

# The Digitale Delta

*An analysis on success & failure factors of a Public Private Partnership in the development of a digital data exchange platform*



By : Halit Aktaş  
Institution : Erasmus University Rotterdam  
Faculty : ESE, UPT Economics.  
Student nr : 331389  
Supervisor: Larissa van der Lugt  
Co-reader : Onno de Jong  
Date : 27-07-2015

## ***Abstract***

This paper researches the Digitale Delta in the context of a Public Private Partnerships. Public Private Partnerships are further examined through theory and empirical evidence from Infrastructural Public Private Partnerships. Certain success and Failure factors of Public Private Partnerships have been found. These were also valid in the context of a Digitale Delta Public Private Partnership. The paper concludes that the Digitale Delta confirms theory on alliance Public Private Partnerships' and that it is possible to turn failures in to success.

The following parties are partners of the Digitale Delta:



## *Acknowledgement*

I would like to thank my family for their passionate and unconditional support during my quest to complete my master. They helped me to find the right way in times where I couldn't see the end of the tunnel anymore. The distraction and motivation they provide ensured a motivational boost and mental rest, in which I could rethink and evaluate my thesis in a clear way. My friends were also of great motivational support therefore I would like to thank them as well.

Of course none of this would have been possible without my intern at Rijkswaterstaat. Therefore I would like to thank my intern supervisor at Rijkswaterstaat; Marcel Kotte, for the opportunity to experience a wonderful and interesting intern at Rijkswaterstaat. I also want to thank the department of Data & Informatie Management for their educational presentations that I regularly attended. Lastly, my thesis supervisor Larissa van der Lugt who helped me throughout my thesis to sharpen my view on the Digitale Delta. Both my supervisors were of excellent support and guidance. They assisted me through my quest to find the answers on my thesis, therefore I am very thankful.

## Tabel of Content

|   |    |
|---|----|
| Chapter 1: Introduction .....   | 7  |
| <i>1. Introduction.</i> .....   | 8  |
| 1.1 Background. ....  | 8  |
| 1.2 Problem definition. ....  | 9  |
| 1.3 Research Questions. ....  | 10 |
| 1.4 Research approach. ....   | 11 |
| Chapter 2: Theoretical Background.....  | 13 |
| <i>2 Theoretical Background.</i> .....  | 14 |
| 2.1 Public Private Partnerships.....  | 14 |
| 2.2 Public Private Partnerships in the Netherlands. ....                        | 15 |
| 2.3 Public Private Partnerships defined.....                                    | 15 |
| 2.4 Two basic models.....   | 17 |
| 2.4.1 Concessional/contracting form. ....                                       | 17 |
| 2.4.2 Alliance/partnership form. ....   | 18 |
| 2.5 Benefits and Risks of Public Private Partnerships.....                      | 19 |
| 2.5.1 Benefits of Public Private Partnerships. ....                             | 19 |
| 2.5.2 Risks of Public Private Partnerships.....                                 | 21 |
| 2.6 potential of Public Private Partnership. ....                               | 23 |
| Chapter 3: Lessons from infrastructure .....                                    | 25 |
| <i>3 Lessons from infrastructural Public Private Partnership.</i> .....         | 26 |
| 3.1 Motive for DBFM. ....   | 26 |
| 3.2 Determining added value.....  | 26 |
| 3.2.1 Public Private Comparator. ....   | 27 |
| 3.2.2 Public Sector Comparator.....   | 27 |
| 3.3 Characteristics of DBFM.....  | 28 |
| 3.4 Benefits of DBFM. ....  | 29 |
| 3.5 Limits of DBFM.....   | 30 |
| 3.5 Results of DBFM.....  | 31 |
| 3.5.1. Factors that influence the adaption of Public Private Partnerships. .... | 31 |
| 3.5.2 Achievement of innovation. ....   | 33 |
| 3.5.3 Achieving added value.....  | 34 |
| 3.6 Recommendation of Commission Ruding.....                                    | 35 |
| Chapter 4: Charactersitics of the Digitale Delta .....                          | 37 |

