DEVELOPMENTS IN PARTNERING: MODELS, RELATIONSHIP DURATION AND KNOWLEDGE INTEGRATION

ANNA KADEFORS
Department of Technology Management and Economics
Chalmers University of Technology, SE 412 96 Göteborg, SWEDEN
anna.kadefors@chalmers.se

PERNILLA GLUCH
Department of Technology Management and Economics
Chalmers University of Technology, SE 412 96 Göteborg, SWEDEN
pernilla.gluch@chalmers.se

Abstract
Over time, partnering initiatives have been characterized by increasing formalization and involvement of a wider range of actors, but there does not seem to be a clear trend that project partnering is replaced by long term relations. In this paper, we discuss which factors influence the development of strategic and project partnering respectively, as well as trends in managing integrated teamwork. The empirical basis is three case studies: two of project partnering relationships and one of a long term long term partnership involving a network of suppliers. We find that partnering models and performance are shaped both by project management and by factors in the project environment. Long term relations supplier have to be skilfully managed to be an attractive alternative to project partnering in a market where general partnering competence is high. Also, in the management of complex collaborative relationships, a key challenge is to balance the benefits of including as much competence as possible with the restrictions of creating meeting places for meaningful knowledge exchange. Further, with increasing maturity partnering may more often be used to change power relations and bring in critical perspectives, thereby calling for other types of conflict management than those relating to contractual disagreements.

Keywords: trends, strategic partnering, project partnering, knowledge integration, Sweden

INTRODUCTION AND BACKGROUND

In general project management, where the focus has traditionally been on planning and reducing uncertainty, many authors have called for strategies that are better suited to project with high uncertainty (Dvir and Lechler, 2004; Williams, 1999). Another stream of research deals with the relationship between projects and their organizational environment and how this affects learning (Grabher, 2004). In this, abilities of knowledge integration (Grant, 1996, Huang and Newell, 2003) are central. Partnering is increasingly seen as an opportunity both to achieve flexibility and to advance learning in the construction sector.

Today, various forms of partnering arrangements account for a growing proportion of construction contracts in many countries. In Sweden, this development started in the building boom of the late 1990s but was interrupted when demand fell in 2001. A couple of years later the use of partnering started to increase again, and since around 2006 partnering can be

considered an established project management form. In most early projects, collaboration was based on interpersonal trust between the client and the building contractor. There were hardly any facilitators, no partnering tools and systems, and teambuilding meant going to the races together. For clients, a primary concern was whether they could trust contractors (Kadefors, 2004), while organizing for teamwork was a secondary priority. Over time, however, partnering initiatives have been characterized by increasing formalization and involvement of a wider range of actors (Andersson and Johansson, 2008). The focus seems to be shifting from trust issues to managing integrated teams.

In general partnering literature, partnering development is often believed to follow a transition trajectory from project partnering to strategic (or long-term) partnering and then further to even more integrated networks (Bennet and Jayes, 1998). However, this trend is not obvious in all markets. Also in the UK, partnering between main contractors and their subcontractors have not always meet expected performance and many clients prefer that subcontractors are procured by competitive tendering (Beach et al. 2005). In Sweden, formalized strategic partnering between clients and contractors seems to be increasing slightly (Andersson and Johansson, 2008), but no clear trends can be seen in contractor-subcontractor partnering.

This paper deals with how partnering develops over time. What can be expected from project partnering compared to strategic partnering in terms of integrated teamwork? Which factors influence the development of strategic and project partnering respectively?

The paper is based on preliminary finding from the first three case studies in an ongoing research project on knowledge integration in complex partnering relationships:

- A partnering project for a university building, which involved several participants that had no partnering experience and others with extensive experience.
- A partnering project for a hospital building, where both the client and the contractor had significant partnering experience, also working together.
- A long term strategic alliance between a building contractor and its network of consultants and specialist contractors

The two project partnering cases are from the same medium-sized town, which is generally perceived as one of the places in Sweden where partnering development is strongest. The strategic alliance is based in a larger city.

METHODOLOGY

The empirical basis consists of semi-structured interviews and project documents. The intention is to interview representatives of clients, consultants, building contractors and specialist contractors in each of the relationships studied. This paper is based on the following interviews:

Case 1, university building: client sponsor/owner, client property manager, client project manager, contractor district manager, contractor site manager/project engineer

Case 2, hospital building: client project manager, contractor district manager, contractor project manager

Case 3, strategic network: core contractor representative, architect representative, HVAC engineer representative, plumbing contractor representative

Case 1: Project partnering, university building

Background

The building comprises premises for research and education with an auditorium. It was completed in the summer of 2008, and the building cost was approximately 30 MEUR. The client was a regional office of the Swedish government owner of university premises, and this was their first official partnering project. There were three reasons for choosing a partnering approach: a) demand was high at the time of procurement and it was difficult to get contractors to bid on a traditional contract, b) initial estimations indicated that the proposed design was too costly, and c) the client's project manager was dissatisfied with the traditional process and wanted to try a model where design and construction competences could be integrated. Thus, the client decided to team up with contractors and a new set of consultants to reduce costs.

