

TOWARDS THE USE OF PROJECT ALLIANCE: JOINT DEVELOPMENT OF A TEAM SELECTION PROCEDURE AS AN EXAMPLE OF STEPS TAKEN

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Abstract

Project alliance is a relatively fresh project delivery method where the owner and service providers, the designer and the constructor, share the risks of the project in order to intensify their collaboration for the best of the project. Experiences from the model from “down under”, where it has broken through, reached Finland some years ago. Since then, the Finnish Transport Agency (incl. its predecessors) has been intending to introduce the system in its transport infrastructure projects. The paper discusses related challenges and sheds light on an industry-wide joint effort and the progress made to date. In that respect, the development of the qualitative team selection process and criteria are presented in more detail. Moreover, the paper introduces the first two projects that are to apply the project alliance model: a rural rail renovation and an urban road tunnel construction one. The ambience generated by the efforts so far is promising, and it seems that all the parties look forward to taking up the practical work and seizing available benefits.

Keywords: project alliance, collaboration, selection criteria, shortlisting, competition

INTRODUCTION

Project alliance is a relatively fresh project delivery practice that has broken through especially in Australia and New Zealand. In project alliance the owner and service providers, the designer and the constructor, share the risks of the project and the payment to the service providers is tied to the overall success of the project. It is, first and foremost, a project delivery system for large, complex and risky projects. Success stories from the use of the project alliancing approach and news on related benefits reached Finland some years ago. Since then, various activities have been organised for the introduction of the delivery system also in Finland. *The Finnish Transport Agency* is the enthusiastic commissioner of the system and the first planned projects involve rail renovation and urban road tunnel construction that are about to start in the very near future.

This paper sheds light on the present state of the preparations for applying project alliance in Finland. After reintroducing the key ideas and principles of project alliance and how they reached Finland, the presentation focuses on the initial joint development between *the Finnish Transport Agency*, the industry and *VTT*. The development of qualitative team selection criteria is singled out for more detailed review as an example of steps taken so far. Finally, the paper proceeds towards the introduction of project alliance in practice by looking into the two transport infrastructure projects that are to be the first of this type in Finland. The procurement process for service providers has already started with one of the projects and will start later this year with the other.

AWARENESS OF PROJECT ALLIANCE

Features of project alliance

The concept of *alliance* refers generally to an association and agreement between actors aimed at integrating their goals and/or operations. An arrangement of the type made for a given project is called a *project alliance* or an *alliance contract* to distinguish it from so-called *strategic alliance* which is a collaborative arrangement covering several projects or other long-term activity.

More precisely, *project alliance* is a project delivery method based on a *joint contract* between the key actors to a project whereby the parties assume joint responsibility for the design and construction of the project to be implemented through a *joint organisation*, and where the actors *share* both positive and negative *risks* related to the project and observe the principles of information accessibility in pursuing close cooperation:

- *Joint agreement.* The tasks of an alliance include project planning and implementation tasks and (possibly) ones related to them and to the promotion of the project traditionally performed by the owner, which said actors are jointly responsible for. The parties enter into a single joint multi-actor contract instead of several bilateral contracts (different in spirit).
- *Joint organisation.* The alliance organisation comprises people from all partner organisations, including the owner's. Decisions on project implementation are taken jointly by the parties. The cost estimate covers all related tasks and persons. The project target cost is defined correspondingly and is consequently the total cost of the project.
- *Risk sharing.* Alliance partners share the risk of project implementation as concerns the bulk of both positive and negative risks. Thus, the reward of service providers is also based on the success of overall project implementation, not on their performance of their own tasks. The practice requires observing the principles of openness in cost monitoring.

In addition to these structural features, the collaborative features of trust, commitment and cooperation are of primary importance in project alliance (see e.g. DTF 2010).

The project alliance system evolved from the need to improve the implementation of demanding and risky investment projects. In a project involving much uncertainty due to, for instance, new technology and project conditions or interfaces, risk premiums and/or adversarial behaviour characteristics of traditional contracting would lead to an uneconomical result from the viewpoint of the owner. On the other hand, the alignment of the parties' objectives by joint risk-sharing in a project alliance arrangement, supplemented by a joint organisation and decision making, is supposed to improve the performance.

