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Relational base contracts – Needs and trends in Northern Europe

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Abstract

Starting from a large case project in Norway, a research gap was identified concerning analyses of experiences in the use of different relational contract models. We have mapped experiences with relational contracts in large infrastructure projects in selected countries. We have looked at what types of contracts were applied, why these, what were the experiences, and what contract strategies will be used in the future. Based on findings of this study, it is not easy to identify patterns in factors that influence the choice of contract. Rather, it seems that each country's selected approach is incidental. Each country selected approach after experts advocated a certain model or practitioners who have applied a certain model. We observed that targeted countries could somehow be grouped in two. In Sweden and Denmark relational contracts seem to be more about attitude rather than formal contract regulations. In the UK, Finland and the Netherlands relational contracts seem to be more dependent on formal contract regulations. The future trend seems to be a more widespread the use of relational contracts.

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1. Introduction

By moving the construction projects toward getting more complex and uncertain ¹, relational contracts, where a contractor offers wider services packages, are increasingly used in construction projects. Several types of relational contracts have been formed in the construction industry, mostly in the last few decades, to comfort public owners achieving their targets in terms of time, cost and quality.

Starting from a large case project in Norway, a research gap was identified concerning analyses of experiences in the use of different relational contract models in large infrastructure projects. Although type of contract should be selected based on project characteristics, owner characteristic, and market situations ²⁻⁴, it often appears that the choice of contract is more subjective than educated selection among the alternatives available for public owners.

The main goal of this study is to allow researchers and practitioners to learn from experiences from the main infrastructure actors in Northern European markets with relational contracts (Sweden, Finland, Netherlands, UK and Denmark), as well as helping the infrastructure industry to focus on the main positive experiences with each relational contract.

By spotting the lack of consolidated knowledge about relational contracts, this study provides an excellent opportunity to learn from different countries and differing relational contract used in these countries. This paper is the result of a pilot study, where we have mapped experiences from different countries with relational contracts in procuring big infrastructure project.

This paper answers the following four research questions:

1. What types of relational contracts are applied?
2. Why were these contract strategies used?
3. What are the experiences with these contract strategies?
4. What contract strategies will be used in the future?

This pilot study directly connected to an infrastructure mega project in Norway. The Norwegian Public Roads Administration (NPRA) wants to establish a ferry free coastal highway E39 from the city of Kristiansand to Trondheim. This highway is dependent on eight fjord crossings, and the estimates say that 269 Billion Norwegian kroner will be spent over a 20 years construction period. This comes in addition to other infrastructure projects that will be carried out during the same period. Both in terms of size and need for technological innovation the ferry free coastal highway represents a challenge for the NPRA.

Another major change will be the way, which the NPRA is going to procure roads. Based on the capacity of the NPRA, contract types that guarantee smooth and appropriate project delivery by allocating more responsibilities to the contractor will be the main interest of the authority. The NPRA needs to choose the best contract procedure in the early phase of the project lifecycle based on project characteristics, client objectives and the external environment. In this direction, this study provides the challenges and experiences with relational contracts to assist the NPRA in the later decision-making process

2. Method

To answer the research questions of this study, two main approaches have been used; a literature study and a multiple case study. To develop a theoretical background and map the existing knowledge on contract models, especially relational contracts, the work started with a literature study following the prescription of Blumberg et al. ⁵. A structured search through relevant databases for a combination of both journal articles and conference papers discussing contracts models resulted in a database with more than 150 references. The literature search conducted with different combinations of the key words, namely; “relational contract,” and “project delivery.” This search resulted in many hits, with plenty of irrelevant responses. The search was narrowed down by using additional key words “collaborative” “procurement”, “Europe”, “experience”, “advantages”.

Selection phase started after establishing the initial database by going through the abstract and screening the article. The number of articles found in the first phase of the search were reduced later by one of the following reasons:

- considered not relevant to scope of this study.
- the article is not considered to be reliable academic research (suffering from a lack of methods, strong discussion, reverence, etc.)
- published in non-refereed journals

Content of the relevant articles were reviewed and summarized in theoretical framework chapter.