|   |    |
|---|----|
| 4 Characteristics of the Digitale delta .....   | 38 |
| 4.1 Added value of the Digitale Delta. ....   | 38 |
| 4.2 The Mission of the Digitale Delta partnership. ....                                 | 39 |
| 4.3 The Digitale Delta partnership. ....  | 41 |
| 4.4 Governance.....   | 41 |
| 4.4.1 Project broad.....  | 42 |
| 4.5 The executive organisation.....   | 43 |
| 4.5.1 Tasks. ....   | 43 |
| 4.5.2 Organization chart. ....  | 44 |
| Chapter 5: Discussion.....  | 45 |
| 5 Discussion. ....  | 46 |
| 5.1 Factors that influence the adaption of Public Private Partnerships. ....            | 46 |
| 5.2. The experiences of the partners during the realisation of the Digitale Delta. .... | 48 |
| 5.2.1. Expected profitability .....   | 48 |
| 5.2.2. Role of public parties.....  | 50 |
| 5.2.3. Interactive project development .....  | 51 |
| 5.2.4. Project content (scope).....   | 53 |
| 5.2.5. Existence of support settings .....  | 55 |
| 5.3 Digitale Delta factors compared to infrastructure factors and findings.....         | 55 |
| 5.3.1 Expected profitability .....  | 55 |
| 5.3.2. Role of public parties.....  | 56 |
| 5.3.3. Interactive project development .....  | 57 |
| 5.3.4. Project content (scope).....   | 57 |
| 5.3.5. Existence of support settings .....  | 58 |
| 5.4 Findings and General reflection of the realization phase of the Digitale Delta..... | 58 |
| Chapter 6:Conclusion .....  | 61 |
| 6. Conclusion.....  | 62 |
| 6.1 Sub-question one. ....  | 62 |
| 6.2 Sub-question two.....   | 63 |
| 6.3 Sub-question three.....   | 64 |
| 6.4 Sub-question four. ....   | 65 |
| 6.5 The main question. ....   | 67 |
| 6.6 Limitations.....  | 69 |
| 6.7 Recommendations for further research for the Digitale Delta operational phase.....  | 70 |

---

References ..... 72

# Chapter 1: Introduction

## *1. Introduction.*

### **1.1 Background.**

In today's society it is expected from the government to reduce its activities in certain areas and focus more on its core tasks. The welfare state as we know is increasingly diminishing and the general assumption is that the market should fulfil tasks that were previously done by the government. When Rijkswaterstaat starts a project, it traditionally prepares and designs the project in full details and seals its specifications in a contract. Usually the project is then realized by a private party that is responsible for the realization of the project. At the execution of a project the private party has to be in line with the specific design of Rijkswaterstaat and is often not allowed to give its own input or redesign the project. This traditional way of doing business is often used by Rijkswaterstaat but it is gradually shifting to different contracting form (Eversdijk and Korsten, 2007). This is partially caused by a changing societal and political view on the government and the tasks it should fulfil.

The assumption "more market, less government" shows the doctrine of a smaller government and an increasing role of private parties. The directorate-general of Rijkswaterstaat continues to strive for a "Market, unless..." principle. Where more and more should be done by market parties, especially in the areas of construction, management and maintenance (PPS voortgangsrapportage, 2004). By giving the market a greater role in the process Rijkswaterstaat strives to make optimal use of what the market has to offer. Public Private Partnership seems like an important tool that can be used for this purpose. Projects are getting more extensive and complex and this makes Public Private Partnerships a necessity or even crucial in the realisation of projects. The larger role of the market in projects makes the government increasingly depending on the expertise that the market can provide.

There is a general consensus that Public private partnerships are an important instrument in the realization of complex spatial projects. Despite the recognized importance and potential of Public Private Partnerships, they are implemented incidentally. Therefore, it has become government policy to look for ways to apply Public Private Partnerships in a more structural way (PPS Voortgangsrapportage, 2004). As a concept and instrument Public private partnerships may look attractive, but empiric evidence indicates that implementing Public private partnerships in a successful way is hard and often quite a challenge. The subject of Public Private Partnerships is covered by both literature and empirical analyses. Looking at real life cases of Public Private Partnerships in the Netherlands one can notice that most Public Private Partnerships, estimated around 54%, are done in the field of infrastructural



development (Klijn & Twist, 2007). Some of these are more successful than other. Also funds from spatial development are increasingly directed towards infrastructural development (Hernandez & Boendermaker, 2007). When one focuses on Public Private Partnerships in the field of infrastructural development, it is striking to see that the concessional form of Public Private Partnerships is dominating (Eversdijk & Korsten, 2009).

In the past decade Rijkswaterstaat already gained some experience in the field of Public Private Partnership. Until now these Public Private Partnership Projects had the form of DBFM (Design, Build, Finance, and Maintain) contracts. Despite the fact that Public Private Partnerships offer big opportunities for government projects, their potential remains in many cases unexploited. In the last couple of years Rijkswaterstaat is systematically searching for different types of Public Private Partnership models it could apply (Hernandez & Boendermaker, 2007).

## **1.2 Problem definition.**

If one looks at Public Private Partnerships it is noticed that the lion's share is concentrated on infrastructural developments. This does not mean that Public Private Partnerships cannot be applied in other cases. On the contrary, Public Private Partnerships are applied in a wide range of sectors. However the infrastructural sector is the sector where most Public Private Partnerships are applied. As a consequence it is in this field where most empirical evidence on Public Private Partnerships lies. Therefore when applying Public Private Partnerships in other sectors, it would be wise to take into consideration the empirical lessons that are learned in the infrastructural Public Private Partnerships.

Rijkswaterstaat is currently working on the Digitale Delta case in which Rijkswaterstaat wants to cooperate with private parties and knowledge institutions to set up a cooperative platform, with most of its agreements in contractual form. This is a unique opportunity to apply the learning's of Public Private Partnership theory and empirical evidence from infrastructural projects in context of the Digitale Delta. What makes The Digitale Delta unique is the fact that it focuses on *digital infrastructure*, a platform where government and private parties have to co-operate to achieve a spill over of knowledge and expertise. The Digitale Delta wants to unite the water sector in one single platform, however the digital water sector in the Netherlands is quite fragmentized into a lot of different public (on different levels) and private players. Therefore it will be quite a challenge to apply the right concept of the Public Private Partnership in this specific context, since it will affect the sector as a whole.