The region where the building is situated has a fairly long tradition of partnering. Several large clients, especially public ones, have used collaborative contracting principles for single projects as well as for longer term relationships. Thus, many of the local firms are experienced in partnering and have developed necessary financial systems and the competence to present cost forecasts.

Partners and partner selection

The design-build contractor was selected partly based on technical and relational competence. The architect from the first design process continued to work in the project. Subcontractors and all other consultants were selected by the contractor, although the client was consulted. All major consultants and contractors were included in the partnering scheme. The client's project manager said that in hindsight, he would have involved smaller contractors, although there is a problem with those who are not appointed at the start of the project.

Contracts and incentives

An incentive system was designed in collaboration between client and the design-build contractor. Since a main goal was to reduce costs compared to the existing design, the client would get 80% of savings and the supplier network a total of 20%. These 20% were then divided between contractors and consultants according to their share of the total building cost. There was also a bonus of 5% of savings which the client subjectively awarded to the participants based on their perceived contribution to project goals.

When construction had started the workers asked which benefits partnering had for them. A bonus was then introduced that rewarded workers based on reduction of total working hours. Both the client and the contractor saw this as an important symbolic gesture that gave different trades a common goal and thus an incentive to help each other out.

Communication, systems and relationship management

A partnering facilitator managed relationship issues. Two workshops were held at the start of the project, the first involving users (university staff), the client, the architect and the design-build contractor, and the second involving also other consultants and subcontractors. Follow-up workshops were held regularly during the project, and questionnaires checking perceived working climate were sent out to project participants. In workshops and follow-up activities, also construction workers participated.

When design work started, it was found that the design meetings involved too many people to allow all participants to bring up their problems and take part in discussions. Thus, project management decided to split up the design activities between two teams: one for architecture and building construction and one for building installation systems. Coordination meetings between teams were organized, and all meetings were documented to facilitate information exchange. Although each team still comprised about 15 people, possibilities for constructive communication and problem solving increased significantly and meetings were perceived as more efficient. Thus, despite obvious drawbacks both design teams were satisfied.

User requirements had been assessed before the partnering scheme was introduced. In this second design process, only one user representative participated in the design meetings. In addition, designers met individually with users to solve specific problems.

One aspect affecting the communication within the design team was the geographical location of firms: local consultants could not supply all competence required, and most consultancy firms were located in a larger city at a distance of 200 km. This was a restriction for meeting frequency and made co-location impossible.

After six months of the construction period, the building contractor's core staff (the district manager, the project manager and the partnering facilitator) left the company to set up their own business. The client was alarmed and worried about how relations and performance would be affected. However, the site manager took over much of the project manager's role and a partnering facilitator was brought in from a management consultancy firm specializing in teambuilding. In the end, the client did not perceive that the change in contractor staffing had any significant negative consequences for project performance.

Experiences and opinions
The project was considered a great success, and especially the client and the contractors are satisfied with both the process and the result. However, a central client goal was to revise the existing design and identify opportunities to reduce costs. The building contractor strongly appreciated this challenge since they felt that it was an ideal situation where a partnering contractor really could make a contribution. Consultants, on the other hand scored significantly lower on perceived working climate in the questionnaires. According to the client and the contractor, this was because the consultants' proposed designs were constantly questioned in the quest for cost-efficient solutions. Thus, consultants did not really experience that it was a partnering project. According to the client, it also happened that some design team members were too slow in revising their designs when the contractors discovered a problem during construction. To keep the time schedule, the contractors then developed and installed their own solutions, and this made consultants feel disrespected. The client's view was that consultants need to organize their work so that they can make quick design decisions to fully attain potential benefits of partnering.

Case 2: Project partnering, hospital project
Background
This project concerns a new hospital building for various medical functions: hospital wards, laboratories and other examination and treatment facilities. The hospital is located in the same region as the university building in the case above, and the county council has carried out several partnering schemes and projects before. The first was in 1998, when a framework agreement was established to deliver a series of small refurbishment projects over several years. After this

scheme was finished, the county council carried out two independent hospital refurbishment projects in other towns. At the time of the case study, two partnering projects are running in parallel at the main hospital. The case study building is under construction and will be finished in 2010, with a budget of SEK 900M.

