or co-workers has any problems which he needs to assist in solving. This is especially important when mentioning joint venture projects which possibly could be placed somewhere far from home and no other options for help are present except from the project manager.

Some other interviewees mention that their company has been in a dialogue to discuss whether they need a common database containing general knowledge and experiences. The meaning should be that all employees could search in this database and obtain knowledge concerning other projects and problems which occurred in other projects. In other words this should be a system for exchanging knowledge and competences.

3.3 Views on project management

Management styles are as different as opinions and clearly also evident to success. To our question concerning the use of guidelines a variety of answers became visible.

In seeking the perfect organisation some organisations omit to do or take action believing that the structure which has brought them so far will take them a little bit further. Others try to create a tool for the organisation to use in case of doubt or any general questions. The latter is done to structure the organisation and support and help the employees. The studied company has no, when talking home organisation, structure or manual for standards or procedures. This is evidently no problem when you have existed in the organisation for some time, but according to an interviewee which was brand new to the organisation, some kind of manual could be a relevant tool to help employees when in doubt. Instead he had to trust in getting some answers from his colleagues, when asking. But then again just when getting acquainted some of them left for working in a project abroad leaving him alone again.

The answers from all the interviewed companies were equivalent and they all seek towards maintaining the flat organisation without structural aids.

In projects whether it is national or abroad a manual, describing procedures or certain checkpoints, is not available. Here all the interviewees claim that it will be up to the project manager to create guidelines.

One company states however that they sometimes under special conditions are forced to create some kind of guidelines. This most often occurs when they are going to collaborate with a client which has a reputation for being unfair. Therefore guidelines are issued to ensure how to carry out progress meetings and how to ensure the correct path for any contractual correspondence.

Another problem can be if the senior management employs the site manager before they employ the project manager. Here personal conditions and emotions play a big part in this puzzle and if the two do not get along it can be necessary to exchange one of them.

Sometimes a problem occurs in a project. If no one has their attention or maybe even the necessary competence to solve an occurring problem the size of the problem will increase and maybe turn in to be catastrophically for the project. Therefore in first hand it is essential that the project manager is skilled enough to identify a problem and clarify issues and solutions. In second hand it is of outmost importance that he understands to turn towards his supervisors to ask for help. Here the company A state that trust is good but control is better. A good tool mentioned here are the weekly reports they use to keep the project director updated combined with site visits. As another company states, if the project manager turns for help in due time the company will be able to help as soon as possible, instead of turning to damage control.

At Company A managers create an individual timetable to run their project. They of course still have their home organisation to help taking care of the administrative workload. At Company A they in their projects usually start out with one organisational structure to end up with another. These especially in Joint Ventures can be difficult to control. The projects undergo a constant change and there are different needs in the different phases. Size and geographical placement is another factor which plays an essential part. According to one interviewee, the studied company has a frame for their organisation, but with deviation according to the size of the project. The project manager at Company A does not possess full control concerning the structure of the organisation, but functions more like a consultant opposing the senior management, where he states his wishes and suggestions for the organisation. Interesting is that another interviewed company places the entire responsibility at the project manager. He is responsible for hiring and firing, due to the fact that two projects seldom are alike and therefore requires the need for different structured organisations. Not saying that there is a big difference, hence the organisations from project to project, within the same company, are much alike only with little deviations.

3.4 Competences of a project manager

All the interviewees state that the project is fully dependent on the project manager which is appointed to steer and guide the project. Further more they acknowledge his skills and competences to be essential for the success of the project.

At Company A the general opinion is that a project manager must be able to scrutinize himself concerning his own competence. If he knows his strengths and weaknesses he will be capable of pointing it out to the senior management. Then it will be possible for the senior management to support him in strengthening these functions in the project organisation. The solution to strengthen the organisation is by placing persons competent within that special area of expertise. The project manager must have the ability to maintain the entire overview of the project and ensure that nothing is lost in the transitions between the project phases. If he discovers an area which needs more attention it is essential that he is capable of reacting upon it. In order for the project manager to be able to maintain the overview he has to understand to delegate as much work as possible. He has to “let go” of most of the work, thus giving him the time to control and follow up on progress.

Another characteristic which is very important for a project manager to possess is that of motivation. He or she must be able to create a team spirit in order to push the entire project in the right direction. This can only be done if everybody involved understands the project and works towards the same goal with the right team spirit. Human skills is therefore of utmost importance. The project manager must be able to place himself in the position of other persons involved in the project to understand their motive and actions. Upon this he must guide the employees and act to secure the best outcome both for the employee, not neglecting himself but also for the project in

general. His ability to communicate is as consequence hereof is very important. According to an interviewee at Company A, fifty percent of errors or mistakes in a project are based on lack of communication. Communication is often seen as one of the most distinguished skills a project manager can possess. He has to understand how to bring his message about to the parties. If he possesses this essential skill he also will be able to avoid a lot of conflicts. This can however not be a pretext for doing nothing concerning the skills of conflict solution. An interviewee from another company had this statement on conflicts:

“Any conflict unexpectedly arising within the project duration represents the Project Managers lacking capability of planning the project in detail. Thereby he should foresee events and conflict arising. Any conflict arising as expected will be dealt with according to the contingency allowed for in the planning. One can only prepare tools for the known conflicts, not for the unknown.”

Some projects undergo their duration without any major conflicts but no project will along its duration be completely free of conflicts. Conflicts occur in a minor scale everyday both with clients, subcontractors, employees and colleagues. Hence the ability to handle a conflict must be present. A part of avoiding conflict is also for the project manager to be obliging to other suggestions and solutions setting own ideas a bit aside. He must try to gain as much input as possible, for then to take a decision. There always exists a danger that a project manager is so keen on own ideas that his believe might overrule any suggestions. These could be bad suggestions but eventually good suggestions would be lost in the process.