A Digitale Delta Public Private Partnership can lead to an innovative platform which makes it possible to exchange uniform and accessible data, services and applications that should be available for not only parties that are involved but also for other third parties. It will be very interesting to apply a Public Private Partnerships in the context of the Digitale Delta. Which of course will bring difficulties that one may have to solve before it will bear fruits. This research paper will take a closer look at what the Public Private Partnership model can offer to this digital platform and show some potential failure and successes of a Digitale Delta Public Private Partnership. While doing this Public Private Partnership literature study and empirical learning's form the infrastructural sector will play an essential role in finding the answers for a successful Digitale Delta Public Private Partnership.

### 1.3 Research Questions.

In this research report the main focus will be to answer the following question:

*What are the success and failure factors of a Public Private Partnership in the development of a digital data exchange platform?*

The following sub-questions will be used in order to find a solution for the main question:

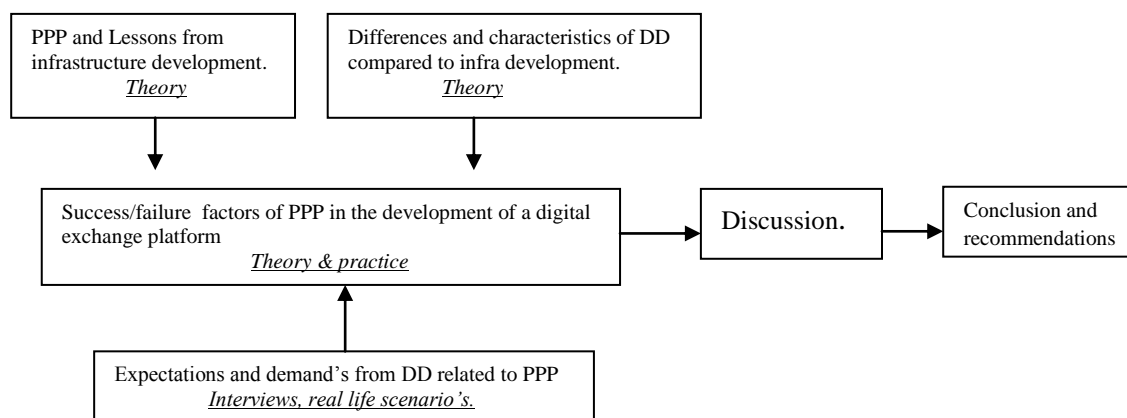
- *What are Public Private Partnerships and how do they manifest themselves in infrastructural Public Private Partnership developments?*
- *How do the characteristics of infrastructural Public Private Partnerships and the Digitale Delta differ?*
- *How did the partners experienced the realisation of the Digitale Delta?*
- *What are the main success and failure factors of PPP in general and how are they related to the Digitale Delta?*

## 1.4 Research approach.

In order to find an answer to the problem definition, research questions and theoretical background, a lot of back ground research has been done on documents and literature in the field of Public Private Partnerships and the Digitale Delta. To get a better understanding of Public Private Partnership literature and empirical evidence; a workshop of the Public Private Partnership Network Nederland (praktijk seminar B-30) has been attended and an expert on Dutch Public Private Partnerships (Arno Eversdijk) has been interviewed. Also both supervisors on the Erasmus University and Rijkswaterstaat were frequently consulted for reviews. Interviews were held to find relevant empirical evidence on the Digitale Delta, these findings have been incorporated into the discussion; the following persons have been interviewed:

| Name               | Organisation              | Function               |
|--------------------|---------------------------|------------------------|
| Raymond Feron      | Rijkswaterstaat           | Program Manager        |
| Joost de Haan      | HoogheemraadschapDelfland | Partner representative |
| Ronald van Nooijen | TU Delft                  | Partner representative |
| Arthur Baart       | Deltares                  | Partner representative |
| Martin de Jong     | IBM                       | Partner representative |
| Aart van Sloot     | Rijkswaterstaat, CIV      | Procurement            |
| Wytze Schuurmans   | Nelen and Schuurmans      | Ceo&founder            |
| Arno Eversdijk     | Rijkswaterstaat           | Expert on PPP          |

This paper will find an answer to the main question with the help of sub-questions. The sub-questions are divided in to questions that will find an answer from a theoretic perspective and from an empirical perspective. The research model below gives a visual representation of the structure of this paper.



