

Managing Project Culture in Partnering Projects - the Case of the Hotel Gothia Towers Project

Göran Lindahl

Email: goran@bem.chalmers.se

Per-Erik Josephson

Email: per-erik.josephson@bem.chalmers.se

Building Economics and Management, Chalmers University of Technology

Introduction

This paper is focussed on organisational culture in partnering projects. The issue that is addressed concerns what culture that characterizes partnering projects and how such culture can be managed to support achievement of goals. A possible scenario in partnering projects is that two partners form a strong relationship, thus excluding other participants from influence in and on the project. The management of culture in the project might then be a way to get everyone on the same track, rather than management having to deal with conflicts between subgroups. One could of course ask whether partnering projects differ from other construction projects as it is likely that all projects need a good project culture. A question is, once relevant prerequisites for a good culture are established, if a daily management of culture in projects can be what distinguishes between success or no success and if the management of culture is more important in partnering projects than in other projects.

In most permanent organisations it is acknowledged that a specific culture develops and prevails, a culture that guides action and characterizes the organisation (Schein 1985). However, in temporary organisations, such as project groups, the issue of culture is equally relevant. The project culture and management of it, whether leadership or group dynamics is in focus, is an important issue to discuss in order to achieve better project performance and also better products. How the culture is created and further developed through projects is therefore a management issue relevant to address.

The paper is based on a case study of the design and construction of Hotel Gothia Towers. The hotel is currently the largest hotel within the Nordic countries with 704 rooms. The construction project described in this paper was the addition of a second building with 410 rooms on 23 floors. The project was carried out as a partnering project between the client, the Swedish Trade Fair, and the main contractor, Skanska. Co-operation in the project was initiated at an early stage before the design phase. The project started as

project development that in turn led to common goals and a common framework that guided the whole project. The project budget and the schedule were successfully met and the project is considered a success by the client and the main contractor (Josephson and Lindahl 2002; Lindahl and Josephson 2003).

The project was chosen for this study because it was a big project in a central city location and a significant building. Furthermore, it was regarded as successful by the partners and carried through at a time when the debate regarding partnering projects in Sweden started. The approach in the Nordic countries is a strategy for improving organisational relations and project performance rather than a way of contracting (Laedre and Haugen 2001; Kadefors 2002; Rhodin 2002). In a Swedish context partnering can be described as a collaborative way of carrying out projects. An approach that has its background in the low levels of conflict in the Swedish construction industry (Kadefors 2003; Rhodin 2003). However, similar to Anglo-Saxon countries where partnering is more common than in Sweden, no established definition is available (Bresnen and Marshall 2000; Rhodin 2003). This raised the question of how experiences from the Hotel Gothia Towers Project related to the developing debate and what could be learnt from this particular project. This also raised the question of what characterises the management of project culture. The Hotel Gothia Tower Project incorporates several issues related to project performance. Management aspects such as leadership, group characteristics, development of knowledge and communication are interesting to study in this project.

This paper aims to describe the Hotel Gothia Towers Project, how it was initiated, the project culture and how the project management managed the project culture to create success. The purpose is, by identifying aspects of the project management, to contribute to the development of knowledge regarding management of culture in projects with close co-operation and partnering.

Organisational Culture

Organisations are made up of people and social groups with norms, standards and values. In organisations a culture specific to the organisation develop within groups as well as within the whole organisation. The culture can be expressed as formal practices such as job descriptions, salary systems and as informal practices such as values and norms. The culture and practices can either support organisational goals or work against them. By focussing organisational culture, aspects that affect performance, management and control negatively can be found. On the other hand organisational culture can build a strong motivation and support efficiency and performance. This is often reflected in discussions regarding trust and ethics in organisations. Openness and the way groups are formed are also topics related to organisational culture (Jacobsen and Thorsvik 1997; Schein 1985). A common culture, seen as standardization of norms and values in an organisation, is according to Mintzberg (1979) central to organisational coordination. A common culture enables and drives groups of individuals to share values, language and to interpret aspects and artefacts the same way. It also supports the communicative arena in a project. On an individual level it reduces ambiguity and support action. On group level it supports belonging. Several writers, including Mayo (1945), argue that the sense of belonging is an important need for the individual. By belonging to a common culture less resource needs to be used for coordination and control and focus can be on the activities in the project. In the Hotel Gothia Tower Project case the project group utilized informal

decision-making and carried out incremental improvements of technical and design solutions supported by the culture in the project. A culture that allowed direct and decisive interaction as the project members were empowered to act with the project goals in mind.

