PUBLIC-PRIVATE PARTNERSHIP
A neglected option for minimal lifetime-costs and optimal quality

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Synopsis:
This final report examines the matter of neglecting Public-Private Partnerships in the Danish procurement and identifies the probable reasons behind it.

The topic was based on the assessment, which manifests that in spite of the advantages of PPPs, the application of the model has not spread as expectable since its introduction in 2004.

The report consists of an introductory outline of PPP’s history in Denmark; its present situation; description of its structure with comparison to other procurement models; and an analysis of the problem-causing factors with an inference. Proposal for improvements – based on the findings - and consequentially recommended initiatives, as well as a suggested method for implementation are also included. In conclusion, the report also comprises a perspective of the future work with consideration of the propositions.

The project work was based on qualitative information search from both Danish and foreign sources; coaching and guidance by individuals with experience in the field and interviews with public sector employees. The inferences and conclusions were made applying the theories from lectures at AAU and establishing hypotheses from own experience and guidance, as well as inspiration from selected books that are listed in the bibliography.

Besides its primary purpose – basis for evaluating the author’s education – the report also aims to inspire public and private sector stakeholders for utilizing PPP by drawing attention to options for improvements in the area.
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Preface

This report is the result of a project work conducted at Aalborg University on the final (4th) semester of Master’s degree in Civil Engineering with specialisation in Management in the building industry (Cand.Scient.Techn. i Byggeri og Anlæg med specialisering i Byggeledelse). The report has been completed in the period from 20th of September 2012 to 2nd of January 2013 under supervision of Associate Professor Erik Bejder in accordance and compliance with the programme’s current curriculum.

The above mentioned Master’s programme (CST-BL) is a two-year full time graduate course targeting Constructing Architects, BSc. Engineers and others with Bachelor’s degree in the Building and Construction Industry. Its profile covers all phases of construction from the idea of form and application for design, construction, management, operation and maintenance. In addition to purely technical disciplines CST-BL also includes organization, finance, project management, strategy, safety, logistics and information technology, etc. Thus both the totality of construction projects and companies in connection with the construction industry (e.g. entrepreneurs, investors, facility managers, etc.) are in focus.

The primary purpose of the report is to serve as a basis for evaluating the author’s education at Aalborg University from February 2011 to January 2013. Therefore the main target audience is the supervisor and examiner. Furthermore the document aims to inspire consulting partners and others in relation to the construction industry for utilizing Public-Private Partnership, as well as fellow students within the education programme as an optional supplement to the curriculum.

Acknowledgement

I hereby would like to express my sincere gratitude to Associate Professor Erik Bejder for his support and guidance throughout the production of this report. I would like to extend my appreciation to Christian Nielsen, Birte Ravn and Torben Michelsen for inspiration and advice during the analysis.

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I would like to express special thanks to my Family for their patience and encouragement, without which I could not have reached this point of successfully finishing my studies.
Abstrakt på Dansk


Offentlig-Privat Partnerskab er en forholdsvis ny samarbejdsform i Danmark, hvor en gruppe (konsortium) af private virksomheder gennem en kompleks samarbejdsaftale udfører design, konstruktion, samt drift og vedligeholdelse af faciliteter, institutioner og nødvendige redskaber til offentlige opgaver indbefattende privat kapital i finansiering af disse. I modsætning til det sædvanlige indkøb, er i tilfælde af OPP den private part – som bygger, vedligeholder og muligvis ejer aktivet i en længere periode (normalt min. 15-25 år) – stærkt motiveret i at minimere de samlede omkostninger ved at vælge såkaldte totaløkonomiske løsninger, der "betaler bedst" under ejendommens levetid. Det første OPP projekt i Danmark (Vildbjerg Skole) blev etableret i december 2004 og siden det (kun) har været 12 andre projekter af denne art begyndt til dags dato (altså rapportens færdiggørelse).

Regeringen har for nylig inkluderet forøgelse af offentlig-privat samarbejde i sin strategi og private investorer (f.eks. pensionskasser) har været klar til at investere milliarder i udvikling af offentlig infrastruktur. Trods ovennævnte, samt at de samlede økonomiske overvejelser tyder på, at det er en gavnlig model og lovgivningen foreskriver egnethedsurdering i alle tilfælde af indkøb til offentlige ejendomme eller aktiver, der anvendes ved delvis (minimum 50%) statsfinansierede institutioner, brug af OPP er stadigvæk ikke udbredt siden det første projekt blev etableret, når man sammenligner med værdien af transaktioner i det danske offentlige sektor i 2011. Den manglende udbredelse vurderes at være af stor betydning i lyset af, at den Danske statsbudget har været stramt igennem de seneste par år, som bl.a. gør at ressourcer til offentlige infrastrukturprojekter ganske ofte er genstand for kontroversiel diskussion (f.eks. Storstrømsbroen).


Nogle af de fundne barrierer/forhindringer trænger til foranstaltninger der skal træffes imod, andre har brug for tid til at aftage, men nogle af dem kan ikke ændres, hvilket gør at holdningen til disse er
nødt til at blive justeret og et paradigmeskift er nødvendig. Resultaterne af analysen og de anbefalede foranstaltninger medfører følgende initiativer, som foreslås at være gavnlige i den nuværende situation:

- Central enhed for OPP – En afdeling i KFST til at kontrollere og yde bistand i OPP-projekter, opretholde en erfaringsbank og standardisere/forenkle procedurer samt regler ifm. modellen.
- Projekt integration – Licitation for små projekter slået sammen som et stort, udført som OPP.
- Fælles finansiering – Finansiering af projektet fra både privat og offentlig kapital.
- OPP-egnede segmenter – I områder, som er generelt egnede til OPP, bør deponeringsregler afskaffes eller lempes på visse – velovervejede – betingelser og der skal udarbejdes langsigtede infrastrukturudviklingsplaner for at igangsætte flere projekter samtidig i disse segmenter.


Working methods

The theoretical foundation of this report is based on the outline topic – Public-Private Partnerships in Denmark that was chosen from a number of subjects proposed by the author, whereupon with inspiration from the supervisor it was developed into investigating the present matter – The neglect of PPPs in Denmark. The work continued with information search, meanwhile applying a hypothetical structure for “knowledge-production” (see Figure 0.1), which “incarnated” in continuous verification and consideration of the found data versus both “new” theories and those already existing in the author’s possession through educational background and experience.

![Figure 0.1 Knowledge-production [ADK, 2012] after [Andersen, 2008, s.25]](image)

For the research and assembling of information the focus was on collecting and using qualitative data in terms of “quality before quantity”. For information retrieval both Danish and foreign sources were used, which include educational material primarily from Aalborg University; professional literature within the fields Construction Management, Strategy, Contracting and Legislation; publications from legislative bodies and authorities; related editorials from scientific-, technological- and news media; law articles; as well as communiqués and publications from private companies. Further information was collected through guidance of the supervisor, coaching by experienced private sector employees and interviews (on phone or via e-mail) with representatives working for the public sector stakeholders.
The collected information was systematized and organized in a presumptively logical structure including comparison of PPP and other public procurement models, as well as inspecting the related legislation, the conformation of life cycle expenditures and the present circumstances. The systematized data resulted in a problem statement and referring questions that formed base for the following analysis. Sources of the problem – The neglect of PPPs – were critically analyzed from various aspects, using news articles; previously carried out surveys, statistics and reports; publications and considering the opinion of people working in the related fields.

As solution to the problem, a set of proposals have been made partly by setting up hypotheses, applying own experience and educational background, as well as inspiration and guidance from the supervisor. The realization of proposals were summarized in a number of suggested initiatives that draw attention to certain guidelines and principles and are recommended to be implemented following Kotter’s Change Implementation model.

Practical information

References in the report are indicated with basis on the Harvard method, e.g. [Fisker et al., 2004, p.205] including the author’s surname or publisher’s name (optionally abbreviated), year of publication, as well as page numbers optionally. Detailed information regarding the sources in the report's bibliography is organized alphabetically by the author’s or publisher’s name. A short review of resources is included in the bibliography.

Numbering of figures and tables is in relation to chapter and section numbers and is followed by reference to the original source. Enclosures (digitally enclosed educational material, articles, etc.) are referred to as [Enclosure XX] The author’s own figures and tables are indicated with reference [ADK, 2012]. Quotations (including translations) are denoted with “…….” and written in italic, with reference. Relevant detailed explanations are given in footnotes on the same page. Specific functions and designations as well as emphasized terms are written in italic, e.g. Dansk Byggeri, length of contract, etc.

Reader’s guide

The document consists of the report as hardcopy and enclosures on the appended CD, where the report itself is also available digitally. The author assumes that the reader is familiar with the Construction industry and the technical, financial, etc. terms in connection with it. The report is structured in a chapter form with sections and subsections shown in the table of contents. The division is the consequence of the work process of information retrieval and analysis and it is recommended to read the report as a whole – optionally using the enclosed material – in the given sequence. The chapters cannot be read separately, as they are “built upon” each other.
- The report begins with a short introductory outline of PPP, its history in Denmark and the present circumstances related to it.
- Chapter 2 describes public procurement methods and relevant legislation as well as the public-private collaboration forms.
- Chapter 3 presents Public-Private Partnership, including the structure of the model and the related legislative and financial aspects.
- Chapter 4 is a short review of related Danish state finances plus problem statement with questions and delimitation.
- Chapter 5 comprises the analysis of the problem’s origins.
- Chapter 6 is a summary of the findings and outline of the inference.
- Chapter 7 exhibits possible solutions and suggested initiatives, as well as recommendation for implementing them
- The report ends in a conclusion and puts the findings in perspective.

The structure of the report is illustrated in Figure 0.2 and shows consistency of the workflow and the methods used throughout the various chapters.
Figure 0.2 Report structure [ADK, 2012]
PART I

1. Introduction

Public-Private Partnership (PPP), with its roots in the early 1990’s in the United Kingdom, has by now become a very popular method of public procurement contracting both overseas and in the European Union. It is, however, a relatively new co-operational form between the public and the private sector in Denmark [Naundrup Olesen, 2011, p.14]. PPP is a new approach of providing communal service, where the private sector – through a complex co-operation agreement – is involved in financing, design, construction, operation and maintenance (O&M) of facilities, institutions and tools necessary to perform public tasks [Wikipedia.org-01, 2012].

In total 13 PPP projects have been established in Denmark until today [KFST, 2012, p.21]. The first one – a public school in Vildbjerg, commissioned by Trehøje Municipality on a 30 year contract – started on the 16th of December 2005 [Ftf.dk-01, 2005], preceded by a whole year of prequalification- and competitive negotiation rounds, and inaugurated on the 15th of December 2006 [Enclosure 01, p.33]. The first State-commissioned PPP project – new warehouses for The State Archives – began on the 1st of July 2007 and was handed over two years later [Kum.dk-01, 2007].

Even though some projects of this kind have already been carried out, PPP is still in its infancy in Denmark. It is implied by the above mentioned, as well as the fact, that private pension funds – while being ready to invest billions for development in Denmark [UgebrevetA4.dk-01, 2012] – have not used much of their fortune on Danish communal projects, but for example financing the construction of a motorway in Mexico [Rambøll-01, 2012, p.20]. Until recently the Danish state has been reluctant in facilitating, and the municipalities were missing the incentive to foster use of PPP, partly because of the so-called Deposit-requirement (Deponeringskrav₁) [Forsikringogpension.dk-01, 2011] and the bureaucracy associated with the procedures [Kritiskdebat.dk-01, 2011].

But there is “movement” on the case: In 2011 the government has published its strategy to enhance public-private co-operation [Enclosure 02], and later that year again expressed its wish for increased collaboration between the public and private sector [Enclosure 03, p.14]. Furthermore in March 2012 the Competition and Consumer Authority (Konkurrence- og Forbrugerstyrelsen – KFST) introduced a standard model for future PPP projects [Rambøll-01, 2012, p.22] and dedicated a section of their website – including a contact point for relevant questions – to this kind of procurement process [Kfst.dk-01, 2012]. In addition, the Ministry of Finance (Finansministeriet) established a deposit relief fund (deponeringsfritagelsespulje) for 2013, where it is possible to apply for dispensation or exemption from the aforementioned Deposit-requirement [Enclosure 04, p.15].

The above may be very essential in the light of that the Danish state budget is tight these days [Kl.dk-01, 2012 & UgebrevetA4.dk-01, 2012], therefore the resources for public infrastructure

₁ A requirement for depositing capital equal to the amount of investment. Explained on page 21.
developments are quite frequently subject to dispute (e.g. a recent and important one: Storstrøm bridge in South-Zealand [Ing.dk-01, 2012 & Transportmagasinet.dk-01, 2012]). Besides, many people are “positive about private firms taking responsibility for construction, maintenance and financing public buildings and roads” [JP-01, 2012, p.5]. A recent evaluation of already existing PPPs [KFST, 2012] supports the attitude.

Contrary to the usual public procurement process, in case of PPP the consortium\(^2\) (typically a group of designer, contractor, facility manager and financier) – that builds, maintains and possibly owns the property for a longer period of time (usually min. 15-25 years) – is strongly interested in minimizing the total costs [Kfst.dk-02, 2012]. Accordingly the contractor is motivated to choose solutions that “pay best” during the property’s lifetime and at the same time to take care of Preventive Maintenance.\(^3\)

In order to see what makes PPP a modern and advantageous method, the other ways of procurement have to be compared as well.

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\(^2\) “an association of two or more individuals, companies, organizations or governments (or any combination of these entities) with the objective of participating in a common activity or pooling their resources for achieving a common goal.” [Wikipedia.org-03, 2012]

\(^3\) “Maintenance of equipment or systems before fault occurs.” [Wikipedia.org-02, 2012]
2. Procurement with public & private co-operation

When a need for a public infrastructure development arises, after having passed the budget for it, the relevant authority or entity (State, Region, Municipality, etc.) invites companies to give bids on a tender or – in a limited number of cases (e.g. urgent cases) – chooses the contractor itself [Kfst.dk-03, 2012]. Thereby the contracting authority becomes a client, which – after the tender procedure – goes into contract with a firm or a consortium. There are several different ways of tendering and contracting available for public bodies in Denmark, regulated by both EU-directives and Danish tender law, each having their own limitations and procedures. The following section describes in general the legal background of conventional public procurement and the different forms of it.

2.1 Legislation

As a member of the European Union, Denmark’s legal system is harmonized with the common EU legislation. Denmark was the first member state that put EU’s Utility Company Directive (Forsyningsvirksomhedsdirektivet) and Procurement (or Public Sector) Directive (Udbudsdirektivet) into practice, entering into force on 1st of January 2005. As part of the law-harmonization a new Act on Tendering Procedures (Tilbudsloven) was passed and entered into force on 1st of September 2005, and is now based on the above mentioned Directives and the EU Treaty [Kfst.dk-04, 2006]

The Danish legislation adopted – among others – the following four basic principles in connection with public tenders:

- **Equal treatment principle** (Ligebehandlingsprincipippet) – Bidders treated equally in all matters.
- **Transparency principle** (Gennemsigtighedsprincipippet) – The bidding process has to be transparent in all conditions
- **Proportionality principle** (Proportionalitetsprincipippet) – Every measure to be taken must be appropriate, necessary and proportionate to the pursued objective. E.g. an authority may not impose requirements for a provider that goes beyond what is necessary and proportionate in relation to the target.
- **Mutual recognition principle** (Gensidig anerkendelse principippet) – “A product lawfully marketed in one Member State and not subject to Union harmonisation should be allowed to be marketed in any other Member State, even when the product does not fully comply with the technical rules of the Member State of destination.” [Ec.europa.eu-01, 2012]

If the budgeted value of a contract goes equal to or beyond the relevant **EU threshold[^4]**, the above mentioned EU-Directives have to be applied. Otherwise the Danish Act on Tendering Procedures can be used. The client has to assess whether the bidder is entitled to receive the contract before evaluating the bid by verifying whether the requirements (technically and financially eligible), advised in the **tender notice** (Udbudsbekendtgørelse), are met. Then the bid is checked, whether it meets the minimum criteria listed in the tender notice or specifications. To commence the tender

[^4]: A set of limit values determined by the European Union for public procurement processes
procedure, certain information about the contract has to be published. The notice also has to state the awarding criteria: lowest bid or economically most advantageous bid.