The first part of this paper will focus on finding an answer to the first two sub-questions. To find the right answers to these sub-questions existing scientific literature will be closely examined by conducting desktop research. The theoretical background, which is the second chapter, will take a closer look at the concept of Public Private Partnerships. Newspapers, internet sources and books will be consulted for more general information. The third chapter will focus on characteristics and empirical evidence from infrastructural Public Private Partnership developments. In chapter four the characteristics of the Digitale Delta will be discussed. This chapter will also be largely based on scientific literature and desktop research. There will also be a closer look at the reports of Rijkswaterstaat regarding the Digitale Delta case. The fifth chapter will give more empirical approach to the paper, it will be analysed through the factors that influence the realisation of infrastructural Public Private Partnerships of Van ham and Koppenjan (2002); it will be based on interviews with experts which will be conducted for a more in-depth view regarding the Digitale Delta case. In this way it will find an answer to the demands and expectations of the partners and the success and failure factors of a Digitale Delta Public Private Partnership. The results of answers to these sub-questions will eventually lead to chapter six, conclusion. In this chapter the different findings for the development of a Digitale Delta Public Private Partnership will be discussed and lead to a result, which eventually will be the answer to the main question. There will be room for limitations and recommendations for the operation phase of the Digitale Delta.

## Chapter 2: Theoretical Background

## ***2 Theoretical Background.***

This chapter will focus on Public Private Partnerships from a theoretical point of view. First the origins of Public Private Partnerships will be discussed, followed by a short experience of Public Private Partnerships in the Netherlands. A short review of the different ideas/definitions behind concept of Public Private Partnerships will follow. Two basic models of Public Private Partnerships will be explained, which will be followed by benefits and risks of Public Private Partnerships. The chapter will be finalized by outlining the potential of Public Private Partnerships. This chapter will provide the theoretical foundations to build on the rest of the research.

### **2.1 Public Private Partnerships.**

According to Klijn and Twist (2010) Public Private Partnerships aim to create a durable cooperation between public and private actors, while developing common products/services they agree on sharing; risk, cost and revenues of the projects they are involved in. The general idea is to create added value by cooperating and while doing this achieving synergy effects or cost reductions for example. The general idea of Public Private Partnerships can be traced back to two scientific concepts. One of them is the concept of New Public Management. The idea behind NPM is that the government should focus on developing policies and that the implementation of these policies should be done by other actors, such as private parties. By privatisation, outsourcing and corporatisation other parties are allowed in business that were once largely operated by the government. These new forms of governance should improve efficiency and effectiveness. This assumption is also partly accepted at the concept of Public Private Partnerships which emphasises the improvement of efficiency and new forms of contracting. However the concept of Public Private Partnerships also emphasis, in contrary to NPM, that a deeper collaboration between public and private parties can result in better products/policy for complex societal problems. Different qualities can be combined by cooperating and exchanging relevant information which in turn can lead to the development of innovative products (Klijn & Twist, oktober 2007). This in turn can be traced back to the literature of governance and networks where the focus lies in horizontal forms of collaboration. By combining information, knowledge and means better coordination and production can be achieved. It underlines the dependency of different actors, inter-organisational coordination and the quality of governance which is important in the achievement of objectives (Klijn & Twist, oktober 2007).

## **2.2 Public Private Partnerships in the Netherlands.**

The first well known form of a Dutch Public Private Partnership is the Dutch East Indian Company. After 1945, the government started intensive cooperation with the private sector to rebuild the countries social and economic structure (Bult-Spiering, 2003). During the late 60's and 70's, there is a lot of conflict in interest and gradually the government tends to do more then it could bear. With limited financial means the government was forced to reorientate its policies and in the 1980's it started experimenting with New Public management policies such as; deregulation, privatisation and decentralisation (Bult-Spiering, 2003). It is during this era that the modern Public Private Partnerships model was introduced to the Netherlands. Inspired by urban renewal projects in the United States. The foundation, "Stichting Forum voor Stedelijke Vernieuwing", called for Public Private Partnerships. They aimed at combining financial means of the private sector with government funds and create synergy by putting these means in a market oriented way. This call for Public Private Partnerships was picked up by the ruling cabinet of Lubbers II and put in to effect in the coalition accords of 1986 (Van den Hof, 2006).

During the past few years Public Private Partnerships have been applied in a wide range of sectors in the Netherlands such as, infrastructural projects, development of government buildings, and urban redevelopment. Until 2002, research done in the field of Public Private Partnership is primarily focussed on policy and knowledge based theoretic concepts. In the years that follow scientist start researching Public Private Partnerships from a more empirical way. Research done by the "Algemene Rekenkamer" and the ministry of Finance shows, that despite the fact that there are high expectations from Public Private Partnerships, the number of projects realized are still falling behind (Eversdijk, 2009). It can be said that during the past decade there has been a lot of political and societal attention for Public Private Partnerships. As a concept Public Private Partnerships seems interesting, in theory it has a lot of benefits but these do not always reflect to empirical evidence (Eversdijk, 2009).

## **2.3 Public Private Partnerships defined.**

In scientific literature there is no consensus over which forms of cooperations can be defined as Public Private Partnerships and which not. The concept of Public Private Partnership can be defined in different ways. On the one side there are very broad definitions which give space for a lot of questions, on the other side there are more narrow definitions. An explanation for this diversity of definitions lies in the fact that the concept of Public Private Partnerships follows the use of the phenomena Public Private Partnerships in real cases (Bult-

Spiering, 2003). Therefore definitions are getting a more explaining ("conditions for Public Private Partnerships are...") then describing character ("Public Private Partnerships are..."). The terminology for Public Private Partnerships is used to describe not only the structure of the cooperation but also the process of cooperation. Hereby the structure includes; the juridical, financial and organisational constructions which are made up to formalize or to capture certain agreements. The process of cooperation is the more factual interaction, which is cooperating as an activity (Bult-Spiering, 2003) .

