


To Ally or Not? The Critical Factors of a New Alliance Model in Urban Infrastructure Projects

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Abstract

The research explains the background of an alliance model which is a new collaborative project concept in urban infrastructure investments and reviews stakeholder views of applied alliances based on a case study analysing project experiences in the city of Tampere, Finland. The alliance model is considered a potential solution for some of the chronic productivity and other problems of the building industry and the classic difficulties in public-sector investment projects, but the model fits a purpose primarily only in publicly funded, technically challenging and sufficiently large projects.

The alliance model has initiation, development and implementation phases, and of these phases, the interviewed experts named the development phases as particularly critical, as team spirit, shared ethos, and joint goals must all be built in that phase before the actual collaboration between contract parties can be initiated.

Keywords: alliance model, public-private partnership, building contract, urban infrastructure investment

Introduction

City governments and other public-sector bodies are looking for new contractual solutions and management methods to improve the construction and refurbishment of urban infrastructure and public service facilities. Traditional public investments have been straightforward public procurements, where a public body orders project work and a construction company delivers only what is agreed in a building contract. Because of the aims of the European Single Market (ESM) and the regulation of public procurement, public authorities typically grant these contracts via standardised methods of competitive tendering to a company able to bid with the lowest price.

Public-private partnerships (PPPs) and especially private finance initiatives (PFIs) have challenged traditional models of public investment projects since the 1990s, when they were seen as radically new types of building contract. In PPPs and PFIs, private-sector organisations accept wider duties and sign longer commitments than in classical projects, as the companies do not only construct a physical object but also take care of its maintenance for a fixed period of time, as agreed in a contract. However, the basic contractual settings defining a public body as a purchaser and a private company as a producer are the same in PPPs and PFIs as they are in traditional investment projects.

Recently, an entirely new project concept called an alliance model has emerged, developed in Australia and emphasising close collaboration between contract parties. As the model is still a new scheme of operations and not well-known in European urban contexts, there is a knowledge gap regarding the features and challenges of this new concept.

We studied the alliance model as a new project concept by reviewing stakeholder views of urban public investment projects in order to deepen understanding about the critical success factors associated with the introduction and application of this collaboration-based building contract and project scheme. We evaluated

the emergence of the alliance model in Finland in order to explain how it differs from other project models and why it is gaining popularity. Our analyses revealed some national aspects of the development of the building industry and difficulties with public-sector building projects.

We also performed an empirical case study of two urban alliance projects based on original research data. The aim of the case study was to demonstrate the premises and noteworthy interpretations of projects in the City of Tampere, Finland and highlight the features of the phases of the alliances. The studied alliance projects included a highway tunnel project in the urban context and a light rail service project representing an entirely new form of urban public transit in the country.

Analytical framework of the study

Alternative methods of public investment projects: traditional construction projects and partnership contracts

A public-sector construction and investment project can be organised in many ways and it is not possible to review them all here. It is not always effectively possible for public-sector organisations to run “make or buy” pre-considerations in order to evaluate the politically and economically expedient execution of a project, since they tend to operate without the necessary in-house construction capacity and financial capabilities. Consequently, public bodies usually purchase construction projects from external providers using standardised and established contracts.

Figure 1 illustrates the main contract types of public investment projects. All-in, or design-build, projects, include typically only a single contract between a public authority and a company that will take care of all design and construction works. The benefit of this type of contract is that as public authorities have to establish only one contractual relationship with a company capable of designing and building a construction object, it can minimise coordination problems between design and construction works. In design-bid-build projects, planning duties are procured from a design office and construction works are outsourced to a construction company. These projects enable public authorities to organise two separate calls for bids and procure architectural design and construction works from specialised enterprises. The third main type of traditional public investment projects is a project management contract. This is a relatively novel application where public authorities let a project management company manage the investment project via outsourced piecemeal contracts enabling the authorities to make many contractual choices during the project as to which companies specific pieces of the project are given (Kiiras).

