Public-Private Partnerships as Hybrid Organizational Drivers of Innovation in the Public Sector

Public-Private Partnership Conference Series CBS-Sauder-Monash

Second joint conference in

Vancouver, 12-14 June 2013

Third draft

First draft presented at the RUC Sunrise conference

Transforming Governance, Enhancing Innovation

29 October, 2012 – 31 October, 2012

Second draft presented at the Inaugural Public Management and Administration Postgraduate Conference

8-9 May 2013, Aston University, Birmingham, UK

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Notes for the reader:

The article will hopefully be the first in my article-based PhD, and is a conceptual piece linking PPP and innovation theories. I plan to use it in a moderated form as a theoretical framework for later empirical analysis. It might still a bit 'rough in the edges', since I am in a process of re-structuring it.

The PhD focuses on public-private partnering and sustainability innovation in municipal solid waste management, and will contain an embedded comparative case study of Denmark and England at different levels. I am currently in England to collect data for this comparison.
Basically, I believe this could be an interesting comparison, because both of the countries have a large inclusion of private actors in waste management services compared to other European countries and have a strong focus on innovation of current practices. Whereas Denmark has been on the forefront of sustainable waste management for many years, but is now lacking behind the best performing countries, England has traditionally been the 'dirty man' of Europe, relying mainly on landfill until the beginning of the 1990'ies, but now rapidly moving forward and seemingly reaching European goals for recycling and reuse. Furthermore, England has a strong tradition for involving the private sector in public services, whereas partnership models are rather new phenomena in Denmark, especially in the waste sector. There could be reason to believe that the partnership model, despite conflicting results from research, have potential for driving sustainable transformation processes. The PhD investigates how the different use of partnerships influence sustainability innovation in waste management in these two countries, and more generally, which factors are important to innovate in PPPs.

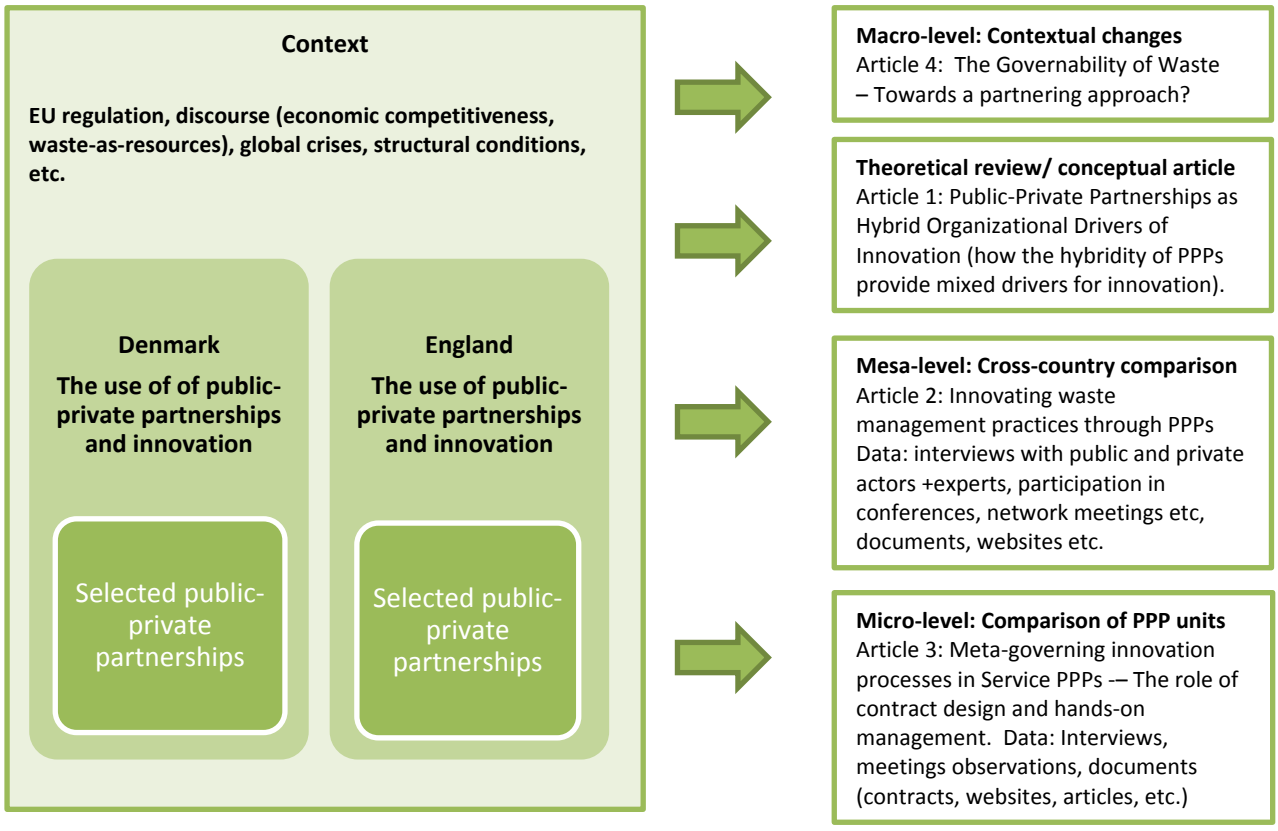
The PhD will include four articles:

1. Public-private partnerships as hybrid organizational drivers for innovation (this draft article)
2. Innovating waste management processes through PPPs – A comparative case study of Denmark and England (A rather empirical descriptive explorative investigation of the use of partnerships and sustainability innovation in the two countries, mapping different forms and uses of partnership in collection and treatment – mesa level)
3. Meta-governing Innovation Processes in (Service) PPPs (Observing the importance of management of PPPs, I plan to apply a network governance concept of 'metagovernance' to develop a comprehensive framework for management of innovation in PPPs, and test this on 2-4

cases, hopefully on service partnerships in waste collection, but this depend on which empirical data I will have access to – micro-level)

4. A macro-level article on the changing environment of waste management and how this influences the local management of waste.

Model of embedded case study and articles



Abstract

Decision-makers increasingly mention public-private partnerships (PPPs) as potential tools for innovation in the public sector. In contrast, literature on PPPs has mostly evaluated their economic efficiency, whereas their ability to enhance innovation has been subordinated and sometimes assumed. Empirical investigations of innovations in PPPs have been rather scarce and scattered between different PPP types and sectors. This article strives for a more comprehensive and reflexive approach and contribute to an increasing body of literature on public sector innovation by constructing a conceptual framework, which can be used to investigate the potential for innovation in different PPP types across sectors.

The last decades have seen sequential waves of public sector reforms, which have resulted in an increased hybridity in the public sector, where ideas, goals and tools from hierarchy, market and network forms of governance co-exist, and a multiplicity of actors participate in the governance of society through a variety of organizational forms. Understanding PPPs as true hybrids in the light of these developments enable us to investigate how the diverse and perhaps even conflicting ideas embedded in the organizational form of PPPs provide different mixes of coordination mechanisms for public-private innovation.

The paper investigates three PPP types, Long-term Infrastructure Partnerships (LTICs), Public-Private Service Partnerships (PPSPs) and Public-Private Innovation Partnerships (PPIPs), and shows how these display different variations of hybridity and provide different possibilities for coordination and hence for the development and implementation of innovative solutions. The three PPP types can be placed at an evolutionary scale from competition to collaboration, where PPIPs are mostly coordinated through collaboration, and LTICs are mostly coordinated through competition, though each PPP type displays a specific mix of both competition and collaboration.

The article provides a conceptually based explanation for the various degree of innovation in different PPP types displayed in current empirical investigations and points towards unused potentials for PPP innovation. This clarification could be a starting point for more thorough analyses of innovation in PPPs, and contributes to the discussion of how PPPs could fit into a strategy for a more innovative public sector.

Introduction

Increased complexity of 'wicked' societal problems, rising public demands and political skepticism and restricted public budgets in austerity times place governments in a cross-pressure that demands innovation (Albury 2005, Bekkers et al 2011, Bason 2010, Munksgaard et al 2012). An increased body of literature suggests that inter-organizational collaboration, where the public sector 'opens the borders' for competences, resources and ideas from private sector actors and civil society as well as across public sector organizations could be a way forward in order to find new solutions to these challenges (Nambisan 2008, Eggers & Sing 2009, Bommert 2010, Sørensen & Torfing 2012). This article explores the potential for public sector innovation in a specific kind of inter-organizational collaboration: public-private partnerships (PPPs).

In the broadest terms public-private partnerships (PPPs) can be defined as '*co-operative institutional arrangements between public and private sector actors'* (Hodge & Greve 2009). This definition can cover a number of organizational arrangements, where public and private actors coordinate action. PPPs have mostly been linked to objectives of gaining access to private funding for public projects and achieving a better risk allocation to incentivize 'whole-of-life' planning, but, as Greve (2009) suggests, innovation seems to be one of the key future arguments for PPPs (p.591). PPPs are increasingly mentioned in government programs or strategies in relation to innovation, for instance in Denmark, where the 2011 government platform of the S-R-SF government mentions partnerships as a central tool for 'new solutions' (The Government Platform 2011, p. 7-8), or in the UK, where partnership has been linked strongly to the Labour government's modernization agenda (Blair 1998, p. 13, from Entwistle & Martin 2005). These strategies are supported by international organizations such as the OECD, which in its Innovation and Growth report from 2007 explicitly mentioned PPPs as one of the strategic tools that governments can use to increase innovation (OECD 2007).