To map rationale for choosing the selected type of contract, experiences with the different models and chosen models for the future, a multiple case study after the recommendations of Yin ⁶ was undertaken to gather information about the use of contract models in large infrastructure case projects.

The selection of countries/case projects was partly determined based on findings from the literature study that pointed to countries/projects with some maturity in the use of relational contracts. In addition, recommendations from the NPRA concerning countries/projects believed to be relevant cases to learn from also influenced the choice of cases. The study targeted one organization in each selected country, responsible for building and operating infrastructure projects.

Data collection from the case projects was primarily undertaken through 14 semi-structured interviews with 26 respondents. The interviews took place at the premises of the respondents. Some of the interviews were case-specific. Others were about country experiences in general, but all of them followed the structure of the four overarching research questions. The respondents came from Sweden, Finland, Netherlands, United Kingdom, and Denmark.

In **Sweden**, The Swedish Transport Administration (Trafikverket) is responsible for long-term planning of the transport system for all types of traffic. Trafikverket is responsible for the overall long-term infrastructure planning of road, rail, sea and air transport. In **Finland**, The Finnish Transport Agency is responsible for the operation of Finland's transport system. The Agency took over from the Finnish Rail Administration. Now FTA is responsible for Finnish roads, railways, waterways and for the overall development of Finland's transport system. In **Netherlands**, Rijkswaterstaat is responsible for design, construction, management and maintenance of the main Dutch infrastructure facilities, such as roads, waterways and water systems. In **United Kingdom**, Network Rail owns and operates Britain's railway infrastructure. Network rail runs, maintain and develop Britain's rail tracks, signalling, bridges, tunnels, level crossings and many key stations. In **Denmark**, the Fehmarn Belt Fixed Link is a planned immersed tunnel that is proposed to connect the Danish island of Lolland with the German island of Fehmarn. The projects were selected due to similarities to the ferry free E39 project, and the agencies were selected due to similarities to the Norwegian Public Roads Administration. The respondents in each organization were chosen based on their experience with relational contracts and/or because they participated in on-going infrastructure projects that used relational contracts.

3. Theoretical framework

According to Haddadi et al. ⁷ Value creation in a construction project depends on three main stakeholders: i) the owner, ii) the suppliers iii) the users. The owner's prerequisite in order to create value is basically summarized in profitable/optimal operation of the building and fulfilling the customer's needs. The suppliers are required to minimize the waste (non-value creating activities) and to fulfil the customer's (owner and user) needs in order to create value in their final product. The ultimate objective of the project should be to fulfil user's needs in order to increase the "customer's perceived value".

By Projects getting more complex and uncertain¹ eliminating waste-non value creating activities such as; disputes, over processing, rework, incidents, etc., is more challenging. On the other hand, delivering the customer needs in such projects might present the desire for developed contract models that can faces different challenges caused by the complexity and uncertainty.

Many authors have enlightened the range of different contract models in construction industry. Walker and Lloyd-Walker ⁸ introduced a project procurement taxonomy including three main subcategories; 1) segregated design and delivery- Design-Bid-Build (DBB), the most known transactional model, that separates design and construction process and teams, is included in this cluster. 2) Integrated design and delivery process by focusing on planning and control- Design and Construction (D&C) and Public Private Partnership (PPP) are among the listed forms in this subgroup. 3) integrated design and delivery team by focusing on collaboration- Partnering, Alliance and IPD are fitted

in this group. We use the term relational contracts in this article while we referring to the last cluster. Relational contract can intervene with traditional distribution of roles and risk between client and supplier. Partnering and alliancing often involves special information, communication and decision making systems.

The relational based contracts can be signed in different project phases. They frequently include untraditional distribution of roles and risk. According to Walker ⁹, there are several aspects in contractual relations and project execution models. Several of these aspects can be summarised on a scale from high to low. Transactional contacts typically have a high level on several of these aspects, as indicated by going to the right in Figure 1.