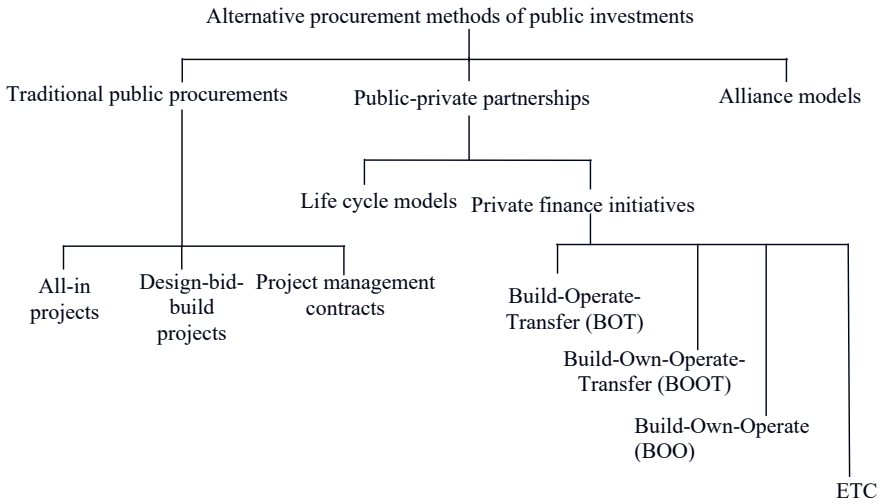


Figure 1. Main procurement methods of public sector investment projects.

A public-private partnership (PPP) is an alternative method of carrying out a public investment project even though the partnership concept is a contested and ambiguous term (see e.g. Powell and Glendinning; Carnwell and Carson). For example, Savas has studied the use of the PPP concept and claimed that for wider political acceptance, some interest groups that want to promote stronger private-sector involvement in the delivery of public projects use the term instead of privatisation. Given that the PPP concept is extensively used but vaguely defined, in this study a PPP is understood as one of the main types of public investment projects, referring to a long-term collaboration between public authorities and private-sector organisations that allocates more responsibilities to the private organisations than is the case in traditional public investments.

PPP contracts are classified into two main categories: private finance initiatives (PFIs) and life-cycle models. A PFI refers to an investment contract between public authorities and private companies that aims to deliver the funding, construction, renovation, management or maintenance of public infrastructure. A PFI contract is a specific form of a PPP, including remarkable upfront and long-term private funding of an investment project that the public sector needs (D’Alessandro, Bailey and Giorgino). A life-cycle model is quite similar to PFI with the key difference that the procurement authorities take care of the funding of a project. Table 1 demonstrates the differences between these main types of investment contracts.

Table 1. Differences between traditional public investment projects, life-cycle projects and PFI projects (Alshawi).

	Traditional public investment projects	Life-cycle models	Private finance Initiatives
Duration of private involvement in the project	Until construction of the facility is completed and the defect liability period, typically 2 years in Finland	Typically from 15 to 20 years in Finland	Typically from 15 to 20 years in Finland
Financing	Public-sector finance	Public-sector finance	Private-sector finance
Private-sector risks	Construction works and materials	Much wider than in traditional investment projects but excluding financial risks	Widest: including planning, construction, operation and finance
Typical remuneration	Lump sum (scheduled payments as works progress)	Lump sum for construction works and annual payments for the use of facilities	Annual payments for everything

PFI models have not been very popular in Finland. Finland's public finances have been relatively stable over a long period, and the central government has been able to borrow money from the global financial market with relatively low costs, more recently with a negative interest rate. A few years ago, public finances faced stronger difficulties and, in 2014 and 2015, Finland's credit rating was downgraded to the second-best level (i.e. AA+). So far, local authorities have also had relatively good possibilities to fund their investment projects via local budgets. Local authorities have wide taxation powers, including a local income tax and a property tax, and the legal and actual capacity to borrow money from the national and international financial markets. They have thus been able to arrange municipal funding for their projects. To secure these capacities and pool the financial needs of individual local authorities, the local government sector (i.e. the municipalities jointly) has established a special financial institution (*Municipal Finance PLC*). This has enjoyed the same credit rating as the Finnish state government, which means that it has been capable of providing cheaply priced loans to local authorities. It has thus been an effective competitor to the banking sector in financing municipalities' projects (Valkama et al.). In the near future, it seems that interest rates, expectedly remaining very low, favour further public debt financing even though they include risk of over-indebtedness.