As Leiringer (2007) notes, despite the acceptance and embrace of PPPs as innovation tools in government and industry '*the theoretical basis to support them seems strangely underdeveloped'* (p.302). The few current investigations available have given us some insights into the degree of innovation in the output of specific PPP types, typically based on case studies, and some of the factors affecting these outputs, but they do not seem to dig deeper into the organizational form of PPPs or provide a broader overview of possibilities in different PPP arrangements. It could be added that current investigations are also rather dispersed with voices from sectors such as health care, waste management and transport, which seldom seem to refer to

each other (see **Annex 1** for an overview of current research). Especially, since the main objective of these investigated PPPs may not have been innovation, which could be part of the reason that they did not deliver this, the author suggests that a more reflexive approach is needed to investigate their potential.

The paper will answer the following research question: *How could a theoretically based framework for understanding public-private partnerships as innovation drivers be constructed?* Thus, it is built on the assumption that the variety of organizational arrangements that the term PPP covers could provide different possibilities for innovating and should be investigated separately, but that there are also common features and cross-over possibilities for learning, which makes it interesting to compare PPP types. The author suggests that these differences rest – not in their belonging to – but in their various weighing of ideas from two theoretical perspectives on public management, New Public Management (NPM) and Governance, which influence various PPP types to a different degree and bring with them ideas and tools for the development and implementation of innovative solutions. Thus, when we refer to PPPs as *hybrid organizational drivers* for innovation, this refers to the hybrid ideas build into the organizational form of a PPP, which influence the possibilities for interaction between public and private actors in the PPP and thereby provide different frameworks for innovation. This could be both in the procurement process leading up to the contract or in the contractual period following the signing of a contract. Thus, this paper will focus on drivers for innovation that are internalized in the organizational form of the PPP, rather than external to the PPP.

The article is structured in the following sections. The *first section* of the article will provide a brief overview of existing research on PPPs and innovation. Since both PPPs and innovation are rather nebulous and contested concepts, the *second* and *third* sections will introduce and define these two concepts. The *fourth section* draw up the conceptual framework for understanding PPPs as hybrid organizational drivers for innovation; the *fifth section* will analyze and compare three PPP types in light of the conceptual framework and discuss the results in relation to existing empirical research; and the *sixth section* will on this background discuss how PPPs as hybrid organizational drivers for innovation can contribute to the challenge of innovating in the public sector. Finally, the *last session* will provide a conclusion and suggestions for further research.

Current research on PPPs and Innovation

From seeing innovation as mainly a product or service, More & Hartley (2008) introduced innovations in governance as an innovation form in the public sector. Similarly, Mandell & Steelman (2003) developed the concept of inter-organizational innovation and showed how public-private partnerships (PPPs) could be seen as an organizational innovation in itself. PPPs have indeed introduced new institutional setups for public-private collaboration, but the rapid spread of these collaborative forms have led Esteve et al (2012) to suggest that '*collaborations between organizations should not be considered innovation, but rather an important catalyst for possible innovations'* (p.836). Although this author would argue that PPPs could still be an innovation in a specific context, and as Bovaird (2006) show, we still see new hybrid forms of governance emerging; I agree that to be able to evaluate the value of these, there is a need to explore their ability for them to be drivers of other types of innovation. Thus this article investigates, if public organizations can use PPPs as drivers of innovation in public services.

There are few theoretically based empirical investigations of innovation through PPPs, and the results are rather mixed (Rangel & Galende 2010, Campos et al 2011 – also see **Annex 1**). Whereas some authors focus on the output of PPPs, some put more emphasis one the drivers or factors leading to or counter innovative behavior in PPPs. Hurst & Reeves (2004) conclude that Irelands first PPP on the design, build, operation and finance of five public schools did not deliver innovative solutions, and likewise Ball, Heafey and King (2000) concluded that the only innovative features in the design of a secondary school in the UK came from the public sector. Leiringer (2006) deter from a multiple case study of construction PPPs that main innovations in the specific contexts were based on technology transfer or development of existing technology, but usually on the background of successful implementation of the same technology elsewhere. Moving to the waste management sector, Slater et al (2007) conclude in an investigation of service partnerships in England that partnerships seem to lead to '*a more efficient version of business as usual rather than a more effective shift towards sustainable management of resources and waste*" (p.663).

In the other ringside, Akintoye et al (2003) on the background of interviews with 59 organizations involved in UK PFIs showed that high competition and bidding costs and the wish to not extend the clients affordability limit

motivated private providers to develop innovative solutions, whereas Bovaird's (2006) analysis of a revenue and benefit services project in the UK provides a list of documented process and service innovations achieved in the project. Similarly in the health sector in Spain, Esteve et al (2012) showed how a public organization created both product and organizational innovations through a range of different inter-organizational collaborations.

Some of the positive factors influencing innovative outputs or innovative behavior discussed were risk transfer, use of penalties, design freedom, synergy, finding win-win agreements, good communication among partners from early stage, competition among bidders, pro-active, networking and entrepreneurial public managers, and an organizational setting that makes close interaction possible (Rangel & Galende 2010, Ysa et al 2012, Campos et al 2011), although some of these factors were also contested (Leiringer 2006, Ball et al 2001). Barriers for innovation mentioned was detailed input-based criteria, restrictions for dialogue, a lack of openness and trust, conflicting interests and lack of mutual understandings, the organizational culture in the public sector and public managers prioritizations and lack of procurement skills (Munksgaard et al 2012, Slater et al 2007, Schoeman et al 2012, Leiringer 2006).

The various results and many empirically derived factors supporting or restricting innovation calls for a more comprehensive, theoretically based framework for understanding the potential for innovation in PPPs. Furthermore, there seems to be a question of which kind of innovation we seek and can expect form PPPs. In the next section, we will take a closer look at definitions and categorizations of innovation in a public sector context.

Defining innovation

There are many definitions of innovation, and although there seems to be no authoritative formulation, an increasing body of literature on the concept, categorization and diffusion of public sector innovation seems to generate some resonance.

Firstly, innovations are often grouped into different categorizations, of which I have already mentioned a few. In this article we will rely on Bekkers et al (2011), which seems quite comprehensive (although some

provide alternative systems of categorization, see Osborne 1998, Walker 2006). Bekkers et al (2011) distinguish between:

- Product or service innovations, as the creation of new products or services;
- Technological innovations, as the creation and use of new technologies;
- Process innovations, as the improvement of internal and external business processes;
- Organizational and management innovations, as the creation of new organizational forms, new management methods and techniques or new working methods;
- Conceptual innovations, as the introduction of new concepts, frames or paradigms;
- Governance innovations, as the development of new forms and processes of governance in order to address specific societal problems; and
- Institutional innovations, as fundamental transformations in the institutional relations between organizations, institutions and actors in public administration (pp. 15-16).

Although these types of innovations could be analytically separated, in reality they would often be combined (Van de Ven et al 2008, Osborne 1998). As this article focus on innovation as *outputs* of PPPs, the two last categories will not be relevant, whereas there are examples of all the others in the current empirical investigations, which we will get back to later.

A common denominator of definitions is *the 'newness' of ideas or practices* (Osborne 1998). For instance, Moore & Hartley (2008) define innovation as "new ideas and practices brought into implementation" (p.4). This definition highlights that innovation is more than invention, generating the idea, but also includes the development and implementation of this idea in a specific context (Mulgan & Albury 2003, Van den Ven et al 2008, Borins 2002, More & Hartley 2003, Sørensen & Torfing 2011). Others emphasize that an innovation does not have to be new in a universal sense, but only have to be new in the context of the specific unit of adoption (Hartley 2005, Newman, Raine & Skelcher 2000, Walker 2006). Accordingly, a technology or process implemented in a PPP would not necessarily have to be new to the world, but could be just new in a country context or to that specific local context. Some authors also emphasize that the newness is 'perceived', referring to that the judging of what is new is a social process and would depend on key stakeholders evaluation (Rogers 2003, Bekkers et al 2011, Moore 2005), but this seems to belong more in a methodological discussion on how to identify innovation than in a discussion on how to define it.

The discussion on newness links to the discussion of *how radical this newness has to be*. A common distinction is the typology of radical, incremental and systemic innovation. *Radical innovation* includes the development of new services or fundamentally new ways of organizing or delivering services, whereas *incremental innovation* is relatively minor changes to existing products or services. *Systemic innovations* require fundamental changes in organizational, social and cultural arrangements and are often spurred by the development of new technologies or mindsets (Mulgan & Albury 2003, Albury 2005, Bekkers et al 2011). There is a fundamental challenge in identifying especially radical from incremental innovation, and in some cases minor changes could over time lead to more radical or even systemic changes. Rather than seeing these as separate categories, we might see them as a continuum of processes of change (Bason 2011).
Although it can be difficult to identify, the distinction between radical and incremental changes is important, since the pursuit of more radical 'breakthrough' innovations and the implementations of ideas that emerge along the way could need substantially different organizational environments (Moore 2005). Thus it seems relevant to investigate the *scope of change* of PPP outputs.