Definitions that are more focussed on the structure of cooperation are:

- Van der Meij (1992) concludes that Public Private Partnerships are a result of an agreement between public and private parties and/or the joint establishment of organisation of public/private parties (Bult-Spiering, 2003).
- Knoester (1987) concludes that Public Private Partnerships are focused on the maintenance, management and exploration of facilities from a joint risk perspective with respect to potential costs and benefits (Bult-Spiering, 2003).

Definition that are more focussed on process site/interactions site of cooperation are:

- Kouwenhoven (1991) defines Public Private Partnerships as following, Public Private Partnerships are an interaction between governments and businesses which are aimed at achieving synergy when dividing convergent goals. These goals have societal and commercial characteristics. A condition is that the different parties that are involved preserve their identity and responsibilities (Knibbe, 2002). This definition of Public Private Partnerships is also adopted by the former governmental Public Private Partnerships-knowledge centre.
- Knibbe (2002) defines Public Private Partnerships as innovative activities- and risksharing between governments and private parties at the realisation and/of exploration of goods and services, which were traditionally fully government financed and subjected to government meddling, in such a way that it will lead to a greater project value for both parties (Knibbe, 2002).

It is clear that Public Private Partnerships as a concept are used in both the structural and process/interaction site of cooperation. This thesis will put an emphasis on the process site and interaction site of cooperation instead of the structure of cooperation, since the structure of cooperation for the Digitale Delta is already defined by the partners. The structural site as



described above will also be addressed but will not be as significant as the interaction part where most of the questions lie.

There are two important distinctive characteristics in the definition of Knibbe (2002), namely that in most definitions financial input by private parties are a must, while Knibbe (2002) emphasis on a broader innovative risk sharing. The second important feature is that Knibbe's definition gives space for Public Private Partnership's constructions outside that of physical infrastructure in which financial investments are less relevant.

Therefore this thesis will use the definition as described by Knibbe (2002), since it makes a clear distinction between the traditional way of contracting and projects based on Public Private Partnerships at the same time it gives room for Public Private Partnerships in different areas.

## 2.4 Two basic models

Eversdijk and Korstens (2009) state that there are different ideas of how Public Private Partnerships could take shape. In general there are two basic models; the Public Private Partnerships *concession/contracting form* and the Public Private Partnerships *alliance/partnership* (Klijn & van Twist, 2007). The concessional model of Public Private Partnership concerns an innovative contract form, but in the same time there is a more or less traditional hierarchical principal-agent relationship. The alliance/partnership model is more of an equal partnership which is focussed on joint development and execution.

### 2.4.1 Concessional/contracting form.

The idea behind the concessional model is that the design, building, financing and management of for example an infrastructural project is integrated in a contract or concession. The government sells the long term exploitation rights/concession for a lump sum (Edelenbos & Teisman, 2008). This is the most basic form of concessional Public Private Partnerships in literature there are many other forms such as, DBFM or DBFO (Van den Hof, 2007). The added value lies in the lower transaction costs by coordinating the different components, which is sometime referred to as "value for money". Not only lies the add value in lower transaction cost but also in new solutions a private party can come up with. If for example; the private party is going to operate the project for the coming 30 years it will be more likely to use durable materials so that in the end it will have lower maintenance cost (Klijn & van Twist, 2007).

### 2.4.2 Alliance/partnership form.

In the model of Public Private Partnership's alliance/partnership; separate activities and special subprojects are integrated to create value. It is an organic cooperation project where different subprojects are brought together and while doing this synergy effects are created (Klijn & van Twist, 2007). It is characterized by intense involvement by the government in different phases of the project. The government is involved in joint planning and development or works together with the initiators to accomplish objectives in a coherent framework. By including different private parties at an early stage in the planning and design of the project, synergy effects can achieve. Sharing resources, expertise and market knowledge can improve quality and effectiveness of the product (Edelenbos & Teisman, 2008).

The difference between the two models is that in the Public Private Partnerships concession the focus lies in contracting and concessions. The coproduction between public and private organisations is focused on the initial phase of contracting after that the public organisation takes an observing role. While in Public Private Partnerships alliance/partnership the focus lies more in coordination and organisation and coproduction is maintained for a longer period of time (Klijn & van Twist, 2007). The main differences between the concession and alliance model will be set forth in table 2.1.