Already in the client's first framework agreement the contractors' responsibility was higher than in a traditional contract, both in terms of liability and requirement's formulation. In the case study building, however, the design-build contractor's responsibility was carried still one step further to also include aspects of user process design. The time schedule was very short – only 3.5 years from political decision to move-in, and there were high ambitions for energy efficiency.

The background was that the county council found it hard to keep hospital care costs down and to prioritize between demands from various hospital functions within a fixed budget. Thus, when a new building was to be constructed, it was decided to use this as an opportunity to get an independent view not only of how building costs could be reduced but also of how hospital care operations could be performed more efficiently. The bidding contractors would bring in cutting edge expertise available on the market to analyse the combination of hospital care processes and buildings. In their bids, contractors should then present a proposal that included both building plans and descriptions of the hospital processes. Thus, hospital staff (users) was required to state their needs only in terms of functions and relationships between functions, and not as area requirements. In order to challenge established local perceptions, the contractors were not allowed to contact the users in preparing their bids.

Partners and partner selection.
The proposal was a significant challenge for the contractors and there was only one bidder: the contractor that had performed the pioneering refurbishment scheme as well as the two independent refurbishment projects. In between, the contractor's project manager had also been responsible for two partnering projects for residential buildings.

The local branch of the building contractor, naturally, did not have any expertise or strong contact network within hospital planning. They engaged the architect who had participated in the refurbishment scheme and then successively involved other consultants, often with a previous experience from international hospital projects.

Over the years, the building contractor had worked with a variety of consultants and contractors in partnering projects. Still, the building contractor has no formalized long-term relationships with sub-contractors, although some of them have been involved in most of their projects. In this project, only one contractor had no previous experience from partnering. For consultants, the situation was different. For this type of complex projects, all competence is not available locally and consultants were hired on the basis of their technical competence more than for their partnering experience.

Contracts and incentives
Initially, there was uncertainty regarding project scope. The scheme has also been changed at several occasions: two stories have been added and the localization and size of several hospital functions have changed. Because of this uncertainty, the client assumed most of the risk. Thus, a cost-reimbursable contract with a fixed part was chosen.

Communication, systems and relationship management
Since they had not been involved in the processes, users were often strongly critical of the processes and design proposed in the bid and suggested significant changes. Thus, a process followed involving 14 parallel function-specific groups where users worked in collaboration with

the architect to develop final designs. This process took longer than expected – one year instead of 6 months. A main reason was that it was hard to prioritize between functions, and several issues could not be resolved within the project but had to be referred to the county council management.

In the county council partnering projects, active participation of consultants and subcontractors, partnering processes such as teambuilding workshops and follow-ups of working climate, and continuous cost assessments and forecasts have become routine. Over time, projects have included more partnering activities, and involved more participants. Thus, ways of organizing communication have developed. Another experience is that a partnering facilitator is needed, to keep the partners from falling back in traditional roles.

In this project, there were large initial workshop groups, with more than 50 participants representing both users and suppliers. In the design stage, meetings were separated between disciplines to reduce the number of participants. Since the project managers, both on the client side and the contractor side, had to participate in many meetings, there was a carefully prepared meeting schedule with fixed meeting days that were coordinated with parallel client projects. As in Case 1, there was a concern that design teams should meet more often, and it was perceived as a problem that competence was not locally available.

Experiences and opinions
The parties have collaborated in several projects before and partnering has become normal practice. In this project, the client is partly disappointed with the early phases, since they had expected the contractors and their consultants to present more innovative and convincing solutions. Thus, planning took longer time than expected. Nevertheless, the county council may try a similar model again because they still think that they opportunities for cost reductions are better than when the county council itself manages early design phases. The contractor agrees that it is easier for them to discuss with users how to prioritize when both value and costs of various alternatives are considered.

The contractors were not entirely enthusiastic about having to question the users' views and the resulting critique, and preferred more collaborative relationships. Further, the design process was often disrupted due to limited authority on the client project management level and political decision processes. Thus, "it is not really partnering", was one contractor opinion. However, contractors also acknowledge that many problems are due to the political influence on the client organization and, overall, express loyalty to project goals. According to the client, the project is clearly helped by the fact that most participants are both taxpayers and potential patients, and thus have a personal interest in high quality and cost-efficient medical care.

Case 3: Long term strategic network
Background
This network, encompassing a building contractor and the key consultant and contractor competences required for office projects, is unusual in the Swedish context. Despite the increase in partnering in recent years, few contractors have explicit strategic relationships to consultants and subcontractors. This network was established by the building contractor 15-20 years ago, and although some participants have changed the collaboration principles have remained much the same over the years.