An organisational culture is not something that is by itself, it is always connected to a group of individuals. It is something that is related to a group's values and it is something that is sustained by the individual's development of knowledge based on experiences and changes in the organisation and the projects. The organisational culture is also connected to what is experienced as meaningful and relevant for the organisation in order to reach its goals and to survive. Thus organisational culture changes continuously and this process is a learning process (Schein 1985).

One of the reasons behind the focus on organisational culture is that, although it develops as soon as a group of individuals are gathered, it is an aspect of organisations that need to be managed rather than just accepted as it happens. Early studies on organisational culture had a descriptive focus whereas modern research views it as something that needs to be understood and managed (Alvesson and Berg 1992; Jacobsen and Thorsvik 1997). The highlighting of socialization in organisations for development of knowledge is an example of this (Nonaka and Takeuchi 1995; Nonaka *et. al* 2001).

Issues related to organisational culture are often related to the field of psychology and as such difficult to grasp; they are embedded in the minds of the individuals (Jacobsen and Thorsvik 1997). A more practical approach is to focus on individuals' experience of participating in and belonging to groups and what norms and expectations that prevail. This paper uses the aspects of leadership, group characteristics and learning as aspects to describe and discuss the organisational culture in the Hotel Gothia Tower Project. These aspects were chosen as they in a concise way describe project groups. The leadership aspects cover the relationships between management and group members and group characteristics describe aspects of how the group functions. Learning, or development of knowledge, is a relevant indicator of the effectiveness of the project group under the circumstances provided by the management.

Method

The study is based on experiences and attitudes collected from users, client, designers, contractor and sub-contractors via interviews, questionnaires and group discussions. The study includes three phases. The first phase focused on an examination of project documents such as descriptions, letters, drawings and a unique diary describing the early stages of the process step by step. In the second phase 25 interviews were made with key-actors as representatives of the client and the contractor, designers, sub-contractors, users and suppliers. All interviews included a number of specified questions depending on the respondent's role and on what was found during the previous interviews. All interviews also included an open part to give the respondent an opportunity to describe incidents, aspects etc the researchers had not heard before. The third phase consisted of three group discussions, each focused on one aspect from the study: prerequisites for partnering, the result of the project and the roles in the project. Four to ten persons participated in each meeting representing the Hotel Gothia Towers Project organization and the research team. The meetings were also attended by at least one experienced person from either a client or a contractor company not involved in the project. The

purpose of the group discussions was to initiate reflection on the project and thus bring forward new perspectives on the data gathered. There were also two questionnaires used in the study in order to make comparisons with other projects. The first questionnaire focused on group dynamics (based on Johnson and Johnson, 1997) and learning (based on Carlsson and Josephson, 2001) in project organizations. The second questionnaire focused on leadership during production (based on Josephson, 2002).

The Case

The client

The client, the Swedish Trade Fair, is a foundation with the purpose of supporting businesses and business development in the Göteborg region in which it is located. The business of the foundation is run as a company that produces trade fairs and conferences as well as supplying such facilities to external actors. Annually 80% of the trade fairs are produced by the client and the others are run on a 50/50 basis with external producers. The exhibition area is 41.000 square meters. The turnover year 2001 was 499 million SEK (\$ 60,1 million) with a profit of 20 million SEK (\$ 2,4 million). The company also runs Hotel Gothia Towers as a subsidiary. The paper, as described above, concerns the hotel.

In the organisation there are in total 350 employees. The construction and facilities department is however small. The technical manager is responsible for the construction department but has also a number of other responsibilities. The management of the day-to-day maintenance is the responsibility of one person.

A concern for the client is that they want to be in the top regarding trade fairs and they want their facilities to have a good reputation. The top management is determined that they shall run a first class business and has therefore made a number of investments in the facilities over the last years. This indicates an ambitious and aggressive spirit towards the trade fair market.