2.1.1 Utility Company Directive (EU 2004/17/EF)
This directive applies when the contracting authorities invite to tender for development of gas, heating, electricity, water, transport or postal services infrastructure. After publishing information about the contract, the client has the following procedures available for tender invitation according to this directive [Kfst.dk-03, 2012 & Enclosure 05, p.2]:

- **Open procedure** – Published in form of a tender notice in the *Tenders Electronic Daily* (TED). All interested companies can give bids within the deadlines of 40 to 52 days (depending on several aspects).
- **Restricted procedure** – Published in TED. Prequalifying bidders that are technically and financially eligible. Deadlines are 65 to 77 days and there are two rounds.
- **Dynamic Purchasing System** – A fully electronic process for making commonly used purchases that are generally available on the market. The system has a limited duration and is accessible to any contractor that meets the requirements in the specifications.
- **Design contest** – A competition, where the client invites entry of plans and designs that are judged by a rating committee. Consequently the contracting authority usually obtains ownership of the designs.

Generally the above must be used by the contracting authority, but under extraordinary situations the so-called **Negotiated procedure** may be applied. In the utilities sector further two tender forms – **Qualification Systems** and **Prior Information Notice** – can be used.

- **Negotiated procedure** – In this type of procedure either a notice has to be advertised in TED – to find possible candidates – or the contracting authority is permitted to choose by its own. The client selects potential contractor(s) and negotiates conditions with them omitting formal tendering procedure.
- **Qualification Systems** – This tender form can be applied as the first stage of **Restricted** or **Negotiated** procedure and commenced with a notice in TED. It is used to qualify suppliers for purchases of certain type for a specific duration. Contracts longer than three years have to be published every year. Qualified suppliers are added to a list where the client can choose who to enter into contract with.
- **Prior Information Notice** – When a contract value exceeds a certain threshold a **Prior Information Notice** (PIN) has to be issued. This allows contractors to prepare for bidding before the procurement process officially starts, thereby reducing the time needed for the tender. PIN can substitute notices for **Negotiated** or **Restricted tender**.

5 'is the online version of the ‘Supplement to the Official Journal of the European Union’, dedicated to European public procurement’ [Ted.europa.eu-01, 2012]
2.1.2 Public Sector Directive (EU 2004/18/EF)

The Procurement Directive applies, when the contracting authority invites to tender in connection with procurement of goods, services and construction, which are not covered by the Utility Company Directive. Apart from the aforementioned tender forms, excluding the Qualification Systems and PIN, the following additional procedures are available for inviting contractors in compliance with the Procurement Directive:

- Competitive Dialogue process – Applied for contracts with high complexity, where the client is not able to objectively define the technical/legal/financial conditions. It is also published in TED and any contractor may request participation, but only a limited number of them are invited to the dialogue to develop one or more feasible solutions dealing with the requirements/needs of client. Subsequent to the dialogue the selected companies can submit a tender.

- Accelerated procedure – In exceptional cases the client may shorten the time limits (e.g. where it is urgent and not possible to feasibly keep deadlines of Restricted or Negotiated procedure).

More detailed information about the application of EU- directives in Denmark is available in [Enclosure 06] in Danish.

2.1.3 Act on Tendering Procedures

If the budgeted value of a public work contract is below the EU threshold, thus not being covered by the EU-directives, the Danish Act on Tendering Procedures for Public Work Contracts constitutes as regulation for the procurement. Nevertheless the EC-Treaty principles – about equal treatment, transparency, proportionality and mutual recognition – still pertain. The Act provides more flexible procurement methods and also covers contracts for works with public subsidy (including private contracts). It consists of two sections that apply for construction and purchases of goods or services, and allows use of the negotiation. The following tender forms are possible [Enclosure 05, p.9]:

- Public tender – Published in form of advertisement in the media (printed or electronic), open for everyone and anyone can submit offer. There is no minimum for deadline (reasonable time).

- Limited tender – Can be carried out with or without preceding pre-qualification rounds.

With pre-qualification it is published in the media and has two phases: checking the market for firms that want to be pre-qualified; afterwards the qualified companies receive the actual tender documents, if it is not obtainable from the internet. Deadline is minimum 15 days and anyone can apply, but documentation of technical and financial capability is required. The notice must include whether negotiation would be possible.

In case of Limited tender without pre-qualification (Directly invited tender) the client directly contacts a number of potential tenderers. There is no minimum for deadline, but no less than 5 companies and at least one non-local have to be invited, plus the client has to specify maximum how many companies would be invited.
In both cases the invitation must state a fixed time and place for opening the tenders where the tenderers are entitled to be present.

- “Private” contracting (Underhåndsbud) – If the total contract sum is budgeted to be under 3 million Danish Kroner (DKK) excluding VAT, the client is allowed to directly invite maximum three contractors (and a fourth non-local one) to submit bids. Negotiation is allowed and the time of submitting the bids does not have to be the same for all. In exceptional situations projects over the value of 3 million DKK can also be subject to Private tender. For works with budgeted value under 300.000 DKK it is not required to invite more than one contractor to submit bid.

When the tender is based on the Act on Tendering Procedures, the client is allowed to negotiate depending on the following award criteria [Enclosure 07, p.42]:

- **Lowest bid** – negotiation only with the lowest bidder
- **Economically most advantageous** – negotiation with the top three best bids

More detailed information about the Act on Tendering Procedures can be found in [Enclosure 07].

### 2.1.4 Threshold values

The European Union determines threshold values for public projects and other projects with communal or state subsidy, which constitute basis for whether to apply the EU-directives or the Danish Act as regulation for procurement. These threshold values exclude VAT and are adjusted every two years (latest in 2011).

The present thresholds are (example):

<table>
<thead>
<tr>
<th>Area</th>
<th>Client</th>
<th>State</th>
<th>Other public authorities</th>
<th>Utility companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods and Services</td>
<td>130.000 EUR or 968.383 DKK</td>
<td>200.000 EUR or 1.489.820 DKK</td>
<td>400.000 EUR or 2.979.640 DKK</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>5.000.000 EUR or 37.245.500 DKK</td>
<td>5.000.000 EUR or 37.245.500 DKK</td>
<td>5.000.000 EUR or 37.245.500 DKK</td>
<td></td>
</tr>
</tbody>
</table>

*Table 2.1.1 – Thresholds for 2012-13 [Kfst.dk-05, 2011 & Ec.europa.eu-02, 2011]*
2.2 Public-private collaboration

The aim of co-operation between public authorities and private enterprises is to guarantee high quality of supplies and permanence as well as continual development of service and workflow. Therefore the collaboration has to be based on dialogue and characterized by reciprocity, so to solve emerging uncertainties and prevent or treat possible conflicts through open consensus.

Every year billions are spent on construction, operation and maintenance of public buildings, therefore it is important to ensure that the three phases all together represent a good investment. Since operation and maintenance constitute the major part of costs in a building’s lifetime, much capital can be saved, if they were well considered during the planning and construction phase (“cheaper to prevent and preserve than to repair and renovate”). This total-economic mentality implies saving on the long run, also via getting tasks done by professionals in a competitive environment. Competition motivates focus on quality and efficient utilization of resources. As an initiative, the Agreement on municipal finances for 2011 calls for increased motivation for solving assignments as efficiently and cheap as possible by sustaining competition [Enclosure 08, p.8 & 21], while communal economy is getting tightened.

2.2.1 Total-economic mentality

The basis of total-economic mentality is that all life stages of an asset have to be examined as a whole together. In this context the operation phase represents 60-80 percent of the total costs [EBST, 2009, p.8]. Originally only the construction costs have been considered while making decisions about what and how to build, which – because of high operation and maintenance costs – resulted in expensive overall economy of the properties. A cheap solution can become an expensive one on the whole life cycle due to the necessary maintenance to preserve its quality. Contrary, higher production/construction costs can lead to and be outbalanced by significantly lower O&M expenditures (See Figure 2.2.1)

![Figure 2.2.1 – Comparison of overall costs [ADK, 2012] after [EBST, 2009, p.8]](image-url)
2.3 Forms of collaboration

Public-private collaboration is an *umbrella term* for several various co-operation forms (see Figure 2.3.1), where private firms are involved in solving tasks that are financed by the public sector. The common in these co-operation forms is that the parties express their demands and needs, which often results in a more seamless construction or operation process. It however requires will and a number of skills from both sides. The following describes the public-financed forms of co-operation between public and private sector in Denmark.

![Diagram of collaboration forms](image)

*Figure 2.3.1 – Public-private co-operational forms with public financing [ADK, 2012] after [Enclosure 01, p.10]*

### 2.3.1 Classic tender and contract

It is the most common form of competitive tendering for municipal projects [Kfst.dk-06, 2012] with the main purpose of testing the market with regard to price and quality. If the case is *reverse tender*, the client invites bids with a fixed price, so the offered performance (amounts and qualities) is in the focus for awarding the contract (economically most advantageous bid) – The winner is the one, who offers most for the same price.

The basis of classic tendering is well prepared documents with detailed information about the client’s requirements optionally about both operational and developmental demands. Potential contractors submit bids and the client chooses the winner by the *award criteria* described in the tender documents. Afterwards they (client and tender winner) sign the contract that stipulates the conditions for the specific objects to be delivered or services to be provided, the quality of performance, the deadline and the payment scheme. This results in a pure contractual relation between client and supplier, where it is ensured that none of the parties involved defrauds the other. Optionally the client can give instructions on how the work has to be carried out, however it can create a rigid co-operation (“I do what I am paid for.”) and prevent innovation. Classic contracting

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6 A common name to cover a wide category of functions
can represent Design, Building, Operation, and Maintenance of public property or some of these mixed (see Figure 2.3.2):

- Build – Trade contract (Fagentreprise) or Main contract (Hovedentreprise) for construction of public property in accordance with the plans and specifications provided by the client or its representative (architect, engineer, consultant)
- Operate and/or Maintain – Service contract for operating and/or maintaining public property according to the Operation & Maintenance (O&M) manual and possible requirements from client
- Design-Build – Turnkey contract (Totalentreprise) for designing and construction of public property based on the concept or outline proposal

![Diagram of Classic contracting organization charts](image-url)

*Figure 2.3.2 – Classic contracting organization charts [ADK, 2012]*
The usual tender forms for these types of contracts are Open/Public and Restricted/Limited tender, and they are particularly suitable, where the tasks are unambiguous and can be precisely described in advance. Nowadays it is becoming more common that the client does not have requirements about how the work should be done, but “only” describes the desired result as a function demand (e.g. cleaning a sports hall – it has to be clean, but does not matter how it is cleaned). Thereby the responsibility – with the collateral risk – is on the contractor that becomes interested in innovation for the sake of more effective and cheaper solutions [DI, 2011, p.46]. As an example for a typical project within this tendering and contracting form – Cleaning of public buildings in Næstved [DI, 2011, p.47:

“Næstved Municipality earns money by letting private companies clean

A tender on cleaning and window-polishing in 175 schools, kindergartens, elderly homes and other municipal buildings ended with Næstved Municipality achieving 20 million DKK in savings.

The municipality earlier budgeted 56 million for cleaning tasks, but through a tender private companies managed to do it for 36 million. This means saving of 35,7 %

- I am very satisfied that the municipality is saving money. Vi received some really good bids. – said Henning Jensen major to Sjællandske magazin.

Næstved Municipality, just like other municipalities, is in search of savings that can benefit the tight economy. As a prolongation of municipal budget deal for 2010 it has been decided to extend the competition on a number of new tasks, including IT operations, and road & park authority.”

2.3.2 Partnering
The concept of partnering represents a more flexible collaboration (than classic contract management) between public authorities and private companies, where the focal point is that the parties know each other’s competences and develop common goals, which are noted in a partnering agreement. This agreement – as a supplement to the contract – establishes a framework for constructive interaction between the parties and describes the tools that support joint development of optimal solutions for the given goals. Open dialogue (inter alia open accounting), mutual confidence and economic incentive are important aspects in partnering, and it requires more comprehensive preparation (value-based planning/management, analysis) and greater commitment from both sides. There is a distinction between service partnering and partnering in construction (see Figure 2.3.3):
- Partnering in construction – An authority, a consultant, an architect, an engineer and a construction company enter into partnering for construction of public property with the common goals e.g. satisfied users, complying with the budget and deadlines, preventing conflicts by maintaining a high level of information flow.

- Service partnership – A public institution and a private facility manager enter into partnering agreement on operating and/or maintaining a public property with continual exchange of information about expectations and improvements. The main goal is to involve the facility manager in a binding assignment of improving and developing municipal tasks based on generally specified requirements about performance and results.

![Partnering in construction and Service partnership](image)

*Figure 2.3.3 – Partnering organization charts [ADK, 2012]*

The purpose of entering into a partnering agreement is to ensure reliability and facilitate/force innovation as well as development in the workflow, last but not least trigger a win-win situation. When entering a partnership, the contract distributes the risks and benefits equally during its usual 4-5 years period. Experience shows that projects carried out with partnering saved capital, created better working environment and the deliveries were on or before time, and in higher quality than traditional projects [Busk, 2003, p.11 and Bennett & Jayes, 1998, p.10].

An example for partnering in construction [Enclosure 10]:

> “Hvidovre Municipality's historically largest construction project, elderly home Krogstenshave, was conducted in partnering with NCC as a contractor. The building case on its half way was threatened by the market’s unexpected price increases, but kept the budget with close follow-up on the economy and a high level of communication about all important decisions and risks.”
Hvidovre Municipality entered into partnering with COWI (consultant), Friis & Moltke (architect), Rambøll (engineer) and NCC for the renovation of Krogstenshave. The partnership’s success criteria were to avoid controversies, high level of information flow in the team and towards the inhabitants and staff, high quality and aesthetic level and effective process within the budget. The project was conducted from 2004 to 2008 with many challenges in the process (e.g large price increase), but close dialogue with and economic goodwill from the partners resulted in reconsidering the choice of structural solutions and materials, thereby the budget could be kept without controversies.

2.3.3 “Combined” contracting (Samlet udbud, PPP-light)
Combined contracting is indeed a somewhat new co-operational form that integrates planning, design, construction operation and maintenance to optimize the overall budget in terms of the total-economic mentality. It is the typical model for the Design-Build-Operate-Maintain (DBOM) contract form, which unites the usually disparate Turnkey and Service contract components within one agreement, while financing and ownership is the public part’s responsibility (therefore also called PPP-light). The starting point is a partnering agreement between the client, consultant(s), contractor and facility manager, which describes the parties’ responsibility areas. The agreement includes a Turnkey and a Service contract (see Figure 2.3.4) or – if contractor and facility manager is the same firm – one comprehensive contract, which definitively set out the conditions for the partnership.