An alliance model as a new project type

In private-sector business studies, strategic alliances are considered as contractual or ownership-based arrangements between companies involving exchange, sharing, or co-development of products or services (Gulati; Boone and Ivanov; D'Alessandro et al.). D'Alessandro, Bailey and Giorgino have stated that strategic alliances are long-term inter-company arrangements, where alliance parties have shared control mechanisms. They work in proactive ways to integrate the contribution of resources and skills by both partners and have common risk-sharing and -bearing methods in place. Based on these arguments, they have also claimed that a standard PPP/PFI is not a strategic alliance since there are no aligned strategic interests and joint entities.

In public investment projects, an alliance is typically defined as a legal contract of cooperation between a public authority as a customer and one or more private companies as service provider(s) with the purpose to carry out one or more public work projects via collaboration (Jefferies et al.). According to Lahdenperä, a project alliance is a contractual delivery method where project parties commit themselves to shared responsibilities in order to design and construct public facilities or infrastructures, where the parties create a joint organisation or joint venture and where the parties share both negative and positive risks while cooperating closely and sharing information. He claims that key structural features of project alliances are joint agreements, joint organisation and risk-sharing arrangements.

Allying is a form of managing construction cooperation between two or more organisations which agree on a shared goal and commit to working together to perform a specific building project. This is generally considered enough to distinguish allying from standard public procurement projects. It aims at achieving more unity of purpose between contractual parties. In standard procurement and outsourcing commitments, the contract parties maintain organisational independence, but in alliances they have to give up some of their autonomy. To compensate for the reduced autonomy, the parties of an alliance expect to get some particular return on association or value added.

In traditional investment and PPP projects, the parties agree on a fixed or maximum contract price, but in alliance projects, the procedure is different. First, the parties define a target cost including a protocol on profit margins. After the project is fully completed, the parties share the profits or losses. Second, the alliance parties identify possible risks before they come up and commit to managing them jointly. Third, alliances are formed through a careful and long selection process requiring participants to commit themselves to a win-win mind-set (Jefferies, Brewer & Gajendran). Alliance parties have to equalise their negotiation powers and agree on a method of consensus-based decision-making since the possibility of litigation is excluded unless there are clear cases of competence deficit or criminal activity.

Trust, transparency, joint working and open communication are the often-quoted key success factors in alliance projects (Walker and Jacobsson). Table 2 illustrates these and other success factors of alliance projects.

Table 2. Critical success factors in alliance projects (n.b. the cells of the two columns are in random order, with no intended correspondence among their contents on a cell-to-cell scale).

Critical factors identified by a literature review (Jefferies, Brewer and Gajendra)	Critical factors identified by an Australian case study (Jefferies, Brewer and Gajendra)
Strong commitment by client and senior management	Attitude
Trust between parties	Formation of a single entity
Equity	Pre-project and planning workshops
Mutual goals and objectives	Continuous facilitation
Joint process evaluation	Careful team selection and project-specific team alignment
Dispute resolution process	Right project personnel
Cooperative spirit	Integrated alliance office
Flexibility and adaptability	Staging of project and stretch targets
Tight alliance outline	Project-specific key performance indicators
Alliance structure	Dedicated client and commitment by all stakeholders
Best people for project	Benchmarking and continuous performance monitoring
Facilitation	Early commercial development
Commercial incentives	Ongoing workshops including site personnel
Open communication	Web-based management programme
Shared knowledge	Participants with part working relationships
Stretch targets	Awareness of project aim, objectives and charter
	Open (transparent) book nature

The potential benefits of an alliance project are casual or nebulous: close and unprejudiced joint working between the contract parties, a best-for-project spirit, more open knowledge-sharing practices, opportunities for learning, increased communication, more open active media relations, and decreased blaming and

disputing (Walker and Jacobsson). One obvious challenge with the alliance model is that it is not easy to find fit-for-purpose alliance members and build shared understanding and commitments. Because of these issues, an alliance project requires quite time-consuming and possibly difficult preparation measures before an alliance contract is ready to be signed (Walker and Jacobsson).