The rise of enthusiasm

The first few alliance-type construction projects were realised in Australia in the late 90's, and only a few years later the delivery system came to the Finns' notice in the connection of the reporting of international interviews on the procedures and performance of different road project delivery systems (Koppinen and Lahdenperä 2004, also Pakkala et al. 2007). Since then there has been growing interest for the model and the thing that finally set the wheels in motion was a fact-finding tour to Australia by a group of the former *Finnish Road Administration's* representatives in the beginning of 2007. At that time, a real breakthrough in the use of project alliance had occurred in Australia and the number of cumulative experiences was already significant (cf. Anon 2009). So far, hundreds of projects have already been implemented by the project alliancing system. Except for very few social infrastructure projects, they have been civil engineering projects for road, rail and water infrastructure (Ross 2006, Anon 2009).

INITIAL DEVELOPMENT EFFORT

Joint development entity

The above mentioned fact-finding tour led to the launch of a sort of feasibility study on the application of project alliance in Finland (Lahdenperä 2009). The general challenge was to understand the possibilities of alliance-type procurement in increasing production efficiency, chart the procedural solutions for project alliances to the extent the approach has been used worldwide, evaluate the feasibility of the application of the procurement method in local Finnish (and European) culture and business and legal environment (e.g. Directive 2004b) and, particularly, develop project processes, procedures and ground rules to support the use of the project alliance in said application environment.

The development work built on a literature study and expert workshops. The several expert groups involved focused on different sections of the problem field. More precisely, there was a steering committee for the entire study and three separate subordinated thematic workgroups for cost estimation and the payment/incentive system, organisational and administrative issues, and selection process and criteria. The work of the last-mentioned group will be looked into in more detail below.

The groups consisted of a few dozen experts and practical actors from transport network owner organisations (the then *Finnish Road Administration* and *Finnish Rail Administration*) as well as numerous companies offering corresponding design and construction services. The groups met regularly to comment on and direct development work and ideate new procedural solutions. Several dozen such workshops and meetings were conducted during the one year team work period (the 2008 calendar year), and the time spent attending them corresponds to a few person-months of labour.

Workshop activity was speeded up by literature surveys and presentations as well as procedural constructions prepared in advance by researchers. Although an attempt was made to utilise existing knowledge to the fullest, the research approach is rather constructive as a whole due to the scope and multiformity of the problem. The aim is to test the workability of solutions through later application and further development. The wide participation in the development project also prepared and committed the markets so as to allow launching pilot or actual alliance projects as soon as possible.

All in all, development work focused on process engineering and basic contractual solutions that form a starting point for later preparation of project documentation. The workability of project alliance which stresses cooperation also requires heavy investment in cultural and management issues, which were excluded from the initial development work reported here.

Selection process and criteria development

The workgroup on the selection process and criteria met ten times during the year in an attempt to adapt the existing model to the target market. The legal praxis concerning competitive tendering in public procurement was, however, found a special challenge which is why it was considered that the implementer selection procedure that is based on competence (or quality) only, i.e. the most common one in Australia at the time, could not be introduced as such. On the other hand, there was the desire to avoid heavy competition involving design and total pricing. A comparison method applied early on that stresses competence while also considering (partial) price was thus heavily weighted in the work.

According to the general guidelines for government procurement, price should – roughly speaking – carry a weight of clearly more than one third when using relative weighting of criteria although, in the case of service procurement, exceptions are allowed (Hytönen and Lehtomäki 2007). The joint view of participating experts and practical actors is that price should generally carry a weight of no more than one fourth or so in project alliance. This is because better overall economy is pursued by putting together the best possible team of versatile know-how already at the stage when the implementation solution still can be influenced and improved. It also makes for more profound evaluation of qualitative factors than is the norm with other procurement methods.