This co-operational form has a usual length of up to 15 years [Enclosure 11, p.5], and requires well prepared output-based (result oriented) demand specifications, which means a great load of work (because of the long time scale) and strong focus on dialog between the parties (including the users’ representative) already in the early process. The more comprehensive and detailed demand specifications provided, the easier contractors can assemble an optimal solution using each others'
and own competences. All the related costs – that can emerge throughout the years of contract – are represented in the bids, motivating the tenderers to work out such (possibly innovative) solutions during planning and design that minimize expenditures in connection with operation and maintenance. Combined contracting is advantageous to use for projects that have a budget of 10 million DKK or more [Enclosure 11, p.5] and the unusually big costs appear at an early stage (e.g. use of better – and more expensive – materials), while they “yield” on long term. So a well-considered choice of durable materials and properly functioning design (e.g. simple to clean) results in relieving the burden of contractor’s responsibilities (lower O&M costs) and sustained quality of the property – contributing to client satisfaction – over the years.

The award criterion in tendering for combined contract is the economically most advantageous solution for the whole period. According to § 6 of Danish Competition Law “It is forbidden for companies, etc. to enter into agreements which directly or indirectly have the aim or effect of restricting competition.” [Retsinformation.dk -01, 2010]. As said by tendering directives a public contract should not be longer than 5 years [Enclosure 06, p.144]. Otherwise it has to be justified with explanation about economical and/or technical circumstances. Therefore the client has to decide what length of contract creates the largest incentive for finding the cheapest total-economic solution, considering possible savings on operation, lifetime of most important components, etc. In any case an extension of the maintenance-guarantee period is required from the regular 5 years to actual contract length (up to 15 years).

An example on combined contract [Enclosure 12]:

“Gribskov Municipality has built a day care centre and 22 residences for the disabled in a combined contract for construction, operation and maintenance. The construction was budgeted at a total of 26 million DKK. The municipality signed only one contract with one firm, which – among other things – won the tender because they demonstrated skills in cooperation, project and process management.

An example of an innovative solution in relation to the buildings’ function is that it has common bath/water facilities, which both user groups can take advantage of. In addition, the users’ needs and desires become involved early in the process.”

Involving the users early in the process has resulted in increasing the size of living rooms and decreasing the size of bedrooms in some of the disabled-homes – significantly differing from the original proposal – because it was better suited to the needs of future inhabitants. An example of the total-economic mentality is that more expensive windows have been chosen, but in return they are almost maintenance-free.
2.3.4 Public-private company (Lov 548)

In compliance with Danish Legislation nr. 548 [Retsinformation.dk-02, 2006] municipalities have the possibility to establish public-private joint companies for selling products or providing service, which are based on municipal or regional knowledge, but have not been previously assigned to private firms. The bottom line in this co-operational form is to provide public knowhow on private conditions by jointly utilizing the expertises of the two sides. According to the law, minimum 25 percent of the capital in the company has to be private and sales to private sector can be maximum 25 percent averagely over 3 years. It is, however, possible to get exemption, if the sales limit is exceeded because of export [DI, 2011, p.50]. An exemplary case of Public-Private company [DI, 2011, p.51]:

“Joint company cooks in Odder

Since 2006, the municipal food service in Odder has been run as a joint venture between the municipality and Danske Madhus. The municipality owns 40 percent of the company, while Danske Madhus owns 60 percent. As part of the creation of the joint company 21 employees, who had previously been in charge of the services at the municipality, went over to new company.

The municipality decided to establish a joint company from a political desire to make the preparation of food in the municipality more effective and retain political control of the area. It has been clearly successful.

- When a private partner is involved in communal business, it is natural that all work is reviewed and optimized. This means that with the availability of the job we have achieved budget security in the area – there is control over the meals and diet composition, and the users are satisfied with the quality of the food, says purchasing manager Jan Møller from Odder.

The contract between the company and the municipality determines what food and delivery may cost. The price cannot be changed during the period of the contract. If the company makes a profit when the year is over, it is distributed among the owners. Conversely, if the company has a deficit, it is its own responsibility to get the deficit covered.”

Contract length of this constellation is usually 5-8 years, depending on the task(s) but can be longer, if the prospects for development require it. The common interest is generally appealing from a political viewpoint, where this model is considered to be a better possibility to outsourcing public values, but still hold on to decision making. As mentioned above, this co-operational form already has private finances involved (see also Figure 2.3.1 on page 22), therefore can be regarded as some kind of transition between public-financed and the new PPP contracting.
3. Public-Private Partnership (PPP)

The financing of public investments is theoretically conceivable from entirely public sources or purely private sources, and also the combination of the two (mixed funding). It has become a more and more applied method in EU member states over the past two decades that the public developments and their financing are carried out by public and private sector jointly, sharing tasks, risks and costs. Developments accomplished under this kind of agreements are called Public Private Partnerships.

With PPP, investments are not funded from the state/municipal budget, but their financial burden and associated risks within certain limits are “outsourced” to private investors and their business partners (usually a consortium). The costs and a part of the risks are the investor’s (the consortium’s) responsibility as well as the ownership, and the public stakeholder pays a fee for using the property, which fee is obviously higher than the costs of operation and maintenance. Thus the public budget is just indirectly influenced by O&M expenditures, and the financial burden appears as a payment obligation distributed on a 5-30 years period instead of a one-off large sum.

3.1 The idea about PPP

Establishment of the PPP model can be originated inter alia in the rising influence of EU Convergence Criteria\(^7\) [Enclosure 13, p.9] that limits the amount of public debt to 60 percent of GDP and the annual government deficit to 3 percent, tightening the resources for infrastructure investments. Authorities, which want/need to invest on public infrastructure developments, conventionally have to apply for funds from the state administration, government or municipalities. PPP “balances” this weakness by taking advantage of private capital for financing investments that would originally be public duty.

Another motive to institute PPP is that the public sector has also increasingly begun to assess and consider cost-effectiveness by comparing the costs of traditional purchasing of equipment or property (one-off large incurring expenditure) with a long term “lease subscription” (smaller future cash-flow) on the basis of Value for Money principle. Since expenditures are compared, the public stakeholder will choose that solution, which – with the same conditions and overall content – can be attained for lower total costs during its whole planned lifetime.

The “nucleus” of PPP is being represented by the Design-Build-Finance-Operate-Maintain-Transfer (DBFOMT) approach that creates the equilibrium in risks taken by and combines the strong competences of the stakeholders (public and private). It aims at having the part, which is best to predict and handle a specific “hazard”, to be also responsible for it. For example the public part could take responsibility for the risk of natural disaster (force majeure that cannot be insured) and

\(^7\) “The criteria for European Union member states to enter the third stage of European Economic and Monetary Union (EMU) and adopt the euro as their currency.” [Wikipedia.org-04, 2012]
the resulting delay of construction in case of building a motorway, since the private part cannot predict how it would influence the works. Otherwise the private part would have to include a certain extra cost (insurance) in the contract budget, so the public pays for something that might not generate returns. The DBFOMT approach presumes that the private part stands for all the life-phases of the asset and contrary to the other models – because of financing it – owns it until the end of the contract, when ownership and responsibilities are transferred to the public stakeholder (see Figure 3.1.1). It strongly motivates the contracting consortium to consider the processes from a total-economic mentality perspective, since it is possible to save capital up to 30 percent [Cowi.dk-01, 2010].

![Figure 3.1.1 – Co-operational forms [ADK, 2012] after [Enclosure 01, p.10]](https://example.com/figure3.1.1.png)

3.1.1 Total-economic considerations

An investment is considered on basis of an evaluation of how long it will take to return via the savings that are achieved by lower O&M expenditures, and whether this time is shorter than the asset’s lifetime. Alternative solutions can easily be compared with total-economic assessment, but it is important to apply the same fixed period of time for all options. This fixed time period is called the investment life cycle and the associated overall costs are called life cycle cost. The total-economic assessment consists of several steps and distinguishes between various classes of expenditures (see Figure 3.1.2), that all have to be considered for estimating the future costs for the asset’s whole life cycle. [EBST, 2009, p.9-10]
The cost of construction and other incurring future expenditures have to be determined, and discounted all back to present value, adding up to the life cycle cost. Determining the expected incurring future costs can be very complicated and time consuming, but the calculation gives an idea of how much the present value of the whole investment is and may be basis for comparison of alternatives. Then – if relevant – the client may estimate the annual cost effects of various alternatives by distributing the life cycle cost to average annuity.

In traditional contracting the costs are reimbursed by the time the construction is finished and the asset is handed over, while in PPP the public client begins to pay – a predetermined fee – for the “service” afterwards, when the property is operational. Comparing the two models, it becomes obvious that in case of traditional contracting there is chance for the client (the public authority) to exceed the planned budget both during the construction and the operation phase (see Figure 3.1.3) by bearing the risk for defects and delays. On the contrary, with a PPP contract the client has a permanent budget that is based on the settled yearly or monthly fix payment (for correctly and on-
time delivered agreed performance), the risks are on the contractor’s shoulder, and the quality is also significantly better maintained during life cycle (see Figure 3.1.3).

![Graph comparison of traditional and PPP models](image)

*Figure 3.1.3 – Comparison of traditional and PPP model [ADK, 2012] after [EBST, 2009]*

It is important to mention that the transaction costs in connection with PPP projects – as a consequence of the complexity with their tendering, organization and construction – are very high. The client sometimes compensates those tenderers, who were not awarded the contract – if so
announced in the tender – as a motive to submit bids. But this reimbursement seldom covers all the expenses. Therefore it is relevant to consider whether the benefits of a PPP project are high enough – typically with a construction cost of over 100 million DKK [Enclosure 18, p.1] – to outweigh its transaction costs

3.2 Legislation in connection with PPP
According to Danish Legal Notice nr. 1394 of 17-12-2004 [Enclosure 15, p.1] a client has to systematically evaluate, whether a construction task should be carried out as a PPP, if it concerns a public property or an asset to be used by institutions that receive at least 50 percent of their operating budget from the state.

3.2.1 Tender
Since PPPs are based on complex projects, the relevant tendering form is the *competitive dialogue process* with pre-qualification. Although the announcement is public, it means that only a limited amount of enterprises – those, which meet the criteria determined on basis of the above mentioned legal notice – would be involved in concept development and the following dialogue. Under the competitive dialogue – through numerous meetings – the concept gets fully developed/prepared for tender and in the end PPP-consortiums (formed by attending enterprises) are invited to submit their final bids (“best and final offer”). The award criterion in this case has to be the *economically most advantageous* bid [Enclosure 06, p.80], based on the total-economic considerations, where the requirements are result/output oriented (describing rather what functions the asset has to provide, than detailing the solution).

3.2.2 Deposit regulation
An entirely private-financed PPP project can be comprehended similar to a long term leasing agreement with service included – the public client “rents” the asset (whose construction was financed by a private body) for a period of time and finally buys it (depending on contract). In municipal context these “leasing agreements” – thereby the PPP projects – are generally perceived as loans, since they are to substitute loan-financed municipal or regional construction expenditures [DI, 2011, p.53]. Basically, municipalities or regions cannot take loans for such purposes, but have to deposit capital (on a bank account or as bonds) equal to the sum of construction, so no projects – for which the public doesn’t have the necessary budget – are carried out. Depositing the capital happens step by step according to the accumulated expenditures on the different construction stages, which can be documented by the interim account statements. The capital is then either released, if and when the client pays the consortium for the construction at handover (client becomes owner), or remains deposited for 10 years and gets released over 15 years [Enclosure 16, p.22], if ownership is not transferred at inauguration.

There is, however, possibility for dispensation partly or totally via a deposit relief fund by applying to the Ministry of Economy and Interior. For example, in the *Agreement on regional finances for 2013*
the mentioned relief fund is established with 300 million DKK in order to promote the use of PPP [Enclosure 04, p.15]. The aim of the deposit regulation is to prevent choice of PPP on basis of the opportunity of financing projects that otherwise would not be possible funding. PPP should be chosen on the basis of total-economic considerations [DI, 2011, p.53]. Another way of avoiding difficulties arising from the deposit regulation is to carry out the project with combined contracting, however then it is not the case of private financing.

### 3.3 Structure and processes

The Danish Standard Model for PPPs distinguishes between two main structures [Enclosure 16, p.25] – PPP with private financing and PPP with public financing. Since PPPs are regarded as contract forms for public procurement, where private financing is substantial [Bygningsstyrelsen.dk-01, 2012 & Bygningsstyrelsen.dk-02, 2012 & Enclosure 17, § 4.], this report considers PPP with public financing as combined contracting (Samlet Udbud, PPP-light), described among the other models [page 26].

When the winner of the PPP tender is chosen, the public body and the winning consortium go into contract, stipulating the details of earlier agreed distribution of risks, financing conditions and authorities – the public part bears the political risks and the private part is reliable for construction and commercial risks. The agreement also lays down the conditions for ownership during and after the contract – the exit-model, i.e. whether ownership is to be transferred to the public body subsequent to the end of contract period (e.g. a motorway) or remains in private hands (e.g. a building). If the contract prescribes that the ownership is transferred at the end, the public body has to take over the property, whereas in the other case it has priority purchase rights.

### 3.3.1 Stakeholders

The foundation of Public-Private Partnership is the contract between the public body and the consortium of private firms. The consortium comprises the private companies (contractor, suppliers, facility manager) also on contractual basis and – provided that it does not necessarily have the capital itself to finance the construction – usually includes a bank/investment firm via an agreement on loans or issues shares (see Figure 3.3.1). These contracts and agreements are prepared with reference to the given PPP-contract. In case of a concession⁸ – where it is typically not the client that uses the property – the users also go into contract with the PPP consortium, for example in the form of tickets on a motorway. A significant feature of the organization is that even though the consortium has the exclusive rights arising from the PPP contract, a major part of risks and obligations are redirected by the “secondary” contracts towards the included or sub-contracting private companies, therefore the continuous open dialogue is a very important factor in the collaboration.

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⁸ “a business operated under a contract or license associated with a degree of exclusivity in business within a certain geographical area.” [Wikipedia.org-05, 2012]
3.3.2 Incentive and payment
The incentive for the private part to think in total-economic terms is strong, since it cannot demand higher payments from the client just because of rising costs, if the lifetime of chosen materials appears to be shorter and need for replacement or refurbishment emerges during the contract period. The consortium is also incited to provide the asset in time or before the deadline, since – as mentioned previously – the first payment is taking place at the beginning of the asset’s operation. So the earlier it is operational, the sooner the investment begins to return. This means payment either as a monthly/yearly “rent” from the public client or – in terms of a concession – as a “per-use” fee from the users (e.g. on a motorway) on top of a state/regional/municipal refunding. The private part can actually increase profit with a well considered cost structure – by saving on the operation (e.g. heating, electricity, etc.) and maintenance – because the payment from the client is fixed. At the same time the client can also be motivated to save for example on the consumption overheads.
(not to leave windows open in the winter or lights on for the night), if the agreement stipulates distribution of these savings between the parts.

The private part is motivated to deliver and maintain the agreed service with the agreed quality, otherwise non- or low performance can result in deductions from the payment as part of the payment-mechanism, laid down in the agreement. It guarantees the public client in getting the function requirements met for the payment that consists of three elements [Enclosure 16, p.39]:

- Basis payment – for the asset that is provided at disposal
- Service payment – for the operation of the asset
- Maintenance payment – for the maintenance of the asset

The payment-mechanism does not necessarily stipulate all the function requirements, but can include prioritizing the more important ones. Therefore it is important to involve the users (via a representative) and staff with knowledge about operation in planning of the mechanism [Enclosure 16, p.39].