The technical skills are always a topic when discussing the competences of a project manager. At Company A there are different views of where the focus should lie when choosing a project manager. Some of the interviewees say that the need for the technical competences not is a must and that is more important that he possesses skills of administrating combined with the previous mentioned skills. However some of the other interviewees state that a certain level of technical competences must be present since a project manager not only has to be competent but also has to appear competent towards his employees and other parties in the project. If his technical skills is down to a minimum there is the possibility that he has to ask his employees at the site or the senior management for a solution, one to many times.

This can undermine the trust and believe in his skills and also in him as a competent person for running the project. On the other hand if it is a project leader is very strong in this area, there is the risk that he will focus to much on this aspect, thus neglecting some of the other important issues concerning project management. As one interviewee claims; none of all these and more tasks can be separated as they each form a part of the necessary information required to be at level with the present project situation. Further he stresses the need for planning and economy as essential

parts but not overshadowing the others and brings up an English say: “*nobody plans to fail, but numerous project managers fails to plan*”.

4 Discussion/analysis

Our discussion is based on the documentation and findings obtained through this study. These findings are analysed and will be discussed in this chapter.

4.1 Organisation - how to control growth and development

The starting point was to analyse the problems and issues concerning project management in a joint venture project. As the authors went deeper into the material from the interviewees, certain issues became clear, hence changing the focus towards another direction. It started out in an attempt to try to uncover which problems which were occurring in a specific joint venture project at Greenland. The focus was widely placed on the project in general but quickly moved to be upon project management and organisation.

The starting issue was this project at Greenland being their “problem child”. The authors now searched towards asking questions which could uncover where the problem and failure lied at. The initiate interview questions were therefore aiming broadly and the focus based upon these questions landed on the project manager. Some of the interviewees proclaimed the project manager as the problem. However one of the interviewees saw the problem differently. He mentioned the fact that the project manager was new to the organisation and maybe also a bit young for undertaking a project of this magnitude. Then the authors started wondering which support and available tools this project manager had accessible. This brought us to investigate how their organisational structure was outlined.

When looking at company A their organisation has grown extensively over the last 10-15 years. Despite of this, they still seek the advantages of a flat organisation. This structure is supported by Jacobsen and Thorsvik (2002) which states that in order to adapt to today’s development in the world, organisations strive towards maintaining a more horizontal structure. This enhances their flexibility. The result from trying to maintain this structure has been that the organisation has become too wide, thus giving some of the similar effects to a vertical structured organisation, (figure13). The massive growth has put a great pressure on the organisation and it has become evident that changes are needed.

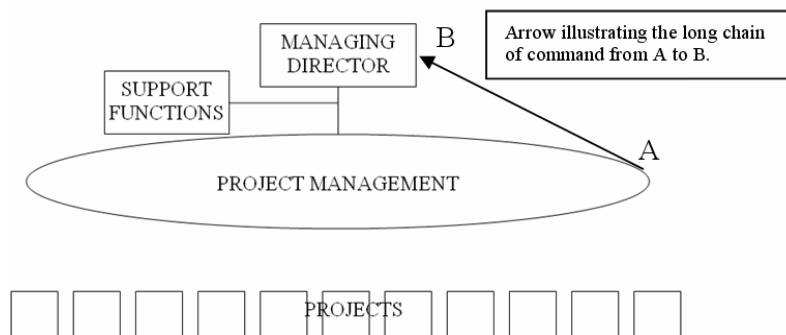


Figure 13. Illustration of organisational problem, according to Jacob Gade & Tonny Madsen (2005).

Changes are already undergoing, as mentioned earlier in the report, and have certainly helped the organisation concerning some of the issues it had before. The senior management of company A are now creating a market based organisation, also called the M-form (Haiwen, 2005). The advantages company A will obtain from this form is that they will gather all tasks considering one business area. This will, accordingly to Jacobsen and Thorsvik (2003) make them more sensitive towards their customers and also more attentive towards the market.

When looking at company A's project organisation it is similar to the model described by Briner et al. (1996), as "The firm model". This model is also the model which is mostly used in the construction industry. Exactly as described in this model company A has well defined organisational structure. According to an interviewee the projects need to have this developed structure in order to function properly. But as stated by Briner et al. (1996) the downside can be that the employees get stuck in old patterns and thereby diminish their possibilities for creative thinking. This however do not seem to be valid here.

As Mikkelsen and Riis (2003) states a project consist of several parties. When executing a project, depending on level of difficulty, the need for attaching the right knowledge, services and management is essential. Here an important assignment for the project organisation lies in attaching the sufficient resources to complete the project. Company A also places focus on this process before undertaking a project. However it seems like company A in their Greenland project, at first has failed to attach the right human resources. This is partially explained by the employment of the new project manager. The fact that there has been a remarkable pressure on the organisation has made the job as project manager at company A difficult.

First of all the organisation do not know this new employees competences and skills. Secondly by placing him in a project which sets high demands, not technically but to planning, overview, coordination and communication, they places themselves in a situation where the unknown factors and risks increases. An interviewee from company C states that if you not are 100 percent sure that the project manager attached to the project can solve the task at hand satisfactory it will be best not to undertake such a project. This means that before starting the process of obtaining a new project, the plan for who will manage the project must be made. A risk estimation could be a way to prevent the situation.

Which skills do the companies then place their focus upon?

When recruiting a new employee it is essential that their competences are clarified. Usually when companies search for a new project manager they focus on the technical skills rather than focusing on the skills as a leader. This statement is also supported by Mikkelsen & Riis (2003). However all of the interviewees at company A claims, that at their company the focus is placed on the competences as a leader and secondary on the technical skills. This seems, based on the interviews partially right, but when studying the previous project process it seems like the leader and

organisational skills of the manager was inadequate. This probably relates to the fact that he was newly employed and lacked support from the organisation. This underlines the fact that here a structural system/data base could prove to be beneficial. Furthermore there needs to be a good introduction. This concerns both the introduction to new colleagues but also concerning the social aspect. If there are any tools which the employee could use, a proper integration concerning these also should happen. It is essential that the employee knows his way around the organisation, and which persons to turn to in case of any problem or general questions.

