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To bind or not to bind: It's in the contract

Formalizing collaboration through partnering contracts in the U.S., British and Danish construction industry

By

Christina D. Tvarnø

Abstract

This article discusses the formalization of collaboration through partnering contracts in the construction industry in U.S., Great Britain and Denmark. The article compares the different types of collaborative partnering contracts in the three countries, and provides a conclusion on whether the collaborative partnering contract should be binding or non-binding, based on the three empirical contracts analyzed in this article. The partnering contracts in Great Britain and Denmark are legally binding while in the U.S. the partnering agreements are non-binding charters or a letters of intent. This article discusses, in a theoretical perspective, the legal reasoning behind the different partnering approaches, both from a historical and contract law perspective, and furthermore applies a game theoretical approach in evaluating binding versus non-binding partnering contracts. The analysis focuses on private collaborative multi-partner partnering contracts in the construction industry and compares contractual clauses from the U.S., British and Danish partnering contracts. The article argues that from a legal and a game theoretical perspective, the collaborative partnering contract should be legally binding in order to minimize the risk of self-optimization and improve joint utility through the contract, and thus recommends that the U.S. partnering regime should shift from a non-binding partnering agreement to a legally binding partnering contract.

Key words: Collaboration, partnering, contract law, comparative law, game theory, U.S., Denmark, Britain

1. Introduction

This article concerns partnering contracts in the U.S., Great Britain, and Denmark and supplements the legal analysis by applying a game theoretical perspective on the concept of a binding versus a non-binding partnering construction contract. The article presents the legal history of the development of the partnering contracts, and the legal definitions of partnering in the U.S., Great Britain and Denmark are analyzed and

compared. There are some significant differences between the countries' perspectives on partnering as a legal concept. First and foremost, the collaborative partnering contract is legally binding in Great Britain and Denmark. In contrary, the partnering contract is not legally binding in the U.S., though a change of this view is emerging (Dyer & Doyle, 2010 at p. 1). This difference will be discussed and compared from a legal and a game theoretical perspective.

In general, construction projects are invariably temporary and expensive. During a traditional construction project, the parties often have different and even opposing objectives (Skeggs, 2001). In traditional contracts, collaboration takes place in the normal course of business, and without specific measures or incentives. In contrary, partnering contracts *"specifically aim to foster and reward collaborative behaviours and actions by members of a project team"* (Manchester Business School, 2009 at p. 8) through the partnering contract. In partnering contracts, the parties change from being parties to becoming partners through the formation of a collaborative team that has common goals and objectives stated either through a binding partnering contract (Great Britain and Denmark) or through a non-binding agreement, for example as a letter of intent (U.S.).

1.1.Contractual freedom, empirical data, methodology and research purpose

This article only concerns private contracts due to the contract law principle on "freedom of contracts." The classic contract law perspective is based on a self-interest approach concerning commercial contracts. This perspective encourages a minimum of judicial intervention on the contract relationship and the contract itself supported by a maximum of legal certainty of the enforcement of the contract terms. The British principle of 'freedom of contract' is based on the needs of the mercantilist society and the security of business transactions (Begg, 2003 at p. 184). This approach is the same in both Denmark and the U.S.

The empirical data used in this article includes three official contract documents. Firstly, the British contract data derives from the PPC2000.¹ Secondly, The American contract data derives from the letter of intent from California Department of Transportation in the Field Guide to Partnering.² The Danish contract data derives from DPP2005, which is established by the Danish Construction Organization.³ All three contractual documents are copy right protected. The Danish and the U.S. ones can be found at the internet and will be correctly cited when referred to. The British PPC2000 is a printed contract in hand of the author and is restricted from citation. The author has been approved the right to quote some few provisions from PPC2000 by the British ACA - Association of Consultant Architects.⁴

Thus, the empirical data in the article is based upon existing and used contracts, and the legal analysis is conducted as a Länderbericht comparative legal analysis (Zweigert & Kötz, 1998). The analysis begins with the British history and PPC2000 partnering contract, followed by the U.S. legal history and the California Partnering Field Guide and ends with the Danish DPP2005 partnering contract.

The comparative legal analysis is applied with a game theoretical perspective on the binding character of the partnering contract in order to discuss whether the binding legal contract might improve the collaboration as in the multi partner approach. Thus, the article analyzes legal empirical data (contracts, statutes and governmental guidelines) through a comparative legal contract law and game theory perspective in order to conclude on whether the binding or non-binding contractual approach should be considered in regard to multi partner partnering contracts in the construction industry.

A common theoretical perception in all three countries is that a partnering contract can achieve cost and work effectiveness, improve risk allocation, and ensure a reduction in the cost of litigation (Black, Akintoye, & Fitzgerald, 1999). Furthermore, several studies on partnering conclude that each specific part of the partnering contract, for example trust, positive incentives, open information, risk allocation, dispute solution and collaboration, are all key elements in achieving success by partnering in the construction industry (Egan, 1998. Harback, Basham & Buth, 1994. McGeorge & Palmer, 2000. Ng, Rose, Mak & Chen, 2002. Tvarnø, 2016). This article builds on the results from these conclusions, but takes a legal, rather than an economic or management, perspective on the partnering concept (Bygballe, 2010).

Most partnering analyses take an economic perspective, but the purpose of this article is to contribute to the partnering research with a legal approach in order to improve the effect of collaborative partnering contracting in the construction industry by focusing on the contract between the parties and the impact the contracts may entail. Thus, the purpose of this article is to investigate whether a binding contract might improve the collaboration among the parties, which would be an economic advantage for both parties.

1.2.The structure of the article

Section 2 of this article includes a comparative presentation of the legal history of partnering contracts in the U.S., Britain and Denmark, as well as relevant partnering data from each country. Section 3 then introduces and compares the legal definition of partnering contracts in the three countries. Section 4 discusses the binding versus non-binding legal concept from a comparative legal perspective. In section 5, the economic perspective will be introduced by applying game theory on the partnering contracts. Finally, in section 6, the conclusion and recommendations will be presented.

2. The legal history of partnering in the U.S., Britain and Denmark

This section analyses the historical development regarding partnering agreements and partnering contracts in the U.S., Britain and Denmark. The article uses the definition that states that an agreement is a non-binding letter of intent and a contract creates a binding legal obligation among the parties.

2.1. The legal history of partnering in the US

The U.S. was the first country to introduce partnering in the construction industry. Partnering in the U.S. is per definition a management tool that stems from the 1980's, a time in which both the legal and business communities were concerned about the rise of unresolved claims and litigation in commercial construction cases. Consequently, new strategies emerged to change the traditional contractual environment in the construction community (AGCA, 1995) and the partnering concept was developed.

The U.S. Army Corps of Engineers were pioneers in the use of partnering on two construction projects in two separate engineering districts, Portland and Mobile, in the late 1980.

"The central objectives of Partnering are to encourage parties to change from their traditional adversarial relationships to a more cooperative, team-based approach, and to prevent issues from evolving into disputes. The Partnering concept is significant because it offers the most efficient form of dispute resolution: conflict prevention through joint problem resolution of issues as they arise. Indeed, the benefits of partnering go beyond preventing disputes and include improved communication, increased quality and efficiency, on-time performance, improved long-term relationships, and a fair profit and prompt payment for the contractor" (Edelman, Carr, & Lancaster, 1991 at p. 1).

Furthermore, the Construction Industry Institute at Texas A&M University formed a task force to identify the risks and benefits of partnering, provide guidelines for the process, and to define the relationship between partnering and the construction contract in 1987 (CII, 1991).

"... Partnering is a long-term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant's resources. This requires changing traditional relationships to a shared culture without regard to organizational boundaries. The relationship is based upon trust, dedication to common goals, and an understanding of each other's individual expectations and values." (CII, 1991 at p. 2)

What is most relevant concerning this quote is that the parties must ensure a change in behavior, compared to in traditional contracts, and dedicate themselves to the common goals.