3.3.3 Distribution of risks

A very substantial element of PPP contracts is how the risks are distributed between the client and the consortium. Generally the risks are shared systematically according to, which part can easier and cheaper influence and deal with an emergent problem. As mentioned in the Standard Model for PPPs [Enclosure 16, p.37] the risk sharing can be the following:

Risks that can be handled best by public body
- Access to the construction area
- Pollution (can be transferred to the private based on a survey by public)
- Archaeological finding
- **Force majeure** that cannot be insured (e.g. natural disaster)
- Interest related risks from submission of bids until signing of contract
- Inflation related risks
- Changes in legislation in connection with the project

Risks that can be handled best by the private part
- Risks in relation to design, construction and operation
- Energy consumption (can also be shared between the parties)
- Delays
- Maintenance according to function requirements
- Insurable **force majeure**
- Interest related risks from signing of contract until expiration
The public body can choose to let the consortium take responsibility for certain – normally by the public taken – risks, but then the private part – if supposedly not able to influence the outcome – raises the price to ensure its profit during the project. It can infer such extra cost for the public that is important to consider whether it is worth.

### 3.4 Typical projects

Generally PPP is recommended in connection with larger projects that can run for up to 30 years and where open functional requirements can be expressed. The rule of thumb in Denmark is that the minimum contracted construction price for a property is 100 million DKK to be suitable for PPP [Enclosure 18, p.1], however experience shows that relatively smaller projects have also been successful as PPPs. A good example of a relatively smaller PPP project is as follows [DI, 2011, p.55]:

> “Land Registration Court in Hobro
> The Land Registration Court in Hobro was ready 1st of April 2009 and was built in terms of the PPP model. The property was built by a consortium of MT Højgaard, Dan-Ejendomme and Bank DnB NORD, and the consortium will own and operate the building throughout a 20-year contract.

> The PPP contract gives the consortium a fix incentive to ensure that the building is constantly maintained. If the building is not functional, it has influence for the rent the Danish Court Administration has to pay.

> For example if the light does not work in a room, it is the consortium’s task to get the defect fixed. There is an agreed period of time for how fast such a problem must be resolved. If the problem is not resolved within the agreed time, it can lead to reductions in payment.

> When the PPP contract expires in 20 years, the State may choose to exercise its priority purchase right to buy the building. If the state chooses to purchase the building, the price depends on the quality, the building has that time. Therefore the consortium has a continuous incentive to ensure optimal maintenance, so when the time comes, the building can be sold for the best possible price.”

The Land Registration Court in Hobro – as the first State ordered PPP project handed over in Denmark – with its 4697 m² cost 65 million to build and has been to such a great satisfaction of the Danish Court Administration, that the contracting consortium was pre-qualified for the tender of following four new court buildings [Mth.dk-01, 2009] and the contract was complimented as “role model” by – among others – the Minister of Justice that time.
4. Problem formulation

In 2011 the transactions in the Danish public sector constituted 29.4 percent of Denmark’s GDP (estimated ca. 321 billion USD = ca. 1850 billion DKK for 2011 [Gfmag.com-01,2012]), which is the highest percentage among the EU15 countries, and about a quarter of the public tasks is carried out in terms of full competition. The possibility of increasing competition and efficiency in the public sector is still large, which gives space for improving the public-private co-operation, e.g. with 37.4 billion DKK in the municipalities’ and 1.6 billion in the regions’ budget. Experience indicates that the public sector can achieve 15 percent enhancement in efficiency by tendering some of its tasks, and by that free 5.6 billion DKK and 245 million DKK allocated funds in municipal and regional budgets respectively. [DI, 2011, p.17]

The adoption of PPP as a new co-operational and organizational form is an opportunity to achieve the overall objective of an efficient Danish public sector that can deliver high quality services in the most cost-effective way. According to the Standard Model for PPPs [Enclosure 16] and a recent survey by the Competition and Consumer Authority [Kfst.dk-07, 2012] the PPPs are advantageous for both private and public entities, and the experience from the examined 13 projects [KFST, 2012], which have already been running, shows that the method is a success with minor but rewarding difficulties.

4.1 Problem statement and questions

The government’s Plan of Acts for Public-Private Partnerships from 2004 [OEM, 2004] specifies numerous initiatives in order to promote PPP and Legal Notice nr. 1394 of 17-12-2004 obligates evaluating whether to apply the model for a public project [Enclosure 15, p.1]. PPP has been considered a success, additionally private pension institutes expressed their willingness of investing in it [UgebrevetA4.dk-01, 2012]. Despite these facts the method has not been widespread and generally applied in Denmark yet. The construction cost for 10 out of the 13 PPP projects range from approx. 25 million up to 1,2 billion DKK [KFST, 2012, p.22], which add up to 2,17 billion DKK. This is only about 0.4 percent of the value of transactions in the Danish public sector in 2011. The first PPP project with its present form in Denmark was started about eight years ago [Enclosure 01, p.33].

In light of the above mentioned the following questions emerge:

In spite of the prospects and related success why is Public-Private Partnership not used widespread in Denmark? What can be done to intensify its application?

The following chapter – 5. Analysis – attempts to clarify the causes and chapter 6 draws inference from the coherence of the various aspects.
4.2 Delimitation

Due to the limited time for information search and compilation of the report, as well as relatively poor amount of available data from comprehensive statistics about the financing, project expenditures, PPP contract text, etc. the focus is on a general approach to the causes of the outlined problem. As an effort for overall exposition of problem-causing factors, instead of going into detailed analysis of them (e.g. the exact price of financing), publicly available facts are compared to and evaluated against hypotheses, theories and opinions.
PART II

5. Analysis

According to Danish Legal Notice nr. 1394 of 17-12-2004 [Enclosure 15] a public entity has to systematically evaluate, whether a certain construction task should be carried out as a PPP project, possibly based on a model that estimates the price difference between a PPP and a traditionally organized project. The considerations and decisions have to be documented.

A publication from the Union of State Authorized Accountants (Foreningen af Statsautoriserede Revisorer) from 2008 affirms that out of the 30 public projects, which had been under preliminary evaluation, only five were established as PPPs [FSR, 2008, p.82]. Some at that time were still under consideration, but the most of them – including extension of Skejby Hospital – had been rejected even to evaluate for the new model and were organized e.g. in terms of combined or simple turnkey contract or completely classic way (Trade or Main contract).

5.1 The (negative) influence on decision

There are several various reasons for the “negative” results (rejection), based on foreign experience and meaningful process insecurities, etc. These various aspects have significant influence on the decisions whether or not to take on the venture. What are they?

5.1.1 Conservative view

In Denmark neither the private, nor the public sector has comprehensive experience with PPPs. If a public entity has poor or no experience with some working methods and/or the stakeholders are unfamiliar with the concepts, it can be politically risky to do pioneer work in the subject. In Public-Private Partnerships the private stakeholders do the big investments and thereby obtain greater involvement in decision making. The prospects of essential changes in the parties’ responsibilities can lead to the public stakeholder’s fear of losing control over the competences. It easily triggers the conservative “do as we used to, instead of taking the risk” way of thinking and sets back innovation.

An analysis of the market for PPP in Denmark, taken in 2005 by KPMG for the Danish Business Authority (Erhvervsstyrelsen), included a survey about 23 prevalent barriers for widespread use of the model [Enclosure 22, p.86]. Stakeholders (40 directors and managers) from various disciplines (public entities, entrepreneurs, consultants) were asked to rank these prevalent barriers in regard to importance based on their experience. As a result of the survey, habitual thinking – in other words: conservative view – was one of the most important barriers for augmenting the application of PPP.

Some 7 years have passed and several PPP projects have been established, since the analysis was carried out. However – underpinned by a statement [Enclosure 24, p.3] from Peter Hesdorf,

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9 An international auditor and consultant company, one of Denmark’s leading firms in the field.
CEO of the Danish *Construction Benchmark Centre*\(^{10}\) (Byggeriets Evaluering Center) – traces of conservative view still appear in the decision making procedures and it normally takes a relatively long time for a significant change to happen in the industry, especially when critical sounds emerge in the public consciousness.

### 5.1.2 Critique about PPP and negative experience from abroad

Even though the public sector has expressed its satisfaction about PPPs, the critics about them are not unsubstantiated. They often originate in negative experience from abroad, however there is also bad example from Denmark – the extreme case about Farum municipality [Enclosure 09].

Critics claim that risk distribution - in particular risk of demand-dependency – is very problematic for a 30 year contract. It might not be possible to properly estimate what the demand will be for a certain facility (e.g. a hospital) within such a long period of time. These demand-dependent risks are usually taken by the public part in a PPP, otherwise an additional fee is incurred for the extra risk of the private part, making the contract more expensive. Either way, a faulty estimation can cause continuous public expenditures on an immovable asset that may not even be necessary, as it happened e.g. in Northern Ireland, where the public part has to pay annually for a school building in the next 16 years, even though it has been closed in 2008 due to the reduced number of students [News.bbc.co.uk-01, 2007].

For all infrastructure investments the communities and their representatives – the politicians – expect big return to society (value for money). There are many arguments in Denmark that private financing is too expensive [FSR, 2008, p.18], the public would receive a huge extra bill in connection with a PPP, because investors – e.g. pension funds – expect big guaranteed yields [Lund, 2011, p.29] that are costly for the community and on the long run “our children might have to pay a lot for our decisions”. But these arguments do not consider all the elements of the total economic mentality, there is a misunderstanding especially about the risk distribution. Various important risks (keeping the budget, guaranteed quality of operation, etc.) are on the private part, which has a long sighted attention on the finances, because the payments from the public are conditional – only the on-time and agreed-quality services are paid for. If PPP was applied for projects like the Metro or DR-byen in Copenhagen, where the budgets were flagrantly exceeded, the extra costs or losses in most cases would have been the private part’s problem. Since it has not been properly communicated, it is worth to disclose that some extent of the budget over-runs in the mentioned cases were due to altering the original plans to gain extra added value, based on e.g. new technology and user involvement.

The tight public budget could generate a strong temptation for seeking investment resources in the private sector – despite the deposit regulations – and thereby erroneous comparison methods – for

\(^{10}\) “… is a foundation established by a wide range of construction stakeholders to promote building quality and efficiency.” [Byggeevaluering.dk-01, 2012]
assessing whether to apply PPP – give room to subjective approach. British experience shows that in many cases assessments and comparisons were incorrect and incomplete, omitting cost-benefit analyses and systematically biasing in favour of PPP [Enclosure 14, p.2]. For example the assessments included anticipated tax revenues as added benefits of PPP, which in fact were partly never collected, because it was ignored in the evaluation whether the private part pays them in the UK or somewhere else.

An economic and financial report of the European Investment Bank (EIB) from 2006 argues that road construction contracts in PPP terms are on average 24% more expensive than if they were traditionally procured, and that there is no evidence whether PPPs are better to deliver the asset on time [Enclosure 14, p.4]. However a later study, commissioned by the UK Treasury, found that on average PPPs were finished on or before time, while 17% of traditionally organized projects were delayed [Enclosure 19, p.11]. This study also found that the averagely 1% of PPP budgets were exceeded, while in case of traditional projects the value was 47%. The difference is clear, but the critics claim with a logical answer: setting the budget 24% higher reduces the chance of exceeding it. A higher budget can also be explained with the theory of “more expensive production results in better quality, therefore cheaper O&M”. A more substantial critique about the difference in finances is that more time and resources are used for preparing PPP than traditional projects, therefore – by possessing more detailed information – the budgets can be more precisely estimated, thereby less probable to be exceeded.

The length and costs of tendering PPP are also popular subjects of criticism. An EIB study disputes whether the lengthy competitive dialogue procedure and the related expensive legal and accountancy services provide for savings on the long run. The study alleges that procurement costs for a PPP project are averagely 10% of the contract sum and tendering takes on a par 34 months, while it has not been clearly proved that the private sector is more efficient in running services than the public [Enclosure 14, p.5]. It is also claimed by critics that the long projects (25-30 years) restrict the freedom of political action, since parts of the public budget is bound by the PPP contracts, thereby resources at disposal for new development investments are reduced.

In connection with the Farum case PPPs are mentioned in a very negative context. Farum municipality contracted out several properties (kindergartens, elderly homes), made sale-and-lease-back\(^{11}\) deals on school buildings and its water supply plant, and entered into Build-Own-Operate-Transfer agreements for constructing sports facilities (e.g. stadium and nautical centre), making it one of the most active local governments experimenting with PPPs in the beginning of 2000s [Enclosure 09, p.2]. The scandal started when it was publicized that the deals were made with tendering and competition, a huge amount of loan was taken on behalf of the municipality, plus some suspicion about corrupt behaviour evolved. From being one of the most successful and

\(^{11}\) *~ is a financial transaction, where one sells an asset and leases it back for the long-term; therefore, one continues to be able to use the asset but no longer owns it.* [Wikipedia.org-06, 2012]
cheapest municipalities, Farum has lost its self-governance and taxes have risen in 2002. The events having been mentioned together with the PPPs in the media contributed to a major setback of applying the model in the country, but also triggered development in the relevant legislation [Enclosure 09, p.8]. As a result of the scandal the Ministry of Interior ruled that municipalities must not apply the Farum model as it was introduced and are obliged to deposit the capital from sale-and-lease-back agreements [Enclosure 09, p.6].

The above critics represent a very important influence when deciding about PPP, they obviously contribute to the conservative thinking (up to some extent) and a general providence on the public side. Both the critics and the negative experience are aspects, which are carefully considered and the authorities – as well as the private sector – in Denmark try to learn from them. This brings up another criticised feature: Too many resources (time and money) are used for comparison and evaluating PPP feasibility. It is correct that many resources are used, but one thing has to be remembered: that it usually happens so during a learning process. The more the knowledge-base about PPPs develops, probably the lower transaction costs will incur during evaluation. As stated by Njal Nikolas Olsen, project manager at the Danish Construction Authority (Bygningsstyrelsen): “It is one of the main reasons, why the Competition and Consumer Authority (KFST) along with the Construction Authority work on developing the PPP Standard Model” [Enclosure 25].

5.1.3 Suitability assessment
The Danish Business Authority (Erhvervsstyrelsen) issued a note with a number of questions to take into account for the public entities, which – based on Legal Notice nr. 1394 [Enclosure 15] – consider different ways of carrying out a project. There are special requirements in connection with a PPP project, which the public is not used to, because they are normally not considered during traditional contracting. The note comprises a dozen of simple “yes-no” questions, including small explanation, and its purpose is to help assessing whether the project qualifies as suitable to be carried out as PPP, before the more comprehensive evaluation is initiated. The questions are the following [Enclosure 18]:

1. **Can the task be bound for a period?** – Some projects require high flexibility (e.g. political) and therefore can be expensive to carry them out with binding private involvement for 30 years.
2. **Is the project big enough?** – The rule of thumb is a minimum construction cost of 100 million DKK, however smaller projects can also be attractive, if O&M costs are higher. The point is to outweigh the high transaction costs.
3. **Is it possible to specify clear function requirements?** – Too many detail specifications of HOW the function requirements have to be met limit the possibility for innovation that is substantial with PPPs.
4. **Do the limitations allow PPP?** – Local restrictions or fixed architecture might prevent development of new solutions, thereby a big part of the PPP advantages would not be realized.
5. *Is the financing realistic?* – The public entity has to “pay the rent” and at the same time the construction cost has to be deposited (Deposit regulation), so liquidity is important for carrying out a PPP project.

6. *Are there private firms that would bid?* – A research has to show that there is a private market with firms that can take upon the task and it is attractive enough for them to bid on a tender.