Furthermore when working within Joint Venture projects the qualities and competences of the project manager is repeated by all of the interviewees. They all state that he must be communicative, receptive and cooperative. All of these skills are supported by the literature, but one thing is to acknowledge these skills as important. Another is to secure that the management in fact possesses these skills. Whether or not Company A has ensured this has been difficult to uncover through these studies.

What is needed to create the right support for a new employee in an organisation to undertake such a project?

When being new to a company, either fresh out of school or with some experience, it can be difficult to enter into a new organisation. Therefore the authors conducted a string of new interviews concerning which support system they have at company A. The results from these interviews showed some interesting facts. When asked which tools or support systems the employees have at their disposal, the interviewees at company A answered that there is none. However, some of the interviewees were reluctant to say that such a system didn't exist, but they had never seen one. One comment was also that such systems usually are complicated and difficult to implement to daily praxis. The authors tried to uncover if company A, had an intranet which the employees could benefit from. Here the interviewees surprisingly answered that an intranet does exist, but only a few of the interviewees have ever been investigating it to see if they could benefit from it.

The authors find it surprising that an organisation of this magnitude doesn't possess such a support system. During interviews at company B they had such a structure. This support system was developed by external consultants in collaboration with the company. This made it possible to construct a system which fitted a very large joint venture project, and the involved parties were benefiting highly from it. Today it seems like the individuals at company A might be more mature as members of the organisation. But when trying to recognise their structure of the organisation, it does not support knowledge management and/or communication. Therefore if there had been a support system which the project manager along with other involved parties could have leaned against in the Greenland project, it maybe could have prevented some of the mishaps that occurred.

The very experienced project managers could of course also benefit from such a system. But it is especially beneficial for two specific user groups. One of these could be a new employee who needs to adapt to the company routines and way of working. The other could be an employee which has been in the organisation for some time but maybe lacks sufficient experience. These two particular groups could both profit from such a system.

Another factor which company A haven't realised is, that most of their experienced managers in the not too distant future will reach an age were they maybe will consider to retire. This means that the organisation stands in front of a major generational change. This in the long run could prove to be a problem. There have to be a balance between the human capital and the structural capital. It is obvious that if a company and removes the human capital it will need the structural capital as its backup and knowledge bank for the new employees. Company A today is mainly based on the human capital resources.

This means that the available support at the moment is present in the form of the senior management and in Joint Venture projects the support lies in the steer committee set down by the parties. The senior management function is by Mikkelsen and Riis (2003) called "the grey eminence". They possess a role in the project which has influence but they aren't participating.

In order to secure the transition phases between old and new employees, the need for a support system is present. This will concern both project management, but will also have to include other company guidelines. If such a system is not developed, the younger and maybe new managers will be in a situation where they can't lift the heritage from the previous managers. The change of management of course isn't dependent solely on generational matters, but maybe also is dependent of issues as simple as changing to a new job. If the organisation fails to implement a support system it can end up having catastrophic consequences for the company.

When working in joint ventures it can prove difficult to obtain a mutual understanding, between the parties, concerning the project goal. But also documents, agreements way of acting can be a lot different from each other. On top of these issues comes the company culture. Every company acts in their own way, thus having their own routines and approaches to certain things. All of this can be things which can contribute to conflict. In company A's, Greenland project some of the problems which have occurred can be connected to the previous project manager. The authors however see the problems differently. Therefore before undertaking a joint venture, team development could be a way of creating teams, for the mutual benefit of the joint venture organisation. All of the interviewees have recognised the need for this and do, in one way or another, use some kind of bonding between the joint venture parties. They have some different approaches on how this relationship should be established.

The variety of things to do is of course endless. Some use seminars, team building courses whereas others uses more ordinary things as dining, bowling etc. They all however do it with the same goal in mind. This is to create a well functioning joint venture organisation. However it seems like it usually is at the top management level this development and collaboration is going on. It can however seem strange that they are the only ones which are doing the development activities. This is due to the fact that the daily contact at the construction site is involving other persons which also need to be able to work together.

Company A primarily uses integrated joint venture when they wish to share a risk at one of their projects. But when sharing risks and responsibilities they also have to share the power. Therefore company A usually tries to be lead partner in their joint ventures to be able to maintain control over the project. This according to themselves has not created any problems. During the authors interviews with other companies they didn't seem to have the perception of this being a problem either. In integrated joint ventures Sridharan (1992) also states, that there is a more positive approach toward development of the organisation. Furthermore he claims that the open structure used in integrated joint venture makes it easier to maintain an overview.

In all joint ventures the parties are bound to each other legally and financially by a joint venture agreement or contract. However interviewees at company C proclaimed that they place a great focus in making of the contract to prevent that they will be pressured to an extent that exceeds the limits in which they feel their responsibilities lie. Company C sees the advantages in Sridharan's (1992) point of view. But they do have some reservations. They feel uncomfortable in a collaboration were one partner is very keen on bringing power to their advantage in order to control other partners. Company C sometimes sees split joint venture as a more regular way of working, thus being easier for them to control their own financial risk.

Sridharan (1992) and Deresky (2005) claims that spilt joint venture is used where the partners don't have achieved the mutual respect which is needed. This statement underline that a joint venture would be doomed from the beginning. When looking back at the statements from the interviewees this is likely to be a valid statement. This is due to the fact that company C only carries the risk for their own work instead of risking bankruptcy if a large project should go wrong.

4.2 What is fundamental support within joint venture management?

Controlling project management and being a project manager is in it self difficult to excellence. In joint venture the factors and parameters are increased while several aspects are attached to the project as mentioned earlier. The theory is very similar to "normal" project management but get more fragile for influence based on these extra interactions. Our interviews gave us several examples on situations and statements which supported our theory, but also issues which were corresponding.