- 1977 Two new exhibition halls
- 1984 Hotel Gothia, tower 1
- 1988 New loading/unloading and support facilities
- 1992 New congress hall
- 1997 The Expo hall
- 2001 Hotel Gothia Towers, tower 2

The expansion of the trade fair and conference capacity did also increase the need for hotel capacity. The construction of new or rebuilt facilities has been a significant aspect of the business over the last years and made them an experienced client to construction companies. As the foundation is supposed to support local business they have used a number of different consultants and contractors for their facilities over the years. There are however a few they have had longer relationships with, among them the contractor used in the Hotel Gothia Towers Project.

The culture of the client's organisation is characterised by openness and informal relationships within the organisation. The client representative in the Hotel Gothia project did also get full responsibility once the decision to go ahead was taken. The openness also supports trust, an aspect that characterized the relationship between the client and

contractor in the Hotel Gothia Towers Project. The number of construction projects over the last few years and the fact that each trade fair is a project, has established a culture that enable completion of projects. The organisational structure supports the ability to deliver projects. Thus, the client is used to carrying out projects, has an open and informal culture and is an ambitious competitor in the trade fair and conference market.

The contractor

The contractor Skanska is a large international construction company. The aim of the contractor is to develop, build and sustain the built environment. The contractor has 76.000 employees and net sales amounted to 146 billion SEK (\$ 18,3 billion) in 2002.

The contractor has shifted, as has other contractors, to focus more and more on project development rather than traditional construction projects. Thus they aim for early cooperation with clients in order to gain a better relationship with the clients as well as securing a higher profit. One approach in this direction is partnering. Skanska argues that one of the advantages with partnering is that the client's interests are better looked after and that it creates a more efficient construction process. This also incorporates a closer relationship where Skanska wants to be the client's complete service and construction provider.

As a big contractor the organisation has major experience of projects and the way of working in projects is well established in the organisational structure. The development of project work forms in Skanska is illustrated in their "Code of conduct" which gives the different Skanska companies freedom to work independently with projects. This supports creativity and entrepreneurship but makes dissemination of project-based experiences between Skanska units cumbersome.

The Hotel Gothia Tower project was carried out by Skanska's local branch office. They have a strategy that is in line with the Skanska overall strategy to extend the relationship with the clients. As a consequence the local branch has started a marketing department and now focuses on creating businesses rather than only answering tenders. The Hotel Gothia Tower Project is an example of this development.

Skanska's, or rather their local branch office's, culture is characterized by openness and an ambition to create projects. The contractor is an ambitious competitor on the construction market and they have an extensive experience of carrying out projects, just as the Swedish Trade Fair.

The partners

The experiences the Swedish Trade Fair and Skanska had from previous projects with each other indicated that a project with close collaboration could be the way to organise the Hotel Gothia Tower Project. The experience from project development on Skanska's side and from longer relationships with contractors on the side of the Swedish Trade Fair presented a good starting point.

Skanska has been viewed as the main contractor often used by the Swedish Trade Fair. They have also been involved in, among other projects; the first hotel tower 1984, the congress hall 1992 and the Expo hall 1997. So, although other contractors have been building at the Swedish Trade Fair, they had been involved in a number of significant

projects. Individuals from the partners also had contacts from previous projects, e.g. the district manager had earlier been project manager from Skanska in the Expo hall project. Other personnel, including the architect and construction engineers, had also worked together before with another hotel project.

A comment from Skanska and a few non-Skanska project participants is that they consider, after having worked together in several projects over several years, that they have "come to speak the same language". This expression, and the fact that the client and contractor had been working together for several years, indicates that they had extensive experience and knowledge concerning each other. This formed an important prerequisite for the partnering in the project. The experiences from working together and the similar approach to projects formed a background to the decision to start the project on common basis with a partnering agreement. The approach to projects also created a starting point for the development of an open and informal culture in the project group.

The managing of the project culture

The Hotel Gothia Tower Project was carried out as a partnering project between the client and the contractor. The client and the contractor initiated partnering at an early stage. The contractor was actively involved in the design phase as well as during the production of the building. Sub-contractors and designers were engaged after traditional tendering processes. The project was based on informal discussions initiated by the contractor. However, the Swedish Trade Fair already had some vague ideas of extending the hotel. After some initial investigations by the contractor, they were engaged for an extended investigation aiming at preparing document for tenders for a design and build contract. This first stage can be described as a project development phase. Just before the documents concerning the tenders were finished, the contractor presented an idea of carrying through the project as a partnering project. After some discussions and negotiations the client accepted the offer.