Some definitions such as Mulgan & Alburys (2003) 'new ideas that work' (p.3) or Basons (2011) 'new ideas that create public value for society' (p.4) insert *a normative 'good'* in the concept of innovation. Although innovation has a very positive ring to it, it is not all innovations that result in improvements (Hartley 2005, Osborne & Brown 2011). Though innovation should not be considered an improvement *per se*, innovation would definitely *aim* towards improvement. This opens for a discussion of improvements for whom? In the public sector, improvement would entail the creation of public value either though increased efficiency and effectiveness in service delivery or through aligning services better with public goals – and in both instances developed though processes and leading to outcomes, which is deemed appropriate in society, thereby delegating legitimacy to public organizations (Bekkers et al 2011).

Thus for the public partner of a PPP it is essential to align the PPP to the organizations political goals and interests in the local community and to some degree keep in control of this. For the private partner, improvements is interesting if they create economic value for the organization in question, which is seemingly a more simple question, but important to remember for public organizations (Mulgan & Albury 2003, Moore 2005). This could for instance be by winning a contract that secure long-term profit or obtain savings by decreasing production costs along the way. Thus, the question of value potentially complicates the process of innovating, since public managers, private companies and groups of citizens might have very

different perceptions of an outcome, which could lead to tensions and conflicts (Sørensen & Torfing 2011, p.850). Following, innovation through PPPs would need to build on some degree of *goal alignment* between public and private actors to secure *incentives for both partners*.

As this discussion shows, innovation does usually not only refer to an outcome, but also to *the process of innovating* (Osborne 1998, p. 1137). Whereas many authors describe the innovation process as stages or cycles, for instance idea generation, idea selection, idea implementation and idea diffusion (Eggers & Sing 2009), Van de Ven et al (2008) describes the innovation process as a journey, highlighting the chaotic aspects of innovating. From seeing innovation as mainly an internal process in an organization, there has been an increased focus on open innovation, where inflows and outflows of knowledge are used to accelerate innovation (Chesbrough 2006, OECD 2009). This development is captured by new practices and concepts such as user-driven innovation, collaborative innovation and co-creation of innovation in the public sector (Bason 2011, Sørensen & Torfing 2011). Thus, it could be interesting to investigate to which degree PPPs can facilitate such open processes of innovation, which part(s) of the innovation process PPPs relate to and to what degree PPPs can make room for less predictable and non-controllable processes of innovation.

On the basis of these discussions, this article will define innovation in the public sector as ***the development and implementation of ideas that are new to the specific unit of adoption*** (Van de Ven et al 2008, Rogers 2003, Walker 2006). Rather than closing doors, this definition should open for the possibility of asking relevant questions to the types of innovation, degree of newness, scope of change, value added and process of PPP innovation. **Table 1** summarizes the questions for PPPs as drivers of innovation.

Subject	**Questions**
Type of innovation	Can the innovation be characterized as product, service, process, organizational, management or conceptual innovation?
Degree of newness	Is the innovation new to the world, new to the country or new only to the specific unit of adoption?
Scope of change	Does the innovation lead to incremental, radical or systemic change?

Value added	Does the PPP arrangement incentivize both public and private actors to innovate?
Innovation process	Does the innovation include development and/or implementations of new ideas? Does the PPP make room for an unpredictable and non-controllable innovation process?

Table 1 – Questions for investigation of innovation in PPPs

Drivers of innovation in the public sector

In classic innovation theory, the driver of innovation has been seen as the development of new technology. Schumpeter (1942) describes the capitalist system as an evolutionary process of 'creative destruction', where the development of new technologies, new commodities or new forms of organization destroys existing economic structures from within and replaces them with new ones. Innovation is seen as an inherent part of the economic system, where an ever-present threat of destruction effectively imposes competitive behavior in firms. Essentially this could be described as a *supply-driven innovation system*, where new markets are developed on the background of availability.

Contrary to the private sector, the public sector has often been accused of being less innovative. To some degree this makes perfect since, since according to Wilson (1989), the bureaucratic organization is in its essence aimed to stabilize systems rather than create changes. Four main challenges are often mentioned in relation to public sector innovation:

1, A bureaucratic culture: The main critique of the public sector has been on its hierarchical, slow-moving, conservative and rule-bound culture, which focus on standardization and securing equal rights to citizens (Sørensen & Torfing 2011, Bekkers et al 2011).

2, Political leadership: The political nature of public administration is said to lead to incremental, rather than radical change, because of the culture of compromise in political negotiations. Furthermore, these compromises tend to have a short-term orientation towards the next election and bypassing finding solutions to long-term consequences of complex problems (Bekkers et al 2011).

3, Risk aversion: Inherent in the public sector culture is also distaste for risk-taking. There can be great political consequences of failure, where public blame and the image of gambling with taxpayers' money

could lead to a change of power (Moore 2005, Bommert 2010). If the public sector takes risks, this could have serious consequences altering the quality of life for individual citizens (Albury 2005).
4, Lack of competition: The lack of incentives to take risks is linked to the lack of competition in the public sector, which makes the diffusion of innovation slower than in the private sector (Albury 2005). Generally, the survival threat for public organizations is less evident.

Despite of these 'maladies' that restrict openness and impose a 'zero-failure' culture, many examples have shown that the public sector have actually delivered a number of innovations (see Albury 2005, Mulgan 2007). According to Eggers & Sing 2009, what seems to be the problem is that these innovations have been episodic 'grand-slam' innovations driven by accidental events, and that there have been a lack of focus on incremental innovation. To deliver more innovation, the public sector needs a more strategic focus on innovation (Eggers & Sing 2009).

The political system does however install competition between political parties, and there is a tendency for more competition not only between nations, but between local authorities competing to be 'the most climate friendly city' or to reviving local communities by attracting the 'creative classes' through events or entertainment arenas, which could drive forward the search for innovative solutions to public sector challenges. Several studies indicate that public sector demand actually has greater importance for innovation than technology innovation within private firms (Rothwell & Zegveld 1981, BDL 2003, *OECD 2009*). Thus, there seems to be a good reason for the increased interest in *'demand-driven' innovation* at the European level (EC 2003, 2006), although these ideas still seems to play a less significant role in national innovation policies (Edler & Georghiou 2007).

In the 'innovation systems perspective', demand is seen as one of the 'components' of the innovation system. Innovation system theorists emphasize the importance of having a large and differentiated group of innovation actors operating in a framework, which enables learning-oriented interaction between them. This leads Edler & Georghiou (2007) to propose that rather than focusing separately on supply or demand, the innovation key would lie in the interaction between them. Thus, there seems to be a need for increased public-private interaction to create communication channels between supply and demand for innovation in the public sector. The question is, if PPPs could deliver these micro-cosmoses of demand-supply interaction, and thereby engage the private sector not only by delivering public services on demand, but by

participating in innovation processes aimed at developing new solutions to public challenges. To understand if and how PPPs could drive public sector innovation forward through more intense coordination of action between public and private actors, we have to dig a little bit deeper into the organizational forms of PPPs.

Defining and categorizing public-private partnerships

The most general agreement in PPP literature seems to be that the concept is nebulous and ill-defined, and many authors have tried to address this by dividing PPP literature into different approaches (Weihe 2008) or families (Hodge & Greve 2007). Whereas different forms of collaboration or 'mixes' between public and private actors in society have a long history (Wettenhall 2003, 2010), the partnership term have in modern times been used to describe inter-organizational cooperation such as urban renewal projects and regional development projects, public policy networks in specific policy sectors, long-term infrastructure contracts in various forms and partnerships for development in less developed countries (Greve 2009, Weihe 2008).

PPPs have been categorized according to different ideologies in the purpose of PPPs (Linder 1999), organizational form and type of relationship (Klijn 2010), tight or loose financial setup (Hodge & Greve 2007), or as instrumental, symbolic or organic ideal types (Ysa 2007). This has led to a theoretical discussion of the limitations of which organizational forms deserve the PPP label (Klijn & Teisman 2000). As Weihe (2006) describes, it has been claimed that a PPP as a minimum involve a) a public and a private actor, b)an enduring cooperation between these actors, c) risk-sharing and d, a principal-principal relationship (p.20). Empirically speaking, this is not always so. For instance, contractual PPPs build mainly on principal-agent relationship, and service partnerships are sometimes rather short-term. But how then, can partnerships be differentiated from other contractual relations, where a public task is delegated to a private actor?

For the purpose of this article we will define PPPs as ***cooperation between at least one public and one private actor to solve a public sector task, in which the partners share risks, costs and resources and engage in dialogue on goals and means concerning the task*** (Ham & Koppenjan 2005, Donahue & Zeckhauser 2011). For the public sector to be able to participate, the partnership has to focus on solving a public sector task, whether this mean delivering a public service, providing infrastructure or developing

new technology for the purpose of improving the public sectors ability to solve societal challenges. The partners share risk and costs in the project, preferably by placing risk with the partner most capable of handling them, and contribute with their unique resources to solve the task. Since these features could probably also be found in a traditional contract, the last part of the definition is the most crucial: there has to be some degree of shared discretion on the goals of the cooperation and how to achieve them. In opposition to Donahue & Zeckhauser (2006), who exclude traditional contractual relations from being collaborative, since a contract to them would '*rest all discretion to the government'* (p.497), this article argues that, especially in complex contracts, there will always be an element of dialogue about the operation of tasks, at the very least in the continuous negotiation of the wordings of the contract. For instance in refuse collection, citizens with complains usually contact the responsible municipality, who then discuss this with the contractor. For the cooperation to be a partnership and not just a market transaction though there should not only be a dialogue on means, but also on goals, with the purpose of aligning interests and creating a common understanding to guide problem-solving.