In 1991, the U.S. Army Corps of Engineers published the first pamphlet on partnering in the construction industry, which described the partnering process, the potential benefits of partnering, and actual experience with the process obtained by the U.S. Army Corps of Engineers:

A central objective of Partnering is to encourage contracting parties to change from their traditional adversarial relationships to a more cooperative, team-based approach and to prevent disputes. The Partnering concept, therefore, is significant because it offers the most efficient form of dispute resolution: dispute prevention. Indeed, the benefits of successful owner/contractor relations go beyond preventing disputes and include improved communication, increased quality and efficiency, on-time performance, improved long-term relationships, and a fair profit and prompt payment for the contractor (Edelman, Carr & Lancaster, 1991 at p. 2)

In 1995, the Commission on Partnering in the American Arbitration Association's Dispute Avoidance and Resolution Task Force of the construction industry conducted a

partnering guide to define the process and to provide guidelines for partnering in the construction industry:

“With margins and costs heavily influenced by market forces, improved cost effectiveness and productivity are where a business or agency has the most potential for positive impact on its return on assets or program budgets. What's more, business arrangements based on mutual gain, like partnering, yield improved relationships and lead to increased trust. Studies by the Construction Industry Institute (CII) indicate that increased trust results in reduced project costs and schedules, ergo, effective partnering yields improved productivity resulting in increased value.” (AAA, 1996 at p. 3)

The International Partnering Institute, founded in 2009, does research on collaboration in construction projects (Dyer, 2011). The International Partnering Institute has adopted the California Department of Transportation's Partnering Program Model (Dyer & Doyle, 2010 at p. 1). This partnering model will be described below in Section 3 and includes a non-binding partnering agreement.

2.1.1. Partnering data US

Data from the American Arbitration Association showed that 90 percent of the participants surveyed said that partnering improved the quality of the project. Five partnering projects that were surveyed, with a total cost of \$492 million, reduced the cost on averaged by 7 per cent, and 83 percent of 30 partnering projects that were surveyed, with a total cost of \$684 million, completed early or on time. (AAA, 1996)

The International Partnering Institute found that in the short term, the collaborative advantages of partnering include that the owner saves 5 percent on total installed cost, and that the contractor saves 5 percent on total installed cost. The average profit in construction is 3 percent (equilibrium), which is why the total partnering profit is 8 percent. The International Partnering Institute found that in the long term, the collaborative advantages of partnering are that partnering increases the contractor profits by 5 (plus) percent and reduces the owners' costs by 5 (plus) percent. When the contractor's profits increases, new entrants are attracted to the market. Hence, the owners see an increase in competition, which will result in lower prices on the market. Thus, the contractor's profits eventually return to 3 per cent (equilibrium), and the owners eventually retain all cost savings, which is estimated to be a 10 (plus) per cent gain (Dyer, 2011/4).

2.2. The legal history of partnering in Britain

The British partnering experience emerged from both the general experience of strategic alliances in the oil industry in the early 1990 and the U.S. partnering experience from the construction industry. The British oil industry sought to achieve economic efficiency through strategic alliances and collaboration (Bresnen & Marshall, 2000, Spang & Riemann, 2014), and due to the experience in the oil industry, the construction industry introduced the partnering and strategic alliance concept (Bennett & Jayes, 1998). In other words, the British partnering concept in the construction industry emerged from the initial successes of strategic alliances and from the U.S., and was developed between the 1980 and 1990 (Skeggs, 2001). The British partnering concept

initially focused on the importance of including all parties in the process of a construction project.

The development of the British partnering concept began with the National Economic Development Office's series of reports questioning the traditional system in the construction industry, starting with the Latham Report in 1994, and ending with the Egan Report in 1998. These reports primarily focused on the benefits of partnering in the public sector and the inefficiency of construction as a product (Naoum, 2003 at p. 71).

In 1991, the National Economic Development Office introduced partnering as:

A long term commitment between two or more organisations for the purpose of achieving specific business objectives by maximizing the effectiveness of each of the participants. (Greenhalgh & Squires, 2011, at p. 158)

The development of the Latham Report concerning Constructing the Team (Latham, 1994), was funded by the British Construction Ministry and the construction industry, and focused on procurement and contractual arrangements. The Latham report introduced the win-win-concept and stated that:

"The Review has been about helping clients to obtain the high quality projects to which they aspire. That requires better performance, but with fairness to all involved. Above all, it needs teamwork. Management jargon calls that 'seeking win-win solutions'. I prefer the immortal words of the Dodo in: "Alice's Adventures in Wonderland", 'Everybody has won and all must have prizes'. The prize is enhanced performance in a healthier atmosphere." (Latham, 1994 at p. v)

Furthermore, the Latham report concluded that the client perspective should be in focus, that the industry needed a reform in regard to the tendering procedure, and that the existing standard forms of contracts were inadequate and generated adversarial relations. Hence, new models were requested (Latham, 1994 at p. 146).

Even though the Latham Report was to be seen as a milestone in the process of adopting the American partnering concept, the report did not have the success that was anticipated (Naoum, 2003/72). Thus, the Labor Government in 1997 established the Construction Task Force, which resulted in the Egan Report of 1998. Both the Latham report and the Egan Report supported the use of the U.S. developed partnering concept, see above in section 2.1.

The Egan Report based the partnering concept on the knowledge and benefits of strategic alliances:

Alliances offer the co-operation and continuity needed to enable the team to learn and take a stake in improving the product. A team that does not stay together has no learning capability and no chance of making the incremental improvements that improve efficiency over the long term... Partnering on a series of projects is a powerful tool increasingly being used in construction to deliver valuable performance improvements." (Egan, 1998, at p. 29)

British partnering contract PPC2000 contains clauses on relational content, as common goals, co-operation, trust, fairness and mutual disclosure of information are a part of the

parties' formal, legal and binding obligations. Furthermore, PPC2000 creates a strategic alliance between all the parties, due to PPC2000 § 24.1 and § 24.2. This type of alliance is also seen in Public Private Partnerships in Britain (Marrewijk, Clegg, Pitsis & Veenswijk, 2008 at p. 592).⁵ PPC2000 will be analyzed below in section 3.

2.2.1 British partnering data

The Egan Report refers to several partnering studies regarding construction projects in Britain (Egan, 1998 at p. 9). The Egan report uses the data from the Latham report (Latham 1994). Both reports refer to studies of partnering contracts that show that a 30 per cent cost saving was common in the cases that partnering contracts were used over a series of construction projects. Data from the British Ministry of Defense show that a reduction of capital cost (as Latham's 30 per cent suggestion) is difficult to achieve. However, quality improvements that affect running costs are easier to achieve (Naoum, 2003 at p. 75 and Tavistock Institute 1999).

2.3. The legal history of partnering in Denmark

The partnering concept was first used in Denmark in the late 1990's, but did not have an impact on the Danish construction industry to the same degree as in the U.S. and Great Britain. In 2003, the Danish Building and Property Agency explained partnering as:

The concept of partnering refers to a form of cooperation in a construction project based on dialogue, trust, transparency and an early involvement of all parties. The project is implemented under a common objective formulated through joint activities and based on common economic interests. (Danish Business Authority, 2004, at page 9)⁶

Due to the Danish Contract Act, section 1, the parties are bound by their contract, and the statutory rules come into action only if the contract is unclear. Hence, the rules in the Danish Contracts Act are only relevant to both public and private partnering contracts if the contract is inadequate. Furthermore, public contracts must comply with the Procurement rules, both in regard to the EU directive and Danish law. This article concerns only private contracts.

In the Danish Procurement act from 2001, partnering was mentioned in the preparatory legislative work stating the purpose of the Danish Public Procurement Act.⁷ The purpose of the act was to strengthen competition in the construction sector, to promote the development towards a better and less expensive construction, to provide enterprises with fair and equal opportunity to participate in public construction projects, and to promote opportunities for enterprises to benefit from the advantages of new forms of cooperation (e.g. partnering).⁸ The act covered "committed construction cooperation's", where partnering, according to the preparatory works, was subset of the term "committed cooperation". Furthermore, it was defined in the preparatory work, that:

"The Aim of partnering was (after a competition at an early stage) to ensure the selection of a team of consultants and contractors with a view to concluding a binding cooperation contract on a specific building or construction task on the basis of the most economically advantageous tender" and where an award criterion may be included in the selected sub-criteria other than with an overall binding price for the project, for example in the form of a "target price" maximum cost, unit prices, hourly rates or similar".⁹

Accordingly, the 2001 Procurement Act included the use of partnering on the assumption that it could provide benefits for the construction industry. At the same time, a number of initiatives were undertaken to gather experience of partnering to develop guidelines and possibly standard conditions for partnering (Danish Government Report, 2000. Danish Governmental study, 2000).