The contractor's outset was a "partnering - design and build - contract". The design and build contract was completed and encompassed also the client's cost management. The payment was arranged as a running account with a maximum cost and incentive. The maximum cost was based on documents established by the client and the contractor. The incentive shares were stipulated in the contract and a decrease in cost benefited the client to a higher degree than the contractor. Also, and what was important, the project had a common budget with full insight from both the client and the contractor. The contractor also argued that due to the participation in the development phase of the project they and the client had a common view on the project outcome. And, based on the argument that 80-85% of the participants, consultants and sub-contractors, in the project should be engaged through a traditional tendering process, there was still a competitive edge to the project.

The partnering in this project was also characterized by the personal relationships. The contractor's district manager and the client's technical director as well as the contractor's regional manager and the client's managing director established their relationships early in the project. Another important aspect was the fact that the contractor due to earlier projects had knowledge and experiences from the client's daily activities. This together with the knowledge of the project, due to the early contact and participation in the development of the project, enabled the contractor to effectively deal with the complexity of the building site. It is a large hotel in an inner city site with almost no space for

transports and storage on the construction site. The existing hotel and the trade fair ran their daily activities parallel to the construction of the new building.

A number of management decisions and actions supported the development of a good project culture. The top management of the contractor deliberately chose project participants that were open to the idea of partnering and the way of working in a shared on site located project office. Project members were also kept over several stages. The participants from Skanska, the client, the architect and structural engineers were the same throughout the project. This made them carry project related knowledge and they became "knowledge brokers" to new project participants. Knowledge brokers are usually organisations (Winch 2003). However, in this project individuals that stayed on enabled new participants to quickly become active in the project and they might therefore be viewed as knowledge brokers on a project level. The choice to keep several project members throughout the project and support all project members interaction by a shared on-site project office was a deliberate management decision by the client and the contractor. The way of working in a co-located on-site project office created new relationships and enhanced communication within the project organisation. The project office became an arena for communication within and regarding the project (Lindahl and Josephson 2003; Persson *et al.* 2001). The project participants consider the management actions regarding manning of the project and the project office as actions supporting development of good project culture.

Conditions that supported development of good project culture were the working methods and the early co-operation in the project. The participants considered, both in questionnaires and interviews, the project well planned and that it was performed with good methods and high standards. Another aspect that has to be considered is the fact that the project was large and significant. This aspect of the project increased the motivation of all project members.

The sub-contractors did not participate in the project in the same way as the designers did. They had a traditional role as suppliers of goods and services. However, the client and the contractor repeatedly described the project to the sub-contractors by saying that "this is a project with much collaboration". The sub-contractors experienced this as a statement regarding the project and said that it made them feel as informal partners. The management's way of talking about the project as a collaborative project supported the overall culture of openness and communication for all participants. By talking about collaboration the management presented the view they had regarding the project, which in turn had effect on the participants view on the project and their role in it.

Analysis and Discussion

The project established for the client and the contractor a new way of carrying out projects. Although partnering and on-site located offices are not uncommon these aspects were utilised to full extent in the Hotel Gothia Towers Project. The partnering concept and on-site office were used from the initial project phases. The project was based on the relationships between the client and the contractor and their utilisation and development of these. The top management allowed the project to form a common platform and to create a way of working unique to the project. Although a large part of the project structure and processes have been used in other projects, it was the configuration of them that created

the specific characteristics of the Hotel Gothia Tower Project, a project that was managed with a culture of interaction and efficiency in mind. The aspects leadership, group characteristics and learning used below are used here and considered as aspects affecting the efficiency of the production process.

Leadership

One important aspect in managing project culture is the leadership. A number of aspects related to leadership are listed in table 1 below. The table is based on data from a questionnaire used in the study of Hotel Gothia Towers Project and in 19 other construction projects ranging from small to large ones. The questionnaire was sent to project managers, site managers as well as representatives of the workforce.