A general point mentioned in several interviews, was the focus toward a “manual of operation”. Company A did not have a home office manual which could support the new employee or existing colleagues. Additionally at the interviews it was said that if they had they were not aware of it. This fact can therefore be essential toward the employees to know the specific way of accession to a project. This statement only increases when talking joint venture, while the accession from the project manager also depends on the type of project and organisation. Valuating a project if it is complex or transparent is of course a part of the selection of project team and oppose. This valuation exists continuously in the project, and place demands both toward a supportive organisation and project manager. Mikkelsen and Riis (2005) support this by experiencing that the type and size of project set the “limitation” of the action of the project manager.

This place essential issues because the company state that when hiring people to support and manage an international construction project, it is normal procedure in the company to station the employee immediately at the construction site without further insight to the information. Earlier an introduction to the company was given and maybe a trial period, where the project manager could possess a national project. The possibility was in this former situation to see if the individual would procure the correct knowledge, competence and ability. Why the new procedure is implemented toward this old procedure is unclear, but the company strategy and oppose to this was to hand over the responsibility to other colleagues and getting answers and knowledge from them. Contemporary disputes this with the theory from Mikkelsen and Riis (2004) while it is said that an objective of an assignment and project have to be clarified by focusing on structure, strategy and problems from the beginning. The way to approach those focus areas often rise from the organisational perspective and if there is no or minimal knowledge concerning, it can be difficult to oppose those factors successfully.

Further more if the employee even got a “mentor” it was said that often this was for a rather minimum period, while rotation within the project organisation could occur and place the “mentor” abroad in another project. This in itself is not unusual while high flow of accession and redundancy of employees in project work is normal. In complex project it is essential that assistance can be granted in form of experienced colleagues, when a new educated access the project. While at the transparent project the use of experienced work force is limited to the implementation phase and actually the optimal situation. Then it is up to the organisation to evaluate when a project is complex or transparent, which here can be the part that is critical to the former process and structure.

An interesting part was that even that we have a company which core competences is civil work and participate in many technical projects, the focus toward the human skills exceed the technical skills remarkable in all interviews. Not that the technical skills disappear totally, but the project manager must be able to understand the project and technical resources in its whole and from there distribute the assignment to the functional employees. Especially the “high” technical focus can perceive the project

manager an administrative position and blind him or her to forget the personal competence. This support the theory from Briner et al. (2005) where this is visualised by a project triangle where we precisely see the development from the “old fashion” project management to management where soft values and personal competence is essential. As one said it is essential that the project manager understand to identify the issues and solutions in the project and at the same time use his supervisors as guidance and help. To obtain these demands in this organisational structure the need for an experienced and competently manager is often the solution toward this need, but not always available.

As said in an interview, a way to compensate is weekly reports where project updates is stated. In this way the project manager reports within a short interval and the possibility to localise problems is increased, and hereby avoiding the situation where “damage control” is the only solution. As Riis et al (2004) state is a continuously controlling essential in all project management situations, which also strengthen the observation of “trust is good but control is better”. The weekly reports support the information the company will have toward the time, cost and specifications, and have been used successfully in several joint venture projects. This tool is important while the interviews stated, when you start up a joint venture project organisation it probably end with another, and is difficult to control in joint venture organisations. Both Kerzner (2003) and Mullins (2005) oppose this by especially saying that one of the characteristic which minimizes situations that invites to conflicts, is consistent organisational plans, policies and procedures. But to deliver this information either if it is consistent organisational plans or weekly reports, the way of formulating it right the first time is objective number one. In the interviews there was a common agreement that an objective have to be understandable with a specific and not a general objective.

This situation can interfere with the company accession, and the organisation structure, while it was said that the project manager do not have full control of the structure of the project organisation, but more giving comment to the actual situation. In joint venture projects where a geographically distance and interest is an essential factor, project manager responsibilities have to be taken into consideration when building up the organisation structure. People are different and the situation where we have two persons which work perfectly individually, but together it collapses may not occur or should be avoided. The situation with international joint venture projects, the possibility to assist and correct the organisation, impedes by the geographical situation and can give serious displacement in time schedule, before problem is solved.

The risk of this occurring should be decreased by giving the project manager more control with structure, already from the preliminary phase. This also support Kerznerns (2003) theory that greater delegation and empowerment down the hierarchy, make the project manager or the individual, more aware of the task and the accession of action, which hereby minimize the lack of information and conflicts. As said in another interview they supported the theory namely that projects seldom are alike and

therefore set up demands of creating an individual organisational structure which should benefit or develop everybody in the project team. Jacobsen and Thorsvik (2004) support the statement, by saying that an organisation should try to create a stable “coalition” which here could be the joint venture organisation. This should increase the focus on a common objective and the field of responsibility.

The view on the project as one process does therefore make it important while the development and production processes have two individual ways of handling but a common interaction. The focus from the project manager should be if possible with focus in the development phase, while we here see the important factors as the interactions between production, project environment and management. Hereby the possibility of valuating them as one process and give an essential foundation to the production and implementation phase. Then the project manager should be able to identify which resources and which involved parties that affect the project. This should then decrease the risk of conflicts in the organisation and hereby make it possible to make a well defined goal and commitment. According to Bentley and Rafferty (1992) this situation should prevail the shifting in interest groups who here could be employees or consultants through both the development and production process. A comment to the theory was from an interview that “you can prepare tools for known conflict but not the unknown”. Jacobsen and Thorsvik (2004) partly answer this statement by saying if you make continuously decision points you highlight the goal and project limitation, which decreases the risk of elements of uncertainty. Then even with phased completions, there still will be control and focus on project milestones and the unknowing conflicts that should occur.

In the interview the focus on technical competences repeats itself, as said before the majority of interview do not have this competence as the main factor. Analysing this statement toward the process, an interesting theory appear which say that in the implementation phase there is a higher focus on technical questions which enlarges when several interest are cooperating in a joint venture. The skills are then moving toward a more organisational skill, the closer we get to the implementation and production process.