The specific reference to partnering was not mentioned in the re-construction of the Danish Procurement act in 2005, and the preparatory work for the 2005 act does not mention the reason for leaving out the partnering references. By that time, a public order concerning Public Private Partnership, partnering, and key figures was introduced in Danish law.¹⁰ This may explain the omission of partnering in the preparatory legislative work. Due to the existing public order from 2013, in section 1, the public order covers all the Danish Government's renovation of existing public buildings and new construction, and includes the partnering concept in section 3. In section 3 it is stated that the Danish Government must include an evaluation of the total cost of the construction project and of the question of whether an organization of the work in a PPP or similar (as partnering) is a relevant organization.¹¹

In regard to partnering contracts between the private and public sector, it is a requirement by Danish law that the government always uses the agreed documents on construction called AB 92, ABT 93 and ABR 89 without any deviations. Due to the fact that partnering agreements are significantly different from the standard agreements, the Danish construction Authority in 2004 issued a circular¹² (binding to the governmental authorities), by which public builders may deviate from the standard contract documents in respect of construction works carried out in partnering.

In 2001, the Danish construction industry created a partnering paradigm, amended in 2005, to be used by the parties in the construction industry (DPP 2005). DPP2005 will be analyzed below in section 3.

In 2006, the Danish Building and Property Agency sent out a guideline concerning partnering:

In partnering, it is a common economic interest that all parties' financial goals are taken into consideration and that no party seeks to increase its own economic result on the expense of other parties.¹³ (Danish Government guideline, 2006 at p. 9)

The Danish Association of Construction Clients considers partnering as:

“... a form of cooperation with the early involvement of all the parties and their competences. Partnering is established as a minimum between client and advisor in the planning. The object of partnering is essentially to optimize the process, in order to create a better starting point for the building process and thus a better product.”¹⁴ (DACC 2004, at p. 1)

Legal disputes in the Danish construction industry are usually decided by the Danish Building and Construction Arbitration Board. There has not been many cases regarding partnering contracts before the Board, and the three known cases¹⁵ show a tendency of interpreting a partnering contract in the direction of the generally applicable rules of the Danish construction industry, which all are to be found in agreed documents.¹⁶ The

Danish Building and Construction Arbitration Board uses the general construction contract law and principles when determining disputes in partnering collaborations in the cases that the contract itself is not specific enough. Therefore, it is also important that the partnering contracts are binding and explicit in stating how the partnering contract differs from the traditional construction contract. Otherwise, there is a risk that a partnering dispute will be settled based on the traditional construction law rules rather than the parties' intention of the partnering collaboration (Nielsen & Johansen 2012).

2.3.1. Partnering data from Denmark

As in Britain in the beginning of the 2000, the Danish construction industry faced an extremely high amount of cost due to conflicts – more than 100 million DKK per year (Danish Construction Authority, 2008). The conflict culture in the construction industry in Denmark swallowed many resources, and the industry adapted the partnering concept to reduce the increasing number of cases at the Danish Building and Construction Arbitration Board. Data showed that approx. 11 per cent of the cases in 2007 used a partnering contract, and under 0,5 per cent of the cases in the Arbitration on Construction involved partnering contracts (Danish Construction Authority, 2008).

The Danish Construction Authority estimated that partnering would result in significant economic savings (5-20 per cent) in the designing and construction. Partnering would provide a potential for increased margins for construction companies and thus, an increased construction quality through a closer and more trusting collaboration. Fewer resources spent on litigation and arbitration and a more cooperative environment throughout the construction process (Danish Construction Authority, 2008).

A light version of partnering is more typically used in the construction industry,¹⁷ and some data shows that the light version of partnering was used in up to 70 per cent of the private construction contracts in 2009.¹⁸

3. The legal partnering definition

The first important definition of a partnering contract is that it is an alternative to a traditional contract. However, the partnering contract is not there to replace the traditional contract. The traditional contracting can be defined as:

“Construction contracts exists in a largely adversarial atmosphere where collective needs and interests are either subordinated to individual needs, or ignored entirely,” opposite to partnering that must build on commitment, trust, communication and mutual goals and objectives. (Libby, 2000, at p. 828)

Furthermore, the British Partnering agreed document, the PPC2000, includes a section defining partnering as a strategic alliance in which the partners recognize the potential benefits for the project of developing a strategic alliance relationship and pursuing joint initiatives. Thus, the PPC2000 aims at guiding the parties to become partners, rather than individual parties. Therefore, the partnering contract sets up a binding legal framework that aims to optimize the transaction among the parties as a whole, instead of having two parties aiming to optimize their own utility.

3.1. The U.S. partnering definition

In 1991, the U.S. Army Corps of Engineers defined partnering as a management method, and not as a legally binding contract, to create a positive, disputes-prevention atmosphere during the performance of the construction contract. The U.S. Army Corps of Engineers defined partnering as:

“... the creation of an owner-contractor relationship that promotes achievement of mutually beneficial goals. It involves an agreement in principle to share the risks involved in completing the project, and to establish and promote a nurturing partnership environment. Partnering is not a contractual agreement, however, nor does it create any legally enforceable rights or duties. Rather, partnering seeks to create a new cooperative attitude in completing government contracts. To create this attitude, each party must seek to understand the goals, objectives, and needs of the other-their "win" situation- and seek ways that these objectives can overlap.” (Carr, 2010, at p. 1)

In 2006, the U.S. Army Corps of Engineers redefined the partnering definition:

“Partnering is a voluntary organized process by which multiple stakeholders having shared interests perform as a team to achieve mutually beneficial goals. It is based on establishing these goals early in the project lifecycle, building trusting relationships, and engaging in collaborative problem solving.” (EBS, 2006, at p. 2)

The most common partnering definition in the U.S. is that partnering is not a binding legal contract, but a management tool used to obtain better results in construction projects. Thus, it is up to the partnering team to define the common goals, improve communication, and foster a problem-solving attitude among the group of individuals who must work together throughout contract’s performance. The parties must “change from their traditional adversarial relationships to a more cooperative, team-based approach and to prevent disputes,” (Edelman, Carr & Lancaster, 1991 at p. 2), not by legal contracts, but by behavior through a partnering charter or a Letter of Intent.

The same idea of the partnering definition is seen in the CII task force report from 1991 titled: *In Search of Partnering Excellence*. In the report, partnering is defined as a:

“...long-term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant’s resources... The relationship is based upon trust, dedication to common goals, and an understanding of each other’s individual expectations and values.” (CII, 1991, at p. 1)

The American Arbitration Association share the same definition as the one above regarding the non-legally binding partnering concept as:

“...a collaborative process that focuses on cooperative solving of problems participants have in common. Properly applied, it yields reconciliation (win-win) as opposed to either compromise (lose-lose) or concession (win-lose). It is not a social process that simply promotes courtesy and politeness among participants, but rather good faith joint resolution of problems.” (AAA, 1996, at p. 3)

Hence, a common partnering contract in the U.S. is seen more as a letter of intent than as a binding legal contract:

“The Parties are committed to close and continuing cooperation, mutual support through shared information and expertise, and the dedication of their skills and resources to continuous innovation and

process improvement in faithfully executing their responsibilities under this PA. The Parties' intent is that this partnering relationship can and will successfully integrate their efforts to continuously improve total systems support of the JSTARS Weapons System, while providing best value to the Air Force.”¹⁹

The International Partnering Institute defines partnering as:

“... a collaborative process that works to develop a “culture” of partnership between the organizations and teams that must work together to achieve the successful delivery of construction projects.” (Dyer & Doyle, 2010, at p. 1).