This definition is broad enough to comprehend different empirical phenomena under the PPP umbrella. In line with Brinkerhoff & Brinkerhoff (2011), the article will categorize PPPs on the basis of the purpose or expected output of the PPP. Three PPP types are chosen as relevant for solving public sector tasks in a European context: *Long term infrastructure contracts (LTICs)*, *public-private service partnerships (PPSPs)* and *public-private innovation partnerships (PPIPs)*. Thus I do not include policy PPPs or economic development PPPs, but have chosen to focus on PPPs with a relatively tangible output to increase comparability. Service partnerships and innovation partnerships are generally less described in partnership literature than infrastructure partnerships, and rarely get their own PPP category. This could probably be explained by a mixture of economic importance and newness of phenomena. Whereas there have been some literature discussing service partnerships, sometimes as *strategic* service partnerships (SSP) (Domberger & Fernandez 1999, Entwistle & Martin 2005, Baker 2007), literature on innovation partnerships, which empirically speaking is a more recent phenomena, seems to have bloomed only recently (see for instance Micheli et al 2012 and Munksgård et al 2012). The lack of focus on these PPP types seems problematic as both partnership types are relevant for solving public sector tasks.

LTICs, service partnerships and innovation partnerships have all been identified in a Danish context and are described in Udbudsportalens guide on public-private collaboration to Danish municipalities

(Udbudsportalen 2010). The division of infrastructure and services also correspond with the European Union's definition of PPPs: "*PPPs are forms of cooperation between public authorities and businesses, with the aim of carrying out infrastructure projects or providing services for the public*" (European Commission 2004). In a European perspective, the distinction between the three PPP types could in reality be a bit blurry, since for instance some infrastructure partnerships also includes service delivery, and some service partnerships have a strategic focus on innovating services. I have withheld the distinction, since, as suggested in the introduction, the purpose could matter to the possibilities for innovation. Obviously, innovation PPPs should more likely lead to innovation, and I could have chosen to place the spotlight on them alone, but I believe this would mean missing out on the possibilities in the two other PPP types.

PPPs as hybrid organizational drivers of innovation

To understand how these three PPP types could act as drivers for innovation, we will look a bit more closely on the organizational form of PPPs. We argue that PPPs can be understood as hybrids not only because they engage actors from different organizations and sectors, but essentially because they combine ideas and tools from two different perspectives on public management. This creates different frameworks for innovation across PPP types.

Public management reforms are often connected to different periods of time gradually replacing each other (Osborne 2010, xx), but though New Public Management (NPM) has been declared dead (Dunleavy et al 2005), and post-NPM reforms has emphasized greater centralization and a revival of control and coordination (Osborne 2010, Christensen & Lægreid 2007), NPM tools and assumptions seems to be very much alive in the public sector. Rather than complete regime shifts, the acceleration of various public management reforms seems to have resulted in a 'sedimentation' or 'layering' in the public sector, where public sector organizations are becoming increasingly complex and hybrid as they attempt to attend to various and sometimes conflicting ideas, considerations, structures, demands and cultures at the same time (Christensen & Lægreid 2007). As a part of this development, the distinct public vs. private divide has dissolved into a more blurry perception of public + private along with the introduction of a broad range of competition- and/or collaboration-based management tools (Wettenhall 2010, Sørensen & Triantafillou 2009). PPPs can be seen as sedimentations of this blurriness and increased hybridity in the public sector.

According to Klijn (2010) recent confusion on the meaning, argumentation and rationality for and best form of PPPs can be linked to the hybrid ideas in the PPP concept. The main idea of PPPs is that a more intense cooperation between public and private partners will produce better and more efficient policy outcomes and products. But the way this should be done and the assumptions about how this will lead to better and more efficient outcomes are presented differently in literature. The reason for this confusion, Klijn argue, is that PPPs are hybrid ideas in the sense that they inhabit assumptions from two theoretical perspectives on public management: NPM and Governance.

The NPM-agenda rose on a critique of the 1970'ies planning-regimes, which in the late 1980'ies were deemed inefficient and bureaucratic (Sørensen & Torfing 2005). The cure was 'less state, more market'. The government should focus on the formulation of policies and leave the implementation to private or non-profit organizations, who according to Osborne & Gabler (1992) '*tend to be better at performing economic tasks, replicating successful experiments, adapting to rapid change, abandoning unsuccessful or obsolete activities and performing complex or technical tasks*' (p.45f).By tapping into the competencies and rationalities of private companies through the employment of market-based tools such as privatization and outsourcing, more autonomous and specialized 'arm's length' organizations and increased focus on output, customer satisfaction, measurement and evaluation, public organizations hoped to gain more efficient and effective outcomes (Hood 1991, Baker et al 2009). In this sense, NPM was aimed at governance innovation by changing not only the organization of the public sector and the applied tools of governing, such as contracting out, but also the mindset and role of public managers (Hartley 2005).

Although PPPs also promise an alternative way of managing public services that should provide a better combination of public and private strengths (Hodge & Greve 2009, p.545), especially contractual PPPs could be related to ideas of delegating public tasks to a more efficient private sector, but also less formally bound cooperations could be related to ideas of placing specific bodies in arm's lengths of their mother organizations (Klijn 2010).

The conceptual shift from 'government to governance' could be seen both as an empirical observation of changes in societal governing, where the governing of society increasingly take place through autonomous, but independent horizontal networks and other forms of collaboration between actors from the public, private and civil society (Sørensen & Torfing 2005, Sørensen & Triantafillou 2009), and as the more normative

idea, that increased complexity, diversity and specialization in society has led to an increased interdependence between societal actors, which demands more complex ways of governing (Rhodes 1996, Kickert et al 1997, Kooiman 2003). Thus, the ideas in governance could partly be seen as a reaction to the increased specialization and atomization of the public sector following NPM reforms and led to a resurrection of the state, but in an altered role. In the governance perspective, politicians and public managers are re-vitalized and large-scale changes are supplemented by a focus on supporting innovations broadly in the public sector, including involving private actors as co-producers (Hartley 2005). PPP ideas of combining resources and knowledge from interdependent actors to create new and better solutions to complex society problems can be linked to ideas from governance (Klijn 2010).

In this sense, both NPM and Governance reforms have emphasized innovation and the inclusion of private actors, but in different ways. *In the NPM perspective*, the driver of innovation is the creation of incentives for the private agent. Increased focus on strategic goals, outputs and customer satisfaction in NPM reforms creates a pressure for innovation (Aagaard 2012), which is transferred to the private sector through a principal-agent relationship (Baker et al 2009). The incentive is created though competition for delivery of public services and through the specifications in the contract providing specified tasks and penalties for not achieving them. PPPs can be organizational drivers for innovation, because they create a stronger incentive for innovation by the private agent delivering the public service.

In the Governance perspective, the driver of innovation is seen as the creation of synergies through public and private collaboration, which adds to what Huxham (1996) calls 'collaborative advantage'. Actors collaborate because of their recognition of mutual interdependencies, which lead them to share resources as equal partners in principal-principal relationships. Information and knowledge sharing and mutual idea generation could lead to new and better solutions for complex problems. PPPs can be organizational drivers for innovation, because they create an institutional setup for collaborations between public and private actors with different resources and competences.

As Klijn's analysis suggest, the hybrid idea of PPPs also manifest itself in the organizational forms of PPPs. In this sense PPPs are not only hybrid ideas, but also hybrid governance tools and practices. Ideas from NPM and Governance tend to lead to different ways of coordinating action between public and private actors. Whereas the main mode of coordination in NPM is competition, the main mode of coordination in

governance is collaboration. C*ompetition* is coordination mainly through transactional mechanisms such as tight specification, financial incentives, penalties and competitive tendering, and *collaboration* is coordination mainly through mechanisms of trust, mutual commitment and shared goals (Alford & O'Flynn 2012, p.20). Thus, the possibilities for competition and collaboration sedimented in different PPP types could indicate a greater or lesser degree of influence from governance or NPM reforms and create different frameworks for public and private partners to develop and implement new ideas. Basically, PPPs gives us more than one tool in the toolbox, which could be positive, but it could also lead to confusion about when which tool is in play or impose conflicts between the functioning of tools and the ideas behind them.

Table 2 provides an overview of the influence from NPM and Governance on PPPs, which influence their possibilities as innovation drivers. The overview can be used to understand the drivers of innovation build into the organizational design of different PPP types.

	Idea of PPPs	**Organizational form**	**Public-Private relationship**	**Mode of coordination**
NPM	Contracting out to private actors leads to more efficient and effective solutions	Contractual relations or arms length's organizations	Principal-agent	Competition
Governance	Including private actors resources and knowledge leads to better solutions	More loosely bound, network based interaction	Principal-principal	Collaboration

Table 2: PPP influence from NPM and Governance

Analyzing PPPs as hybrid organizational drivers of innovation

Instead of dividing partnerships in groups of either competition-based or collaboration-based, **Figure 1** show a scale, where partnership types are placed according to the opportunities for competition and collaboration build into their organizational design. As all the PPP types are to a greater or lesser degree hybrid combinations of NPM and Governance, this means that they could primarily act as innovation drivers through either incentives/competition or synergies/collaboration, but would tend to include both drivers. This could be positive, as PPPs in this way could combine the 'best of two worlds', but it could also lead to confusion of the dynamics, purpose and possibilities of PPPs.