7. *Are the possible commercial activities realistic?* – Some PPPs involve commercial activities, which partly finance the project and also need to have a certain volume to attract the private sector. It is important to clarify the relation between these activities and the municipal services.

8. *Are you ready to constrain the budget for O&M?* – The public entity binds a part of its budget for a long period of time, thereby missing the opportunity to use it on priority tasks. In return a fixed level of quality is ensured.

9. *Can you imagine that private employees do janitor’s job in e.g. a public school?* – Disinclination towards private employees in a public institution can result in obstacles, because the close contact between the public and private part is vital for a successful PPP.

10. *Do you wish to closely co-operate with private firms?* – It is important in the early stage to decide if the public entity is ready to maintain close co-operation with private firms. It requires understanding and accepting the private parts interests (e.g. that it wants to realize profit).

11. *Are you willing to give off control over how the private firms solve the task?* – In case of PPP it is required, furthermore advantageous that the private part is given the freedom to decide how it delivers the agreed asset or service (function demand).

12. *Are you willing to share the risks with private firms in an appropriate way?* – Risk sharing is yet another essential and beneficial aspect within PPP, therefore the public entity is required to trust that the private entrepreneur can handle the undertaken risks.

The *Competition and Consumer Authority* (KFST) has also published a list of questions on the PPP Standard Model website. These are only five, but little more complex pre-qualifying questions with advice for how the public authorities – lacking PPP experience – should base their suitability assessment on them, since relevance can vary depending on the entity’s character. The criteria are as follows [Kfst.dk-08, 2012]:

1. *Does the project include design, construction plus subsequent operation and maintenance, so it is possible to procure these together on a tender for a comprehensive PPP?*
2. *Does the concept of joint construction and O&M generate prospects for total economic mentality in the PPP project?*
3. *Is the project sum big enough for a PPP?*
4. *Is there a market with firms that would be able and interested in solving the task in a PPP?*
5. *Does the public authority have the political will to enter into a PPP agreement, which – up to a certain extent – constrains the quality level of O&M for 15-25 years?*

The questions – both from the note and the standard model – inquire answers about substantial elements in order to continue working with the idea of PPP in connection with a certain project. If
the answer is clear “yes” to all the enquiries, then the next phase is a more detailed PPP feasibility study, otherwise different terms have to be investigated and applied for carrying out the project (e.g. turnkey contract). However the mentioned pre-qualifying criteria might contribute to a negative result of PPP suitability assessment by their nature in the sense, that they leave space for subjective weighing and deliberation of the concerned aspects. In such an instance the option for PPP is already out-rulled in the very beginning.

At present there is no standard procedure – only propositions – for how to pre-qualify projects for PPP. As suggested, the political will – and expressing it – is also essential for projects carried out as PPP, so private companies would be assured and more likely to use resources on the case. But again, the political will depends on a numerous subjective factors, e.g. the decision makers – who may be biased – have to be convinced about the advantages of close co-operation on the long run. Moreover, according to Legal Notice 1394, § 7 [Enclosure 15] documentation about the decision has to be provided on request from the Ministry of Finance, which does not necessarily have time to deal with all the cases, therefore probably did/does not demand it very often (interviewed relevant authorities seldom have examples [FSR, 2008 & Enclosure 26]).

5.1.4 Feasibility study

If the idea of PPP in connection with a certain infrastructural development passes the pre-qualification, the public entity conducts a feasibility study to investigate what would be the difference, if the project was carried out as e.g. a “simple” turnkey contract, and who are the possible tenderers. The feasibility study consists of financial- and market analysis, optionally supplemented with aspects such as quality, and consequences of applying the different contracting models [Kfst.dk-08, 2012].

The purpose of the financial analysis is to point out the extra (or reduced) expenditures and the expected advantages of PPP compared to traditional organization of the given project, regarding the price of land and construction, risk transfer and distribution, plus whether the efficiency gain is higher than the disadvantage of higher finance- and transaction costs. Whereas the market analysis should identify the elements for motivating total economic mentality, as well as what products and services have to be included in the contract to make the entrepreneurs really interested.

The analysis can provide insight, but will always be exposed to some uncertainty, based on its hypothetical nature. Besides it is very hard to assess the effectiveness of the PPP and compare it with a turnkey contract, since with the former the project is based on function requirements, while the starting point for the latter is detailed specifications (usually not about the functions). Furthermore the efficiency gain is difficult to measure in case of non-numerical factors, e.g. society satisfaction based on handing over a motorway before deadline (Kliplev-Sønderborg connection). If the budget for PPP is higher than for a turnkey contract, it is often understood as less value for money, because the aforementioned efficiency gain is not or inadequately considered. For example the city of Næstved with its present day traffic problem (20.000 cars in daily traffic jams [Enclosure...
20]) could benefit from the efficiency of a PPP motorway connection project, not having to wait until the tight public budget allows the construction.

5.1.5 Price of private capital versus public financing

The ongoing economical crisis presumably contributed to increasing the cost of private capital (because of the generally higher risk), thereby generating a stronger base for the argument that public financing (e.g. with state bonds) is cheaper and regarded as more value for money. It is obvious that private entities (e.g. pension funds) would require higher interest, since the risk deviates from that of state bonds and because they want to realize return on the investment.

The problem with the argument is that ordinary private funding should not be simply compared to public financing. Private firms usually finance their investments partly from loan (higher proportion, normally more than 50%) and partly from equity (own capital), where the risks are different. Besides loans on long-term have higher fixed interest than on short-term. The public sector usually finances its investments on short-term (up to couple of years), while PPPs are financed on long-term (up to 30 years). Since the public part does not want to take the risk of possibly fluctuating interest rate, it requires a fixed price from the PPP consortium, which loans the capital on long-term – with high fixed interest – to similarly avoid the large insecurity and being uncovered for the consequential losses. So the comparison of public and private financing in the argument is incorrect, since the two different interest rates are equally considered.

Value for money means the least expensive option for the same output and quality of service [Enclosure 19, p.2]. As pointed out before in terms of the total economic mentality, risks are taken by the part that can best and easies/cheapest handle them. So if a public entity is not the one that can handle financial- or project risks (budget, deadlines, maintaining quality and functionality, etc.) the best way, then value for money is to relocate them for a price. If the cost of relocation is too high, then maybe private capital involvement is not the best idea. The comparison of public and private financing should include the price of the risks – that are taken by the private in case of PPP – on both sides, which might make the two funding models appear to cost equal. Furthermore it may even result in better value for money with private investment because of risk reduction for the public part. If savings can be realized on the other elements of PPP (e.g. coherency of construction and O&M), then it is the reasonable choice.

5.1.6 Misunderstood accounting

It is argued that PPPs – private investments in public infrastructural developments – can be omitted from the yearly state balance, since they do not debit public budget [Lund, 2011, p.20], thereby the so generated public debt would remain somewhat hidden. As mentioned earlier, this is the reason for the deposit regulation – to prevent public authorities from initiating investments, for which the required capital is not available in their budget. A key misunderstanding of public payments accounting is presumed in the comparison of PPP and traditionally organized (e.g. turnkey)
projects. A traditionally organized project (a public-financed investment) is regarded as a one-time incurred expenditure, so the construction cost is accounted when the asset is paid for, but the further duties (e.g. costs of operation and maintenance) are not considered thoroughly. As a contrast, in case of a PPP all the payment obligations for its 25-30 years period are included in the accounts. In this fashion the traditional project seems to be cheaper, but the operation and maintenance costs or the needed refurbishment because of the enforced savings on them (to keep the budget) may “turn the balance”.

5.2 Barriers
Apart from the negative influences on the decision making process there are several challenging factors that have been functioning as barriers and have set back the development and augmentation of PPP in Denmark. These barriers originate from legislative regulations, the norms and standards in the industry, the composition of stakeholders, and the present situation (financial crisis). The barriers in this report are categorized regarding which entity they affect.

5.2.1 Barriers for public entities
An earlier mentioned publication from the Union of State Authorized Accountants from 2008 explains that due to the strict management of state economy and the large surplus in public budgets there was no real motivation to adopt PPP as a non-public financed development tool, rather focus on the already well-known methods, such as combined contracting and classic tender [FSR, 2008, p.88]. Now, four years later and still in the period of an economical depression the financial situation of public budgets are drastically changed to the worse, motivating more for involvement of private capital, but the related barriers for PPP are somewhat the same.

Deposit regulation
The deposit regulation has been a key barrier to blame that PPP has not augmented in Denmark to an expectable degree and kept public authorities from experimenting with it [FSR, 2008, p.82]. PPP was started in England with the aim of involving alternative (non-public) funds in infrastructure development because of unavailable finances in the public budget. Apart from its original and anyway reasonable purpose – to prevent exaggerating (overdoing) investments in infrastructural development despite unavailable public budget – the deposit regulation inadvertently neutralizes the public entity’s motivation for total economic mentality.

Since the construction costs in connection with PPP projects are usually higher, the public entity has to deposit a larger amount of capital than e.g. in case of a turnkey contract. The amount to be deposited in case of PPP is assessed by a public evaluation and includes value-added tax (VAT). If the public entity goes into traditional contract, then VAT is deducted from the construction cost, so the budget is only debited by a lower amount. Besides, the public entity might also have to deposit capital in case of refurbishment works, which can make it cheaper to construct a new building [FSR, 2008, p.87].
Thus many projects do not get optimized, even though it would be reasonable from the *return to society* perspective. In a long-sighted perception the construction costs are not the most important, but constitute a part of the total economy, so the deposit regulation presumably focuses on the wrong aspect in the PPP context, creating a paradox – prevention of savings on the long run, because it costs more on short-term. Bringing the deposit regulation in line with the total economic mentality, along a certain set of standard conditions and rules, could help to dissolve this paradox without losing control and running the risk of overdoing infrastructure development investments from private funds, which manner would cause large debt constraints in the public budgets.

*Internal problems at public authorities*

Governing bodies are elected for four years in Denmark. It is reasonable to assume that they are motivated to use their budget during the given four years as efficiently as possible, thus contributing to the maintenance of their popularity and perhaps getting elected for the next term as well. Thereby short-term planning is consequently a logical way to spend the allocated funds. Since PPPs are long-term considered projects, they might not demonstrate economical efficiency within one political term, hence would not be preferred for constrains in public budget.

Provided that an elected governing body is in favour of using private capital on a certain project (be it short or long-term investment), there is no guarantee that the next political leadership would not neglect the idea, unless there are signed agreements. As the preparation and preliminary negotiations in connection with a PPP can take relatively long time (e.g. four years for Kliplev-Sønderborg motorway, “only” a PPP-light project), one government can start the pre-qualification procedure for a project, but the next one may prefer the traditional models and would cease the process or change it to a classic tender.

### 5.2.2 Barriers for private firms

There have been fewer barriers that affect the private sector alone in connection with PPP, because they do not spend the public capital, but on the contrary earn from it. These barriers have meaning for how the private sector is able to earn on the PPP business, and are based on the process insecurities in connection with ownership and tax.

*Insecurities about ownership and tax*

The ownership of the property that is constructed in a PPP is a decisive factor for a number of conditions for payment of tax and VAT from the private part. The Danish tax authority (SKAT) has to assess, who is to be recognized as the owner of the asset. It is important in the sense that if recognized as the real owner of the property during the PPP contract’s period and builds it for commercial use (e.g. renting it out to a public entity), the private part has rights for the following [Enclosure 16, p.28]:

- tax deduction based on annual depreciation of the asset and inventory
- deduction of VAT (25%) from construction, O&M and administration costs [Enclosure 16, p.78]
The value of the deductions (if applicable) is calculated in the private parts investment and thereby has influence on the price, the public entity has to pay for using the asset. If the private part is not recognized as real owner, the consequential extra costs (e.g. VAT) are redirected to the client, but the additional expenditure-capital would anyways flow back to the state treasury in form of taxes, which is why it is not considered a barrier for the public.

For the assessment an application has to be submitted to the authority together with a copy of the PPP contract and a definitive description of the framework (risk distribution and exit-model) [Enclosure 16, p.32]. SKAT rules a decision within 3 months that is binding for 5 years. To date there has not been a standard process for assessing ownership conditions, SKAT evaluates the situations case-to-case [Enclosure 16, p.81]. There are, however, guidelines – originating from experience – for how to form the contract, so the Tax Authority's ruling can be inferential. Observing the guidance rules does not ensure the decision, but are included in an overall evaluation as the following main elements [Enclosure 16, p.29]:

- whether the private part takes the risk for construction phase
- whether the private part has opportunity for profit and risk of deficit during the operation
- whether the private part can practice owners authority during the contract period (e.g. can sell the asset to third party with respect to the PPP agreement)
- whether the private part has opportunity for profit and risk of loss by selling the asset at the end of the PPP agreement

If the required information and documents are not available, the resolution process may be longer, as SKAT can earliest give a binding answer as soon as it has a “ready model” and is able to do a “reality evaluation” of ownership authorities. The model can be adjusted, but until the planning phase finishes there is uncertainty about how the tax conditions are stipulated and a missing consensus can cause tremendous delay (up to 3-6 months) in the project [FSR, 2008, p.87]. This defers the private parts return on investment (of its time and resources on the preliminary negotiations), and definitely reduces incentive to bid for the job.

5.2.3 Common Barriers
Some barriers are distinguishable – they have significant meaning for either public or private stakeholders, however there are some common barriers that create challenge for both parties, because of the different stakeholder interest or the complexity of the challenge.

**Length of contract**
As PPPs run usually for over 20 years, the length of the contract represents an intricate set of obstacles that is based on the apprehension of constraining finances and limiting political control. During such a long period claims for modifications – impossible to foresee at the time of entering contract (e.g. replacing walls, changing function of rooms) – probably evolve relatively often and
presumably there are certain limits to fulfil these demands [Encosure 20, p.87]. Either the PPP contract has to include a clause that leaves opportunity for such modifications or they would be subject to negotiation. Both ways mean expenditures – the partnering consortium has to be paid for taking the risk of possibly evolving demand for modifications or the negotiated price would be based on a so-called control tender (kontrolbud) [Encosure 20, p.87], where the public entity itself assesses how much the task would cost, if it was openly tendered.

As for the political control, the long contract period has a significant meaning for the financial constraints. When a government decides to carry out a project as PPP, the contract immobilizes a part of the public entity’s budget for 20-30 years, representing an obligation for the next 5-8 political terms. It could be understood as one governing body expropriates a part of the following governors’ budget, deteriorating their financial opportunities [Lund, 2011, p.33]. However, the same time it has the advantageous feature of partly depriving politicians and officials the ability to prioritize short-term goals that in many cases lead to lack of maintenance presumably resulting in large future expenditures for refurbishment.

A successful tender depends on – among other things – the extent of competition, so the ability and interest of many private stakeholders in entering a contract is vital for a reasonable PPP. Since such projects usually require large capital (rule of thumb is 100 million DKK construction cost), only a relatively few market stakeholders can afford to participate with a constrained investment for such a long period (20-30 years), small and medium-sized companies would scarcely – if at all – have the chance to join. Forming a consortium or a network of preferred smaller companies that enter into partnering as subcontractors could somewhat balance this limitation, but the lengthy procedure (up to 34 months on average – example from UK [Enclosure 21, p.30]) of preliminary negotiations, preparation, tender and entering the contract, without a guarantee of winning the competition has its restraining effect. Thus the length of PPP contract itself may limit the competition that is essential for public procurement. Competition is a benefit for the public sector – it is a key factor for innovation, efficiency and cost effectiveness. So a limited amount of private competitors with required expertise and ability for the job is disadvantageous for the public.