Another impact of the European legal environment on the shaping up of the selection process was that when using the negotiated procedure or the competitive dialogue, at least three candidates must be invited to the tendering process unless there are fewer suitable candidates (Laki 2007a). Tender phase workshops are so laborious that it is generally not justified to invite more than that minimum number.

The development of qualitative selection criteria, on the other hand, started on a slightly more independent basis. A global survey (Lahdenperä and Sulankivi 2001) carried out a few years earlier offered a good starting point since it comprised all thinkable qualitative criteria for the selection. Through reclassification, combination and elimination the set of criteria summarised below was created. The material from the survey was also complemented with alliance-specific issues drawn from actual alliance owners' requests for proposals (e.g. VicRoads 2006).

The development of actual qualitative selection criteria was also constrained by the local environment. Courts are known to have intervened in cases where clear enough distinction has not been made between reducing the number of candidates and tender evaluation as concerns suitability criteria. Thus, qualitative criteria must evolve between these phases from evaluating qualifications toward evaluation of project-specific procedures although in the case of project alliance evaluation during both phases focuses on quite similar issues.

SELECTION PROCESS AND CRITERIA

Selection process

The procedure of competitive selection is established for the early involvement of service providers through a collaborative approach. Service providers are selected as a team; in other words, designers and builders are not selected separately and matched. According to the model, selection takes place through elimination of candidates and a subsequent two-phase tendering process: the qualitative tender precedes the workshops that are part of evaluation, followed by submission of tender price data. The price is made up of unit prices, overhead rates and other components as appropriate in each case (although the issue is too multifaceted to be discussed here). Then, selected service providers develop the project and its designs in cooperation with the owner before the actual target cost is set and the parties are ready to finally commit to the implementation of the project in question.

The phases of this process are shown in the middle of Figure 1. The elements on the left represent the key inputs of each phase and those on the right are the key results from the phases or a characterisation of follow-up work.

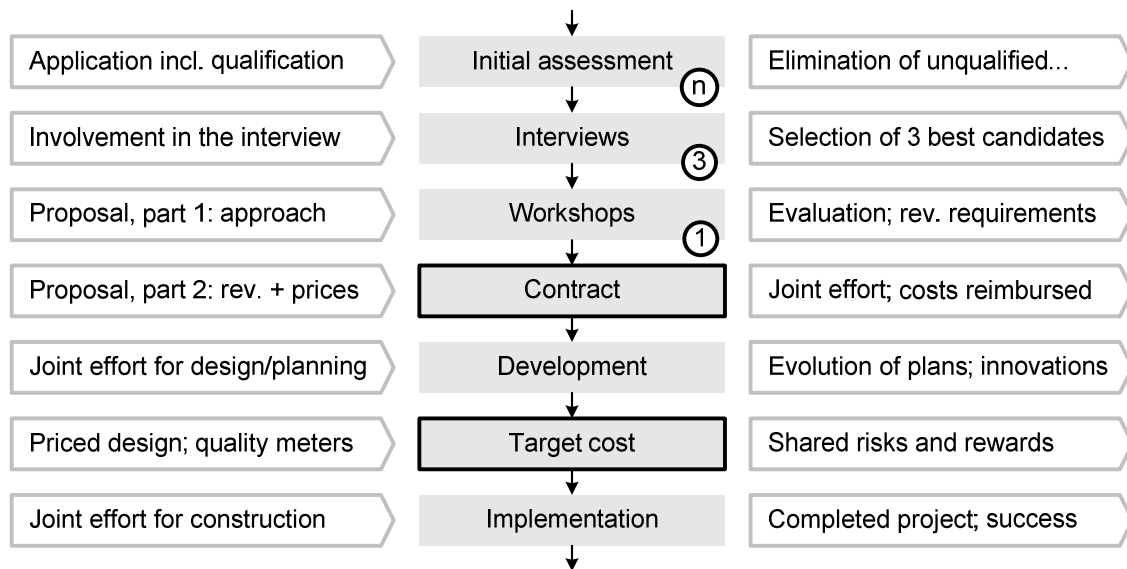


Figure 1: Selection process with key input and output characteristics.