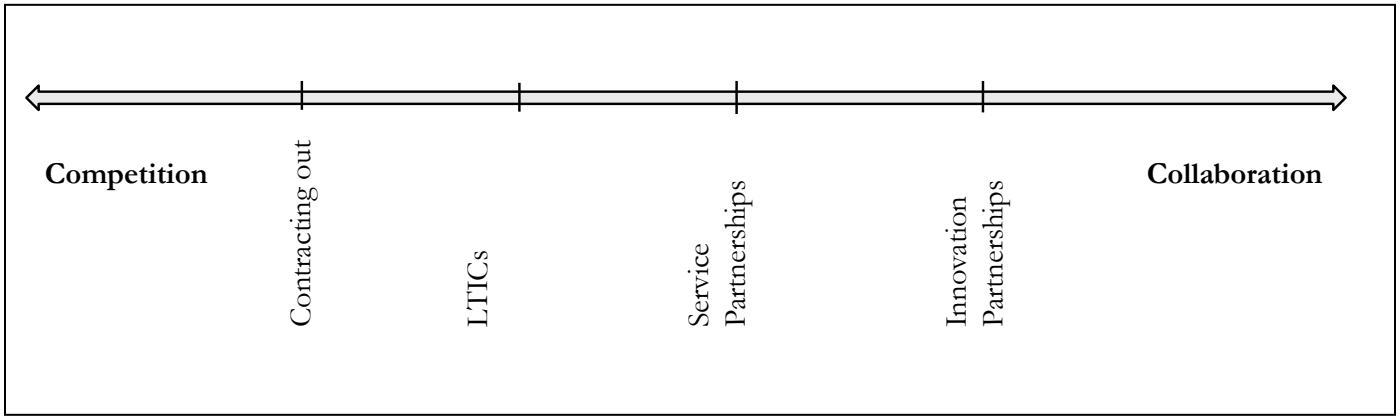


Figure 1: Contracting out and public-private partnerships on a scale from competition to collaboration

In the following sections we will have a closer look at the innovation drivers in the three PPP types. We will illustrate these considerations with examples from existing empirical evaluations, which will help us point to existing gaps in our knowledge on PPPs and innovation.

LTICs

Long term infrastructure contracts (LTICs) originated from the UK's Public Finance Initiatives (PFIs) in the 1980'ies, and was reframed as PPPs by the Labour government in the late 1990'ies. Koppenjan (2005) has defined LTICs as: '*A form of structured cooperation between public and private partners in the planning/ construction and/or exploitation of infrastructural facilities in which they share or reallocate risks, costs, benefits, resources, and responsibilities'* (Koppenjan 2005). LTICs have been used to build for instance public schools or roads and involve a complex contract that combines several phases in an infrastructure project in various

constellations, such as BOOT (build-own-operate-transfer) or DBFO (design-build-finance-operate) (Hodge & Greve 2009). In relation to our definition, LTICs have especially put focus on improved risk-sharing including a re-allocation of costs, benefits, resources and responsibilities, whereas the possibilities for dialogue have been limited by EU regulations aiming to secure equal competition. There are only limited possibilities for dialogue after the announcement of the competition, which has to be open for all competitors, and the scope of the task cannot be altered in any significant way after the choice of contractor. These barriers have been addressed by altering the material to describe functions instead of detailed specifications and establishing a period of 'competitive dialogue', where the project moves from a general description to more detailed specifications in dialogue with pre-approved private bidders (Greve 2009).

Despite these new possibilities and the long-term relationships that could enable trust-building, the procurement rules and detailed, complex contracts apparently still restrict possibilities for *collaboration*. In an empirical investigation of construction projects, Leiringer (2007) concludes that LTIC type PPPs do not create innovation through collaborative working, since the possibilities for this is very restricted (see pp.305-6), and likewise Hurst & Reeves (2004) experienced that the contract on a public school in practice was based on detailed input specifications and not more open output specifications.

Thus, it remains open, if LTIC PPPs could lead to collaborative driven innovation if the possibilities for dialogue in for instance competitive dialogue processes were exploited fully. These experiences rather highlight the challenges of managing these processes in praxis, where public managers have a tendency of falling back on bureaucratic governing. This could also be a question of learning. If we look at Uyarra & Gee's (2012) analysis of the Greater Manchester waste PFI, they managed to keep open the descriptions, while still pressuring the market towards new and less tried solutions.

Competition provides an incentive for delivering a proposal that impresses the public organization, but this demands a healthy competitive environment. In a study of 68 highway concessions, Rangel & Galende (2010) found correlation between the number of bidders and R&D activities in the private companies. On the other hand, Hurst & Reeves (2004) describes a case, where 12 original bidders and three pre-qualified demonstrated competition, but the results still seemed to follow public sector demands closely, rather than being a result of private sector innovation (Hurst & Reeves 2004). In the Greater Manchester case,

increasing economies of scale was used to increase interest from bidders and there apply pressure for more innovative solutions (Uyarra & Gee 2012). This late case highlights that the market might not work by itself. The Manchester case showed how collaboration with stakeholders to develop demands and investigate market opportunities made them more equipped to use the competition tool. Because of the restrictions in procurement legislation, this had to take place before the call for tenders, which of cause to some degree limits democratic inclusion in the innovation process.

As these PPPs rely heavily on the idea of risk transfer, the link between transfer of risks and innovation could be the most relevant question to ask. The transfer of relevant risks could create an incentive for solid projects that display a whole-of-life thinking, which could involve implementation of new technologies or products. On the other hand, transfer of risks could actually work against innovation. If the private agent takes on the risks of for instance on-time and on-budget delivery, there is not much incentive for experiments with more radical innovation. This could lead the private sector to bring only tried and tested concepts into the project (Greve 2009), which is also mentioned in several papers (Leiringer 2006, Ball et al 2000) .

Thus, though the main ideas in LTICs are improvements through competition and risk transfer, and the quest for competition is limiting possibilities of collaboration, regulation and practices seems to be moderating towards more collaboration thereby increasing the hybridity of LTICs. Although technology innovation seems to be only incremental, focusing mostly on already tried and tested technologies, the large scale of LTIC projects could provide possibilities for more systemic changes at the local level, which could lead to a transformation of public services, as we saw it in the case of Greater Manchester. Still, the large risks involved would probably rather lead implementation of technology used in other contexts, rather than development of new technology. The mixed experiences with innovation outputs, seems to highlight that the possibilities of these organizational forms are not used in full, and that management, learning and loosening up on public control are crucial.

Service Partnerships

Public-Private Service Partnerships (PPSPs) sometimes have shorter time frames than LTICs, and they tend to involve smaller private investments. Baker (2007) defines strategic service partnerships as "*large-scale, long*

partnerships between two or more organizations in which core or strategic services of a local authority are delivered through a partnering arrangement" (p.71). These partnerships in the UK can involve several organizations in multiple service delivery in a period of 10-25 years, but as Domberger & Fernandez note based on surveys on Australien service partnerships, these partnerships, which do not involve heavy investments in psysical assets, is not necessarily long term. In a Danish context, service partnerships are usually smaller in scale and have time ranges around four years (Udbudsportalen 2010).

Service partnerships usually involve tasks that are complex and diverse and thereby require a continuous dialogue between public and private actors (Domberger & Fernandez 1999). This could be in waste management, where the collection and treatment of waste requires flexibility for continuous environmental improvement and a good dialogue for solving issues arising from weather and other logistical challenges. Thus, when a public service is contracted out, the contract will usually be designed to create some degree of flexibility in the relationship (ibid.). This involves the establishment of common goals that should guide the relationship and promote trust and reciprocity. Thus, in relation to our PPP definition, dialogue on goals and means are crucial in a Service PPP, whereas sharing of risks, costs and resources are less prominent that in LTICs.

Service partnerships are the most hybrid partnership type, as they initially build on competition, but are essentially 'trying to become' collaborations. Service partnerships aim at creating incentives for providing the best offer from the private sector through competitive tendering, but include in this the willingness to engage in a collaborative relationship. Thus engaging in a service partnership rather than a classic service contract could in itself show some openness towards innovation in the private actor.

Compared to LTICs the innovation does not necessarily lie in the creation of the contractor proposal, but rather in the flexibility and/or incentives in the contract to implement continuous improvements after the contract. As service partnerships like LTICs are contracted out according to EU competitive tendering rules, there is not much possibility for changes in the contract after the award, but as in LTICs, the idea of describing the function rather than specified tasks could provide some flexibility. The basic idea is that the interdependency between the partners will result in the development of mutual trust, which will make a more detailed contract unnecessary (Baker 2007). Thus, this is a very strong emphasis on assumptions in governance theory.

Furthermore, outcome-based incentives for continuous improvements can be built into the contract, with the risks and potential awards being shared between the public and private partner (Baker 2007). Thus, this is an incentive build into the contract, which actually promotes collaboration by creating improvement as a common goal. Bovaird (2006) shows, how a potential for shared gains built into the contract resulted in a number of service and technology innovations in revenue and benefit services. Thus, the organizational form of service partnerships creates an interesting mixture of incentives and synergies as drivers for innovation. This could be relating to improving the service or changing the process of service delivery.