**High initial and transaction costs, long preparation**

The criticized high initial and transaction costs are associated with the long preparation and tender procedure, which require relatively large investments of time and resources (that cost) already in the beginning phase from both sides. Since PPPs are long term contracts, the public authority has to carefully investigate how and on what its budget is to be used to avoid similar scenarios as the one with the unused school building in Northern Ireland. The private part also needs to thoroughly scrutinize in what it would invest its capital and how are the income/profit opportunities, since it takes a major part of the risks for the 20-30 years period.

The high initial expenditures can have a deterring effect, but the comprehensive analysis is necessary for the total economic advantage of PPP and in fact the proportion of transaction costs
may be ranked alongside those of smaller tenders for classic contracts (e.g. turnkey, maintenance, operation) that would be necessary in case the project is carried out the traditional way. If a sum of the initial and transaction costs from classic tenders is compared with the corresponding expenditures of a PPP, the two might be barely different or even the same, however this statement is theoretical, since it was not possible to acquire evidential studies about the proportion of such expenses. As discussed before, PPP in Denmark is still somewhat in “children’s shoes”, which brings along the fact that there is a learning process where the present high initial and transaction costs can be regarded as the “tuition fee”. A significant reduction of these costs can be expected in the future, when the already running projects will provide reusable experience, (e.g. risk assessment, payment mechanism, function demands, etc) [FSR, 2008, p.86], which would also help decreasing the bureaucracy in PPP.

**Expensive bidding, EU-directives, incentive structure**

When a PPP project gets to the tendering phase, the competing consortia have to allocate much of their resources (e.g. working hours) to be used on preparing a feasible, competitive bid that still includes the opportunity for realizing profit to return the investment in question. Although there have been some PPP projects that had lower value than 100 million DKK (rule of thumb), most of them cost above the valid EU thresholds, so the EU directives and – because of the complexity – the competitive dialogue process has to be applied. Even in classic tendering the preparation of bids is a costly procedure, and a PPP with the multiple-round negotiations in terms of the competitive dialogue process (see Figure 5.2.1) and comprehensive planning (practically all lifetime phases of a property) requires yet more resources involved. Without the guarantee of being chosen as winner of tender, the question “to bid or not to bid” for a PPP is often – if not always – subject to thorough consideration, since the costly procedure is really discouraging.

As broad competition is vital for successful tendering, the public entities sometimes need to involve a certain incentive model to make potential business partners interested in bidding. Such incentive models can include for instance a design contest with prizeing or a limited guarantee for reimbursement of bidding expenses. This guarantee usually does not cover the entrepreneurs’ all tendering costs, but attracts them to “sit by the table”. Its inevitability emerges during the preliminary negotiations in the planning phase, where the public entity finds out, which companies express serious interest in the project. The incentive models in this fashion mean an occasionally necessary extra investment from the public budget, whose influence is not really measurable It cannot be determined how many tenderers are attracted exactly by the incentive, neither what would be the value of economically most advantageous bid in case of lower amount of competitors. The public entity therefore has to carefully weigh the advantages of such a costly incentive model.
Price of risk distribution

Risk distribution is a central element of PPP, which affects the two parts (public and private) with concerns of different aspects. Private sector companies may not be interested in a project with too much risk allocated due to lack of technical or financial capacity to implement it. As an alternative possibility, the private sector would charge such a “fee” for taking the risks that the public entity may not regard it as worthy to pay for and decide to have the project realized in a different way (e.g. turnkey contract).

Identifying all the relevant hazards and finding the equilibrium is a challenge, since the tight public budget does not allow paying just any price for risk transfer. As a principle, the risks to be taken by the public are those, which only the authorities can influence or be held liable for.

Time factor

Since the preparation and pre-qualification normally takes relatively long, the time factor in connection with an urgently emerging demand embodies a serious barrier for a PPP project. Short time available for pre-qualification makes it troublesome both for the private to form realistic working groups (consortia) and for the public to thoroughly pre-qualify those interested, which can risk excluding some otherwise capable firms and possibly including – later apparent – incapable companies in the further process. Short timeframe can also contribute to incorrectly prepared
technical specifications and wrongly defined contract conditions, causing uncertainties in the competitive dialogue and debasing the quality of bids. It easily results in a situation where competition is very restricted, thereby prospects for innovation and reasonable pricing (total economic mentality) are diminished.

It is, however, worth to mention, that besides PPPs, which are typically characterized by long preparation and tendering processes, there has been at least one “just-developed” exemplary project, where these procedures were carried out in an unusually short time. Although being a PPP-light (public financed) project, its structure and processes are very similar to those of PPPs.

“From publishing the tender notice for Ny Helsinge Skole (including a public swimming pool) late June 2010, it took approximately three and a half months to entering the contract in the beginning of October.” – according to Julie Mortensen, project manager at Gribskov municipality. “It was a competitive dialogue process under pressure from the Ministry of Interior through three meetings with three tenderers, and the model has later been reused in Frederikshavn and Jammerbugt municipalities” – significantly lowering their related transaction costs.

These facts indicate that although there are many aspects to be taken care of during a competitive dialogue process, it is indeed possible to carry it out in a relatively short time as well.

**Detail specifications**

It is a challenge to get the sometimes very detailed design specifications transformed into clearly specified, understandable function requirements that allow innovation and result in a project, which satisfies the expectations. Innovation happens, if design specifications do not limit the entrepreneurs’ imagination. However there are some aspects that must be considered for compromise in case of certain buildings or other assets. For example the Kliplev-Sønderborg motorway had significant limits on design of track and location, because the already accomplished expropriations, furthermore other detail specifications, like emergency lane or separation railing for safety, were not negotiable. Such non-negotiable detail specifications can embody barrier for PPP by compelling a consensus for a balance between the fixed detail specifications and open function requirements.

**5.3 Stakeholder interests and influence**

Stakeholders in a PPP project have certain interests that serve their proprietary aims in their respective sphere of activities. These stakeholders can be distinguished by being directly or indirectly involved in the project with varying influence. The diverse main concerns of stakeholders often have been roots of obstacles for development, because they were more important than the occurrent common interests. Provided that PPP is an attractive model because of its advantages for both public and private sector, a stakeholder mapping would give the following picture (Figure 5.3.1):
5.3.1 Public authorities
A public entity is the most directly involved and most influential stakeholder (the client) in a PPP project (see Figure 5.3.1). Public authorities are generally concerned in using their budget as efficiently as possible, since they are accountable for their financial transactions by the tax payers. Therefore it is essential for the public entities to get well functioning facilities and services established with durable assets in the cheapest achievable way. The public sector’s concern is not particularly generating profit for private firms [Enclosure 01, p.26], but to have maintained a flourishing/healthy business environment (that ensures tax incomes and keeps companies running), with the possibility of choosing among many competitors on a tender, thereby having the opportunity for lower prices and intensive innovation. By having regards to the delivered quality and efficiency, the public sector theoretically has the outmost interest in the PPP model.

5.3.2 Private sector
Architects, Engineers, Contractors and Facility Managers, etc. – collectively Entrepreneurs – are the stakeholders that physically deliver the assets and/or services. They are foremost interested in generating profit on the job, both for covering expenses (e.g. raw materials, salaries, etc.) and for growing/developing. Furthermore it is also important for them to maintain and increase the amount of orders that generate the cash-flow and give people jobs, so they have high interest for PPPs that
provide this opportunity, yet relatively low influence, since they depend on the finances (see Figure 5.3.1). To gain these, entrepreneurs have to focus on offering competitive prices and attaining good reputation within the industry with efficiency in their expertise and high quality deliveries. (See Figure 5.3.2)

**Figure 5.3.2 – Stakeholder interests [ADK, 2012]**

Banks, credit institutes and shareholders often provide the major part of capital for the investments in the PPP constellation. For them it is important to profit as much as possible from investing the funds they dispose of. The – now international – competition on the capital market influences the price of financing, so investors’ interest and influence in PPPs are somewhat neutral (see Figure 5.3.1), since they can also invest on other enterprises (e.g. Mexican motorway) – should the public sector in Denmark not be fascinated – and on the other hand the PPPs might also obtain resources from abroad, if the costs of inland private funds are too high.

The users pay tax and in some case also a fee for using a public asset (e.g. ticket to a swimming pool) or service. In return they principally expect high quality, efficiency and well functioning facilities from the public sector (see Figure 5.3.2). The users’ influence on a PPP converges to zero, but in the end they are them who elect the governments. In that sense they have indirect influence on the public sector’s decisions, so their interests (e.g. jobs, lower fees/taxes, efficient public service) are “not negligible” (see Figure 5.3.1).
5.3.3 “Common denominator”

The public sector has been pursuing ways to provide facilities and services as cheap as possible, especially in the last few years, since the budget got tight. The focus was on savings, while the profit oriented private sector indeed delivered good quality work with guarantee – for five years though. In this way it was not ensured for the public sector to realize savings on the long run with this short sighted view and the lack of familiarity with PPP.

In terms of the total economic mentality the above mentioned opposing concerns (savings and profit) have a “common denominator” – high quality and efficiency that serves both sides’ interests on the long term. By focusing on this common denominator constant orders plus cash-flow for the private and preserved value plus relatively low budget operation of the public asset is guaranteed on the long term.
6. Summary

Public-Private Partnership is a contracting model that combines the public authorities’ concerns for savings in their budgets with long term goals in terms of the total economic mentality, involving the private sector’s finance and utilizing its professionalism in stately or municipal infrastructure and service development. When applied with care, the model is advantageous for both parts (public and private) through the incentive structure and comprehensive risk distribution. By careful application it theoretically generates savings and budget security in the public finances plus efficiency in services and facilities on the long term, which theory has for now been supported by foreign experience – since the model is relatively new in Denmark. Meanwhile it maintains a certain level of orders in the private sector, keeping people in jobs with the generated work flow and contributing to profit realization.

The foreign experience provides an ambivalent (both good and negative) image of applying PPP, which indeed constitutes foundation for critiques and refusal, but on the other hand offers possibility of extensive inspiration for decision makers in Denmark to learn from and “build upon” when developing the utilization of the model. The comparatively minor Danish experience represents success with the application of PPP so far and the will to attempt has been present to some extent. The Competition and Consumer Authority has taken measures to improve its use, however until 2008 approximately 17 percent of the identified preliminarily evaluated projects have been carried out in this contracting form. This percentage is possibly higher now due to the popularization, but still considerably low provided that only a fraction of public development projects are evaluated for PPP at all. The fact that many projects have been rejected to be carried out as PPP allows the assumption that the decision makers have been extremely cautious and/or somewhat neglected the idea of using the model (e.g. because of old-school opinion), which might actually be one of the reasons for the successful experience in the few realized cases.

6.1 Inference

The reason for why PPP is not yet wide spread applied in Denmark, originates from a combination of various legislative, empirical and socio-philosophical aspects as well as the consequential erroneous associations and incorrect perception, furthermore the occurrent barriers due to the complex nature of the model and the diverse interests of the relevant stakeholders. The significance of these factors emerge and have effect already prior to, but also during various stages of the decision making process. Most of the above mentioned aspects and barriers have correlations and/or logical concatenations that make the delineated problem multi-faceted.

In order to understand the complexity of the grounds for the lack of enthusiasm (reluctance) and the neglect of PPP, a diagram (see Figure 6.1.1) on the following page illustrates the coherence of the aspects with the purpose of drawing a parallel between them and the decision-making process, indicating the type of the factors and their causality relations, as well as alluding to when the various barriers’ significance become influential. (The size of circles has no importance.)
Figure 6.1.1 – Reasons of PPP neglect [ADK, 2012]
The foundation of the negatively influencing aspects is the still present conservative way of thinking, deterring experience from abroad (and from Denmark) and the valid EU-directives. The habitual thinking results in comparing the conventional (already well-known) procurement models and the new PPP from three main views (type of contract, requirements and financing), but incorrectly (unbalanced) considering certain features. As a consequence of this, along with the negative experience and misunderstanding in the state balance accounting, PPP has been openly criticized.

The mistaken accounting intensified the compelling influence of foreign bad experience and domestic incidents (Farum case) for creating the restrictive *deposit regulation*, which neutralizes the incentive for private finance involvement in the project during the suitability assessment for PPP. The habitual (conservative) thinking has an additional effect that manifests itself in *short term goals* as internal problems at public entities. The *short term goals* in view of the *length of contract*, together with the open *critique*, contribute to a bias and negative attitude during the assessment, where one of the few motivating factors (private capital) has now been *neutralized*.

The applicable EU-directives indirectly add to barriers like *length of contract* and *complexity of project* (carried out as PPP), which are correlated and together are responsible for the constrained *long preparation*. Besides the *contract length* triggers *high initial and transaction costs*, which are additional barriers that also emerge because of the *recent existence of PPP* in Denmark. Furthermore the *complexity of project*, again indirectly including the EU-directives, prompts *expensive bidding*. Another legislative barrier – *ownership insecurities* – that influences the private companies, provides basis for an obstacle – *costly incentive*, which is a possible (not certain) consequence too of the *private-retaining effects* (*long capital binding* and *expensive bidding*), but is a concern of the public sector. These latter barriers become of significant meaning during the tendering phase, but are subject to consideration already in the assessment.

The comparison of detail and functional demands highlights the fact that it is *difficult to transform the specifications* and deliver a clear, easily understandable, but comprehensive set of requirements that do not limit the possibility of innovation. Incorrect comparison in general leads to false results in the feasibility study, where the risk of rejection, based on the outcomes, is not negligible. Additionally emerges the question of *risk allocation price* that is rather a concern of both parties in the competitive dialogue phase than a real barrier, yet has its impeding effect on the decision in favour of PPP.

As it is indicated in the diagram, most of the discussed negatively influencing aspects are present or appear before the evaluation for PPP is begun at all, allowing much room for subjective thinking (bias). The influence of most barriers is considered during the suitability assessment and/or feasibility study stage, possibly setting back the amount of positive feedbacks on applying the new model. Unfortunately it was not possible to acquire a documented rejection during the assembling of the report, but the analysis suggests that there is a need for change of paradigm and attitude towards PPP as well as enlightenment in both the private and public sector.
PART III

7. Proposal for solution

Since the problem about intensifying PPP in Denmark is based on composite factors and barriers, it presumably demands a complex solution. Some of the aspects and barriers need direct actions to be taken and/or organized initiatives in order to be obviated, others would disappear or abate with time as a side effect of the initiatives. Some obstacles cannot be changed, but can be reacted upon in certain ways, so they no longer represent barriers for carrying out procurement projects in Public-Private Partnerships.

The proposed solutions are based on the findings of the report and include the author’s judgment rooted in his educational background furthermore partly on the experience, opinion and guidance of those interviewed.

7.1 Barriers and aspects that need action

The common in these identified empirical aspects, erroneous activities and barriers, that they are partly the foundation of the stated problem (page 38) and/or their importance and effects emerge early, before any suitability assessment for PPP is commenced. Therefore direct actions taken corresponding to them, would probably have indirect influence on their causality relations down the line too.

7.1.1 Negative experience

Negative experience is most often a result of issues or difficulties due to (intentional or involuntary) errors and mistakes in the processes that usually cause extra – otherwise unnecessary – expenditures for certain stakeholders (e.g. corruption – Farum case – or inadequate analysis of future demand for a certain type of building – case with the closed school in Northern Ireland). Negative experience gives good grounds for and is typically followed by criticism, especially from those, who are sceptic about the subject, where the problem emerges.