According to section 5-1.09A General in the California Department of Transportation partnering agreement, (California Department of Transportation, 2013) the parties must create a partnering charter. The charter must include mutual goals, both core project goals and project-specific goals, a dispute resolution plan that includes a dispute resolution ladder and may also include use of facilitated dispute resolution sessions, an obligation to participate in monthly partnering evaluation surveys to measure progress on mutual goals. Furthermore, due to section 5-1.09A General, the California Department of Transportation requires that the parties:

Using early and regular communication with involved parties
Establishing and maintaining a relationship of shared trust, equity, and commitment
Identifying, quantifying, and supporting attainment of mutual goals
Developing strategies for using risk management concepts
Implementing timely communication and decision making
Resolving potential problems at the lowest possible level to avoid negative impacts
Holding periodic partnering meetings and workshops as appropriate to maintain partnering relationships and benefits throughout the life of the project
Establishing periodic joint evaluations of the partnering process and attainment of mutual goals
Considering discussing with and involving all stakeholders in evaluating potential Value Engineering Change Proposal (California Department of Transportation, 2013 in appendix A)

It is furthermore stated in section 5-1.09A General that: “Partnering does not void any Contract part.” Hence, this agreement and guideline illustrates that partnering is used more as a management tool than as a legal tool. However, some changes to this perspective have been seen in the U.S. as the International Partnering Institute is becoming more open to the idea of a binding partnering contract. This is further discussed below.

3.2. The British partnering definition

To some extent, the British partnering definition follows the U.S. definition. The Egan Report defined partnering as:

”Partnering involves two or more organisations working together to improve performance through agreeing mutual objectives, devising a way for resolving any disputes and committing themselves to continuous improvement, measuring progress and sharing the gains.” (Egan, 1998, at p. 9)

The British literature shows similarities between the U.S. and the British partnering definition in regard to the purpose of the partnering concept (Naoum, 2003, Barlow, Cohen, Jashapara and Simpson, 2002). The purpose of the British partnering contract is to obtain a joint economic benefit through having a common goal, defined as follows:

"The first approach essentially sees partnering as a tool for improving the performance of the construction process and emphasises the way it helps to create synergy and maximize the effectiveness of each participant's resources... Secondly, partnering has been seen as a management process... to improve the efficiency of large construction projects... as a variant of total quality management... the formation of a project team with a common set of goals. Finally, others have focused on the contractual and relationship implications of partnering, seeing it as a way of "putting the handshake back into doing business"..."

Barlow, Cohen, Jashapara and Simpson, 2002, at p. 6)

Today, the partnering concept in Britain is an acknowledged contractual concept (Potts, 2008 at p. 150, Hughes, Champion & Murdoch, 2015):

PPC2000 Project Partnering Contracts, ACA/ACE, for integrated projects teams, a multi-party contract, that aligns contractual project management processes with teamwork methods and behaviors. Thus, PPC2000 is a single contractual hub, allowing all team members to 'contract as a team' on identical terms.²⁰ Thus, PPC2000 integrates design, supply and construction.

TPC 2005 for single multi-party contract that provides a foundation and route map for term partnering.²¹

NEC 3 Partnering Option (x12) for long-term strategic partnering between the building owner and the contractor based on collaboration and incentives.

Public Sector Partnering Contract (PSPC), for single partnering projects. (Potts, 2008, at p. 50)

JCT Framework Agreement- 05 Constructing Excellence, for long term strategic partnering. (Hughes, Champion, & Murdoch, 2015)

JCT partnering Charter, a non-binding letter of intent ensuring and creating a collaborative working environment. (Potts, 2008, at P. 150)

ICE was not designed as a Partnering Contract. The ICI concerns transparent pricing and alternative dispute resolution. Furthermore, ICE has a Partnering Addendum to the ICE Contract. (Potts, 2008, at p. 150)

Contrary to the U.S. partnering concept, the PPC2000²² as the first partnering Agreed Documents in Britain was legally binding. Today, most of the partnering contracts in Britain are legally binding (Barlow, Cohen, Jashapara & Simpson, 1997, at p. 4).

Furthermore, the PPC2000 partnering contract is a multi-partner contract and thus involves more than two parties. The PPC2000 includes all parts of the construction according to § 2.3. This includes the building owner, the advisor, the architect, the engineer and the construction company. Through the PPC2000 contract § 1.3, the parties commit themselves to collaborate, to show mutual trust in one another, to be fair, and to work with the common purpose of the project in sight. Thus, the parties are not able to work just to optimize their own utility under this contract.

In § 1.3 in PPC2000,²³ the partnering collaboration is defined as:

"The Partnering Team members shall work together and individually in the spirit of trust, fairness and mutual cooperation for the benefit of the Project, within the scope of their agreed roles, expertise and responsibilities as stated in the Partnering Documents." (PPC2000)

Moreover, the PPC2000 obliges the parties to ensure transparency and share all relevant project information, due to § 3.1, such as open books and calculations, due to § 10.1(i) and to create and fulfil common goals in accordance with § 4.1(i).

In PPC2000, § 3.1, the openness regarding sharing of information is defined as:

”The Partnering Team members shall work together and individually, in accordance with the Partnering Documents, to achieve transparent and cooperative exchange of information in all matters relating to the Project and to organize and integrate their activities as a collaborative team.” (PPC2000)

3.3. The Danish partnering definition

The partnering tradition in Denmark is also based on the idea that the contract is legally binding. There are several definitions on partnering found in Denmark. The most important one can be found in the Danish Partnering Paradigm, including a partnering contracts and a guideline, developed by the Danish construction industry in 2001 and amended in 2005 (DPP2005). This paradigm is a legally binding multiple party contract based on common goals, open books and an on-going negotiation to solve the needs and functions, as well as trust and collaboration, as stated in DPP 2005, § 4.

The parties commit themselves to act in accordance with the intentions in this contract. Accordingly, it is a precondition for the contract and for the realization of the objective and the intentions arising from the contract that the parties' cooperation based on trust, full transparency and professionalism.²⁴

The Danish Construction Authority defines partnering as:

The concept of "partnering" refers to a form of cooperation in a construction project, based on dialogue, trust and transparency and with early involvement of all parties. The project is implemented under a common goal formulated through joint activities and based on common economic interests.²⁵ (Danish Construction Authority, 2005, at p. 10)

Furthermore, the Danish Construction Authority focuses on the parties' transformation from a self-centered, “contract based” attitude to a relation-based, joint optimization and collaboration (The Danish Construction Authority, 2002, at P. 5).²⁶

Thus, the DPP2005 is based on binding clauses concerning joint utility in § 6.2, open books in § 6.1, collaboration, trust, openness in § 2.1 and establishment of joint management teams and alternative conflict procedures in § 11.

There is full transparency on the economy, and all parties have a responsibility to ensure that the economy maintained within budget and are required to contribute to optimizing the economy in order to achieve increased earnings and savings for all parties.²⁷ (DPP2005, § 6.2).

4. The comparative legal perspective

The first part of this article has presented a legal analysis of partnering contracts in Great Britain, U.S. and Denmark. Each legal system and legal development has been described and analyzed separately due to the *Länderbericht* comparative legal analysis (Zweigert & Kötz, 1998). This section will compare the three different legal systems to examine similarities and differences.

The major difference between the Danish/British partnering contracts and the U.S. partnering agreements is that the U.S. partnering agreements are not legally binding, while the Danish and British partnering contracts are contractually bounding the parties

to work co-operatively. Thus, the legal risk of one party exploiting the partnering approach for their own gains, particularly when there is sharing of the profits or other incentive mechanisms (Skeggs, 2001), is less in Denmark and Britain compared to in the U.S.