Selection criteria

Overview

Different phases of the selection process for the implementer of the alliance contract use different criteria: at first minimum criteria concerning candidates are applied, followed by elimination (or shortlisting) criteria, and lastly tender evaluation criteria (Figure 2, Table 1). The meeting of minimum criteria (A) is evaluated on the basis of the request to participate, and that of elimination criteria (B) on both the request to participate and interviews. Tender evaluation has two phases. First, Part I of the written tender (C1–C3), submitted before the workshops are conducted, and the workshop performance of the tenderer’s project group (C4) are assessed. After the workshops, Part II of the tender including price data (C5) is submitted as well as other information required by the specification of the call for tenders. The criteria are examined in more detail by phases below.

Verification of qualification

Application of minimum criteria ensures that candidates have the basic qualifications for successful implementation of the construction project in question. Minimum requirements include, for instance, that candidates have a transparent financial monitoring system suitable for cooperation as well as the required experience from design management and organising and implementing of projects involving design (Table 1, Section A). Candidates that meet the minimum requirements qualify and are invited to interviews organised by the owner. Candidates that fall short of the minimum requirements are rejected.

Reducing the number of candidates

Candidates meeting the minimum requirements are ranked according to their merits, initially on the basis of the requests to participate they submitted to the owner (Table 1, Section B). Candidates are also invited to interviews intended to clarify things already expressed in writing in the request to participate. On the basis of the interviews and the request to participate, the three best candidates are selected for the next round. These candidates receive the project’s call-for-tenders material. The criteria used at this stage are the candidates’ competence and technical capacity, proof of successful projects and planned project organisation.

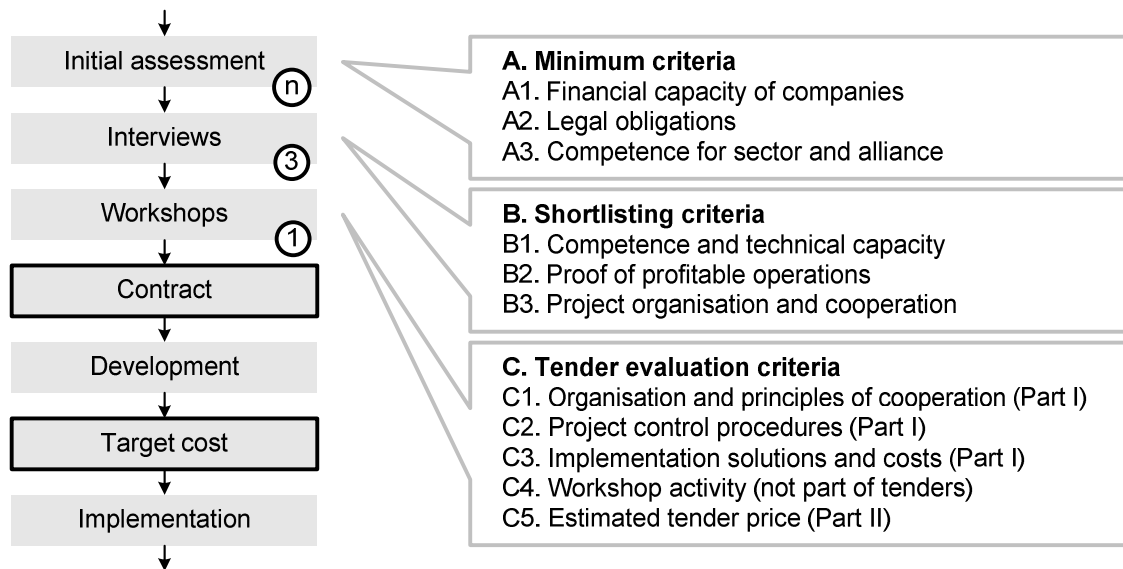


Figure 2: Selection criteria headings combined with process phases.