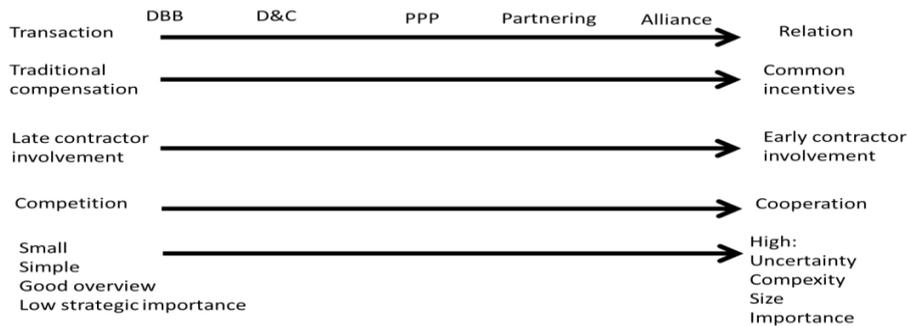


Figure 1 an illustration of aspects that vary between transactional and relational contracts

A common tool in partnering is a partnering charter ^{10, 11}. According to Lahdenperä ¹¹ the practice of partnering has evolved and a new contractual practice has developed today. The Latham Report ¹² discussed partnering as a broad term used to describe a collaborative management approach that encourages openness and trust between parties of a contract. According to Eriksson ¹³ partnering is required especially for complex construction projects, characterized by high uncertainty and time pressure. Drouin ¹⁴ also provide definitions of two categories of partnering: ‘project partnering’ and ‘strategic partnering’. The former aims to improve performance over the life cycle of a single project. The latter focuses on obtaining a competitive advantage over the long period to foster long-term relationship.

As indicated in Figure 2, it is frequently assumed that a low level of collaboration is associated with highly transactional contracts.

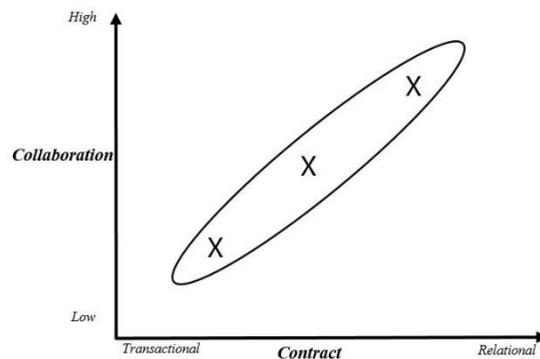


Figure 2 Relation between type of contract and degree of collaboration that is typically assumed in literature

Project alliancing is built on the notion of Partnering. Alliancing is a relational contract mechanism and typically involves an open-book accounting sharing risk setting, and initial target cost generated by the joint project team ¹⁵. An alliance agreement defines the targets, and risk and reward mechanisms and the interrelationship of different contractors ¹⁶.

Partnering and alliancing share intentions of win-win game and sharing risk. However, the distinction between them today is not clear ¹¹. There is no universally agreed definition of partnering ^{17, 18} or alliancing. The two terms are used interchangeable, which may cause confusion ¹⁹.

In this context it is enough to note that both partnering and alliancing, can be defined as relational forms of contracts, in which the client and contractor usually collaborate through informal or formal agreements, and include the establishing of trusted-based relationships to achieve common objectives²⁰. Marcus et al.²¹ state that Derek et al.²² identify that alliancing, is more “all embracing” than partnering. Consequently, we have placed alliancing further to the right than partnering in Figure 1.

In complex projects, changes can occur in the project. Changes have to be managed through the contracts in an efficient way²³. According to Ng et al.²⁴, the use of transactional contracting processes inhibits flexibility. Uncertainty, complexity and long duration in construction projects call for flexible contracts.

4. Findings and discussion

In this section, we present a summary of findings from each case country.

4.1. Sweden

The Swedish Transport Administration’s national plan requires an annual productivity improvement of 2-3 per cent. Trafikverket and representatives of the suppliers have agreed that they are dependent on each other in the common process of change. This requires the parties to take responsibility for running the common direction and show tolerance, openness and transparency in their relationships based on their roles and responsibilities (Trafikverket, 2016).