In 1992, it was stated in the British construction literature that binding contracts are needed in a complex industry such as that of construction:

“Parties should enter into proper contracts and not rely on letters of intent or other nebulous arrangements... Standard forms of contracts are often criticised, but since construction work is complicated it is inevitable that contracts governing it are also complicated.” (Newey, 1999, at p. 23)

On the other hand, Sir John Egan in 1998 suggested that the partnering contract might not be legally binding to work (Egan, 1998). From a starting point, the report proposed partnering as a new model for entering into construction relationships. Due to the binding versus non-binding issue, Sir John Egan proposed that:

‘Effective partnering does not rest on contracts. Contractors can add significantly to the cost of a project and often add no value for the client. If the relationship between a constructor and employer is soundly based and the parties recognize their mutual interdependence, then formal contract document should gradually become obsolete.’ (Egan, 1998, at p. 30)

Contrary to Egan’s approach, partnering contracts have been defined as binding contracts from the very beginning of the implementation in the Danish construction industry, which partnering also is today in most partnering projects.

Opposite to the Danish and British binding concept is the U.S. partnering tradition. The U.S. Army defines the non-binding partnering agreement as:

“Partnering is not a social process that simply promotes courtesy and politeness - but rather is a good faith effort at joint problem resolution. It is not mandatory, but rather voluntary - it does not attempt to mandate behaviors but seeks to influence them... It is not a waiver of contractual rights and responsibilities - it is a recognition and respect of those rights and responsibilities and a willingness to work together to help all stakeholders fulfill them.” (Carr, 2010, at p. 34)

The American Arbitration Association defines the non-binding partnering agreement as:

Partnering is a voluntary, organized process by which two or more organizations having shared interests perform as a team to achieve mutually beneficial goals... Partnering is also a collaborative process that focuses on cooperative solving of problems participants have in common... It is not a social process that simply promotes courtesy and politeness among participants, but rather good faith joint resolution of problems. Partnering is a nonbinding process. It neither alters the contract documents nor the relationships between the parties. Instead, it is a commitment between the parties to use the agreed-upon partnering process and to deal with one another as true partners... (AAA, 1996, at p. 3)

Thus, the U.S. approach to the partnering agreement is that the partnering agreement should, without binding the parties by contract, improve communication, increase quality and efficiency, on-time performance, improve long-term relationships, and create fair profit and prompt payment to the contractor, similarly to the approach in the Egan report. The U.S. Army Corps of Engineers suggested that the first two steps in a partnering project should be to ensure the commitment of the parties, create a joint

statement of goals, and establish the common objectives in specific detail for reaching the goals in the project (Edelman, Carr & Lancaster, 1991 at p. 3). These steps are also found in Denmark and Britain, but as a part of the binding partnering contract (Tvarnø, 2016).

The international Partnering Institute has to some extent challenged the non-binding partnering approach and is suggesting that partnering should be considered as a binding contract instead of a Letter of Intent or a management tool:

“For years we have believed that partnering must be voluntary. We believed the same thing about mediation. Recently courts have been experimenting with mandatory mediation. Low and behold they found that they had the same high percentage of resolved cases whether the parties entered into mediation voluntarily or because it was mandated. The same has shown to be true for partnering.” (Dyer, 2011 at p. 7)

The Danish and British partnering experience supports this perspective. The industry in both Denmark and Great Britain has set up a binding legal framework aiming at optimizing the transaction among the parties as a whole, instead of having two parties aiming at optimizing their own utility.

From a legal point of view, the biggest difference between the U.S. versus the British and Danish partnering concepts is the non-binding versus the binding aspect of the partnering contract. The next section will discuss the binding versus the non-binding partnering concept from an economic and game theoretical approach.

5. Partnering and game theory

As stated above in section 2, the construction industries in the U.S., Britain and Denmark have experienced a high degree of litigation and costs. Thus, the partnering contract should aim to solve these problems. In an economic perspective, the lack of collaboration, the high amount of litigation and costs in the construction industry could be explained as cooperative moves in a conflict-ridden industry, in which there is the question of whether or not the parties would be willing to instigate the first cooperative move (Wong, Cheung & Ho, 2005). This can be explained by the prisoner's dilemma (Rapoport & Chammah, 1965). In this game, the outcomes of a party's strategy depend on the reaction of the other party, and the game can explain the outcome of the contract parties in a partnering contract if the choice of strategy is either competitive or cooperative. With a competitive focus, the parties only care about their own interest. A cooperative move includes the interest of both contracts parties.²⁸

Partnering contracts are useful and can even result in an economic improvement if the economic transaction concerns for example a strategic alliance (Berg & Kamminga, 2006), or another type of transaction in which there is a close relationship among the parties.²⁹ The partnering contract is a legal setup to promote long-term relational commitments among two or more parties, as for example a strategic alliances or a multiple party construction contract. In a partnering contract, the parties must shift from being parties to being partners, which is a significant in maximizing the output from a long-term strategic alliance. Sharing information is also a relevant alliance tool together with the relational norms such as trust, collaboration and incentives, and also tools in

strategic alliances used to create a competitive advantage (Berg & Kamminga, 2006).

The joint utility and common goals can be explained by several economic theories, for example the principal agent theory, the Coase Theorem, and Game Theory. Looking at the game theory argumentation in the Prisoners Dilemma game, joint utility will create the highest possible output, but the game will still end up in an inefficient Nash Equilibrium, because the parties will end up self-optimizing, even though this will result in the worst possible economic output.

The most significant difference between a traditional contract and a partnering contract is the objective concerning joint utility. Traditional contracts are based on the idea of self-optimization, and therefore each party seeks to optimize their own utility.

5.1. Joint utility in the partnering contracts

The joint utility is defined in the partnering contracts as common goals. The U.S. definition of common goals and, thus joint utility, is:

“The typical partnering Charter includes a list of common goals that will provide measurable milestones for success on the project. These goals are often quantifiable and appear over and over again in partnering Charters. When all the goals are achieved, the contracting parties achieve a win-win result. Common goals that appear in partnering Charters are: On-Time Delivery, Within Budget, Safety with No Lost Time, Value Engineering Supported, Zero Litigation, Quality Project, Reduce Paperwork.” (Carr, 2010, at p. 13).³⁰

According to Office of Federal Procurement Policy, a contract statement of work is the foundation of performance-based services and should include key elements such as "what, when, where, how many, and how well" the work is to be performed, positive and/or negative performance incentive, proactive management support and direction from the highest agency levels disseminated throughout the agency, including field operations, training for program and contracting personnel and a partnering structure in this Governmental guideline, the common goals in regard to partnering are defines as:

“Partnering is a technique for preventing disputes from occurring. Under this concept, the agency and contractor, perhaps along with a facilitator, meet after contract award to discuss their mutual expectations. The parties mutually develop performance goals, identify potential sources of conflict, and establish cooperative ways to resolve any problems that may arise during contract performance.” (Office of Federal Procurement Policy et al, 1998, see chapter 8)

In general, the American partnering perspective considers the evaluation of the partnering collaboration as a significant tool in obtaining the benefit from the partnering agreement. Section 5-1.09B in the California Department of Transportation partnering agreement states, that the parties must establish a partnering facilitator, workshops, and monthly evaluation surveys. The parties must ensure that written invitation to enter into a partnering relationship after contract approval, respond within 15 days to accept the invitation, cooperatively select a partnering facilitator, schedule initial partnering workshop throughout the life of the project, recommended quarterly (California Department of Transportation, 2013 in appendix A). The non-binding agreement requires a higher degree of process-focus compared to the binding partnering contracts in Great Britain and Denmark to ensure the common perspective and collaboration.

The British definition of common goals is to be understood as the benefit of the project due to PPC2000 in § 1.3 and the mutual benefit of the partnering team members due to § 4.1.

PPC2000, § 4.1 mentions the legally binding obligation of:

“...trust, fairness, mutual co-operation, dedication to agreed common goals and an understanding of each other’s expectations and values;...”