It is, however, just a question of perception to turn the negative incidents to an advantage. If it is someone’s own bad experience, it might be the easiest to evaluate and learn from. Whereas if the incident happens to someone else – and becomes of public knowledge –, it is a “treasure box” for inspiration about how to make processes better, thereby own experience more successful. Therefore it would be beneficial to set up a task force that collects and analyses the valuable information (what went wrong) both from abroad and inland, as well as works out schemes for preventing the identified incidents and embeds them in the already existing Standard model for PPPs.
7.1.2 Incorrect comparison of procurement models

The three main views (contract form, specifications and financing), the procurement models (conventional and PPP) are generally compared from, are the consequence of paradigms in habitual thinking that leads to the unbalancedness and bias. It is substantial to maintain impartiality and balance, considering non-variable factors equally and the variables thoroughly during the comparison in order to get a clear and objective image of which model is more beneficial for the public.

Since PPP is a comprehensive model, concerning all phases of a project (total economic mentality) from concept to operation and maintenance, the other side of the balance – with a conventional model – has to include all the same stages equally in the comparison. I.e. the expenditures, time scheme, authorities, etc. for a PPP compared with e.g. a turnkey plus service (O&M) contract together. It is also important that the usual detail specifications in the compared conventional models get transformed or get defined according to the PPP’s functional demands, so there is a better possibility to draw a parallel, as in this fashion they become “non-variables” in the evaluation process.

As public financing and private funding is not supposed to be equally regarded – because of the different (respectively short-/long-term) interest rates and conditions – the comparison has to include a weighed consideration with respect also for the transferred risks, whose significant part would be the consortium’s responsibility in case of PPP. If equally regarded, the price of risk transfer should also be included on the “conventional” side of the balance, so to have a fair comparison of value for money. Besides, if Danish private capital is found to be too expensive, it is possible to obtain funds from abroad (e.g. Germany), as it already happened before in case of Vildbjerg school – a PPP project carried out by MT Højgaard, Dan Ejendomme and Nrd LB Bank (German) [Dknyt.dk, 2005].

An independent task force could be formed to analyse and define standards as well as describe guidelines for correct, unbiased comparison of the procurement models, and add them to the Standard model for PPPs.

7.1.3 Misunderstood accounting

As one of the reasons for creating the deposit regulations and contributing to critiques, the misunderstanding that the PPP-relevant part of public debt would be hidden from the state balance accounting, is indeed a result of misinterpretation. It should not be a problem to register all the monthly/yearly costs of a PPP project in the state balance accounts as programmed expenditures (e.g. for 25 years), then draw a parallel between them and the one-time expense of a turnkey contract plus the planned O&M and refurbishment costs included. The experience base (e.g. frequency of refurbishment/replacement) for estimation of the latter (classic contracts) is in fact already at disposal.
In 2004, along with several other countries, Hungary became a member state of the European Union, and thereby was bound to obey the more strict regulations about budget deficit (max 3%). With a deficit of 4.8% the previous year and prospects for 4.3% in 2004, the government ruled a decision about reducing it to 2.8% in 2005 [Enclosure 23, p.85], partly by focusing on initiation of PPP/concession projects (e.g. extension of motorways) and applying the accounting benefit of replacing a significant one-time payment with a stream of smaller reimbursements distributed over a number of years.

7.1.4 Too much room for bias, internal problems at authorities

There is a need for comprehensive revision of the processes in the assessment and feasibility study, to overcome and reduce the possibility of subjective influence within these stages. At the same time there have to be made efforts to eliminating the “do as we used to” and “we know better” mentalities. It is important to focus on maintaining dialogue also with the “old foxes” (those with large experience in the field) in a consensus seeking way and encourage sounds of creative critique.

Governing bodies often revise what/how their predecessors decided about certain cases. Some guidelines of the Standard model for PPPs make the choice of PPP also a political issue, e.g. by enquiring about political will [Kfst.dk-08, 2012]. Political will – with the risk of short-term goals – and similar subjective factors should not be decisive in the assessment procedure, but clear, objective points of consideration (e.g. numbers, statistics) could be of support. An independent central unit could assist in the evaluation and suggest or reject the model to be applied, so no resources would be used on the revision of previous governing body’s decisions in connection with PPP, and it would be made indifferent or impossible to be biased in the resolution process. It should be obligatory to document the considerations and the outcome of the evaluation, in that way contributing to the development of a systemized empirical knowledge base. This knowledge base could be a part of the online available Standard model for PPPs.

7.1.5 Ownership and tax insecurities

The uncertainties about the tax authority’s ruling on the ownership of the property could be dissolved by SKAT itself. In addition to the already existing guidelines the authority should work out a standard procedure and define the criteria that clearly describe the cases where the private part is recognized as the owner of the property in a PPP project. Since this is a legislative barrier, there is a need for political decision in connection with it.

A standard decision procedure and clear criteria would automatically ensure the private sector companies about the outcome of SKAT’s evaluation of the cases, and it would no longer be “just” inferential. Besides, the process would definitely take less time, as documentation of a “ready model” could be submitted to the authority without the possible need for later adjustment (at least in connection with ownership and tax aspects). It means less work for SKAT and probably eliminates
the possible delay that would be the consequence of re-evaluation. Thus bidding on PPP would become more attractive for the entrepreneurs.

7.1.6 Deposit regulation
Since the analysis found that the deposit regulation neutralizes public entities incentive for deciding in favour of PPP by having to debit their budget more than in case of classic contracts, it is meant to be advisable to abolish this ruling or ease it on certain conditions with focus on long term (20-30 years) total economic advantages. Alternatively its application could be excluded in various areas, where the long term combination of construction and O&M is assessed to be beneficial in terms of the total economic mentality. Such areas would possibly be hospitals, schools, roads, public service supply (e.g. electricity, sewerage), etc.

In a PPP project the construction cost – that now has to be deposited – is not the most important to be minimized, the emphasis is on diminishing the whole life cycle expenditures. Therefore the construction can easily be more expensive than in other procurement models. Abolishing or easing the deposit regulation would make long term benefits matter more during the suitability assessment of a project.

7.2 Barriers that abate with time
Some of the discussed obstacles do not need direct action to avert, but would either automatically fade away as time goes by or as an indirect consequence of the initiatives taken against the abovementioned barriers.

7.2.1 High initial and transaction costs
As mentioned before, comprehensive analysis is necessary for total economic advantage and to keep away from scenarios that would result in redundant expenditures and negative influence on the general opinion about PPP. As for now, this comprehensive evaluation requires costly efforts, since relatively little experience is at disposal. But as more and more PPPs are carried out and the experience from them is systematically registered in a knowledge base, some – or maybe even most – of the evaluation can eventually be omitted and replaced by empirical information, thus reducing the related initial and transaction costs.

Since the argument, that projects with minimum construction cost of 100 million DKK (rule of thumb) are suitable for PPP, relates back to outweighing high transaction costs, having them reduced would make it possible for smaller projects to be carried out also by applying the new model. Consequently entrepreneurs with less financial power could also afford participating, which makes the competition more intense, thereby generating opportunity for more innovative ideas and lower prices.
7.2.2 Long preparation, time factor

It has been proved possible to get prepared, pre-qualified, tendered and a contract signed with consortium for a PPP light project (that is very similar to a real PPP – only it is public-financed) within four months (see page 53) in Gribskov, and the “just-developed” model has been reprocessed in other municipalities as well. However it happened under pressure and the outcome – whether it is a success – is not known yet, as the asset was supposed to be handed over in September 2012, but due to vandalism – and consequent fire – it is delayed by approximately four months [Jp.dk-01, 2012].

The usually required long time for preparation is a compound consequence of the EU-directives, project complexity and contract length, but perhaps principally the fact that PPP is relatively new in Denmark. Therefore it is presumed that as more experience accumulates and becomes available for reuse, the necessary time for preparing PPPs will significantly decrease. So in that sense a part of the work load at public entities will be reduced and/or PPP can safely be applied for “urgent” projects as well in the future. Besides, as smaller projects become feasible in the PPP constellation, the preparation for those – due to their probable lower complexity – will presumably need shorter time.

7.2.3 Transforming detail specifications

The total economic mentality is assumed to be getting more and more common in the public sector, especially that the Danish Business Authority (Erhvervsstyrelsen) popularizes it among others via publications like the “Best Practice Manual on Total Economy” [EBST, 2009]. By gathering ground, the total economic mentality compels and presumably eventuates in a change of attitude towards certain aspects in the industry. One of these aspects is the way the demands are expressed and specified, so it is not necessarily the physical design that is important, but what its outcome is (result oriented view).

Even though transforming detail specifications to functional demands is said to be a complicated task now, with the above mentioned trend and the accumulating empirical information this difficulty will be relieved. After a certain period of time the transformation will presumably not be necessary, because expressing the demands through functional requirement specifications will become standard.

7.2.4 Critique

Critique is such a socio-philosophical aspect that normally will always exist in some certain degree. However critique is also necessary for innovation, as long as it is creative/constructive, by not only explaining what is bad about a certain thing, but also drawing attention to methods and areas for development. That is why sounds of constructive critique should be encouraged, while non-constructive criticism can be disputed and disproved by statistics and analyses – if exist – like the
Competition and Consumer Authority’s publication from October 2012, Evaluation of Danish PPP projects [KFST, 2012].

The criticism of PPPs and related factors will probably ease down or come to an end, when evidence of successful experience becomes available openly. In this context the above mentioned “success of Danish PPPs” can be considered as one of the first steps.

7.2.5 Conservative view
Conservatism is another socio-philosophical aspect that will always remain to some extent, as the so called followers “seek to preserve things as they are, emphasizing stability and continuity” [Wikipedia.org-07, 2012]. But as the industry and public understanding develops, new concepts sooner or later become accepted as normal/standards (or disappear, if unsuccessful), so the conservative view does not target them any longer and consequently the related critique – that is partly rooted on it – would also fade away.

It is, however, important to well inform the sceptics about the advantages of and challenges with new concepts, so they are provided adequate information to creatively approach the eventually emerging doubts. The Competition and Consumer Authority’s online Standard model for PPPs is created partly for this purpose.

7.3 Obstacles that cannot be changed
Certain barriers, which emerge as a consequence of PPP’s character, cannot be eliminated or avoided. Therefore a different attitude (and perception) is necessary to make the best out of them. It may not be possible to take action against these obstacles directly, but informing and encouraging stakeholders to shape new approach could be beneficial.

7.3.1 Length of contract and complexity
PPP contracts will always be very complex because of their duration, financial size and their purpose of reaching the total economic advantage compared to the alternatives (classic contracts), by integrated planning – of construction, operation and maintenance – and risk distribution. PPP agreements have to be long, so the incentive for the total economic advantage is sustained. So these obstacles should be observed as the “price” of:

- the financial advantage of minimal lifecycle costs and guarantee of optimal quality for the public sector
- depriving the ability to prioritize short-term goals at public authorities
- public guarantee of return on long term investment and continuous flow of orders for the private sector
It is worth to mention that although the complexity is not a factor that can be changed (PPPs cannot be made less complex), as experience develops and accumulates, it will presumably be perceived as a set of opportunities rather than challenges, and the consequential high costs of bidding might also be reduced.

7.3.2 Capital binding
Capital binding is a retaining effect – a barrier – for the private sector, which originates from the contract length, in the sense that the companies have to directly (investors) or indirectly (entrepreneurs) constrain a great deal of money for a long time and make sure that it will result in reasonably high yield in return for the risks taken. This will always be necessary, as the concept of PPP (cash flow starts, when asset is operational) requires it.

Partnering among smaller companies to create “capital-strong” networks can be an effective way to overcome this competition-limiting aspect, but those firms would still have to bind the proportional amount of funds in the investment. It is, again, a matter of perception that binding capital for a long time should not be understood as a factor, which keeps entrepreneurs away, but the whole should be considered as a long-term investment (that is typically the investors’ interest) with public guarantee on reimbursement and a good motive for improving efficiency (cost effectiveness) within the firm/partnership.

7.3.3 Costly incentive
Public authorities occasionally – when becomes apparently necessary in the planning phase – have to motivate potential tenderers to submit bids. Such costly incentive scheme (e.g. prize contest or partial reimbursement) does not always have to be included in the procurement, but when it takes place, it is understood as extra incurring charges. However it could also be perceived as the price of the opportunity for fair and broader competition, thereby more intense innovation and the incurring extra charges would perhaps be outbalanced by the possibly realized lower contract sum.

7.3.4 Price of risk allocation
The risk transfer has its price, because of the stakeholders’ necessitated fix profit margin. The attitude towards this price should be focusing on the advantages of reallocating the major part of the risks from the public sector. If these risks were not transferred, they would cost (much) more for the public entity to handle them, than the price it pays for reallocation. As the private part is more cautious about avoiding occurrent problems – with focus on the project economy and profit – when a certain risk is their responsibility, they can offer lower price for taking it than the cost of consequences when it is the public entity’s burden.

7.4 Suggestion for initiatives
Based on the analysis and the aforementioned propositions certain initiatives are presumed beneficial to be taken. The suggested initiatives concern institutional and managerial development
as well as financial and legislative changes, keeping in mind that it is the public sector, which has the ability and authority to intensify the use of PPPs.

7.4.1 Central unit

A team at the *Competition and Consumer Authority* (KFST) has already been engaged in developing the *Standard Model for PPPs*, so it could incorporate the earlier mentioned independent task force as a whole new department, dedicated to administration of PPPs in Denmark. The related tasks, evaluations, analyses and authorities could be focused here in this central unit, taking this burden from each public entity.

**Knowledge base**

This central unit should continue to be responsible for the administration and further development of the *Standard Model for PPPs* (the online knowledge base – *info centre*) to facilitate the exchange of relevant information, as all the experience would be at disposal in one institution. The starting point of further development of the *info centre* should be the resulting inferences from comprehensive systematic analysis of existing PPPs both abroad and inland, as well as the revised standards/guidelines for correct comparison of procurement models. By centralizing the information, the department could assist the tax authority (SKAT) to work out standards for decisions about the ownership issues. Thereby individual evaluation of each project for this aspect would no longer be necessary, since the property ownership could be automatically ruled depending on the standardized criteria.

**Unbiased evaluation and analysis**

As an independent entity from the municipalities and regions, the central unit would have no interest in whatsoever plans of the individual public authorities, so it could aim at optimizing the processes only, thereby objectively evaluating the existing PPPs, with emphasis on the total economy and quality. By having all the information (from analyses of the various projects) in “one hand”, it would be easy for the department to draw the inference completely unbiased and focus on “how to do it better”.

**Uniform assessment of all future projects**

The central unit could support the individual public entities in the assessment of PPP suitability (and possibly the feasibility study) for future procurements by working out standard procedures – with emphasis on excluding opportunities for subjectivity – where not only “yes/no” questions, but numerical criteria is also included in the decisive enquiries. Furthermore the department could propose whether a certain project should be carried out in terms of the new model. In this way all public procurement is assessed with the same uniform methods focusing on long term lower costs (total economy) and the possibility of bias – e.g. because of the public entity’s short term plans – is minimized or eliminated.
PPP suitability assessment is already obligatory – according to Danish Legal Notice nr. 1394 [Enclosure 15, p.1] – for public properties and assets used by institutions, where minimum half of the operating budget is financed by the state. This order should be extended to all cases, where public funds are involved. Furthermore, it should also be made obligatory to justify, why a project has been rejected to be carried out as PPP, which justification could be controlled by the central unit.