| Characteristics                                     | <i>Public Private Partnerships as concession/contracting</i>   | <i>Public Private Partnerships as alliance/partnership</i>  |
|---|--|---|
| Partnership relation                                | Clear difference between public party and private party. Cooperation is limited to the phase before the contracting out of it. After that phase it is followed by a supervision of the private actor which is done by the public actor, with non to little mutual interaction. | Both parties (private and government ) are involved in the design construction and operation based on a joint commissioning status. They collaborate the whole process. It begins with a search for goals and connections. Later on it moves towards joint realization. |
| Role of the contract in launching and going towards | A strong emphasis on the use of contracts to have clarity  | Less emphasis on contracts, more on mutual trust.   |

|   |   |  |
|---|---|--|
| Public Private Partnerships.                    | and certainty over the cooperation.   |  |
| Determining issues and direction for solutions. | The problem and solutions are specified and defined by the public party.  | Defining problems and solutions are done in a joint process between public and private parties.  |
| Scope of the project.                           | Looking for clear distinctions and boundaries. Broadening of scope should be done in within the areas of responsibilities.            | Seeking for expansion of scope (from the perspective of coherence) and trying to lay connections between important elements in the project.                  |
| Management principles                           | Founded on project management principles: specifying clear objects, setting schedules, organize human resources and supervising them. | Founded on process management principles: operating goal orientated, developing a solid cooperation process (rules, roles) and trying to interconnect goals. |

**Table 2.1 Public Private Partnerships difference in concession/contract and alliance partnership forms** (Edelenbos & Teisman, 2008).

## 2.5 Benefits and Risks of Public Private Partnerships.

In short Public Private Partnerships create added value because the private parties are capable of exploiting certain opportunities and by doing that, they should be able to generate higher turnover. On the other side, it could also be that the private parties are more capable of controlling risks and the costs these bring. This section will give some deeper insides on benefits and risks of Public Private Partnerships.

### 2.5.1 Benefits of Public Private Partnerships.

*A better control of risks/costs.*

A benefit of Public Private Partnerships is that according to theory, risk are transferred to a party that is capable of controlling these risks. A control over risks brings often with it that the costs that comes with these risks are lower. The thought behind this risk transfer is that private parties will be incentivized to control risks. In this way these risks are not only a burden for

the government. There are different reasons for the public party to transfer risks to private parties (Knibbe, 2002): The first is the possibility that a private party is better in coordinating different project activities and optimize it as a whole. The second reason is that private parties are better in controlling innovation risks. Market parties can act quicker and in a more adaptive way on innovations. The third reason is the fact that private parties are better in controlling building risks, therefore they can accelerate the building of a project. Which results in a faster availability of the project for society and thus creating financial and societal added value. A fourth and last reason is that if private parties get a playground for being creativity/innovative they will find better and faster solutions. Better sharing of risks can lead to a cost reduction and so risks should lie with the party that is able to control these risks. It gives an incentive to reduce cost. The challenge lies in finding the right package of risks that can be transferred because transferring risks the government should have controlled can induce unnecessary costs (Knibbe, 2002)(Van Bommel et al, 2003).

#### *Exploiting opportunities.*

Cooperation can lead to exploiting opportunities which will result in a higher financial and societal result (Knibbe, 2002) (Canoy, Janssen, & Vollaard, 2001):

By cooperating, government and private parties can congruence their goals so that the financial interest of private parties are in line with the societal interest of the public party.

The public party can take advantage of the additional profit potential. Private parties are in general better in raising project revenue's by boarding the scope of the project and letting stakeholders pay for their use of the project (Knibbe, 2002).

The public party can get additional income outside of the project, certain benefits are coherent and come indirectly from projects. For example by the internalization of positive effects that are caused by the project (Knibbe, 2002).

By cooperating the government gets more space to better control the complexity of a project. In certain situations complexity is an issue. Simply because if a project is something completely new it will bring uncertainty about what the desired end result should be. In this case both parties are dependent on each other, but it is not clear what each party should contribute. Cooperation offers flexibility, within boundaries of the agreements things can be changed according to the changing environment (Knibbe, 2002).

Public Private Partnerships brings with it that the public party is forced to think and to come up with certain output specifications of the project in an early stadium. It should focus on

planning and monitoring the output instead of the whole process of the project (Knibbe, 2002).

#### *Better planning quality by early information exchange*

At Public Private Partnerships the involved parties make a joint planning. The aim is to exchange information in an early stage of the project. By doing this expertise of all parties can be used in the early design of the project, which will result in higher planning quality and higher return of the project. A condition for this to succeed is that parties with a direct knowledge of the project should exchange information from the beginning. By drafting an integral project opportunities and time are better utilized (Canoy, Janssen, & Vollaard, 2001).

#### *Greater commitment from both parties*

Commitment is an important feature. Since the parties are involved in a long term project it is in their best interest to know what to expect from each other (Canoy, Janssen, & Vollaard, 2001).

### *2.5.2 Risks of Public Private Partnerships.*

#### *High transaction costs.*

Large and complex projects are often done in consortiums. The problem with consortiums is that they have high intern transaction costs. These transaction cost are caused by the fact that the different parties in the consortium have to align their goals, way of business and activities. They have to present the consortium to the customer as one party and hereby optimize their total costs and revenues. It is often the case that transaction costs between organisations (in a consortium) are higher than within one organisation. Another reason for higher transaction cost in case of Public Private Partnerships is the simple fact that compared to traditional tenders it is a new way of contracting for the public party, which bring other costs with it. The final reason for higher transaction cost is caused by the interaction between the government and consortium. To achieve better results both parties have to understand each other's languages which costs time and energy (Knibbe, 2002).