However, the few empirical investigations show mixed results for innovation. Though Slater et al (2007) describes an increased awareness of interdependencies in service partnership, they also stress that building trust takes time, and the partners tend to fall back to coordination through control and monitoring. The authors found no correlation between partnership type and the choice of technologies hence the results seemed as business as usual, rather than innovation. On the more positive side, the 'commerzialization partnerships' from Micheli et al (2012) and Schoeman et al (2012) as well as Scheuer's (2012) health partnership and Bovaird's (2006) revenue and benefits partnership all showed innovation outputs. In Scheuer (2012) a health school described as both a conceptual, service and product innovation was developed in collaboration with a private company, although it in the end turned out to not be commercially successful. In the 'commerzialisation partnerships' private partners contributed with ideas and knowledge to develop a new product that could be commercialized though the public organization.

As the name hint these partnerships were strategically focused on innovating public services, which could be the triggering factor explaining the different output in Slater et al.'s service PPP. Again, the organizational form takes us some of the way, but to exploit the possibilities for innovation demands strategic management.

In comparison to LTICs, their relatively smaller scale makes it less plausible that service partnerships would lead to more large scale systemic innovations, whereas the focus on flexibility, dialogue and gradual improvements provides good possibilities for incremental change, although still under the restrictions of public procurement regulation. As in LTICs, rather than development of technology, the risks implied would probably lead to implementation of technology that have proved to work elsewhere, and the

development part of the innovation process would rather focus on finding out which kind of technology or combination of technologies could be implemented to improve the public service, as well as how processes of service delivery could become more efficient.

In Bovaird's (2006) revenue and benefits partnership, there was an effort to broadly include public servants in the organization in the innovative efforts by the private company, which was used to generate a more innovative culture, but in the other cases described, opening up innovation processes to other than the involved actors does not seem to have been in focus.

Innovation Partnerships

Public-Private Innovation Partnerships (PPIPs) could still be considered a new subject of study in the PPP literature. As the review in Munksgaard et al (2012) shows studies are rather discarded and PPIPs go by many names. For instance, and adding to their review, the descriptions of the 'contractual' and 'institutionalized' PPPs in Esteve et al (2012) show that these could probably fit into the category of innovation partnerships, as their aim is the development of new technologies, processes or strategy in collaboration with private partners.

According to Munksgaard et al the main characteristic of PPIP is that "*it focuses on developing a solution that afterwards is delivered through public procurement. (…) the common denominator of innovative partnerships between public and private organisations is the mutual idea development and sharing of knowledge as well as risks, costs and benefits."* (p. 42). In comparison to descriptions of LTICs and PPSPs, this description underlines the dialogue part much more and explicitly mentions mutual idea development. In these partnerships the main purpose is innovation, and they are complicated by the fact that the solution cannot be known on beforehand.

Compared to the other partnership types, innovation partnerships usually do not involve the delivery of a specified service, but rather focus on either a technology that solves a specific problem, or the development of common knowledge that could result in contracting out at a later stage. PPIPs build on an idea of mutual interests, since the public organization gains access to new technology and know-how, whereas the private part gains access to knowledge on user needs, which can be used to develop new products or solutions for a later profit (Udbudsportalen, 2010).

Innovation partnerships can involve only one private and one public actor, but they can also be more network-like structures that include several actors that are engaged because of common interests or specific competences. Often innovation partnerships grow out of personal relations between public and private actors, and they can avoid the demand for being contracted out, if they live up to the criteria of being an R&D project or do not extent national or EU lofts of economic amounts that can be transferred from public to private without competitive tendering (Designit, 2010).

Thus, innovation partnerships are mainly coordinated through collaboration, though they can include dimensions of competition as well. Public and private actors engage in collaboration, because they have mutual or corresponding goals, and the organizational driver of innovation is the synergies that may arise in these collaborative processes.

According to Esteve et al (2012), institutionalized partnerships based on principal-principal relations established in a new organization are potentially more innovative than contractual partnerships, because the institutionalization creates a higher intensity of collaboration, than when the private company is hired to deliver innovation in a principal-agent relationship. Thus, this could be seen as a combination of NPM and governance ideas, where the establishment of an 'arms-length' space for innovative interaction provides possibilities for closer collaboration. Contractual arrangements also show to be rather hybrid, since if a development task is contracted out through competitive tendering, the task of the private actor would often be to show that they are capable and have the 'muscles' to engage in such a collaboration, rather than that they should find the solutions before the contract. Thus, competition is not an incentive for private innovation, but rather becomes a tool for establishing an institutionalized collaboration for synergies, which could make the contractual/institutionalized distinction a bit blurry.

On the other hand, if the introduction of competitive tendering means that the common goal in reality is more public than private and that there is no political discretion in the relationship, there would probably be less effort put into the project from the private side, resulting in less synergy. Danish experiences show, that contracted private actors, especially in the start-up phase of projects, are more passive participants, and only deliver what is in the contract, without showing interest for the overall purpose of the project (Designit, 2010).

Furthermore, as Sadler (2000) states, PPIPs needs a special motivation and stimulation to actually succeed in the sense of implementing and diffusing the developed solutions. There could be a risk of not attaching the innovation to actual market opportunities, making it less clear for the private sector why they should participate (Designit, 2010). Thus, innovation partnerships may result in innovations that are actually not innovations, but rather inventions, as they may not result in implementation.

Despite these challenges, since PPIPs create the possibility for synergy effects in more open frameworks with the explicit goal of the development of new knowledge, technologies or processes, innovation partnerships could aspire to achieve actual 'new to the world' innovations. Esteve et al (2012) describes how The Blood and Tissue Bank (BST) and their private partner Caridian developed a radical new process for separating blood component before storage, which "*would not have been possible if BST had attempted to undertake the project alone, not even if the company had bought pre-designed machines currently available at the market, since this possibility did not exist for blood banks*" (p. 841). Thus, this combined technology and process innovation was afterwards implemented at a broader market.

The investigation by Esteve et al (2012) also showed that even though there were successes, public organizations experienced many failed innovation projects. Thus the allocation of risks is also an issue in innovation partnerships, where the resources, time and prestige placed in the project could be an incentive for both partners to work harder towards finding new solutions. Both Esteve et al (2012) and Nissen et al (2012) propose that the degree of unpredictability in these partnerships, actually lead to a higher degree of interaction between the partners. This could probably be linked to a higher degree of perceived interdependency. Although these closer interactions could lead to the development of new technologies or radical new ways of delivering public services, they are also more expensive and risky than buying an on-market product (Ysa et al 2012).

Campos et al (2011) emphasize the need for stakeholder involvement and participatory management on the basis of a review of product development partnerships in health care, and the sometimes more open forms of Innovation PPPs could provide possibilities for more inclusion. Also, they tend to involve users in the testing of new solutions, which is one of the attractions for private companies wanting to explore market opportunities. Again, the range of inclusion in innovation processes is a management decision.

Though there are also challenges in innovations partnerships, this PPP type creates possibilities for synergies between public and private actors that could lead to more radical changes in public services, and perhaps even the development of new technology which could alter systems of service delivery. Compared to LTICs and service partnerships they could be weaker on implementation.

Enhancing an innovative environment through PPPs

Recapping the challenges of innovating in a public sector context - bureaucratic organization, political leadership, risk aversion and lack of competition – recent public management reforms have altered the picture. The focus on innovation from the NPM regime seemed to have hung on, and even though the public sector is still bureaucratic to various degrees, reforms related to NPM and Governance have invited in new hybrid organizational forms such as public-private partnerships. These hybrids seem to have potential as institutionalized linkages between demand and supply side innovation.

Although partnerships in principle represent more horizontal forms of governance, they appear to be still living in the 'shadow of hierarchy' (Scharpf 1994). Empirical investigations of LTICs, service partnerships and innovation partnerships all show that innovation is often demand-driven through political goals from the public sector. This does not have to be a problem, and current challenges in the public sector in terms of increased public demands and distrust, wicked problems and restricted budgets, could also make politicians more eager to take on the risks of innovations (Bekkers et al 2011), but it is plausible to believe that linking up with supply by inviting the private sector in to a greater degree would lead to more synergies producing not-seen-before solutions.

If the public sector should wish for more radical change from PPPs, a main challenge could be the move towards principal-principal relations, where private actors are invited into more open idea development processes. Also, the public sector should accept that the 'raison d'être' is different for private actors. It cannot be expected that the creation of public value is reason enough to engage in collaborative projects for private companies, and the partnership should invite private partners in for a dialogue on both goals and means. This has been attempted with some success in especially service partnerships and innovation partnerships in the process after the contract award, whereas this would generally rather take place before the call for tenders for LTICs. On the other hand, inviting in private partners raises well-known issues of

democratic accountability, and the public sector would always have to be careful of how much influence it gives to some actors compared to others. This is probably a balance that has to be found and continuously adjusted in each case.

More markedly, PPPs take up the issues of risks and lack of competition, creating a possibility for placing more risk with the private sector through competitive tendering processes. This could make it easier for the public sector to engage in innovation projects. When empirical investigations show less innovative results from private partners, this seems to be connected to public managers holding on to well-known tools of bureaucratic control. Also, to explore the possibilities in competition as an innovation driver seems to demand a great deal of preparation and market investigation before a call for tender is made, for instance by introducing collaborative tools in the early phases of the PPP process.