When comparing the 19 projects with the Hotel Gothia Towers Project we find that leader competence is ranked higher in the Hotel Gothia Towers Project. This indicates a stronger position of the leadership but it also indicate a situation were the management is trusted and give trust. This competence combined with the degree of support of the leader creates a situation were an open and informal culture can develop. The management has the competence to stimulate social interaction, a basis for sharing of knowledge, and is trusted by the project group. The management also has support in both head office and the workplace which give a high degree of freedom to manage the project group and in turn give them the degree of freedom they needed to be creative. By not imposing rigid structures on work processes in the project group, the group got a degree of freedom to develop a collaborative culture. The support from head office is central as it gives the project manager mandate to support interaction and development of relationships rather than framing the project group in organizational structures.

The distance between leader and group is ranked lower than the 19 projects, this can be interpreted as insecurity regarding the role of the leader in a project where collaboration and informal processes are common. However, it might also be explained by the fact that there are some smaller projects among the 19 other projects.

An important leadership aspect, not covered in the table below, that reflects the top management leadership is that several actors were active in several stages. The person responsible for project development later became manager of the design phase. The project manager has been a key person from the beginning. He is, 2003, still involved in following up errors occurring during the use within project guarantee time. The site manager joined the project team during the design phase and stayed on. The characteristic organisational boundaries in construction projects have in this way become less tangible. Persons remaining in the project do not only carry technical and economical information, they also carry the understanding of the context and the client - they carry the project culture and have the role of project representatives. They are also important to the learning in the project and to introducing new participants, the social process of disseminating project norms and values that characterise the project culture.

Table 1. Leadership

<i>Aspect</i>	<i>Gothia</i>	<i>Average of 19 constr. projects</i>
Group confidence in leadership	4,9	4,9
Leader competence	5,5	4,8
- Ability to give clear instructions	5,7	4,9
- Social interaction	5,5	4,8
- Knowledge and experience	5,4	5,4
- Trusting the group	5,2	4,8
Distance between leader and group	4,4	5,0
- Leader role	4,2	5,5
- Previous relationships	4,6	4,4
Support of the leader	5,2	5,0
Leadership power	6,0	5,9
Leadership support in the workplace	4,7	4,2
Leadership support in the head office	5,0	5,0

Aspects of leadership in the hotel Gothia Towers project compared with 19 construction projects. (7=maximum points, 1=minimum point).

Group characteristics

Table 2 below compares the Hotel Gothia Towers Project with four other medium to large construction projects. The data was collected using a questionnaire. In each case 10 to 15 persons answered the questionnaire. Studying the group characteristics and comparing with the four other projects it is indicated that the activity of the members, flexibility of decision processes and goal setting is experienced as better in the Hotel Gothia Towers Project. This reflects group independence but also that the competence and trust in leadership is reflected in the project group. The positive ranking of the flexible decision process reflects the informal and open culture in the project which enables participants to act in the work process.

The way conflicts are solved is however ranked lower than compared projects. This can be interpreted as a consequence of insecurities regarding the informal procedures for decision making in the project. Solving of conflicts in the Hotel Gothia Towers Project get a figure of 2,7 compared to the four other projects, with an average of 3,1. This may imply that conflicts are solved in processes among the project participants and not by a management decisions. This in turn might be related to the distance between the leader and the group as indicated in table 1 above. An interpretation of this is that an open and informal group not only needs clear goals regarding the project goals, but also regarding the work processes in the project in order to deal with conflicts. The leadership clearly matters when supporting an open and creative culture in projects.

Table 2 Group characteristics

Statements	Gothia	Proj 1	Proj 2	Proj 3	Proj 4	Average proj. 1-4
All members are active	3,2	2,8	3,3	2,9	3,3	3,1
Flexible decision processes	3,2	2,8	2,9	2,6	3,0	2,8
Group members communicate ideas and feelings	3,1	2,8	3,1	2,8	3,1	3,0
Creates clear goals	3,1	2,8	3,1	2,7	3,0	2,9
Conflicts are resolved constructively	2,7	2,8	3,3	3,0	3,3	3,1
Members fight/argue within the project group by not agreeing to various issues	2,6	2,9	2,6	2,6	2,8	2,7
Members have equal influence	2,2	2,2	2,6	2,2	2,5	2,4
All statements (mean)	2,9	2,7	3,0	2,7	3,0	2,8

The Hotel Gothia Tower project group compared to four other construction projects. (4=agrees fully, 3=agree to some extent, 2=does not agree fully, 1=does not agree)