The difficult – almost impossible part is to get a project manager which possess the necessary knowledge in both areas. Therefore is it alluring for an organisation to change the management during the process. Theory state that change in management is not a success factor and can be crucial to the outcome of the project. A way to support the same project manager through the entire construction process is therefore according to Rwelamila (1989) an extensive attention on progress and a continuously information exchange. The project manager needs to have an understanding for when assistance have to be added to the project before it can continue. Here the interviews gave an indication, that there in particular was a focus on using the phased decision making points by milestones or similar tools.

Furthermore the theory mention that a project leader or organisation in general have to react on different condition. Hereby meaning that some conditions can not be changed and instead the management has to adapt to it, while others give a direct

possibility to influence on. An example could be that in an international joint venture the country working in – and together with, can have specific cultural and political differences which can not be changed. Instead the organisation has to adapt to it. However in the joint venture if placing a strong project manager within the organisation, who understand the situation and instead motivate and use the accessible resources, he or she can influence to an extensive degree.

An important statement which was said in an interview was that either you look at one task or another, it was important to see it in the “big picture” while every resource, task and information form a link to each other. Even that it is a project leader with a strong personality, he is obliged to take in new ideas, placing own aside. This support the statement an interviewee said that when you are representing the company you are a diplomat and “gentleman”, which do not access with an egoistical attitude. Hereby you can oppose the situation strategically and minimize the conflict situation. The problem can be as Jacobsen and Thorsvik (2004) say that the higher you get in the hierarchy the more control and accessibility will increase proportional. If the organisation places the project manager in position which does not conform to the expectation of result or approach from the organisation, the risk that the project manager cannot fulfil the goal is high.

It is important to underline that the Project management perspective is where the tools and approach from the organisation is defined. Either if the joint venture organisation is with three or ten participants, is the common goal and consistent rules. Here the project leader should have straightforward accessibility to “decode” the support that can be granted from the organisation and have a level of responsibility fulfil the needs of the entire construction process. Focusing on the project leader itself does the word personal competence arise several times, and the phrase that” you can not change others but you can change yourself” do really state that an organisation and its employee have to adapt to a situation to a high extend.

5 Conclusion

Analysing the findings has shown some interesting facts concerning the organisation at company A. Furthermore the discussion has brought up some possibilities for improvements at company A, not only in specific JV situations, but also for the organisation in general. Their still growing organisation is undergoing a constant development which set demands for the organisation to constantly build up and improve itself. Therefore the intention with this conclusion is to cast light upon areas suitable for improvement, but also to give actual suggestions which could be carried out to assist the organisation in its development.

During the report phase several issues were under investigation. In order to discover why company A with all their expertise and knowledge still were running into serious problems in some of their projects, the starting point was to look at a complex joint venture project. This project has continuously been exposed to problems throughout its duration. When examining the facts concerning this project some interesting discoveries showed themselves

It became clear to the authors that the root of the problem was not created in the joint venture project but were depended on the organisation of company A. Mentioned several times earlier in this report company A has been growing significantly over the years. This now shows it self in problems occurring in some of their projects. The company has a great challenge in front of them in developing themselves within the company, but also to manage and run an organisation. Another challenge lies in continuously improving in getting their partners, including staff in another organisation and culture, to act as they want.

An organisation has to develop in order to support and assist a still growing number of employees. This has been difficult for company A which has tried to maintain their old structure without making any changes or adapting the organisation. However after problems has started to show, the organisation has realised that changes now are necessary. The realisation of needed changes is good but unfortunately for some employees and projects somehow a bit too late.

The results show that need for support systems are present. The quickly growing organisation needs tools in which the employees can seek help and support. The fear for removing creativity and initiative by implementing these systems is not present according to an interviewee from company B. Company B itself was in a crisis until they found more structure and created a system. The statement from them was that structure and support systems allows the employee to focus upon the important things. This in their opinion has turned their business into the better. The authors however do not think that company A should develop such a system for each project. Instead company A should carefully consider the construction phases and thereby try

to carefully develop a checklist which all employees could benefit from in all projects. Here the authors have created a suggestion which can be developed. See under appendices.

In addition to that there could be an advantage in creating an organisational tool which can be helpful in projects but also for the organisation as a whole. The intention is to create a support system which could function like an operation manual for all of the projects within company A. The benefit could be to take it one step further and develop the support system. Not only for company A, but for their partners as well, especially also in joint ventures. The authors mean that, in collaboration with partners, to develop and implement such a system to a mutual project, they could establish common goals. These goals would have to be accepted by all employees. The guidelines and support the system would benefit the project with, would be the same for all the partners, employees and subcontractors. But it would also benefit other involved parties, thus creating the best conditions for project success. The authors have created a suggestion for such a system. See appendices.

The system contains a list of points which the organisation needs to define for themselves in order to achieve a hundred percent backup in their organisation for this system. We will now describe the content of such a manual. We choose to call it a **“Project Operation System”**.

First of all the manual should start with an **“Introduction”** which contains an explanation of the objective with the manual. Why do we need such a manual, what is it meant to govern and which aspects of the project is it created for in order to maintain system and control of the process? Secondly the introduction should contain a description concerning the project operation system which explains and illustrates the handling of project documents, documentation and correspondence. Finally the introduction could contain an explanation of the scope and application of the system.

The next chapter should be – **“Business Targets and Overall Targets”**. This chapter would consist of e.g. a project business concept, for example in a joint venture where you describe the concept, Targets and the operation policy. This should help all the parties to grasp the concept and lighten the understanding of the mutual goal.

Third chapter should be the **“Management”** chapter. This should concern issues as management by deployment of targets, leadership, organisation and responsibilities, communication and information, economy, environment and finally management review. Fourth Chapter should be a **“Personnel”** chapter which contains subjects as joint values, meeting procedures, training, employment and introduction, Health and safety. Additionally the manual should have an **“Owner”** chapter. Usually the owner of projects is neglected as an important part and this chapter could give the opportunity for all to understand the owners requirements and expectations.