#### *Initial high riskpremium*

Transferring risk from public party to private parties is relatively new for private parties. Private parties are unfamiliar with this and will try to get compensation to carry this risk. This

could lead to a higher cost with Public Private Partnerships compared to traditional tendering (Knibbe, 2002).

#### *Innovative input is limited*

It is very hard to give companies enough space within Public Private Partnerships so that they can be creative and innovative. This is often caused by certain procurements at the start of the project that are limiting flexibility (Knibbe, 2002).

#### *Mutual trust is not optimal*

Mutual trust is not always optimal. This is due to the fact that different parties speak different languages. Numbers are not the only thing that are relevant. There has to be a chemistry between the parties, an atmosphere of mutual trust and understanding of each other's languages is a must. (Knibbe, 2002) (Van Bommel et al, 2003).

#### *Non-cooperative behaviour before tendering*

In the initial phase of negotiations; a division of costs, benefits and risks are discussed. Two problems will rise during this phase namely; the so-called prisoners dilemma in information exchange and an unequal negotiation position. An important aspect in the initial phases of a project is the availability and preparedness of the different parties in sharing their plans/information. None of the parties that are involved in this information exchange should have the idea that the information shared with other will be used to get a better negotiation position. Uncertainty about how certain information is used can reduce the level of willingness to share information. This will lead to a prisoners dilemma; both parties will choose an option which is not in the interest of the common goal just because of the fear of non cooperative behaviour of others. Therefore it is in the interest of everyone to adopt a cooperative stand in the initial negotiations (Canoy, Janssen, & Vollaard, 2001).

An unequal negotiation position can also be an issue. During the negotiations a party can abuse its negotiation power to benefit at the expense of the other. There are different reasons why one can be weaker. One reason is that one may have less alternatives than others or it has more to lose at delays of the project. It can also be the case that one party has less information available which leads to information asymmetry. The fear of opportunistic behaviour at the realization phase could lead to the withdrawal of one of the parties (Canoy, Janssen, & Vollaard, 2001).

### *Not-cooperative behaviour in the realization phase*

To minimize non cooperative behaviour certain agreements are recorded in contracts, this provides a certain degree of certainty. Uncertainty of how a party will behave in the future can be an obstacle for the degree in which a party is prepared to invest in the initial phases of a project (Van Bommel et al, 2003). It is not possible to take away all kind of uncertainty with contracts, simple because this would be too expensive (Canoy, Janssen, & Vollaard, 2001).

## **2.6 potential of Public Private Partnership.**

Public Private Partnerships is an concept that has a lot of potential and is therefore of great interest for policymakers and scientists. Public Private Partnership is an intensive way of cooperation between public party and private parties to achieve a common goal. It is a form of cooperation where private parties are involved in the execution of government policy or at the realisation of policy products/services. The idea behind this is that cooperation will create more value. Value that could not been created otherwise. This cooperation between public and private parties can then create solutions for complex societal problems (Klijn & van Twist, 2007).

Eversdijk and Korstens (2008) conclude that Public Private Partnership's models have the potential to add value, innovate, create efficiency and result in a faster decision making. However literature often concludes that the interaction in the initial phase between the different parties is time consuming and it is hard to achieve the targets set by the organizations (Twist et al., 2006). Cooperating in a way that enables parties to reach the greater goal sounds great but in reality this is not always the case. Cooperating is hard to realize and hard to endure when; the interests of the different parties lay apart, there is indifference about responsibilities, information is fragment over different parties, conflict in rationality, difference in prioritizing problems and a continuous shift in ideas within and between parties about how things should be managed (Twist et al., 2006).

The difficulty at Public Private Partnership projects lies in the management of interactions (Twist et al., 2006). In many cases the different parties struggle in their quest of finding the right organizational form. If business is not going as the organizations aspire, they tend to find their salvation in certain forms of contracting. Which is often accompanied with public planning and separation of responsibilities, this approach is in line with the contracting vision of Public Private Partnership. However, the gains of such contracted certainties are often disappointing. This approach tackles the opportunities of the management to broaden its scope and enriching the content of projects. In other forms of cooperation where the focus initially

lies on a broader approach and coproduction, management is an obstacle. The focus of a broader approach and coproduction often turns out to be complicating, the lack of good selection mechanisms tend to sum up ambitious goals which in turn makes it hard to achieve (Twist et al., 2006). It can be said that if one should opt for a high coproduction level it will require a lot of process management to achieve the set of goals. While in contracting, where there is more certainty the added value is less.



## Chapter 3: Lessons from infrastructure

### ***3 Lessons from infrastructural Public Private Partnership.***

This chapter will give insides in the characteristics of infrastructural projects and lessons that are learned from it. These characteristic and empirical lessons from infrastructure will be used as handhold for the Digitale Delta Case. The chapter begins with the motive and tools that are used to determine whether DBFM is the right choice for certain infrastructural projects. Followed by a sum up of characteristics, benefits and limitations of using DBFM at infrastructural projects. The chapter ends with empirical evidence from certain infrastructural projects and the findings of Commission Rudings.