The relationships between actors in the project are equally important. Openness as a project characteristic implies a need for trust, an aspect related to the relationships between group members and management. This trust needs to be found on management and blue-collar levels as well as in the relationship with the client. As this project was set in the midst of daily business there had to be good relationship and trust between the whole construction project and the trade fair business. A central aspect to achieve this in a project is to staff with competent and open-minded personnel. This is important to the function of the project and to the change and development processes taking place in a partnering project. A first step is to evaluate the company cultures of the partners to find out how ready the organisations are to work in closer relationships. This is both an organisational and personal issue. In order to support partnering, arenas for communication has to be created and supported. This is important in order to enable discussions and co-operation between the participants. To support a broad and extended scope of partnering several different actors need to participate. This also enables a wider range of relationships between participants, which may support creativity and enhance performance in a project. In order to succeed potential partner's history and culture has to be evaluated.

Learning

An aspect related to the aforementioned and to the culture in a project is the development of knowledge, learning. Individuals always learn, but to what extent they consider what is learnt as positive, is a relevant question here. We have seen that the informal character of the project group and its culture created some insecurity regarding decision processes and responsibility. On the other hand, as indicated in table 3 (based on data from the same questionnaire as used in table 2), the development of knowledge is considered better than projects compared with. This was also confirmed in the interviews where interaction and learning on an individual level was regarded as major benefits with the project. It seems as if the insecurity regarding decisions created a leadership ambiguity that was challenging and allowed the project participants to co-operate and learn on an equal level. The time for reflection is also rated higher than in the four other projects, a

fact that might indicate that the co-location supported interaction and thus discussions that in turn generated reflections. On the other hand the level of feed-back is not rated much higher than in the projects compared with, a fact that indicate that management need to support the feed-back process. The picture of the development of knowledge thus show a project group where learning takes place on an individual level, but were the feedback process is not managed on an organisational level.

Table 3. Learning

Statements	Gothia	Proj 1	Proj 2	Proj 3	Proj 4	Average proj. 1-4
I learn a lot from the project	3,5	3,0	2,5	2,9	3,0	2,9
I learn and get experiences that I can make use of in other projects	3,4	2,9	2,9	3,1	3,3	3,1
I get a lot of feed-back	2,8	2,5	2,3	2,6	2,9	2,6
There is time for reflection	2,6	2,2	1,9	2,0	2,3	2,2
All statements (mean)	3,1	2,8	2,4	2,6	2,9	2,7

Development of knowledge in the Hotel Gothia Tower Project compared to four construction projects. (4=agrees fully, 3=agree to some extent, 2=does not agree fully, 1=does not agree)

Conclusion and Further Research

This paper aimed at studying what culture characterised the Hotel Gothia Towers Project and how this was related to the management of the project. The project was found to be characterised by an open and informal culture. A culture that, as indicated by the insecurities regarding decision processes, on one hand, may have needed a firmer management. On the other hand, the high degree of trust based on good relationships between the client and the contractor gave the project group a degree of freedom that enabled them to be creative and push the project forward to completion - on time and on budget.

To manage project culture is very much about getting the right roles and relationships and manage this with a communicative focus. In the Hotel Gothia Towers Project the contractor got much right because of the manning of the project. One key aspect is that several individuals took part over a long time and as such carried knowledge about the project over several phases of the project and thereby supported communication within the project. This also enabled a social structure that carried the values of the project group. Regarding relationships it was found that early setting of common goals, an open-minded attitude and relationships on several organisational levels provided a foundation for the success of the project. However, although these factors are important to all projects, not especially partnering projects, a conclusion is that as partnering projects implies collaboration and closer relationships between the participating organisations and actors, the management of these projects need to focus and develop these aspects already from the early project phases. It is a management and leadership responsibility to create the basis for partnering and to manage with that in mind.

Further research is however needed regarding the organisational boundaries and responsibilities and effects on organisations working as partners. It needs to be investigated what decision processes that allow creativity at same time as the informality of them doesn't create ambiguity in the project group. What impact this has on development of knowledge in construction projects is of equal interest.

To sum up, the Hotel Gothia Towers Project is a success built on open-minded participants that were managed by determined and well-established managers. It is a project that carries experiences and knowledge on how to develop partnering by managing project culture.

References

Alvesson, M., and Berg, P. (1992) Corporate culture and organisational symbolism. De Gruyter, Berlin.