Related to transactional project implementation models, Trafikverket have launched an initiative called «Samverkan», which can be translated to collaboration. Samverkan Basis is expected to be used on all projects, while it was previously voluntary. «Samverkan» has much in common with partnering and alliances. It requires common systems for risk management, conflict resolution, and performance measurements. Colocation of key project personnel is important for both client and suppliers, and they require attendance at the joint location at least 2 days per week. Major projects shall have a dedicated project person who is responsible for Samverkan. Interestingly, “Samverkan” is not necessary linked to relational based contracts. They consider Samverkan to be one aspect, which can be combined with different types of contracts, including transactional contracts. Samverkan is independent of contract structure and compensation format. Figure 3 illustrates the relation between collaboration and type of contract in Swedish approach. Good Samverkan is dependent of the attitude of the project management of both client and supplier.

Future plans include more Samverkan and further training. Trafikverket’s goal is a 50 % proportion of design & build, which they consider to be compatible with Samverkan, and transactional contractual thinking. In the future, they have ambitions to include designers in schemes for incentives and pain/gain sharing.

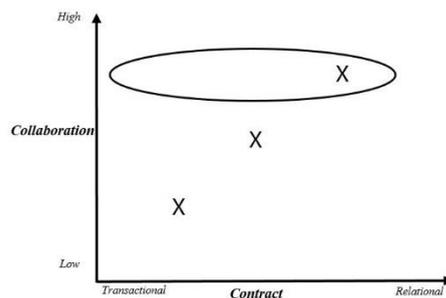


Figure 3 Swedish approach – partnering is independent of type of contract

4.2. Finland

FTA has been experimenting with new project delivery forms due to low productivity, many conflicts, poor quality and the need for innovation supported by inspiration from research from other countries that showed better solutions,

better plans, better reliability and higher productivity.

After trying some PPP projects, FTA has now started to use more collaborative delivery forms including Alliancing in some projects. Project size is growing and responsibilities of contractors are broadening. Collaborative delivery method and alliance has become the most preferred road project delivery method. The response from suppliers has been varied; some fear a lower profit margin, others actively support it.

In Finland, FTA uses Alliancing, aligned with the Australian alliance model, specifically inspired by Australian experiences and some other countries, and following a deliberate decision to test it in some public projects. In Finland and other EU countries it is required to use a price component in the evaluation of contractors.

4.3. Netherlands

Dutch industry has practiced and study different type of relational base contracts^{25,26}. Scheublin²⁵ underlined the needs in construction industry to learn from industrial relations specially Project Alliance while construction projects are getting more complex and uncertain.

Rijkswaterstaat as a major part of the Dutch Ministry of Infrastructure and the Environment, recently introduced Best Value Procurement (BVP) as a response to problems like disputes, change orders, rework, etc. Rijkswaterstaat found the advantages in BVP when it comes to early involvement of contractors. The BVP allows the contractors tell what they can do in an early stage of the projects while in transactional approach, the client tells them what they shall do and how. After exciting couple of dozen projects, Rijkswaterstaat experienced successful outcomes including; reduced cost, shorter execution time and low level of conflict in the projects. The BVP helps a major reduction in the client's need for personnel during the execution phase, however, the client need more people compare to transactional approach in the clarification phase. By now, approximately 10 % of the projects are procured with Best Value Procurement, but the goal is to reach 50 %.

Although some projects are better suited for transactional procurement methods, the Dutch public owners and Rijkswaterstaat desire to continue this development of the contractor market toward more relational based models. They think a paradigm change is needed even the broad implementation and application might take time.

4.4. United Kingdom

Related to relational delivery models, the UK use a variety of models from, different types of PPP to partnering and alliancing. Network Rail has wide experience with relational based strategies, and has adapted a version of the Australian alliance model. The experience is that alliances are suited for large, complex, high-risk projects with interfaces to ongoing production and traffic.