The Danish partnering contract does not consist of a definition of common goals, and thus joint utility is not explicitly mentioned in the partnering framework contract. The definition of the project goals can be interpreted based on DPP2005 in § 6:

It is the project management's objective: to implement the project within the budget with an improved economy in relation to the known forms of contracts and thus ensure value for money; to ensure the project's partners have a sound business; to improve the project's overall economy (capital, operating - and maintenance costs) ... There is full transparency on the project economy, all parties are responsible for ensuring that the economy maintained within the budget and are required to contribute to optimizing the economy in order to achieve a higher earnings/savings for all parties.³¹

The partnering concept in Britain and Denmark consists of a legally binding contract aiming at obliging the parties to be bound to optimize the joint and common goals through collaboration, positive incentives and information. In contrary, the U.S. partnering concept expects the parties to obtain these key elements through a non-binding partnering charter to be characterized as a letter of intent with no binding legal value, but with a stronger focus on the process compared to the British and Danish partnering contracts. In this regard, the strong focus on the process in the U.S. partnering concept could be applied to the British and Danish binding partnering contracts to support the objectives of the collaborative relationship.

5.2. From partnering contract to game theory

Partnering agreements are clearly intended to intensify the relational nature of construction contracts and are building on clauses based on trust, collaboration and co-operation in PPC2000, § 3.1, open books in PPC2000, § 10.3 and positive incentives in PPC2000 § 23.2.

”It is reasonable to suggest, therefore, that parties will have some positive expectations of the relational aspects of partnering arrangements. It is submitted that such expectations would include moderation of the extent to which each party is entitled to pursue their own self-interest at the expense of other parties. However, in a competitive commercial context, relational concepts give rise to a fundamental tension between individual self-interest and consideration of the interests of other contracting parties.” (Begg, 2003, at p. 184).

Hence, the negotiations of the partnering contract result in a joint goal that benefits all and removes the opposite interests among the parties. When optimizing the project or the partnering transaction, the parties must focus on the common interests instead of only their own interest.

For example, in a traditional building contract the building owner will demand the lowest price and the contractor will want to set the highest possible price. By establishing joint optimization, it is possible to create both cheaper and better buildings in all parties' interest as long as they share the gains. Hence, the partnering contract seeks to create a Pareto improvement and thus extra benefits to be shared among the parties (Grossman & Hart, 1986),³² opposed to a traditional contract, in which the supplier is obliged to deliver the asset in due time, place and condition, in order to not be in breach of contract. The asset owner will deliver the right payment at the right time and at the right place. Neither of the parties have an incentive to deliver a better solution than agreed upon. In a partnering contract, the parties are obliged to improve the asset by working to fulfil the needs instead of specific demands. Through collaboration they can create the solutions to the demand with lower costs and fewer resources. From a game theory perspective, the parties are obtaining a higher output by joint utility, but will not. They will end up in an inefficient Nash equilibrium, from which the only possible way to escape is through the use of the legally binding partnering contract.

Game theory can explain how parties in conflict will react when negotiating, making decisions, cooperating or not cooperating, and explain the typical strategy (that) the parties will consider. Thus, game theory is a traditional mathematical study of the decisions made by rational parties.

The game used in this article is the prisoner's dilemma – a game explaining the dilemma between self-optimizing and joint utility. The concept of "self-optimization" serves to illustrate the parent's decisions, and joint utility serves to illustrate the best child-situation. Also, the prisoner's dilemma game serves to illustrate that parties cannot optimize their utility by themselves, and that legal actions are mandatory if the intention is to focus on the optimal outcomes in terms of the child's best interest.

The prisoner's dilemma game illustrates the dilemma between choosing self-optimization and joint utility (Rapoport & Chammah, 1965).³³ The parties in the game will choose not to cooperate even though they can both see the common benefit of collaboration. This conflict illustrates the difference between individual and collective rationality. Decisions that are rational from the individual's perspective are inappropriate when seen with common eyes, even though an outsider can see the rational gains resulting from a common perspective.

The dilemma and the economic pay-offs from the decision-making are shown in the matrix below.³⁴

Prisoner 1/2	Keeps quiet = Joint optimizes	Confesses = Self-optimizes
Keeps quiet = Joint optimizes	- ½, - ½	-4, 0
Confesses = Self-optimizes	0, - 4	- 3, - 3

The matrix shows that "confession" is the dominant strategy because "confession" is the optimal choice for each player regardless of what the other player does. Thus, the only possible Nash equilibrium is to

always defect. Prisoners 1 and 2 are in the same situation and have the same information. Thus, the game ends by both players spending three years in prison instead of only half a year. The prisoner's dilemma game illustrates that two individuals will not cooperate even when it is obvious that it is in their best interests to do so. Furthermore, the prisoner's dilemma game illustrates that defecting is always chosen in preference to cooperation because a rational, self-interested person evaluates their own options in consideration with the other party's possible choice, knowing that the rational self-interested counterparts do the same – in this scenario the only possible outcome therefore is not to cooperate, but to defect. The risk of being defected by the other person is too high (Cooter & Ulen, 2011).

The purpose of having common goals in the partnering contract is to create mutual benefits of joint utility by creating a legally binding contract, making the parties choose the right strategy without being caught in the dilemma between joint and self-optimization.³⁵

The partnering contract can be defined as an exogenous change to the preferences of the players in the prisoner's dilemma game. Hence, the content of the partnering contract is significant. The content of the partnering contract must on one side make the parties prefer to cooperate instead of self-optimize, while on the other hand, bind the parties to joint-optimize through cooperation. The inefficient Nash Equilibrium must be avoided through the partnering contract (Cooter, R. & Ulen, 2011). In this connection, the contract becomes the most important tool in obtaining joint utility and cooperation, and ensures that self-optimization does not occur. Furthermore, economic literature argues that creating appropriate incentives for cooperative interaction could alter the orientation of partners to collaborate, and thus improve the joint utility in the game (James, 2002). Hence, the partnering contract must change the parties' behavior by creating incentives through a written and explicit contract, which obliges the parties to reward collaboration in the interest of both parties.

In a partnering context, the joint utility and thus the Win-Win perspective does not mean that all parties must win the same amount of money as shown in the matrix above. Neither does it mean that all parties must achieve the same award in per cent due to the incentive clause. The win-win perspective means that the transaction itself is improved by the collaborative partnering contract and that all parties gain more from the partnering contract compared to a traditional construction contract (Cox, 2010, Cox, 2004). Thus, the gain from the result in the prisoner's dilemma game (-1/2, -1/2 instead of -3, -3) could be divided differently between the parties due to the negotiations, the initial investments, the risk allocation etc. This discussion is not included in this article, but is relevant in regard to future research on this subject.

6. From game theory to proposing a binding partnering contract

The Danish and British legally binding partnering contracts require the building owner to describe the needs and functions, and commit the constructor, design enterprises and the building owner to collaborate on common goals negotiated by all parties. The common goals must be negotiated to optimize the transaction, and the parties are obliged to fulfill the contract requirements of mutual goals, collaboration, trust, open books and positive incentives as stated in the binding partnering contract.

The U.S. partnering concept expects the parties to find their way to the joint utility by a not-binding partnering agreement. According to the California Caltrans Partnering standard specifications, appendix A. Section 5: Control of work, 5-1.09, Partnering, 5-1.09A, (California Department of Transportation 2013) the non-binding partnering charter include identifying, quantifying, and supporting attainment of mutual goals and establishing of a relationship of shared trust, equity, and commitment. At the same time, it is stated that the use of a partnering charter does not remove the legal force from the contract.

“Consequently it is merely an element of the pre-contractual process and is subject to the current, essentially classical, self-interested limits to the reference which may be made to it subsequent to contract formation. With this in mind there is no reason to suggest that the relationship where a partnering charter is agreed after contract formation would be subject to other than the current narrow rules of variation, estoppel, personal bar, waiver, etc. in relation to conduct subsequent to contract formation.” (Begg, 2003, at p. 195)

Thus, the non-binding partnering concept does only support the change from a self-optimizing behavior towards a collaborative joint optimization behavior through a process perspective and hence not a legally obligation. The legal effect of the U.S. partnering charter containing only relational and behavioral aspects and does not create a legal duty to ensure joint utility.