Bresnen, M., and Marshall, N. (2000) Partnering in construction: a critical review of issues, problems and dilemmas. *Construction Management and Economics*, 18 (2), pp 229-237.

Carlsson, B., and Josephson, P.-E. (2001) *Kommunikation i byggprojekt – verkligheter och möjligheter*, FOU-VÄSTRAPPORT 0102, Sveriges Byggindustrier. In Swedish.

Laedre, O., and Haugen, T. (2001) Use of project partnering in construction. In *Construction Economics and Organisation, Proceedings from the 2nd Nordic Conference on Construction Economics and Organization Construction Economics and Organizations* (pp. 139-155).Chalmers, Göteborg.

Jacobsen, D.I., and Thorsvik, J. (1997) Hur moderna organisationer fungerar. Studentlitteratur, Lund.

Johnson, D., and Johnson, F. (1997) *Joining together: group theory and group skills*, 6th ed., Allyn and Bacon, Boston.

Josephson, P.-E. (2002) Project Leadership Influence on Human Error Cost. In *Procurement Systems & Technology Transfer, Proceedings of the International Symposium of the Working Commission CIB W92, January 14-17 2002*, Trinidad & Tobago, pp 485-495

Josephson, P.-E., and Lindahl, G. (2002) *Roller, relationer och kunskapsuppbyggnad i partnerlika projektorganisationer: Hotel Gothia Towers*. Dept. of Building Economics and Management and The Centre for Management in the Built Environment (CMB), Chalmers University of Technology, Göteborg. In Swedish.

Kadefors, A. (2002) *Förtroende och samverkan i byggprocessen - förutsättningar och erfarenheter*, Dept. of Service Management and The Centre for Management of the Built Environment (CMB), Chalmers University of Technology, Göteborg. In Swedish.

Kadefors (2003) Collaborative approaches in Swedish construction projects – four case studies In Hansson, B and Lundin, A. (Eds.), *Construction Economics and Organisation*,

Proceedings from the 3rd Nordic Conference on Construction Economics and Organization (pp. 209-219). Lund University, Lund.

Lindahl, G., and Josephson, P.E. (2003) The Hotel Gothia Tower project: roles, relationships in a successful partnering project. In Hansson, B. and Lundin, A. (Eds.), *Construction Economics and Organisation, Proceedings from the 3rd Nordic Conference on Construction Economics and Organization* (pp. 209-219). Lund University, Lund.

Mayo, E. (1945) *The Social Problems of an Industrial Civilization*. Boston: Harvard University.

Mintzberg, H. (1979) *The Structuring of Organizations*. Englewood Cliffs: Prentice-hall.

Nonaka, I., and Takeuchi, H. (1995) *The Knowledge Creating Company. How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.

Nonaka, I., Konno, N., and Toyama, R. (2001) Emergence of "Ba" A conceptual Framework for the Continuous and Self-transcending Process of Knowledge Creation. In Nonaka, N., and Nishiguchi, T. (Eds.), *Knowledge Emergence, Social, technical and Evolutionary Dimensions of Knowledge Creation* (pp. 13-28). Oxford University Press, Oxford.

Persson, S., Rosander, S., Stenman, P., and Vranjic, D. (2001) Shared on-site-located Project Office – A successful concept?, Dept. of Building Economics and Management, Chalmers University of Technology, Göteborg. Unpublished project report.

Rhodin, A. (2003a) Pros and cons in partnering structures. In Atkin, B., Borgbrant, J., och Josephson, P.-E. (eds.), *Construction Process Improvement*, Blackwell Science, UK.

Rhodin, A. (2003b) Partnering in Swedish construction projects – analyses of processes and structures. In Hansson, B and Lundin, A. (Eds.), *Construction Economics and Organisation, Proceedings from the 3rd Nordic Conference on Construction Economics and Organization* (pp. 209-219). Lund University, Lund.

Schein, E.H. (1985) *Organizational Culture and Leadership*. San francisco: Jossey-Bass.

Winch, G. (2003) Rethinking Construction Innovation. In Hansson, B and Lundin, A. (Eds.), *Construction Economics and Organisation, Proceedings from the 3rd Nordic Conference on Construction Economics and Organization* (pp. 39-57). Lund University, Lund.