Selection of best tenderer

Evaluation of offers divides into two phases. The issues of the qualitative Part I (Table 1, Sections C1–C3) and workshop performance (Section C4) are evaluated first. At this phase, emphasis is on the suggested organisation and operating culture, project management procedures and implementation solutions and costs. After the selection workshop, the second part of the written tender, which contains the issues of Part I of the tender dealt with in the workshop and updated to the extent necessary, as well as Part II of the tender, that is, certain price data (Section C5), are submitted. The candidate that submits the most advantageous tender from the overall economic point of view is selected for negotiations.

Although both of the latter two phases of selection focus on the evaluation of the competence of actors, the general principle is that each selection criterion is used only in one phase of the selection process and the elimination-phase evaluations and corresponding scores of candidates are not considered as such at the tender evaluation phase. Naturally, the original project report (Lahdenperä 2009) describes in much more detail the process phases and tasks, selection criteria and the proof required by the owner of meeting the criteria.

THE WAY FORWARD

Pilot projects

Some time has now passed since the completion of the initial feasibility study described above. Appropriate transport infrastructure investment projects in which the model could have been applied were not found immediately thereafter. One reason for that was the need to immediately expedite some major projects as a part of the financial stimulus package launched to diminish the adverse effects of the global debt crisis. Although project alliance is generally the choice for demanding, urgent projects, it was not considered appropriate for those projects due to the significant amount of preparatory work and educational efforts that the first project of its kind would have required.

Table 1: Selection criteria for service providers in project alliance.

Selection phase >	Verification of qualification	Elimination of candidates	Selection of consortium
Basis of evaluation >	Request to participate	Request to participate	Candidate Interviews
Selection criteria	Tender (Parts 1 & 2)	Selection workshops	
A. Minimum criteria			
A1. Financial capacity of companies	●		
A2. Legal obligations	●		
A3. Sector and alliance competence	●		
B. Elimination criteria			
B1. Competence and technical capacity		●	●
B2. Proof of successful operations		●	●
B3. Project organisation and cooperation		●	●
C. Tender evaluation criteria			
C1. Organisation and principles of cooperation (Part I)			
• Alliance organisation			●
• Project management and operating principles			●
C2. Project management procedures (Part I)			
• Management of project quality and env. issues			●
• Safety management			●
• Risk management			●
C3. Implementation solutions and costs (Part I)			
• Technical approach to project implementation			●
• Budget critique			●
C4. Workshop activity (not part of tenders)			
• Commitment, attitude and cooperation of team			●
C5. Calculated tender price (Part II)			●

An additional challenge was posed by the reorganisation of the owner bodies. *The Finnish Road Administration* and *the Finnish Rail Administration* were the owners involved in the earlier development, who soon thereafter merged with *the Finnish Maritime Administration*. Since the beginning of 2010 all three have operated as *the Finnish Transport Agency* (except for branch offices of the earlier *Road Administration* that are currently under *the Centres for Economic Development, Transport and the Environment*). *The Finnish Transport Agency* is a government agency operating under the jurisdiction of *the Ministry of Transport and Communications* and it is responsible for the maintenance and development of the transport system overseen by the government.

The search for the first projects where project alliance could be applied has finally produced a plan to adopt it at least in the two following forthcoming projects:

- *The Lielähti-Kokemäki rail section.* The section extends from the western boundary of the City of Tampere nearly 100 km towards the west. It is a replacement investment required by the decades old railway superstructure. Renovation of the superstructure to meet the standards of modern technology is a basic requirement for increasing the rail speed and axle loads of the section. In need of renovation are the rails, sleepers, crushed stone and gravel layers of the beds and switches. The project with a total cost of nearly €100 million also includes renovation of electrical, information and safety equipment as well as repair of bridges, culverts and platform areas.
- *The Tampere lakeshore road.* Arterial road 12 serves as a major entry road to the city as well as a through road for long distance traffic. Its current traffic volume is 30,000–45,000 vehicles/day and the road gets jammed regularly during commuting hours. Moreover, the 2+2 lane bypass road splits up the city. The aim is to bury part of the lakeshore road in two 2.3 km tunnels of three lanes in each direction, to widen the rest of it (along 3 km), and to connect it to the surrounding traffic network by graded interchanges. Besides the city infrastructure, the tunnels will also pass under the Tammerkoski Rapids, which traverse the city, at 20 metres below the river bed. The project is estimated to cost nearly €200 million.