The final three chapters should be “**Suppliers and subcontractors**”, “**Execution of the works**”, “**Audits, results and Evaluation**”. The latter could be a part of the quality assurance system. These chapters could be supplemented with **attachments** which illustrates the different issues.

In the authors opinion it is very important that a great effort is done in implementing this tool. There is a danger it becomes another forgotten document which lies on the shelf not getting used.

Furthermore the next statement is probably the most important thing to remember when creating such a tool.

It is important that it is kept simple and easy to read.

This is in order to maintain interest and promote the use amongst employees. Important is that all participants recognise this as a beneficial tool. In order to achieve this it would be a good idea to involve the partners in the formulation of the goals and targets. Some of the interviewees claimed that system and structure would kill initiative and innovation. But as an interviewee wisely said;

“System and structure gives the strength to focus on new ideas and solutions”

By this he meant that system and procedures secures that the employees do not have to invent the wheel all over again, but can focus on what is important.

One further way to ensure continuously improvement is by implementing a knowledge management system. To benefit other project managers and projects, a knowledge bank could be created where the project managers was obligatory bound to add data from their projects.

These data should contain good and bad experiences obtained in the projects, but also solutions. By placing them on the intranet, all employees can see problem and solutions from other projects and through this avoid doing the same mistakes. This would set demands to promote the use of the intranet as a beneficial tool. Maybe by simple things as e-mail and posters at the office, but it could also be by arranging seminars where the concept is explained.

When new staff is employed company A should secure that a proper introduction takes place. Due to the business of the company it will be difficult to attach a mentor which follows the new employee. Therefore some short introduction courses which introduces the company and its way of working. As a part of a better integration also the tool and support systems which has been mentioned earlier in this conclusion should be introduced.

Structure and support tools toward the management of the construction process, are inevitable within large organisations. This became very clear for the authors during the analysis of company A. Especially when dealing with an organisation which is

influenced by a massive growth. One thing is that support from the organisation has to be present; another part is that the project management understands to “decode” the available resources and the needs. This meaning that the manager has to participate and make an outreaching performance toward the available tool. This accession would acquire an insight of which support tool that exists. Additional may the support tool not be pretext for doing nothing from the individual.

It became vary clear that the competences from the individual manager had to be consistent with the company organisations needs. This in itself maybe seems logical but was not fulfilled to extent in company A, while the integration of new employees was nonexistent. Combined with the fact that the manager posses a more or less critical position within the “chain” of the organisation, can result in conflicts. As the proverb says “*the chain is not stronger that the weakest link*” which underline that the manager have to understand which position and authority he can use.

Dealing with joint venture, did in it self not place further competences toward the manager, though the focus toward the different aspect was reinforced. I became clear that the personal competences have similar valuable as the technical, which maybe was the problem in the Greenland project. Here we mean the lack of communication and understanding to obtain consensus was a main factor. The manager did not understand to communicate among the interests in the organisation, and did not understand to unite the organisation with a common goal. This access invites to situations which in itself can be simple misunderstandings but can generate a conflict. In this project the project manager was placed in a central organisational and geographical position, which therefore positioned a serous demand toward the accession from the manager. The authors’ analysis does therefore state that toward the project manager as individual, the personal competences are within important matter. In addition, the lack of a support tool and understanding for the organisational values can therefore be a serious factor which can increase the project manager to create own guidelines in the organisation. Creating own tools will successively the volume and size of organisations be fatal and as in this project generate several managerial problems and conflicts.

The statement emphasize that the need for a support tool within controlling the process is present. The manager has to know the general needs which are necessary to obtain a successful project both toward the company organisation and joint venture organisation. Furthermore did the study confirm that the project manager needs a specific guideline which can support him or her in the construction process. It must however be said that by implementing a support tool all problems can not be solved. It must be considered as a helpful tool.

The analysis state that competence among the team members is essential, and is important when the company is valuating a procurement situation. Interesting was the statement from all three companies that replacement in construction project is inevitable, even that all companies participate in this way of employee replacement. If the possibility to obtain the same project team during the whole project period is

none existing, an early evaluation process contribute to the possibility of localising employees which eventually can cover the risk and contribute with their special competence.

An important part concerning the support tool is that it has to be accessible and easy to implement in a specific project process. This also places a demand toward the flexibility of it, while a tool has to be a support and not feel like a “demand”

The way to obtain the flexibility is to have some general ways of accessions divided in phased completion, which give a possibility to make a successive completion. The tool which could support the manager within the project could be the “Project operation system”. According to the 5 elements within the construction processes it is possible to place different factors which have to be taken into consideration before continuing each step of the process. By using the project operation manual the managers will be able to see his specific areas of authority. Furthermore is this operational manual a guidance to make a checklist and an equal set of objectives which have to be followed during the joint venture process. The manual will be guidance for the individual project manager to carry out his own check list according to the construction process. Using the manual as support tool, will automatically contribute to a similar standard and way of accession from all interest.

The implementation of support tool is an element which has to be achieved positive from both the organisation and management to obtain a successful project. Implementing a way of working must be united toward the individual, thus the organisation must understand to support the manager. The authors statement is that a critical success factor is to get a project manager which understand to use the tools and furthermore posses the personal competences. Finally is it important to say that a specific operation manual must be a tool and guideline for a way of working and not a forced way of working. This supported by the statement - “you can change yourself but can not change others”.

5.1 Suggestion for further discussion

The analysis and discussion of the project management issue has generated further questions which are not answered in this report. Our focus was at the beginning in the direction toward “geographical” and “individual performances” but it became clear that a more specific support from organisation and transmission of common target/goal is essential when talking project organisations especially in joint venture processes.