The founders and owners of the construction company had a background in the car industry. Thus, ideas from Japanese car production informed company values and processes from the start. Guiding principles were: better design-production integration, more pre-fabrication, shorter time for site assembly and more standardization. This required a fixed network of

partners, who could collaborate in long term process development and carry out projects according to the processes developed. This work philosophy is marketed to potential customers and the strategic partners presented on the building contractor's website.

Participants and partner selection
The network today comprises an architectural firm, an engineering consultancy firm, a building installations consultancy firm, a ventilation contractor, a heating and plumbing contractor, an electrical contractor, a steel and concrete frame contractor and a construction equipment provider. The consultants have been integrated into the network by ownership or existing relationships, and the architect is still owned by the contractor company. The specialist contractors were identified by a more formal procedure. A request was sent to a range of contractor firms within various disciplines, and one firm from each trade was selected.

Previously, there was a strategic partner also for construction works, as the building contractor employs only management staff and no workers. However, the collaboration ended when the partner firm grew. As explained by the building contractor, there is a dilemma in that partner firms have to be large enough to handle quite big projects, but still not so large that they become potential competitors. Instead, it was decided to also establish a lower level of partnership for building and some other areas, with prioritized suppliers that would be involved in early phases and learn the work processes, but would not participate in activities between projects.

For all partners, network projects are only part of their total volume of work. Within the partner companies, there is a pool of people who primarily work with the network projects. Although the combinations of people from different partners vary between projects, most of them have worked together before since the collaboration has been going on for so long.

Contracts and incentives
There is no formal long term contract with strategic partners, only agreements for each project. A standard incentive model is used, where a target cost is set based on all partners' cost estimations and under runs (and overruns) are then shared. If a partner's actual costs are lower than their budget, they get 25% while 75% are shared by all partners, also consultants, according to their share of the project budget. Thus, there are both joint and firm-specific incentives to reduce costs. Further, there are open books between all partners. Both target cost setting and financial openness require a high level of trust between participants. The client may be involved in the partnership and share gains, but there can be also be a fixed price and no close collaboration with the client.

Communication, systems and relationship management
The building contractor has developed an extensive project planning and management system with tollgates, checklists and meeting agendas, defining what has to be done in different phases. This system has existed for many years, but was further developed a couple of years ago. The system also includes standard questionnaires for feed-back and evaluation in projects (separate forms for various participants, also for workers). Further, there is an annual evaluation of partners. Every sixth week, the managing directors of the partners meet to discuss ongoing projects, but there is also much focus on prospects for future work.

Although there is a start meeting, there is no partnering facilitator or teambuilding in the projects. Collaboration between consultants and contractors is very close, and there is a

variety of meetings both within projects and between projects to find opportunities for improvements. Also workers' team leaders participate in design to improve constructability. As a result, design consultants acquire knowledge of production which is of great value also when they work in traditional projects.

Thus, there is a long-term development process which complements and sometimes substitutes for project activities. For example, the discipline in carrying out formal evaluations has diminished over the years, and according to the building contractor representative this is probably because these tools do not give much new information. Everybody already knows which the main problems are, and there is an ongoing process to improve on these areas. However, improvement initiatives tend to appear in cycles rather than as a continuous process. Thus, when it was found that practice differed too much between projects an external consultant was engaged to run a training program involving all partners, focusing on project processes, methods for continuous improvement and leadership training.

Experience and opinions
All parties interviewed are strongly in favour of the collaboration and regard it as much more efficient and rewarding than traditional projects, and also resulting in higher quality buildings. Opportunities for further improvement were mentioned, such as the timing of various design decisions to avoid premature locking and managing meetings to avoid mixing problem solving with decision-making.

The way of working is different from the construction industry in general, where a strong belief prevails that the most value for money is achieved by contracting with the lowest bidder. In this case, the building contractor tries to communicate that the price offered is the final price while other bidders' prices should be adjusted for claims. A problem mentioned by several interviewees was that especially in a recession, many clients will choose the lowest bid. Thus, the partner network also has to take on more traditional projects when demand is low. This is seen as difficult, since it is hard to change attitudes and collaboration culture between projects.

DISCUSSION

Despite being the client's first partnering project, the partnering approach used in case 1 was relatively advanced in terms of processes and participants involved. It could also sustain that key contractor managers were replaced. Thus, a unique case of project partnering can come quite far if there is a critical mass of experienced participants and established organizational models. The cases 1 and 2 were both located in a medium-sized town 2 hours' drive from a larger city, and in this local market a few large clients have repeatedly chosen partnering approaches. Although there has been a fear of limiting competition when one contractor dominated strongly, a more general partnering competence now seems to have developed. Many actors have become familiar with the partnering systems and learnt how to contribute to design and make reliable cost forecasts.