Theoretical perspectives on collaboration in construction projects

The New Public Management (NPM) discourse promoted the use of business-like management practices in public services via marketisation and quasi-market solutions. However, these kinds of aspirations are not highly relevant in public construction projects since the project models and the market structures of the industry have traditionally been very competitive. The classic regeneration of the capabilities of the construction industry has happened via competitive tendering based on open and transparent public procurements, but those construction companies which cannot bid the lowest prices are not able to get new contracts and, economic theory states, in the end they are excluded from the market via bankruptcy. From the Schumpeterian perspective, this is a crucial element of the economic process of “creative destruction” (Schumpeter qtd. in Aghion & Howitt).

A construction project is typically a labour-intensive process where a construction company combines building materials, building automation technologies and soil to create new infrastructures and facilities. These assemblages turn out real estates that, in turn, constitute vital linkages between architecture as a form of art and urban development as a policy goal (Martin et al.). Besides competition implications, the dynamic advancement of projects depends on how public authorities are able to draft building contracts, collaborate with construction companies, and encourage the companies to make their best efforts during the contract duration. The contract parties of a building project can agree and sign their commitments through a classical or relational contract as described in Table 3. If the building contract is used purely as a classical legal document, it guides the parties’ fulfilment of only the precise contractual requirements, eliminating the scope for extensive collaboration, but the public sector has long and extensive experience with traditional contracts, making their use easy and safe. Public-sector bodies are heavily regulated organisations based on the requirements of the rule of law, budget discipline, and the Weberian tradition of public bureaucracy; therefore, it is not easy for them to adopt a new role by introducing the methods of relational contracting.

Table 3. Alternative types of contract: opposite interpretations (Palmer Mills; Morelli; Bevir; Romzek and Johnston).

ASPECTS	CLASSICAL CONTRACTS	RELATIONAL CONTRACTS
Style of contacting	Highly formalistic	Less formal
Parties	Anonymous	Well-known
Interests	Divergent	Common
Favourable conditions of scope	Transactions which are limited in scope and measurable	Repeated transactions in situations which need asset-specific investments
Key features	Predefined terms of contract, negotiation power, conflicts, opportunism	Terms of contract allowing latitude, mutuality, trust
Accountability measures	Ex-ante: careful drafting of contract, competitive tendering, contractual supervision Ex-post: claims for damages, counterclaims	Ex-ante: well-argued choice of contracting partner Ex-post: information-sharing, close collaboration
Decision on disputes	Litigation	Mutual negotiations

As relational contracting leaves space to adjust the terms of the contract during its duration, it is often understood as a platform for social learning and dialogue. Relational norms facilitate cooperation and knowledge-sharing that enable the parties to generate inventions and improvements throughout the duration of the contract. However, public-sector organisations in their classical form have been poorly incentivised to move to the inevitable risk-taking associated with relational contracts (Vincent-Jones). The “innovation paradox” in public investment projects can be unfolded as follows. While the pressures that call for *efficiency* and *productivity improvements* guide public authorities to be flexible, proactive and creative with their contractual parties, they hesitate to work that way because of the strong imperatives for standardised contractual policies. The classical virtues of public administration always tend to prioritise predefined, neutral and distant administrative behaviour instead (Veenswijk).

However, sometimes collaborative approaches and practices are also overestimated. Contractual settings may not always be free from complications but, instead, be infested with contradictions. The theory of collaborative advantage has conceptualised the nature of collaborative arrangements by reviewing complexities that frame collaborative situations. The fundamental assumption of the collaborative advantage focuses on synergies by pointing out that collaboration may

deliver some benefits that will remain beyond the reach of any of the collaborative (or, in this case, non-collaborative) organisations acting alone. However, according to the theory, collaborative arrangements include inertia and they may even fail due to interfering opposite interests or managerial insufficiencies (Huxham).

In analysing collaborative advantages and inertia, the focus should be on a collaboration's structure, communication processes and leadership actors (Vangen and Huxham). Structural issues relate to the contractual parties (including both organisations and their individual representatives) and their formal ties. Process perspectives focus on the instruments and methods of communication and decision-making applied in a project. Leadership actors are those participants who have influential powers and skills to fine-tune a collaboration's agenda (Vangen et al.).