It could be interesting to take it further and look into the specific situation and analyse the implementation. What is the reaction when the organisation “force” the employee to reporting very systematically, using the support tools. Would it have a positive effect? As described in the report does a system need to have certain flexibility, which here contradicts the theory. But is the theory valid in every situation?

Especially implementing a system which have to “monitor” the project member can give problem if the preconditions are not equal from both organisation and the employee. The question could be if it is necessary to monitor every level in the organisation or are there specific areas which are more critical, in this project management level.

Implementing a feedback system is not done over night and may often interfere with the individuals own opinions. Different set from the employees of what is important, is highly a contributing factor. The employee has to understand the necessity of the system and use of paradigm. But is this easy in a relatively flat organisation where virtue and focus toward the technical competence is the dominating factor?

This among many questions arises, but do not automatically determine what is right or wrong. The preconditions for a project have to consist of mutual understanding and common goals. Otherwise checklists have no effect. Using the described operation manual would increase the success criterias for understanding the process, hence developing a project process checklist.

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- 4 Gunnar Gerdtsson, Project director, Skanska AB
- 5 Bent Jacobsen, Engineer, Pihl A/S
- 6 Jens Kjærgaard Jensen, Civil Engineer M.Sc. MBA, project director, Pihl A/S
- 7 Lars P. Jensen, Engineer, Production manager, Istak Ltd.
- 8 Kjartan Langvad, Civil engineer M.Sc., Member of board – Pihl A/S
- 9 Christian Lundhus, Civil engineer, Project manager, Pihl A/S
- 10 Johnny Madsen, Area Manager, Rohde Nielsen A/S
- 11 Jens Christian Kjeldsen Nielsen, Engineer, Quality, health and safety – Pihl A/S
- 12 Karsten Petersen, Home office manager, Pihl A/S
- 13 Vagn Rahbeck, Logistic manager, Pihl A/S
- 14 Bjørn Stefansson, Civil engineer M.Sc., project director, Pihl A/S
- 15 Frederik Spanning, Section Manager, Skanska A/S.

7 Appendices

7.1 APPENDIX 1: *TEMPLATE - "PROJECT OPERATION MANUAL"*

INTRODUCTION

- Objective
- Description
- Scope and application

BUSINESS CONCEPT AND OVERALL TARGETS

- The project and its Business concept
- Overall Targets
- Operation Policy

MANAGEMENT

- Targets
- The leadership
- Project Management
- Organisation and responsibilities
- Communication and information
- Economy and administration
- Environment
- Management Review

PERSONNEL

- Joint Values
- Personal Meetings
- Training
- Employment and introduction
- Health and safety

THE OWNER

- The owners requirements and expectations
- Technique and product development

SUPPLIERS AND SUBCONTRACTORS

- Assessment of suppliers and subcontractors
- Co-operation with the Suppliers/Subcontractors
- Purchasing Process

EXECUTION OF THE WORKS

- Targets in Sub-projects'
- The stages of the project
- Production Organisations
- Production Management
- Authorities (Responsibilities for products, Permits, licenses etc.)
- Inspections and tests
- Nonconforming works, Corrective and Preventive Actions
- Quality plans

AUDITS, RESULTS AND EVALUATION

- Internal Audits
- The Owner
- Employees
- Suppliers and subcontractors
- Sub-projects
- Monthly Reporting (maybe or more frequently)

ATTACHMENTS (SUGGESTIONS DEPENDING OF STRUCTURE AND PHILOSOPHY)

- Scheme for project organisation
- Quality Assurance organisation
- Environmental organisation
- Health and Safety organisation
- General Responsibilities and Authorities of Key Personnel
- Cross References Contract Requirements to the Operation Manual
- List of general procedures

7.2 APPENDIX 2: PRELIMINARY INTERVIEW QUESTIONS

- Er der repræsentanter med fra alle parter under projektering og udførelse (*her menes henholdsvis projekterings- og projekt/entrepriseledere*)?
- Hvordan koordineres opgaver mellem de involverede parter, henholdsvis ved projektering og udførelse?
- Ved initial planlægning og forberedelse, herunder logistik spørgsmål, er alle så involverede i processen?
- Hvordan sikrer I at I har materialerne klar og leveret på plads når produktionen starter op?
- Er arbejds/entrepriselederne med løbende under projekteringen for at sikre processen?
- Burde han/hun være det? – Bliver han/hun spurgt til råds under processen?
- Følger og varetager entreprenøren de enkelte produkter/materialer til hans entreprise. Eller modtager han materialerne når de lander og bygger derfra?
- Udover de i tidsplanen fastsatte deadlines, bliver der så internt som en naturlig arbejdsprocedure fastsat nogle checkpoints/delmål som man skal have opfyldt inden man fortsætter? Dette være sig både på udførelses niveau men også ved den initiale planlægning og forberedelse.
- Tages der vare på den kundskab som opnås i projekterne, på organisations niveau, det være sig ved hjælp af forskellige dataindsamlingsystemer (**IT, Almindelig Arkivering el. Lign.**)? (*eller forbliver den på individ niveau*).
- Hvis der er et sådant system er det så tilgængeligt for alle? – er det **let** tilgængeligt?
- Findes der yderligere hjælpemidler/værktøjer for medarbejdere?
- Anvendes efteruddannelse for at forberede de nye og forbedre de erfarne medarbejdere til bedre at kunne håndtere komplekse projekter?
- Findes der en mentor/vejleder, altså en støtteperson, for de nye medarbejdere?
- Hvilke muligheder har nye såvel som gamle medarbejdere for at få hjælp til et problem de måtte have i processen? – Hvad med projektledelsen?

- Hvor stor indflydelse har projekt/entrepriselederen for at påvirke processen (*makro niveau*) og sin egen situation.