However, the small market also has disadvantages. In more specialized projects such as those in this study, some consultants from the larger city were brought in. A few of them had worked in partnering projects in the region before, but others had no partnering experience and required more coaching. Further, having non-local consultants restricted face-to-face

communication. It may also be noted that there are no long-term contractor-subcontractor relationships in this market. Although this has been considered by the building contractor, the driving forces have not been strong enough.

In terms of which actors are members of the team, the difference was not great between project partnering and the long-term relationship. Rather, there is a difference in depth and levels of ambition. The structured project processes and long term improvement work of case 3 imply higher repeatability and design-production integration, while project partnering collaboration is more limited. Another difference is that in the long term network, there is no facilitator and no explicit relationship building. One reason is that participants know both each other and the processes, but another explanation can be that the inspiration originally comes from lean production and not from construction partnering models. Further, there is of course more communication between projects, but it is not clear if there is less communication within projects than in the project partnering cases. In all cases, communication management is seen as difficult, and various approaches to integrating knowledge are tested.

Another aspect is that partnering has implications for power relationships. Contrary to problems often mentioned in partnering literature (e. g. Alderman and Ivory, 2007), payment to contractors was perceived as fair in all cases projects. Instead, conflicts regarded involvement and respect. In both partnering projects, there were expectations that partnering would imply fruitful collaboration and teamwork, and a disappointment when the relationships also involved pressure and criticism. However, since the clients' choice of partnering in both cases was partly driven by a perceived need to form new alliances to be able to challenge established views and bring in new knowledge, this can not really be seen as a negative aspect.

CONCLUSIONS

A key observation is how important the market situation is for the viability of various relationship styles and levels of ambition. The communication processes that influence opportunities for teamwork and learning are shaped both by project management and by the environment. In a smaller market, local clients have the power to act as change agents and foster a high general partnering competence in local suppliers, but difficult projects are dependent on the wider supplier market. In this larger market, however, technical competence will be higher but partnering development will lagging behind the pioneering local markets.

The long term network show a more developed collaboration, but it is still difficult to convince potential clients that long term relations bring more value for money than a temporary network. Partnering with one contractor and procuring the others together is a smaller step than establishing a partnership with an entire network. A comparison of this model and project partnering is needed, and one opportunity would be to follow up cases where experienced project partnering clients contract with the strategic network. Thus, strategic networks of this type may require both large markets and a high general partnering maturity level.

What is possible in terms of communication and teamwork is dependent on the type of project in relation to the technical and relational competences available in the local market. For example, a general increase in supplier competence might partly substitute for long term

relationships. Perhaps, strategic supplier relationship would have to be very skilfully managed to be an attractive alternative to project partnering in a market where general partnering competence is high.

Also, in the management of complex collaborative relationships, a key challenge is to balance the benefits of including as much competence as possible with the restrictions of creating meeting places for meaningful knowledge exchange. Further, with increasing maturity partnering may more often be used to change power relations and bring in critical perspectives, thereby calling for other types of conflict management than those relating to contractual disagreements.

LITERATURE

Alderman, N. and Ivory, C. (2007) Partnering in major contracts: Paradox and metaphor. *International Journal of Project Management*, 25, pp. 386-393.

Andersson, O. and Johansson, O. (2008). Partneringundersökning 2008. Byggherrarna (The Swedish Construction Clients Forum), www.byggherrarna.se.

Beach, R., Webster, M., and Campbell, K.M. (2005). An evaluation of partnership development in the construction industry. *International Journal of Project Management*, 23, pp. 611-621.

Bennet, J. and Jayes, S. (1998) *The seven pillars of partnering. A guide to second generation partnering.* London: Thomas Telford.

Dvir, D. and Lechler, T. (2004) Plans are nothing, changing plans is everything: the impact of changes on project success. *Research Policy*, 33, pp. 1-15.

Huang, J. C., Newell, S. (2003) Knowledge integration processes and dynamics within the context of cross-functional projects. *International Journal of Project Management*, 21, 167-176.

Grabher (2004) Temporary architectures of learning: Knowledge Governance in Project Ecologies. *Organization Studies*, 25(9), pp. 1491-1514.

Kadefors, A. (2004) Trust in project relationships – inside the black box. *International Journal of Project Management*, 22(3), pp. 175-182.

Williams, T. M. (1999) The need for new paradigms for complex projects. *International Journal of Project Management*, 17(5), pp. 269-273.