Based on the experience of using legally binding partnering contracts in Britain and Denmark, and the explanation provided by the game theoretical example from the prisoner’s dilemma game, the following remarks should be taken into consideration:

Firstly, the principle of freedom of contract applies in all three countries. Thus, the choice of using a legally binding partnering contract is governed by the principle of freedom of contracts, and therefore it is up to the parties to choose a binding partnering contract. This can be effective in all three countries.

Secondly, the legally binding partnering contracts oblige the parties to fulfil the negotiated and agreed upon clauses containing their intentions to collaborate, joint optimize and share information, trust and responsibility.

Thirdly, from a game theoretical perspective, it is in all parties’ interest that all parties are required to fulfil the obligation of joint utility. This will minimize the risk of self-optimization. Thus, the binding contract will ensure that the parties will not end up in an inefficient Nash equilibrium because the parties have an obligation to negotiate and share the gains from a joint utility output.

To sum up, the legally binding partnering contract creates a legal rule guiding the parties towards the optimal transaction. As shown by the game theoretical perspectives, it is necessary to bind the parties legally to ensure joint utility. Otherwise, game theory has shown that it is too risky for the parties to joint-optimize and too tempting to self-optimize.

Furthermore, the International Partnering Institute has argued that it might be relevant to enforce binding partnering contracts also in the U.S. construction industry (Dyer, 2011,

at p. 7). Due to the above analysis, it is therefore recommended that the U.S. partnering contract regime should be changed to include a legally binding contract to ensure a formalization of the collaboration and to ensure joint utility.

As a supplement to the discussion on the binding versus the non-binding partnering contracts, the Australian construction industry also considers a binding partnering contract as a significant part of a positive output in partnering/alliance collaboration (Begg, 2003, Ross, 2009, Lahdenperä, 2014, at p. 48). In Australia, partnering contracts is called “alliance contracts”. The Australian partnering contract is defined as an alternative to the traditional construction contracts aiming at binding the parties to collaborate on common goals, positive incentives and open information (Ross, 2009).

”The concept of collective responsibility is fundamental to creating the commercial/legal foundation which has underpinned the success of alliancing in Australia. While a contract may have an alliance-like compensation regime (ie. open book, target cost with performance incentives) and may be referred to as an alliance, if the obligations of the contractor(s) remain distinct from those of the owner it is unlikely to create the kind of one-team “virtual organisation” that has been a key characteristic of most Australian alliances.” (Ross, 2009, at p. 4)

The Practitioners’ Guide to Alliancing is an example of a partnering construction alliance in Australia (Victorian Department of Treasury and Finance, 2010). This partnering guide defines a partnering alliance as a legally binding commercial/legal framework between an owner and the private parties aiming at collective sharing of risks, unanimous principle-based decision-making on all key project issues, alternative dispute solutions, and a management structure that reflects the purpose of the alliance the intentions of the relationship and the legal/commercial commitments (Ross, 2009). Thus, the partnering concept in the Australian construction industry supports the result from this article regarding the recommendation of a binding partnering contract.

7. Conclusion

This article has discussed the concept of partnering in the construction industry in the U.S., Britain and Denmark, and has compared the different contract law perspectives in the three countries. Based to the analysis above, one can conclude that it is an advantage for the partnering relationship that the partnering contract is legally binding, as seen in Britain and Denmark. In the U.S. however, a partnering agreement is a non-binding charter or letter of intent that includes a management strategy with the specific partnering principles.

This article has discussed the legal reasoning behind both the non-binding U.S. partnering agreement and the legally binding partnering contract used in Britain and Denmark. In Britain, the partnering contract was in the Egan report proposed to be a non-binding agreement as seen in the U.S., but this perspective was unsuccessful and thus not adopted by the British construction industry. In Denmark, the non-binding partnering agreement was never discussed. By the time the partnering concept was introduced in Denmark, the British construction industry was using the legally binding partnering contract concept, which then became the foundation of the Danish partnering regime. The partnering concept was introduced in the preparatory work of the Danish procurement act in 2001, and public contracts were supposed to be written and binding

in Denmark, which was why there was no legal basis for introducing a no-binding partnering agreement as in the U.S., Thus, from a historical and a contract law perspective, partnering in Britain and Denmark is similar, while opposite of the non-binding partnering regime in the U.S.,

The purpose of the partnering contract, however, is similar in all three countries. The aim of partnering is to change the contractual behavior from self-optimization to joint-optimization in the transaction. This is reflected in the contractual clauses in both the binding partnering contracts and the non-binding partnering agreements analyzed above. The non-binding U.S. partnering agreement will not void the binding construction contract, while the British and Danish partnering contracts bind the parties to joint-optimization of the delivery of the work and payment.

In addition, this article has analyzed the question of having a binding versus a non-binding contract from a game theoretical approach. It is argued in the article that from a game theoretical perspective, the partnering contract should be legally binding in order to minimize the risk of self-optimization. Furthermore, the International Partnering Institute has argued that it might be relevant to enforce binding partnering contracts also in the U.S. construction industry. Thus, the time might be right to adapt the legally binding partnering concept also in the U.S.

As shown by the above analyses, it is recommended that the U.S. construction industry consider changing the partnering regime from the existing non-binding partnering agreement to a legally binding partnering contract, similar to the British and Danish partnering concept and thus, formalize the collaboration through a binding contract. The legally binding partnering contract can ensure a legal obligation to fulfil the joint optimization and thus have a significant impact on the positive behavior of the parties and the joint benefit of the project.

From a practical perspective, this article encourages the managers of collaborative and relational contracts in general to formalize the collaboration through the binding contract in order to ensure joint optimization. Through the legal obligation to collaborate, the practical benefit from the binding partnering contract would be a legal instrument, leading the parties to a joint optimization behavior, seeking to avoid an inefficient Nash equilibrium and thus minimize the risk of self-optimization through the contract. Hence, the partnering contract can contribute to a more efficient collaboration, an improvement of the project and an increased output to all parties why the use of partnering contracts rather than the more frequently used traditional construction contracts should be prioritized.

This article has used a theoretical legal and game theory perspective to evaluate the binding versus the non-binding partnering contracts in Great Britain, the U.S. and Denmark. This legal and theoretical result could benefit from further research regarding practical and statistical analyses concerning the economic output of legally binding versus a non-binding partnering contract, in order to investigate to what extend the binding partnering contract will lead to better performance.

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End notes

¹ PPC2000 (Amended 2008), Association of Consultant Architects - ACA - and Trowers & Hamlins LLP, 2008, by Professor Mosey: <http://www.ppc2000.co.uk/documents/PPC08Taster.pdf>

² California Department of Transportation, Field Guide to Partnering, http://www.dot.ca.gov/hq/construc/partnering/documents/Field_Guide_to_Partnering_on_Caltrans_Construction_Projects_final.pdf

³ Danish Partnering Paradigm (DPP 2005) – The Danish Construction Industry Association (Dansk Byggeri, Danish Architects Association (Danske Arkitektvirksomheder), Association of Danish Engineers and TEKNIQ (Danske Ingeniører & TEKNIQ): BYG - Partnering i praksis, Vejledning i partnering, 2. Udgave, oktober 2005.

⁴ Acknowledgments: The author of this article would like to extend a sincere appreciation to ACA (Association of Consultant Architects) in Great Britain and Professor Mosey for the permission to quote the applied clauses from PPC2000 (amended in 2008) in this article. The author is very grateful for this opportunity and for the research based out come from this contractual data. Acknowledgements are also extended to the California Department of Transportation and The Danish Construction Industry for the available partnering data at the internet sites: http://www.dot.ca.gov/hq/construc/partnering/documents/Field_Guide_to_Partnering_on_Caltrans_Construction_Projects_final.pdf

And

http://www.frinet.dk/media/247093/partnering_i_praksis_2005.pdf

Without access to all three partnering contracts/agreements, this research could not have been completed. Every reference to the contractual documents is correctly cited in the article.

⁵ Marrewijk, Clegg, Pitsis & Veenswijk (2008/592) define an alliance in a public private partnership as a type of partnership that "are based on the idea that parties not only financially participate in the project but that they are also more or less interdependent, interacting on the basis of explicit rules that structure their relationship where each contributes different forms of intellectual and social capital." This article does not concerns public private partnerships but collaborative private partnering contracts. The definition is relevant for both public and private collaborative contracts.