Generally, the above analysis of the three PPP types shows that there are several grey zones, where the competition/incentives versus the collaboration/synergies distinction become blurry. Competition is sometimes used to institutionalize collaboration, and collaboration is sometime enhanced through incentives. The distinct organizational form of each PPP type thus influences their possibilities for being organizational drivers of innovation. LTICs, service partnerships and innovation partnerships create different frameworks for public-private interaction in the public sector that attempt to balance the inherent tension between competition and collaboration. Common to them all, seem to be that whereas the different organizational forms matters as a provider of different possibilities for interaction, actually exploiting these to innovate demands strategic management.

Whereas service partnerships are especially relevant for incremental improvements, innovation partnerships have potential for more radical changes and LTICs could have potential for more systemic changes at least at the local scale. This confirms innovation literature stating that major break-through innovations would probably demand different organizational settings than more incremental innovations. For instance, the invention and market maturation of a radical new service process would need a different framework than the continuous improvement of existing service and processes (Moore 2005). The public sector needs both. Generally, increased public-private interaction could lead to new mindsets and ideas in both sectors, which over time could lead to more comprehensive innovations.

Finally, there seems to be a potential in an increased involvement of stakeholders and opening of decision processes in all PPP types. The reviewed empirical investigations show a tendency to focus more on the output part of legitimacy, that the input part (Scharpf 1999). Though PPPs could be said to increase the number of participants in delivery and development of public services, a more strategic approach to user involvement seems prominent for increasing the public value of innovations.

Conclusion and suggestions for further research

In this article we have revisited the hybrid organizational forms of public-private partnerships to increase our understanding of the possibilities for using PPPs as organizational drivers for innovation in the public sector. Existing empirical case studies have been scarce and scattered, and show that PPPs might not deliver the innovations that are hoped for. Looking into the complexity of innovation dynamics in partnerships gives a slightly more positive outlook.

Locating three PPP types on a scale from competition to collaboration helped us identify how PPP types to a different degree incorporate ideas from NPM and governance in their organizational design. Whereas NPM ideas could be seen in PPPs where the public organization creates incentives for private agents to innovate through risk sharing and market-based competition, governance ideas could be linked to PPPs creating innovation through synergies from resource and knowledge sharing in trust-based principal-principal relationships. The analysis of how these two drivers were weighted and combined in the three partnerships types provided us with some explanation of their relative successes and unused potentials as organizational drivers for innovation. Especially, there seems to be a greater potential for incremental innovations through service partnerships, more radical innovations in innovation partnerships and systemic innovation at a local scale through LTICs.

The article have contributed to a deeper understanding of existing empirical investigations of innovation in PPPs and hopefully provided a more solid starting point for new empirical evaluations of PPPs. Furthermore, it attempted to link literature on public sector innovation with literature on PPPs. Main findings included that although the lack of competition is usually called out as the reason why the public sector is less innovative than the private sector, attempts to innovate in PPPs showed that collaboration

was at least as important and that the interplay between these two modes of coordination produced the most fruitful possibilities.

For further research, it could be interesting how PPPs could improve input legitimacy in innovation processes. The increasingly hyped concept of co-creation of innovation, which focus on innovating *with* someone, instead of *for* someone (Bason 2010), could perhaps be helpful to 'spice up' the organizational forms of PPPs. An example of this could be the implementation of new waste bins in municipalities. Voluntary citizens in the suburban municipalities of Copenhagen has participated in trying new waste bins divided in different sections for recycling purposes and both participated in evaluations and acted as local ambassadors for the new systems. This ensures a local adjustment of and involvement in new methods of waste collection.

In this article, we have mainly looked inwards into the possibilities of the organizational forms of PPPs as drivers for innovation. From this starting point, it could be interesting to turn outwards to the external environment. Newman, Raine & Skelcher (2000) suggest that the significance of partnerships as driver for innovation tend to be mediated by a prior culture of networking, openness to new ideas and attitude towards partnering in the organization (p.65). Partnerships do not evolve from thin air, but is often a result of hard work, research and networking activities. This was very evident in the case of Greater Manchester, where public managers engaged in negotiating, lobbying and persuasion to reach their goals (Uyarra & Gee 2012). Being perceived of as a valuable player for a partnership requires nurturing relationships to other public and private organizations in your sector before, during and after the partnership organization. This makes the construction of public-private partnerships an interesting topic for further research. Probably, the development and implementation of innovation in partnerships is rather a result of an innovative environment, than a driver for one.

Esteve et al (2012) dig into one 'best case' public organization to investigate the myriads of partnership innovations that could be achieved through partnership working. They stress how The Blood and Tissue Bank systematically create and use alliances that develop into different forms of public-private collaboration. This gives us some insights into, how the process of strategic partnering for innovation could work. Generally, as other PPP research has also shown (Steijn et al 2011, Ysa et al 2012), the importance of management of PPPs cannot be overstated. In this sense, the use of various organizational

forms could be seen as a part of strategic partnership management. The development of a comprehensive framework for the management of innovation in PPPs could be a next step for enhancing innovative efforts in PPPs.

PPPs basically build on the idea of mutual benefits for all parties that outweigh the costs of participating in the collaboration (Edelenbos, Klijn & Steijn 2007). A yet seemingly unanswered question is what the private actor gets from partnering with the public sector on innovation - especially when in some cases most of the risks and none of the decision-making power. There is a general gap of knowledge of partnerships seen from the private sectors view, which also in relation to innovation could be relevant to investigate empirically (Hodge et al 2010). To get more knowledge and focus on the private sector perspective is also important to develop public manager's skills in constructing markets for the development of new technologies.

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Annex 1 - Empirical investigations of public-private partnerships and innovation

Publication	Sector	Method	Data Collection	Conclusions
Public-Private Infrastructure Partnerships				
Eaton, D., Akbiyikli, R. & Dickonson, M. (2006): An evaluation of stimulants and impediments to innovation within PFI/PPP projects. Construction Innovation, No. 6, pp.63-77	Construction	Testing a theoretical model on multiple case studies	Four previous case studies of PFI projects: Two UK prisons, a Portuguese bridge, a UK military development and a small UK primary school. Text analysis of semi-structured interviews with senior construction industry practitioners and field notes from interviews with client, special purpose vehicle and contractor representatives	• The authors develop a theoretical model for identifying stimulants and impediments for innovation in PPPs by synthesizing theory on social and contextual factors in the working environment influencing creativity and innovation in the restrained context of PFIs • They present a list of factors influencing innovation on four levels: External environment, organizational, project and job role. • They conclude that 3 of 4 projects have more impediments than stimulants for innovation, and that this must mean that there is room for more innovation by adjusting this.
Reeves, E. & Hurst, C. (2004): An economic analysis of Ireland's first public private partnership. International Journal of Public Sector Management, Vo. 17, No. 5, pp.379-388	Schools	Embedded case study of the first PPP in Ireland on five public schools	Interviews and documentation from the Department of Education and Science (DOES), the principals from the five schools and the private contractor.	• The authors conclude that there was no evidence of innovation • The intention on making room for innovation through output rather than input indicators seems to have turned into detailed and prescriptive specifications in a 200 pages doc. • DOES interviewees mentioned increased circulation space as an innovation, but this may not be an innovation. It was only accomplished in three out of five schools and was specified clearly in

				the requirements.
Leiringer, R. (2006): Technological innovation in PPPs: incentives, opportunities and actions. Construction Management and Economics, Vol. 24, No. 3, pp.301-308	Construction	A four year study of PPPs carried out in 1999-2003 through a multi-method research design. Micro-level view on actors in the design and construction phases of PPPs.	Reference group of 15 Sweden-based key stakeholders. Observational fieldwork following a BOT unit in a large construction company. Site visits to five major international projects and interviews with senior representatives of public and private actors involved in PPPs from diverse countries. Multiple-case study of four projects of which three was successful in implementing innovative technologies.	• Despite the acceptance of such claims in industry and government, theoretical basis to support innovation through PPPs seems underdeveloped • The paper evaluates four potential driving forces for innovation through PPPs: Design freedom, collaborative working, risk transfer and long-term commitment and conclude that their functioning is doubtful and that good and early communication among partners is more important than contract formulation. • There could be room for innovation, but some of the general understanding have to be re-phrased • There is a tendency towards implementing technologies that have been successfully implemented before to reduce risks
Ball, R., Heafey, M. & King, D. 2000: Private Finance Initiative – a good deal for the public purse or a drain on future generations? Policy & Politics, Vol. 29, No. 1, pp. 95-108	Schools	Single case study of a PFI project to replace a secondary school, participant observation. The case study is a part of a larger project	Case studies (data not specified), participant observations	• The article explains how the bidding process and finance of PFIs may actually be more expensive than traditional projects, but that this could be balanced by additional benefits such as innovation. • The idea is that a projects output specification will allow private bidders to come up with new and most efficient solutions. • The case showed that the only innovative features in the design