**Standardization, less bureaucracy**

Standardizing and simplifying the processes and regulations (e.g. ownership) would help reducing the level of bureaucracy, with the probable consequential savings on transaction costs and the projects would be carried out faster. The central unit should work out standardized PPP agreements/contracts for different general types of projects, including patterns for what risks are taken by whom. The basis of these standard contracts can be the already available experience and FIDIC’s (International Federation of Consulting Engineers) “Gold Book” – *Conditions of Contract for Design, Build and Operate Projects* [FIDIC, 2008]. The reduced bureaucracy in PPPs would attract the private sector companies more to engage in this business, resulting in more intense competition that is beneficial for the public sector.

**Figure 7.4.1 – General concept: management system [ADK, 2012] after [Bejder, Fisker, Olsen, 2011, p.141]**
The standardization process could be done in line with a general concept for management (see Figure 7.4.1), where the all time empirical data is used for constant quality development of the system. The essence of the concept is that the central unit develops and adjusts the general system based on general input / system demands, initial progress efforts and experience reports. Then the aspects of the general system are used for adjustment of the project specific system that is applied in a certain assignment. Meanwhile experience data from all stages are extracted and proceeded for handling – that is suggested to be done by the central unit and/or the Construction Benchmark Centre – and further experience reports are prepared. This way the growing experience is continuously recycled for system development.

7.4.2 Integrated projects

Since the high transaction costs are blamed for the lower limit (minimum) of PPP contract sum, integrating small projects into a large one and tendering it that way would make it possible for relatively smaller infrastructure development tasks to be carried out with the new model applied (like the four court buildings, ordered by the Agency for Palaces and Cultural Properties – Slots- og Ejendomsstyrelsen [Kfst.dk-09, 2012]). Thus the accumulated amount of orders would balance out the initial and transaction costs. Besides it would create an attractive market for the private sector, because the performing companies could negotiate lower prices at their subcontractors and suppliers – based on the large scale orders – and as a consequence, would be able to submit cheaper bids, which is also beneficial for the public budget.

![Figure 7.4.2 – Integrated PPP [ADK, 2012]](image-url)
Alternatively, smaller companies could also participate by bidding together in terms of partnering as one consortium and sharing up the incorporated projects among themselves. The distribution would happen according to ratio – the bigger firms would take on the proportionally larger integrated part, while the smaller would be responsible for the minor part-projects within the PPP (see Figure 7.4.2) and continuous experience exchange would be also ensured. This solution, however, requires a very thoroughly considered and documented PPP agreement, which might result in high initial costs, due to the increased complexity, besides the tender has to be announced with emphasis on the possibility of integrated bidding.

### 7.4.3 Joint financing

Denmark has been maintaining a stable AAA (also called Triple A) mark at the three – perhaps most renowned/notorious – credit rating agencies (Moody's, Fitch and S&P) [Guardian.co.uk-01, 2012]. This means that public financing should be possible relatively cheap with both short and long term bonds that are guaranteed by the state, similar to that of Sund & Bælt – funding of the bridge/tunnel connections between Fyn, Sjælland and Sweden [sundogbaelt.dk-01, 2012].

Exploiting this opportunity – the cheap long term state guaranteed bonds – PPP projects could be financed jointly from both public and private resources. This way the cost of financing can be somewhat reduced, but the incentive for total economic mentality remains, as private capital is still involved. Besides, by taking over a significant proportion of the financing, smaller firms with less investing power can be taken into consideration for participating in the projects.

Until now Danish private pension funds have not invested much in inland public infrastructure development, but according to a press release MT Højgaard and DEAS (a property management firm) have just entered into agreement with three of them (PensionDanmark, PKA and Sampension) about participation in building construction related PPP projects [Avisen.dk-01, 2012]. The agreement entails that up to 5 billion DKK can be invested in PPP building projects in the next few years, which – also affirmed by Torben Møger Pedersen, executive director at Pension Danmark – results in better and cheaper solutions for the public and reasonable yield for the private, furthermore some new workplaces will be created. The agreement implies a perspective for combining the co-operation and including the above mentioned “powerful” investors in the joint financing, so large “capital-demanding” projects can also be planned with lower burden on public budgets.

### 7.4.4 PPP-suitable segments

The central unit should select and examine areas, where PPP is generally suitable in terms of the total economic mentality (e.g. schools, hospitals, public transportation, electricity, sewerage, water supply, etc). In the segments, where PPP and long-term planning/investment is evaluated beneficial, the deposit regulation should – in co-operation with the legislative bodies – be abolished.
or alleviated based on thoroughly considered and clearly defined criteria (e.g. economic advantage due to large scale operation).

The authorities should prepare harmonized long term plans for infrastructure development with potential PPP projects in the selected areas. The central unit could be the entity that promotes and facilitates the work and aligns these plans, since it would have all (or most of) the necessary information about PPPs at disposal. Tendering more projects in the same area or harmonized projects from different segments together could make the PPP market even more attractive for the private sector. Long term planning of infrastructure development with PPPs would make this market more determinate and reckonable.

7.5 Implementation

The semester’s time frame and the fact, that putting the abovementioned suggestions into practice is dependent on many pre-conditions and interaction of “threads”, limit the scope for preparation of a detailed implementation plan within the deadline, so the focus is on outlining a general proposition for the method of taking the initiatives.

The suggested initiatives include somewhat complex organizational and administrational changes, which certainly cannot be implemented “from one day to another”, therefore the so called change management is necessary in order to get the stakeholders accept and adopt the adjustments in their working environment. John P. Kotter – professor at Harvard Business School and renowned expert in change management – identified eight mistakes that are made in connection with change-projects [Bejder, Fisker, Olsen, 2011, p.242]. Based on these findings, Kotter created a systematic 8-step model for the implementation of organizational changes to avoid the mentioned mistakes and their consequences. The model was developed to be used by companies that are about to initiate larger changes, however it can also be applied in general for a whole branch (e.g. construction branch) with appropriate consideration [Bejder, Fisker, Olsen, 2011, p.241]. The 8-step model is the following [Mindtools.com-01, 2012]:

1. Create Urgency – Make the stakeholders experience the need for a change by opening a dialogue about the problem. Getting the people to talk about the matter and the proposed changes would help and enhance experiencing the importance. According to Kotter “75 % of the company’s management needs to buy into the change” to make it successful [Mindtools.com-01, 2012], so this proportion is presumably also required in the general view of the public sector as a whole.
2. Form a powerful coalition – Assign a group of influential people with various backgrounds into a team to lead the change. These people could be from the Competition and Consumer Authority, Tax authority (SKAT), the Construction Benchmark Centre, the Danish Construction Association (Dansk Byggeri) and also from firms with large investment power (e.g. pension funds) plus influential construction and/or facility management companies, furthermore consulting firms with comprehensive experience, for example the Danish Association of Consulting Engineers (Foreningen af Rådgivende Ingeniører).

3. Create a vision for change – Express a clear, easily explainable target with determinate central values to be the guiding principle. In this case it could be “Intensifying the involvement of private finance in public infrastructure development”. A collectively accepted vision would help optimizing processes at the various stakeholders and could be developed, based on the common values and targets, creating universal grounds to be applied when new methods, tools and co-operation forms (e.g. PPP) are introduced and implemented [Bejder, Fisker, Olsen, 2011, p.247].

4. Communicate the vision – Use all relevant opportunities to “spread the word” and keep the concept in the stakeholders’ mind, not only by addressing them, but also by demonstrating exemplary behaviour. An effective way to communicate the change-vision is to exhibit results from already realized projects, which facts provide support for the concept and contribute to convince the sceptics [Bejder, Fisker, Olsen, 2011, p.248].

5. Remove obstacles – Having reached this point many – if not all – barriers are probably identified. This is the stage when the involved stakeholders should be encouraged to take the risk, use non-traditional ideas and get busy in making the change by neutralizing the preventive factors, which could include adjustment of structures and systems that undermine the change-vision [Bejder, Fisker, Olsen, 2011, p.248].

6. Create short-term wins – Motivate stakeholders in the change by generating small experiences of success. It is also a very good way to subdue or silence the sound of critics by drawing attention to reaching significant milestones throughout the changing process. A very important thing to remember here is to set well considered, failsafe and relatively cheap milestones that can be guaranteed within the given time, otherwise failing could induce the opposite effect or the price would not justify the success without critique [Mindtools.com-01, 2012]. Furthermore the people, responsible for the small successes, should be rewarded and “visibly” credited to keep the motivation and make others enthusiastic about the case.

7. Build on the change – Kotter argues that many change projects fail because victory is declared too early [Mindtools.com-01, 2012]. It is suggested to consolidate the results by using the enhanced credibility to adjust all the systems, structures and policies that are not consistent with the change-vision [Bejder, Fisker, Olsen, 2011, p.243]. Improve the process by analyzing what
went well and what could have been done better, applying the theory of PDCA-cycle\(^{13}\) (process of Plan-Do-Control-Act) and optionally – if needed – even shifting members of the change-coalition.

8. Anchor the changes in the culture – To make the change remain, it should become “part of the core in the organization” [Mindtools.com-01, 2012]. In this case (whole branch) the change should be embedded in the legal and administrational culture for public procurements.

It is recommended that the change-project is carried out by the public sector (that has the authority), because the profit oriented private sector will anyways be motivated in adapting to the new trends. According to Kotter, the key to the effective process is to understand why organizations and individuals (employees) react unwillingly to changes and how it is expressed, therefore special focus should be kept on the first four steps, as these stages have a serious effect on the opinion of the stakeholders.

It is worth to append that some of the above steps appear to be already initiated or in practice (e.g. analysis of the market, examining opportunities, communication about PPP, short-term wins, etc.), furthermore some of them even seem to be happening simultaneously, not following Kotter’s sequence. That is however recommended by various literatures (e.g. [Bejder, Fisker, Olsen, 2011, p.241]) to follow the prearranged chain, because it creates the solid base for a successful adjustment.

\(^{13}\) [Wikipedia.org-09, 2012]
8. Conclusion

Public-Private Partnerships are relatively new in Denmark, the first project – a school building with a 30 year contract – was commenced in December 2004. Neither the public, nor the private sector in the country has large experience with PPPs, therefore observations of the foreign praxis contribute a lot to the influence on the procurement related decisions. Contrary to the other procurement models (e.g. turnkey contract, combined contract), PPP includes private financing beside all the phases (design, construction, O&M) of the project, which makes the method comparably quite complex both management-, organization- and administration-wise. Even though the total economic considerations suggest that it is a beneficial model and the legislation prescribes evaluation – of whether to apply it – in all cases of procurement for public property or assets used by partly (minimum 50 %) state financed institutions, the application of PPP has been quite poor since the first project was started, when comparing to the value of transactions in the Danish public sector in 2011.

The grounds for the neglect of this option are multilevel and multi-threaded, causing various barriers that have effect on both/either the private and/or the public stakeholders’ attitude towards the proven beneficial concept. The main concerns are as follows:

- Socio-philosophical – The conservative views and critique that is based on negative experience fundamentally weaken the willingness for the method.
- Administrational – The suitability assessment and feasibility study, allowing too much room for subjectivity, often can have distorted results that end in rejecting PPP.
- Misinterpretation – The incorrect comparison of financing sources (public and private) and contracting models (turnkey vs. PPP) as well as the demand specifications (detail vs. function) misrepresent the advantages and challenges, contributing to disinclination. Misunderstood accounting partly led to applying disadvantageous regulation (deposit rules) and gives grounds for further critique.
- Legislative – The deposit regulation creates a challenge for public entities (having to constrain more capital), thereby neutralizing the preference or dissolving the volition for PPP. The missing standard and the insecurities about ownership and tax before signing the contract have a deterring effect on the private sector.
- Financial/Political – The long contract (25-30 years) immobilizes a part of the public entity’s budget and deteriorates political control by limiting opportunities of reaction on the unforeseeable future demands. The complexity of PPP and the minor experience infer high initial and transaction costs in both sectors, which is a burden for public budget and also limits the extent of competition, as only relatively few firms can afford to bid in for such contract length, already at the start using so much of their resources on the expensive competitive dialogue with no guarantee of winning the tender. The internal problems at public entities (in the form of bias and logically short-term plans) further decrease the chances in favour of PPP.
The two sectors have opposing interests – the public is concerned about savings, while the private sphere wants to realize profit. However focusing on the “common denominator” – high quality and efficiency – ensures advantages for both sides on the long term.

Some of the found barriers/obstacles (detailed in section 7.1) need actions to be taken against and others (detailed in section 7.2) need time to abate, yet some of them (detailed in section 7.3) cannot be changed, therefore the attitude towards those has to be adjusted and paradigm shift\textsuperscript{14} is necessary. The findings of the analysis and the proposed actions imply initiatives that are suggested to be beneficial in the present situation. The recommended initiatives are the following:

- Central unit for PPP – A department within the Competition and Consumer Authority that would be dedicated to controlling and providing assistance in PPP projects, maintaining a knowledge base and standardization/simplifying of the procedures and regulations regarding the new model.
- Project integration – Tendering small projects together as a large one would enable relatively smaller infrastructure development tasks carried out as PPP (with its advantages) and the bigger procurement value would balance out the high initial and transaction costs, plus attract more competitors that optionally could enter into partnering and take the proportionally relevant part-projects.
- Joint financing – Funding the project from both private and public capital together would reduce the cost of financing (lower burden on public budget), but still maintain the incentive for total economic mentality, furthermore smaller companies could also participate in the projects (better competition).
- PPP-suitable segments – In areas that are rated to be generally suitable for PPP the deposit regulation should be abolished or eased on certain – well considered – conditions. Authorities should prepare long-term infrastructure development plans in these segments and initiate more projects at once attracting even more competitors and making the market more determinate.

For the implementation of the above organizational and administrational changes Kotter’s 8-step model is recommended, with emphasis on its first four steps. It is the public sector that should initiate the change and the profit oriented private sector will adapt the adjusted culture. A recent evaluation of the existing experience – conducted by the Competition and Consumer Authority – represents success and even though the report found that PPP has been neglected, there are both opinions from public sector employees (e.g. Julie Gry Mortensen, projektleder hos Gribskov Kommune og Njal Nikolas Olsen, project manager at the Danish Construction Authority) and news in the media (e.g [Estatemedia.dk-01, 2012] and [Avisen.dk-01, 2012]) that the use of the new model will soon become more intensive.

\textsuperscript{14} “Revolutionary change in the basic assumptions and principles within a science.” Translated from [Ordnet.dk-01, 2012]
8.1 Epilogue, perspective

The present report is the result of three months work of information retrieval, analysis and inference with suggestion for possible solutions on the found problems. The document can be regarded as a support for both public and private entities in understanding the reasons behind the scarce utilization of the opportunities in Public-Private Partnerships. It does not offer normative guidelines for the implementation of new strategies, but appears as an assisting aid or blueprint that draws attention to some options for improvements in the area and for how the barriers can be provided against.

Future work with consideration of the report’s recommendations is estimated to be of help to ensure successful advance for intensification of applying PPPs in public procurement. The involvement of private capital – that actually awaits in huge amounts to be invested – in public infrastructure development simultaneously contributes to the macroeconomic progress. By boosting/reviving the construction and/or refurbishment of public infrastructure (e.g. Storstrøm Bridge in South-Zealand) new workplaces can be created and maintained, which reduces unemployment and the waste of capital that is spent on retraining workforce (or useless seances at jobcentres). Increased employment eventuates more tax paid in to the Treasury (SKAT) and better national economy. Thereby intensifying PPP indirectly might contribute to a better way out from the financial crisis.
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