Based on the experiences in UK, alliancing is a good way to get the contractor/s involved in early phase of the projects, which has been recognised as a key success factor for most projects. Authorities have started seeing the value of early contractor involvement, something that transactional contracts do not rely on.

Several different drivers have been identified for choosing alliancing in the UK; when there is a high complexity in the project, the need for technical solutions, high uncertainty, the need to set new completion targets, multiple interfaces, large number of stakeholders and projects of high value. It seems that the UK started to move towards using alliances to overcome some of the pitfalls of transactional contracting, especially those associated with the adversarial environment and the excessive claims.

In the 1990s, partnering was tried out in the UK and somehow failed because of projects relying on intrinsic motivation/incentives. The UK discovered that this does not work in the real world. You need the contract to back it up, but partnering has the problem of combining a collaborative relationship with a win-lose contract. As soon as the relationship comes under strain, the parties revert to business as usual.

4.5. Denmark

Danish experienced other types of contracts while aiming toward collaborative environment. The data from Denmark is based on one specific case project, the Fehmarn belt project, which used prequalification followed by Competitive Dialogue (CD). The selection criteria were best value for money, price plus the technical bid, including

management competence. High weight was put on management aspects as part of the technical evaluation.

A challenge with CD is that you should spend more resources and money into the contracting process, both from the client and from the contractor, this is the nature of CD. Decision makers in Fehmarn decided early that they would pay money to the contractors to participate into the bidding process in order to achieve early contractor involvement benefits. Under this model, there is a need to have a competent client/project owner organization that is more involved in the process than in a traditional process.

Fehmarn has used an adapted CD procedure and seems to have been the right choice for the project; it has proven its value by giving flexibility in the process and resulting in bidders that were happy with this way of working.

5. Conclusion

While numerous researchers have gathered national experiences with relational contracts, the originality of this study comes from the comparison of experiences in several different countries in Northern Europe. We have looked at what types of contracts were applied, why these, what were the experiences, and what contract strategies will be used in the future.

Based on findings from this study, it is not easy to identify patterns in factors that influence the choice of contract. Rather, it seems that each country's selected approach is incidental, with experts advocating a certain model or practitioners who have applied a certain model. As part of the cross-country analysis, we observed that the countries could somehow be grouped in two; in Sweden and Denmark relational contracts seem to be more about attitude rather than formal contract regulations. In the UK, Finland, and the Netherlands relational contracts seem to be more dependent on formal contract regulations. We expected to find a more systematic analysis underlying the decisions.

When it comes to why the owners chose relational base contracts, two kinds of reasons seem to crystalize. The first is a need to improve the project participants' attitude, and thereby decrease the number of disputes, change orders, rework, incidents etc. The second is that projects are changing, as they are becoming more complex, longer, have higher uncertainty, more need for technical innovation and innovative solution. To meet these changes, clients look for new contract strategies, and relational contracts may represent the answer. By increasing complexity and uncertainty the likelihood of non-value creating activities like disputes and order changes increases. Relational contracts create a better environment for collaboration and addressing the challenges by establishing a common goal for involved parties in the project than traditional contracts where competition and single stakeholders' value creation can get ahead of pursuing the common goal.

The answer to the fourth research question, about what contract strategies will be used in future projects, is related to the development of recent infrastructure projects. Public owners in targeted countries experienced the shortfall of the transactional contract models when it comes to execute a complex project with uncertain scope. We observed indications that present a trend toward increasing the use of relational base models in construction industry especially public sector. These indications include, efforts to gather the positive/negative experiences from executed and ongoing projects, increased number of pilot project and many research projects concerning the relational contract strategy paradigm.

What is required ahead is to continue the effort undertaken lately by Walker and Lloyd-Walker⁸ and ourselves among other research projects to document experiences harvested through the experimentation with different contract types and accomplished effects. For the Norwegian Public Roads Administration, that aims to build the 269 Billion Norwegian kroner project Ferry free coastal highway E39, it will be equally important to find the most suitable contract strategies and document experiences from the projects they are used in.

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