Data and methods

Our empirical study consists of two significant urban alliance projects in Finland: The Tampere highway tunnel and the Tampere light rail project. Both of these are urban public investments co-funded by the city and the state government. The Tampere highway tunnel project is already finished, with the tunnel opened for traffic on November 15, 2016. The Tunnel Alliance was composed of the City of Tampere, the Finnish Transport Agency, and a team of private companies (Lemminkäinen Infra Ltd, Saanio & Riekkola Ltd, and A-Insinöörit Suunnittelu Ltd).

The first phase of the Tampere light rail project was accepted in Tampere City Council on November 7, 2016: "The Tramway Alliance is composed of the City of Tampere, VR Track Ltd, YIT Construction Services Ltd, Pöyry Finland PLC and, by means of a sub-alliance contract, Ratatek Ltd. During the development phase, the Tramway Alliance prepared a detailed implementation plan of the tracks, street planning, stops and depot. The plan's aim was to find the best feasible solutions to support the construction decision" (City of Tampere, "Tramway" online) According to the City of Tampere, the light rail system project includes intentions to have a continuous dialogue with residents, communities, businesses, and property owners (City of Tampere, "Tramway" online).

We collected primary data through face-to-face interviews, interviewing the key people of the mentioned alliance projects in February 2017. The interviewed people represented the city government and the Finnish Transport Agency. Furthermore, we interviewed one external expert who worked as a special advisor on these projects. The interviewed people and interview dates were:

- CEO, urban development, City of Tampere, Feb 7, 2017
- Manager in the Finnish Transport Agency, Feb 17, 2017

- Development manager, City of Tampere, Feb 6, 2017
- Expert consultant, Vison Ltd, Feb 17, 2017

The semi-structured interviews lasted from 40 to 90 minutes. We recorded the interview sessions and transcribed them for further analysis.

The planning phase of the highway tunnel project had started in the City Hall in 2011. Our interviews regarding this project were focused on the fact that it was, at the time of the interviews, an entirely *executed* project. In contrast, the Tampere light rail project was at the beginning of the implementation phase in the winter and early spring of 2017, even if the light rail development programme and development project that preceded it had been working for some years already. Hence, the interviews regarding this project emphasised the features of an unfinished project and its span of implementation and learning curve still underway.

As secondary data, the research team collected and analysed documentary materials, including state government and municipal project reports. We reviewed the governmental value-for-money reports on the alliance projects in order to discover and summarise officially documented and confirmed project aspirations and experiences.

Research findings

Background of the emergence of urban alliances

Problems of the construction industry

In the early 1990s, the Finnish economy faced exceptional problems. The national economy had experienced a finance-led boom in the late 1980s, with the result that after a few years the entire economy overheated. That inflated a bubble of property prices, among other growth effects. A key institutional “merit” of the boom was the too-fast and unplanned liberalisation of the Finnish banking sector that resulted in severe competition for market share between the banks. Banks also lent money recklessly to construction projects, with many of them ending up in financial misery. The state government had to bail out the banking sector, the price bubble burst, and the Finnish economy plunged into deep recession.

As both public and private-sector organisations stopped and cancelled many of their investment plans in the early 1990s, construction companies saw their markets collapsing. Many of their previously important customers and projects were gone for good. The construction industry fell into abysmal financial difficulties, which instigated dramatic changes in the whole management culture of the industry. Some traditional companies went bankrupt, and some companies were sold to foreign ownership. The surviving construction companies made huge redundancies by firing their regular professional staff members (expert consultant).

One of the key managerial changes in the industry was the introduction of new outsourcing methods that included many sub-contracting procedures. The value chains of the construction projects were chopped into small pieces as the main contracting company outsourced individual working phases to small companies via numerous sub-contracts. As a result, construction projects changed their original nature and started to include long contract chains and many project participants. According to the expert consultant, these developments ended up in many disputes and claims between the contracting parties. As he saw it, these developments created many disappointments and frustrations among project stakeholders.

Industrial scientists and economists have considered service sectors as a sinkhole of the economy, immune to significant productivity improvements (Zysman et al.). According to Baumol's "Cost Disease" hypothesis, the productivity of service sectors is either unchanged or grows only very slowly when compared with the scope for innovation in the manufacturing sector. Many investors and analysts considered the Finnish construction industry in the same way and associated it with serious productivity problems (Ronkainen).