		to determine the medium and long-term impact of PPPs on the national economy through economic modeling, which also includes a number of in-depth case studies.		came from the public sector, but also that the specification were rather input than output focused. • One bidder showed financial innovation, but this is not explained in more detail in the article.
Rangel, T. & Galende, J. 2010: Innovation in public-private partnerships (PPPs): the Spanish case of highway concessions. Public Money and Management	Transport	Survey, quantitative analysis (multiple regression analysis)	Survey of highway concession rewarded to Spanish companies. Six out of ten companies responded, which covers 68 highway concessions between 1996-2005	• On the background of varied results from academic studies on PPPs and innovation, the article aims to understand which factors influence innovative activities in partnerships. • Four hypotheses is tested concerning transfer of risk, transfer of design responsibility, use of penalties and competition between bidders. • The findings showed a significant relationship between transfer of risk, large number of competitors and penalties and R&D activities. These activities did not necessarily lead to innovative products or processes though – in fact concerning penalties the relationship was negative. There were no correlation between transfer of design responsibility and

				innovation.
Uyarra, E. & Gee, S. (2012): Transforming urban waste into sustainable material and energy usage: the case of Greater Manchester (UK). Journal of Cleaner Production	Waste	Single case study	Policy documents, industry association reports, press releases and newspaper coverage, 18 semi-structured interviews with key actors in Greater Manchester and nationally from both private, voluntary and public sectors.	• The PFI in Greater Manchester was used to transform the waste management system from a system based on landfill to a more sustainable complex system of recycling and reuse. • The article does not however conclude to which degree the technologies was new, except that they tested technologies not generally used in the UK • The authors emphasize political vision, scale economies, stakeholder engagement, market shaping and the ability of waste managers to gather expertise, resources and knowledge as cruzial.
Public-Private Service Partnerships				
Slater, R., Frederickson, J., Thomas, C., Wield, D. & Potter, S. 2007: A critical evaluation of partnerships in municipal waste management in England. Resources, Conservation and Recycling, Vol. 51, pp.643-664	Waste Management	Multiple case study of five different types of partnerships in waste management in the UK based on an exploratory investigation. They also made a comparison to a case with a traditional contract.	The exploratory investigation was based on 50 semi-structured interviews with key stakeholders such as national level policy maker, umbrella organizations and managers and policy officers in public sector, community sector and industry. The case studies were based on interviews with key partners.	• Authors suggest that partnerships tend to lead to more efficient 'business as usual' rather than a more effective shift to a sustainable future • No clear correlation between the type of partnership and the nature of waste management technologies employed • Implementing more sustainable/innovative technologies are not dependent on partnerships • In most cases, resource synergy and financial efficiency was prioritized over policy synergy and bringing together different perspectives to create innovation

Bovaird, T. 2006: Developing new forms of partnership with 'the market' in the procurement of public services. Public Administration	ICT/ Revenues and benefits services	Typical/best case studies of 1, relational contracting, 2, partnership procurement and 3, distributed commissioni ng as newly emerging market relationships	Qualitative interviews, site visits and documentation studies on the three cases: 1, The Unisys and London Borough of Harrow partnership for the revenues and benefits service, 2, A joint health/social care facility in Dudley, 3, A housing PPP in the South of England	• The article uses the three cases as illustrations of how market relationships have changed from simple procurement to complex, multi-stakeholder relationships, and how this has resulted in better public procurement. • Especially the first case directly shows how relational contracting in a PFI has led to innovations in a public service. The article provides a list of innovations, and describes how incentives in the contract combined with a collaborative approach have led to more innovative behaviors. • The other two cases emphasize how new solutions have emerged from co-development processes including the local society in decision processes.
Micheli, P., Schoeman, M., Baxter, D. & Goffin, K. 2012: New Business Models for Public-Sector Innovation. Successful technological Innovation for Government. Research-Technology and Management	IT/Weather services	Mixed methods: A survey combined with a case study of two projects: The Public Sector Broadband Aggregation in Wales and The Meteorologic al Office healthy	Distribution of an online survey to 22,000 public managers in the UK with 661 survey responses. From this two cases were selected as frequently mentioned good examples of 'commercialization partnerships'.	• The article discuss how 'commercialisation partnerships' can be used to innovate public services on the basis of two empirical examples and propose three factors that private managers should focus on if they would like to diffuse new technology in the public sector: 1, Focus on customer priorities, 2, engagement route and 3, sharing of intellectual capital and skills • 'Commercialization partnerships' is defined as 'a collaboration between a public sector organization and a private company aimed at

		Outlook program		generating economic value from a public sector asset'. The two examples can be characterized as service partnerships, which focus strategically on the development of new public services
Schoeman, M., Baxter, D. Goffin, K. & Micheli, P. 2012: Commercialization partnerships as enabler of UK public sector innovation: the perfect match? Public Money and Management	IT/Weather services	Mixed methods: A survey combined with a case study of two projects: The Public Sector Broadband Aggregation in Wales and The Meteorological Office healthy Outlook program	Distribution of an online survey to 22,000 public managers in the UK with 661 survey responses. From this two cases were selected as frequently mentioned good examples of 'commercialization partnerships', and semi-structured qualitative interviews were carried out.	• The article explores the potential for private sector actors to contribute to public innovation through a new innovative governance model: Commercialization partnerships • By exploring two best cases, the authors show how private partners contribute with ideas and skills to develop new or improved public services, which generate shared benefits • To benefit from commercialization, public sector actors has to overcome traditional innovation barriers in organizational culture, potential lack of skills and awareness
Scheuer, J.D. 2012: The Role of Boundary Objects in Public-Private Innovation Networks: The story of Næstved Health School. In L.A Macaulay et al eds.'Case Studies in Service Innovations',	Health care	Single case study of the collaboration between Falck healthcare and Næstved Municipality on a Health School	Document studies, interviews and talks with key actors	• The research project describes and analysis the process of the project and propose that the reason for the lack of success in terms of continuation of the project was a lack of 'boundary objects', which could translate between the two different worlds of the actors. • The health school is described as both a process innovation, conceptual innovation and marketing innovation at the same

Springer				time. • Although the collaboration is described as an innovation network, I believe it can be characterized as a service partnerships, since it involves the delivery of health care services and only seem to involve two organizations sharing risks, knowledge and resources.
Public-Private Innovation Partnerships				
Nissen, M., Evald, M & Clarke, A. 2012: Collaborative and cooperative forms of interaction and their significance for Public-Private Innovation Partnerships. Ledelse & Erhvervsøkonomi	Hospitals	Testing two typical cases of cooperative and collaborative innovation projects	Participant observations of meetings in two sub-projects in periods of hhv. 1 ½ year and ½ a year: 1, DEFU-STEP on the development of an autoclavable case cart trolley for central sterile departments in hospitals, and 2, BIV on the development of tableware for the care of patients in hospitals.	• Innovation partnerships usually include both collaborative and cooperative processes • A PPI that is mostly dominated by cooperation can mean a lack of knowledge creation based on the knowing each other's skills and less gains for the private sector in terms of learning from close interaction to deliver future innovations • There was a lower degree of collaboration in projects, where a tender is part of the project • The research suggest a correlation between unpredictability and degree of collaborative interaction • Since the projects were on-going, there is no conclusion on the innovation achieved
Esteve et al (2012): The creation of innovation through public-private collaboration. Rev esp cardiol, Vol 65, No 9, pp.835-842	Health care	Single case study of the Blood and Tissue Bank, Spain	14 qualitative interviews, document analysis, data triangulation	• Findings show innovation through both in house, traditional contracts, contractual PPPs and institutionalized PPPs, but also failed innovation processes • The organizational form is a key factor of innovation success.

				• The tighter relationship, the more interaction and the more innovation. • When output uncertainty was high, the organization chose a higher intensity of collaboration.
Ysa, T., Esteve, M. & Longo, F. (2012): Enhancing Innovations in Public organizations Through Public-private partnerships: The role of Public Managers. In C.Greve & G. Hodge ed. 'Rethinking Public-Private Partnerships. Strategies for turbulent times'. Routledge	Health care	Exploratory single case study of the Blood and Tissue Bank, Spain	14 qualitative interviews, document analysis, data triangulation	• The chapter investigates innovations in different forms of inter-organizational relationships in a best case study • Through a grounded strategy they identified two main factors influencing the innovative possibilities of public-private partnerships: organizational arrangements and leadership. • Organizational arrangement should provide possibilities for the partners to work together closely and interact actively, but these arrangements are also more expensive and risky than buying an on-market product. • Public managers need a proactive personality, networking and entrepreneurial spirit. • More research in PPPs and innovation is needed
Campos, K.D.P., Norman, C.D. & Jadad, A.R. 2011: Product development public-private partnerships for public health: A	Healthcare	Systematic literature review, qualitative content analysis	10 empirical articles evaluating Product Development(PD) PPPs in healthcare	• The article subtract knowledge on critical elements in the PD PPP process and propose a framework for future guidelines for the planning, design and management of existing and new forms of PPPs for public health.

systematic review using qualitative data. Social Science & Medicine				• In the development phase the important factors were win-win agreements, synergy of expertise, stakeholder engagement, local health capacity and infrastructure and public and private partner's perceptions of each other. In the management stage, it was communication and knowledge exchange and participatory management and organizational skills. • The main finding is a lack of theoretical based analysis of these PPPs, since most of the included article were rather anecdotal accounts of experiences • It was also difficult to observe the effect of institutional arrangements on the management of PPPs