⁶ Original quote: *Begrebet "partnering" anvendes om en samarbejdsform i et bygge- og anlægsprojekt, der er baseret på dialog, tillid, åbenhed og med tidlig inddragelse af alle parter. Projektet gennemføres under en fælles målsætning formuleret ved fælles aktiviteter og baseret på fælles økonomiske interesser).*

⁷ Danish procurement act, no. 450, June 7, 2001 (lov om indhentning af tilbud i bygge og anlægssektoren).

⁸ L 140, 2000/1, Forslag til lov om indhentning af tilbud i bygge- og anlægssektoren.

⁹ Preparatory work on the procurement act, no. L 140, 2000/1, (Forslag til lov om indhentning af tilbud i bygge- og anlægssektoren).

¹⁰ Public Order on Public Private Partnerships, partnering and key figures, no 1394, December 17, 2004 (Bekendtgørelse om anvendelse af offentlig-privat partnerskab (OPP), partnering og oplysninger svarende til nøgletal) now replaced with Public Order on quality, PPP and total cost in public construction, no 1179, October 4, 2013.

¹¹ This public order was in force from October 15, 2013.

¹² Public circular no. 9099, Marts 3, 2004.

¹³ Original quote: I et partnering samarbejde er det en fælles økonomisk interesse, at alle parter får tilgodeset sine egne økonomiske mål, og at ingen part søger at øge sit økonomiske resultat på bekostning af andre parter.

¹⁴ Original quote: Bygherreforeningen opfatter partnering som en samarbejdsform med tidlig inddragelse af alle parter kompetence. Partnerskabet etableres som minimum mellem bygherre, og rådgiver i projekteringen. Formålet med partnering er således primært en projektoptimering i program- og projektfasen, med henblik på skabe et bedre udgangspunkt for byggeprocessen og dermed et bedre produkt.

¹⁵ Tidsskrift for Bygge og Boligret: T:BB 2007.445 VBA, T:BB 2008.401 VBA and C-10480.

¹⁶ AB92, ABT 93 and ABR89.

¹⁷ <http://ing.dk/artikel/entrepenorerne-elsker-partnering-selv-om-det-giver-flere-byggefejl-103455>

¹⁸ <http://ing.dk/artikel/entrepenorerne-elsker-partnering-selv-om-det-giver-flere-byggefejl-103455>

¹⁹ Partnering Agreement between Northrop Grumman Corporation and United States Air Force Warner Robins Air Logistics Center Depot Maintenance Activity Group, August 15, 2000 Section 1.5. "Partnering Relationship.

²⁰ http://www.ppc2000.co.uk/ppc2000_benefits.html

²¹ <http://www.ppc2000.co.uk/pdfs/IntroductiontoTPC2005.pdf>

²² PPC2000, amended 2008, ACA standard Form of Contract for Project Partnering, Construction Excellence in the build environment, Construction Industry Council, ACA and Towers & Hamblins LLP, 2008, by Dr. David Mosey. In 2005 ACA developed another partnering contract called TPC2005 including a public party. David Mosey, Construction Law (2009) 20, 3, p. 23, 1st of April 2009.

²³ PPC2000, amended 2008, <http://www.ppc2000.co.uk/documents/PPC08Taster.pdf>

²⁴ Original quote: Aftalens parter forpligter sig til at handle i overensstemmelse med intentionerne i nærværende aftale. Det er således en afgørende forudsætning for realisering af den målsætning og de intentioner, der udspringer af den aftalte samarbejdsform, at parternes samarbejde bygger på tillid, fuld åbenhed og professionalisme."

²⁵ Original quote: Begrebet "partnering" anvendes om en samarbejdsform i et bygge- og anlægsprojekt, der er baseret på dialog, tillid og åbenhed og med tidlig inddragelse af alle parter. Projektet gennemføres under en fælles målsætning formuleret ved fælles aktiviteter og baseret på fælles økonomiske interesser

²⁶ Original quote: "... parternes adfærd søges ændret fra at være kontraktorienteret (fokuserer på suboptimering og egne rettigheder) til at være relationsbaseret (fokuserer på helhedsoptimering og samarbejde)..."

²⁷ Original quote: Der er fuld åbenhed om økonomien, og alle parter er medansvarlige for at sikre, at økonomien holdes indenfor budgetrammen og er forpligtet til at medvirke til at optimere økonomien med henblik på at opnå en øget indtjening/besparelse for alle parter.

²⁸ This article does not consider the economic influence of trust. In this regards, see the study performed by Wong, P., Cheung, S., & Ho, P., Contractor as Trust Initiator in Construction Partnering—Prisoner's Dilemma Perspective.

²⁹ Strategic alliances can be explained as a hybrid in a Williamson universe. See Williamson, Oliver E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: The Free Press and Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism - Firms, Markets, Relational Contracting*. New York, London, Toronto, Sydney, Singapore: The Free Press. If the transaction and the specificity and frequency call for a hybrid, a partnering contract could be a relevant legal tool, if the parties are interested in prioritizing positive elements and relational norms to improve the long-term transaction.

³⁰ Furthermore, section 5 states that: "Partnering is a voluntary organized process by which multiple stakeholders having shared interests perform as a team to achieve mutually beneficial goals. It is based on establishing those goals early in the project lifecycle..."

³¹ Original quote: Det er projektledelsens målsætning: at gennemføre projektet inden for budgetrammen med en for- bedret økonomi set i relation til kendte kontraktformer, at sikre kvalitet for pengene, at sikre projektets parter en sund forretning, at sikre, at projektets totaløkonomi tilgodeses (anlægs-, drifts- og vedligeholdelsesomkostninger)... Der er fuld åbenhed om økonomien, og alle parter er med ansvarlige for at sikre, at økonomien holdes inden for budgetrammen og er forpligtet til at medvirke til at optimere økonomien med henblik på at opnå en øget indtjening/besparelse for alle parter.

³² This article does not consider the economic fair share among the parties but will simply recommend using the theory behind initial investments and the theory on law and economic theory.

³³ Two people ("the prisoners") have been arrested with stolen goods. The prosecutor only has sufficient evidence to get them prosecuted and convicted for possession of stolen goods if one or both of them confess to burglary. If the prosecutor only prosecutes the prisoners for possession of stolen property, it will lead to a lower penalty than conviction for burglaries. The two prisoners are placed in isolation and cannot talk to each other. Each prisoner is visited by the prosecutor, and is offered the same deal. If one prisoner confesses and also gives evidence against the other prisoner; the first prisoner will go free, while the other prisoner will receive the maximum sentence of four years of imprisonment. If both prisoners confess, they will each be sentenced to three years of imprisonment for burglary. If neither confesses, then each prisoner will be imprisoned for half a year for possession of stolen goods.

³⁴ The numbers in the matrix show the parties utility of a given strategy. Utility is not equal to money, but shows the value of the strategy to each player. The Nash equilibrium occurs when the players (parties) at the same time make their best reply to the strategy choices of the other player (party). Thus, the Nash equilibrium is showing that pair of payoffs reflecting the strategy chosen by two rational players (parties).

³⁵ This also is a significant condition in order to reach the benefit from joint utility. If the parties do not share all relevant information with each other and cannot trust the other parties to reveal their information, self-optimization will occur at once. Full information will increase the possibility to cheat and self-optimize. This article does not include a discussion of the other significant clauses in the U.S., British and Danish partnering contracts, as for example the obligation to full information (open books and calculations, cost, payment, salary, discounts, savings, earnings, etc). It should be noted, that the higher degree of information, the larger is the possibility to achieve joint utility. Information also decreases moral hazard and adverse selection and the risk of hold up. Information is a key element to increase the output of the transaction. The more the legally bound parties are revealing the information regarding the transaction, the closer to joint utility the parties get. Steven Shavell, Contracts, The New Palgrave Dictionary of Economics and the Law, p. 433.