The expert consultant claimed that productivity improvements were difficult to promote in the industry since the companies operated in old-fashioned ways without a user-centred approach. According to the expert consultant, public authorities were often disappointed with the infrastructure and construction projects they procured. The final products of the projects were often contrary to their actual wishes. His claims are supported by a recent study undertaken for the Finnish Cabinet of Ministers about government construction projects, of which a considerable part end up in delays and cost overruns (Virtanen). These findings are similar to many international research findings demonstrating that classical construction projects have often suffered overspends and deferred timetables (Walker and Jacobsson).

In order to summarise the observations made by the expert consultant, who actively followed the construction industry and participated in development projects, it has to be noted that during the last few decades "frustrated" has been a term that well-describes many stakeholder experiences of public investment projects. After these experiences, some developers and industry leaders have demonstrated at least an implicit readiness to search for and apply alternative methods of project management. However, many of them lacked specific ideas on how to make improvements before getting familiar with a management doctrine that emerged during the post-recession years. This doctrine, lean management, was their key to studying international experiences of how to renew contract management policies. The expert consultant claimed that nowadays the modern representatives of the Finnish construction industry increasingly understand their operations as a service industry that needs to listen to its customers more carefully than before – and find ways to co-create values with the procuring authorities in public construction projects.

The first alliance project in Europe

Although the Finnish municipalities have strong local self-government and wide general powers, municipal decision-makers hesitate to launch experiments in investment projects which include high risks. In Finland, the state government has been the forerunner in efforts to renew procurement and contract practices in infrastructure undertakings. The Finnish Transport Agency, a government-controlled national authority, was the first public agency to sign a PFI contract in the country in 1997. The agency volunteered to work as a pathbreaker and a role model for other public bodies, and afterwards, a few city governments followed it by launching some local PFI projects (Valkama et al.).

The Transport Agency was the first Finnish public authority to introduce an alliance model in a public infrastructure project. This was a reconstruction project of a 90 km railway line (Lielähti–Kokemäki) with a budget of around 100 million €. It was completed between 2011 and 2015. According to the agency (Liikennevirasto), it launched the railway project as a pilot project in order to test and collect experiences. The agency claims it was the first alliance project in Europe.

Role of the transport agency in the tampere alliance projects

The role of the Transport Agency has also been remarkably important in the alliance projects launched in the city of Tampere. Soon after the national railway alliance was introduced, the agency wanted to test it in an urban infrastructure project and recommended that the alliance concept was suitable for the Tampere highway tunnel project, co-funded by the state and the City of Tampere. As the City Hall authorised the agency to apply the alliance contract and take the role of the project leader in the highway tunnel project, the agency became its procuring authority. The agency was confident in the alliance concept: the railway project was an encouraging reference since the construction works completed ahead of time and the realised costs were less than the estimated ones (Rantatunneli; Liikennevirasto).

In the Tampere light rail construction project, the Tramway Alliance, the city government is the leading and procuring authority. Before launching the light rail development project, the city government evaluated the best contract concept to manage the project, comparing the all-in, life-cycle and alliance models. The city decided to apply the alliance model, especially because it did not yet have ready-made technical plans for the project. The alliance concept gave time to prepare the project plans and flexibility to finalise technical details after the first phase of the alliance project had started. The development manager emphasised that from the perspective of a city government, the alliance concept is only one project concept among others, but has some clear benefits in situations lacking readiness in site planning schemes.

The state government and the Transport Agency are still important players in the Tampere light rail development process, now firmly in the construction phase. The state government is a co-funding body providing 30% of the estimated cost, and the Transport Agency has nominated a representative (a senior manager in the agency) to work as a member of the Tramway Alliance board of managers, even though they do not have a voting right in the board (Raitiotieallianssi).

Phases of the studied alliance projects

In the alliance projects launched so far in the city of Tampere, three main phases can be discerned: 1) initiation, 2) development and 3) implementation. The initiation phase is a search process for service provider candidates, where the interested service providers are screened with a preliminary negotiation phase. Here, the best potential candidates are identified to enter the actual negotiation phase. The negotiation phase ends up with the choice of the best partner for the planning and construction works. Like with any choices when public funds are allocated to external organisations, the initiation phase has to fit the requirements of the regulation of public procurements. They require transparent and neutral treatment of candidate companies.