The first rail project is by nature more of a normal reinvestment carrying no extraordinary risks or difficulties although it is a demanding project. Thus, it may not be ideal for implementation through project alliance. Yet, it was considered suitable as the first pilot project that would increase our experience since it might be too risky to start experiment with the most difficult projects. The road project is, by contrast, a challenging one. Tunnelling works involving all the junctions, temporary traffic arrangements and the stakeholder issues related to urban development surely pose a challenge.

The foreseeable future

As concerns the rail project, procurement of service providers for the planning and implementation of the project started in December 2010 by the publication of a procurement notice (Finnish 2010). In Finland procurement notices are to be submitted for publication on the free, electronic *Hilma* information system at www.hankintailmoitukset.fi as determined by *the Ministry of Employment and the Economy*. The aim is to select a project team in early autumn 2011 to start joint development of the emerging project alliance. Actual implementation would, thus, take place from 2012 to 2015. The road project will follow less than a year behind. Some uncertainty still exists about the road and urban plans becoming legally valid (at the time of writing in January 2011). Yet, the optimistic presumption is that the process can be expedited and it will catch up with the rail project so that the 3-year road construction project can also be launched in autumn 2012.

In connection with the preparation work related to service procurement for the rail project, two full day briefing and/or workshop events involving the industry were organised prior to the publication of the procurement notice in order to inform companies and discuss the procedures to be applied in the project. That prepared and committed companies to the forthcoming call and also gave valuable feedback to the owner.

To date, there are no signs that the selection criteria to be used in this project would essentially differ from those condensed in the paper. Naturally, the elaborateness and diversity of the practical criteria influence their format. However, the process differs more. Only a maximum of five teams can be selected for the actual shortlisting phase and two teams

for the subsequent competition phase involving price components and preceding the selection of the best team. The latter option is possible because the general law on public procurement (that requires at least three teams; Laki 2007a) does not apply to the rail sector whose procurements are controlled by a different law on special services sectors (Laki 2007b, Directive 2004a). The actual shortlisting phase including interviews takes place only after the candidate teams have submitted their proposals, and the workshops concern only the best two. This modification, for its part, illustrates the many possibilities for organising the alliance team selection. There is no 'one size fits all' process for all projects and situations.

The pricing arrangement will also differ from that of the feasibility study report (Lahdenperä 2009; not dealt with here). Although lawyers were involved in the initial development, only more recent legal consultations have encouraged the owner to depart from the use of the calculated/comprehensive tender price estimate as a selection criterion, and the price component is likely to be represented only by certain more restricted items (e.g. fee percentage). Therefore, the proper legal praxis concerning competitive tendering in public procurement, that was said to have been found a special challenge earlier, has not been established yet. Finland seems to have been more conservative (so far) in the application of the European directive and its economically most advantageous criterion than some other countries governed by the same directive.

Due to the simplified approach and the lack of price information at the time of selection, it is also not possible to apply the two-stage target-cost arrangement drafted in the feasibility study either. Yet, it is a concept (cf. Lahdenperä 2010) that needs to be examined further before it can be introduced in actual contracts. An effort to that effect is, however, likely to be included in the R&D project just about to start aimed at supporting the development of pilot project practices and more long-term alliancing solutions in general.

Final remarks

All in all, the aim is to take the further steps needed and utilise the project alliance model in Finland in the very near future. The key governmental transport infrastructure owner has committed itself to the model and the effort will be supported by considerable R&D efforts. Naturally, many practical challenges must still be met as we deal with indicative launch-phase views in this paper and its background material. It is also likely that views on the presented solutions will evolve as experiences are gained; as they have until now.

Anyway, the journey towards a more collaborative and, presumably, more innovative and efficient project protocol has started and you will soon be hearing more about Finnish project alliance solutions and experiences. Thus, stay tuned and be prepared for good news. Provided, of course, that the news from the other edge of the globe are true and the benefits can be seized to the same extent by the local stakeholders.

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