7.3 APPENDIX 3: SECONDARY INTERVIEW QUESTIONS

1. Which type of organisational structure is the company aiming at?
 1. *Are you seeking a more hierarchal (pyramid) form or do you aim at a flat structure?*
 2. *Selfcontrolling teams*
2. Is there a process for determining the right members of an organisational project structure?
3. Is guidelines released in the organisation to achieve a more flexible and innovative organisation?
4. Do you create your own guidelines in the projects?
 1. *If so, what are they based on?*
5. Who keeps the project under surveillance – apart from the project manager?(intervention if a problem should occur)
6. In the startup phase (idea and preparation/method), do you then start with one structure, for then again later to develop another?
 1. *Do they have a project structure model?*
7. Are you adapting the organisation during the execution phase of the project? (changing the structure – other than by start and finish.)
8. Is there made any measurements from the company in trying to improve the general organisational structure?
9. How is new employees received in the projects?
 1. *Who is responsible?*
10. Do you try to maintain some of the same employees through the whole project? (considering new projects are likely to start up)
11. Do you usually use an integrated (partnering like) or non integrated (divided/separate risk) JV structure?
12. Do you create a joint organisation or do separate organisations have to work together?
 1. *Do they sit together, are they co-located?*
13. Is this depending on the type of project?

14. How do you in JV secure mutual understanding, agreement and motivation towards reaching a project goal and amongst partners?
15. Do the project manager have limited authority in a JV project. Would you like the PM to have more?
16. Which skills do you think is essential to be a competent and good PM.
 - *According to risk management, conflict resolution etc?*
17. Do you see the PM more as a coordinator and administrator, than actual leader?
18. The resources from the different stakeholders are often limited. How does this affect the decision-making? Does it reflect a JV project?
19. Conflicts in projects are almost inevitable. Which initiative/tools do you have to encounter this?
20. Do you think that one of the reasons why problems occur in JV projects is a late focus on process and decision making? - *Yes/no explain*
21. Role of decision-making and authority in JV can be very comprehensive and should be determined from the beginning. What is the reason to conflict/misunderstandings in projects?
 - *According to cultural differences, agreements, stakeholders, communication etc.?*
22. What does or should an organisation do to support a PM in a JV project?
23. How do you obtain trust in a JV?
 - *Different stakeholders can have different interest, unequal sizes - and available resources, which can summarize to a diverge relationship*
24. Do you think the focus have changed toward project management in JV? Which areas do you think have developed the most?
25. National and International JV have different strength and weaknesses. Explain which you think there can be. Do you think a 100% open organisation is a critical success factor or how do you think it should be managed

7.4 APPENDIX 3: FOLLOW-UP INTERVIEW QUESTIONS

Spørgsmål til interview.

1. Hvilken type organisations struktur tilstræber man hos jer?
Horizontal/Vertical(selstyrende teams)
Søger man en hierarkisk (pyramide) form eller tilstræber man en flad struktur.
2. Er det bestemt hvordan man udvælger en organisation for et specifikt projekt.(håndplukket/tilfældigt-hvem der er ledig)
3. Udgås retningslinier i organisationen for at skabe en mere fleksibel og innovativ organisation?
4. Skaber man egne retningslinier i de enkelte projekter?
- Hvis man gør, hvad er de så baseret på?
5. Hvem overvåger?(griber ind ved evt. problemer)
6. I opstartsfasen (ide og forberedelse/angrebsvinkel) starter man da med en struktur for senere at udvikle en anden?
- Har I en model for projekt struktur?
7. Vil man tilpasse organisationen undervejs i projektets udførelses fase? (ændre selve strukturen- andet end ved start og slut)
8. Gøres der tiltag fra virksomheden for at forbedre den generelle organisations struktur?
9. Hvordan tages der imod nye medarbejdere i projekterne?
- Hvem er ansvarlig?
10. Forsøger man at bibeholde nogle af de samme medarbejdere gennem hele projektet?(Med tanke på at nye projekter evt. starter op)
11. Anvender man integreret(partnering agtigt) eller ikke integreret(delt/seperat risiko) JV former?(sædvanligvis)
12. Skaber man en fælles organisation eller separate der skal arbejde sammen?
- Sidder de sammen, er de flyttet sammen til et nyt sted?
13. Afhænger det af projekt type?

14. Hvordan sikrer man i JV overensstemmelse og motivation for opnåelse af et projekt mål mellem og iblandt partnere?
15. Mener du at beføjelser som PL er begrænset i JV.??? Kunne du tænke dig flere – hvilke???
16. Hvilke færdigheder/områder mener du er essentielle for at være en dygtig projektleder (her tænkes på områder som risikohåndtering, konfliktløsning, osv.)PL
17. Ser du mere dig selv som koordinator og administrator end egentlig leder? PL
18. Resurser fra forskellige interessenter i projekter er ofte begrænset, hvordan påvirker det beslutningstagen. Hvordan afspejles dette i et JV???
19. Konflikter i et projekt er næsten uundgåeligt, hvilke tiltag/værktøjer har i for at imødegå dette.
20. Mener du at en af årsagerne til problemer i et projekt kan være for sent fokus på hele processen og beslutningstagen? Ja/Nej forklar
21. Beslutningstagen og autoritet i et JV kan være omfattende og skal være fastlagt fra starten. Hvad mener du kan være årsagen til at der kan opstå konflikter/misforståelser i JV. Evt. kulturforskelle, aftaler, interessenter, kommunikation, støtte, etc.
22. Hvad gør eller burde, en organisationen gøre for at støtte PL i et JV?
23. Hvordan opnår man tillid i et JV? Med dette tænker man på at aktørerne kan have forskellige interesser og have forskellige størrelser og tilgængelig resurser, hvilket giver divergerende autoritet.
24. Har fokus ændret sig meget indenfor PL i JV projekter - hvilke områder mener du, har udviklet sig mest???
25. Nationale JV og Internationale JV har forskellige styrker og svagheder. Forklar hvilke du mener der kan være. Mener du at 100 % åben organisation er et succes parameter eller skal det styres på anden måde.