The development phase continues with the chosen partners. This phase is very intensive and time-consuming. All in all, the initiation and development phases consume more time than the comparable preparation phase in traditional investment or PPP projects. The alliance model requires a careful search process to find good partners at the personal level. Simultaneously, creating the team spirit requires efforts to enable the creation of preconditions for the successful execution of the due planning and development duties. These phases can last one year or longer, depending on the complexities and size of a project, but they are necessary preparations for a successful implementation phase.

The interviewed CEO of urban development emphasised the importance of the development phase. It is not only finding the “good guys” to become partners but also building trust between those partners. This requires laborious negotiations and working on acceptable agreements for all parties. Another very important feature of the development effort is to keep possible disagreements inside the development group and not bring them out in public during the ongoing development phase. The development phase must also produce a plan that is acceptable to the City decision-making bodies, the Executive Board and, finally, the Council.

A key result of all interviews is easy to summarise. The informants considered a success in the development phase’s creation of team spirit as a crucial precondition for the later success of the alliance model. Not only was this highlighted in our interviews, but it can also be discerned from the following citation from the Tunnel plan of the Alliance:

The composition of the Alliance in the development phase will be kept unchanged as far as possible in the implementation phase, to ensure that the Alliance ethos, cooperation and approved practices created in the development phase are transferred to the implementation phase. The Alliance organisation will grow substantially during the implementation phase along with the construction organisation. (Tampere Highway Tunnel Alliance project, Project Plan by the Alliance Executive Team 6)

The interview with the manager from the Finnish Transport Agency brought out how important it was for the Tunnel Alliance to reach unanimous decisions during the planning phase and for all parties to agree on common goals and a target price for the project. In our interview, the City of Tampere development director emphasised that the way of processing the project with the alliance model brought several advantages, such as innovative cost savings and shorter planning and implementation times. An example of an innovative cost-saving action was an intersecting bridge that was originally planned to be built from scratch. It was changed to being consolidated on the foundations of an already existing bridge. The joint planning phase with all partners involved was appraised to result in a time-saving of over one year, possibly up to two years, compared with a traditional contract workflow.

One reason for the smooth implementation and the desire to co-operate was the well-thought and generally agreed-upon incentive system that guaranteed that time and cost savings benefitted all parties. Good incentive systems included an agreement on the division of risks between the parties. Thus, some of the encountered risks were tackled together by the whole Alliance, some by the constructor and some by the City as the end-user.

Evaluating the urban alliance projects

The Transport Agency (Liikennevirasto) published an evaluation report on the railway project, demonstrating very positive experiences. Lahdenperä has published a schematic and conceptual list of potential benefits and weaknesses of alliance projects. His key theses are summarised in Table 4.

Our empirical findings on the alliance models in the City of Tampere give support especially to benefits 3–5, 7 and 9–10. The interviews also revealed that the top managers of the city were very committed and experienced personal satisfaction in the successful alliance way of working (number 8). So far, the experiences of these two City Alliance projects have confronted hardly any of the threats, according to the interviews. Threats or weaknesses 6 and 7 were experienced, but they have not been seen as major obstacles to the success of the City of Tampere alliance projects so far.

Table 4. Potential benefits, opportunities, threats and weaknesses of alliance projects (based on Lahdenperä).

Opportunities and benefits	Threats and weaknesses
1. Early selection of contract partners enables relatively quick project implementation	1. Cooperative working methods and shared risk limit the possibility to claim for compensation for other parties' mistakes
2. Incentives boost realisation of qualitative goals related to stakeholder groups	2. Terms of liability insurances may not cover damages caused by one alliance partner to other partners in an alliance organisation
3. Collaborative commitments promote knowledge transfer and shared learning exercises	3. Joint discharge of warranty obligations after project completion is a challenge
4. Contract management is more flexible as changes can be made during the project	4. Changed roles and close cooperation may facilitate key staff members to change their employers
5. Project risk can be understood more holistically	5. Commitments by top managers are needed but sometimes they may be too busy to be strongly involved
6. Joint working improves possibilities to understand life-cycle features of a project	6. Participants may find it difficult to give up their old working methods
7. Shared knowledge improves innovation possibilities	7. Creation of a sustainable collaborative culture may require much work
8. Staff members may experience higher job satisfaction and stronger commitment which may improve organisational cultures	8. Failure to direct incentives according to the project's aims when the measurable aims deviate from the original ones
9. Public authorities can have a better understanding of project challenges and costs via joint working	9. Public authorities have to decentralise some decision-making powers to those actors who operate as representatives of a procurement body in a joint organisation

<p>10. Incentives and cost-based payments are likely to allow the project to be realised at a competitive price</p>	<p>10. The actual price tag of the project is not certain before the completion of the project, the maximum price being a possible exception</p>
<p>11. Excellent performance will enable service providers to reap big rewards</p>	<p>11. Financial supervisors of public authorities may doubt the alliance model, as severe low-price competition may be eliminated</p>
<p>12. Success is enabled via knowledge-sharing without severe price competition</p>	<p>12. Payments based on realised costs increase the risks of opportunistic behaviour and skewed cost allocation</p>
<p>13. Contractors can get a better understanding of customer's needs, enabling them to improve their performance</p>	<p>13. Public authorities have to play an active part in the alliance</p>
	<p>14. Key staff members of the consortium that won the alliance contract may be replaced during the project implementation</p>
	<p>15. The partners bear the risk for the entire project and the actions of others that they can influence only marginally</p>

Discussion and conclusion

The interviewed stakeholders and analysed documents considered that the alliance model of a building contract is a potential solution for some of the chronic problems of the building industry such as low productivity development and project disputes, and the disappointments of public-sector investment projects such as delays and cost overruns. As the model is new and not well-known, the national transport agency has played a pivotal role in efforts to introduce and establish the alliance model at the national and urban levels. For example, the Transport Agency summarised the international experiences of the model, implemented the first national alliance project, and managed the first urban alliance project on behalf of the city of Tampere.

Our empirical case study focused on the premises and phases of the investigated alliance projects which the City of Tampere launched as the Finnish forerunner. To highlight its importance, the model, the experiences and the contracting partners of the Tampere light rail process are in a key role in the large-scale light rail constructions in their inception phase in Helsinki region in 2019. The implemented alliance models included initiation, development and implementation phases. The interviewed experts named the development phase as particularly critical. The phase is very intensive and time-consuming, because team spirit, shared ethos, and joint goals are created in that phase before the construction works and actual collaboration can be initiated.

The interview data and document analyses give a reason to conclude that there are some noteworthy preconditions which have to be fulfilled before favouring an alliance model instead of traditional or partnership projects becomes worthwhile. First, public authorities need to be able to fund the project through public finance. Second, public authorities must be ready to give a fair degree of autonomy to an alliance project by delegating some decision-making powers to an alliance team. Third, our interviewees emphasised that the alliance projects must be big enough, about EUR 30–35 million in the Finnish context. Governments around the world have developed criteria for when it is appropriate to consider an alliance model as an option in an investment project. For example, the Queensland State Government uses the alliance model as a default concept in projects that have a construction duration of more than 12 months or a value of not less than A\$10 million (i.e. approximately EUR 7.5 million) (Jefferies et al.).

If city governments have ready-made plans for a project, they should also have the best possibility to compare the alternative procurement methods of public-sector investment projects presented in Figure 1. The expert consultant interviewed explained that the PFI concept was not applicable in the Tampere light rail project since the city was not able to finalise their plans early enough. Another informant stated that projects containing several ambiguous factors and confronting a high

probability of surprises are suitable for being managed through an alliance contract that allows more degrees of freedom in situations where flexibility is needed. However, the alliance process itself includes and even requires a more intensive and laborious development phase. With lesser complexity, smaller and technically simpler projects fit very well within and can be effectively managed through an all-in contract.

The main methodological limitation of the case study is that our major findings are country- and city-specific. However, the experiences of the Tampere alliances are valuable, nevertheless, for sketching the Finnish alliance landscape. Their scale is indicative: both the tunnel and light rail projects are very large and multiannual public works. Further studies should elaborate on the research questions, lengthen the number and periods of alliance projects, and look for possibilities to diversify the empirical data. This would obviously give opportunities to draw deeper and more persuasive conclusions on the functioning of the new alliance model in different circumstances.

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