#### **3.1 Motive for DBFM.**

In the past decade the Dutch government looked for different ways to implemented Public Private Partnerships in a more structural way in infrastructural developments. This could lead to cheaper, more efficient and faster development of infrastructural works. By using the private parties creativity and innovations the government attempts to create added value (PPS Voortgangsrapportage, 2004). Literature describes different concepts and categories of Public Private Partnerships. These can be scaled down to two basic models discussed in the literature review. It is clear that the alliance/partnership model is favoured by literature. However, empirical evidence reveals that almost all infrastructural Public Private Partnerships in the Netherlands are in the format of the concessional/contracting model. Within this model there are different formats. The format that is used in Dutch infrastructural Public Private Partnerships is the Design-Build-Finance-Maintain-contract, abbreviated as DBFM (Hernandez & Boendermaker, 2007).

#### **3.2 Determining added value.**

The government expects that infrastructural Public Private Partnership generates more added value compared to traditional tendering. An important aspect of Public Private Partnerships is that it will only succeed if the involved parties are aware of the added value. The government uses two tools to determine the financial/economical added value of an infrastructural Public Private Partnerships namely, the Public Private Comparator and the Public Sector Comparator. These two important tools play an important role in deciding which format an infrastructural project will get (Eversdijk & Korsten, 2009).

### *3.2.1 Public Private Comparator.*

Since 2005 the department of Verkeer and Waterstaat is obligated to apply the PPC at infrastructural projects with an investment value over €112,5 million (Hernandez & Boendermaker, 2007). The PPC is a financial-economical balancing tool which is used in the tendering phase of a project to compare the innovative DBFM with traditional contracting methods. The goal of this PPC is to analyze the potential financial benefits and disadvantages and in this way determine the economical and financial added value. According to the PPC the Public Private Partnerships delivers added value if it reduces projects costs or leads to a better price/quality ratio. The goal is to reach more quality with a lower budget or the same quality with less financial means. The results of this PPC report play an important factor in the decision making model of politicians in deciding whether or not a project will be DBFM (Hernandez & Boendermaker, 2007).

The PPC explains whether or not DBFM provides financial added value for an infrastructural project, political or societal statements are not part of the test. However empirical evidence of the DBFM “Rijksweg N31” shows that DBFM can also be preferred because of political motives. “Rijksweg N31” is an example of an infrastructural project that had a negative PPC outcome but where DBFM was preferred because of political motives. Empirical evidence also shows that there are projects with a positive financial PPC outcome, which are not executed as DBFM projects simple because the financial motives aren’t the most important factors. So a Positive or negative PPC outcome is not always decisive for infrastructural projects. Arguments to forgo the DBFM format are: potential lower returns, higher risks, the complexity, chances of delay and inexperience with Public Private Partnership (Eversdijk & Korsten, 2009).

Although the department is obligated to apply PPC as an instrument in testing the potential of DBFM cooperation’s, it is not the most important element in the public decision making model but just a node in the decision making process. Financial arguments are important in government policy but are not always decisive (Eversdijk & Korsten, 2009).

### *3.2.2 Public Sector Comparator.*

PSC is a tool to compare traditional contracting with DBFM. Just like PPC the PSC looks from a financial/economical point of view, political and societal motives are excluded from the report. However, PSC is used in the final stage of the tender after private parties made their offers and it’s somewhat clear that DBFM will be the final format. The PSC is then used as an alternative which uses elements of traditional contracting. The PSC gives insides in the total costs, revenue and risks over the total period of time of the public variant of the bidding

(traditional tendering). This bidding result will then be compared to the best private offers (traditional offers). If the offer of a private party is higher than the PPC variant the client (government) can choose for the a traditional tender (Hernandez & Boendermaker, 2007) . Theoretically this is a possibility but it brings a lot of difficulties with it. An adaptation of the DBFM contract to the public variant (traditional tendering) will bring additional cost, delays and legal risks. Until now the PSC option to opt for a public variant is never used by the department of infrastructure and environment (Eversdijk & Korsten, 2009)

### **3.3 Characteristics of DBFM.**

DBFM is an integrated and innovative contracting form which is characterized by its ‘‘integration’’. Different fields of the value chain including finance are integrated in one contract, which falls under the responsibility of one private consortium. DBFM is characterized by the following characteristics (Eversdijk & Korsten, 2009):

- The integration of different building disciplines in one contract. Which falls under the responsibility of one consortium/private party, instead of different contracts for different private parties (Kennispool, 2012).
- The government pays for a service which is provided through DBFM and not for an object or product. For road infrastructure this service is, the delivery of the contracted road by a private contractor. Compared to traditional agreements financial constructions of DBFM agreements are often more complicated (Kennispool, 2012).
- The delivered service should comply with functional demands instead of product demands.
- DBFM has private financing and public funding. Private financing refers to the source of the financial means. While the public funding refers to the party that will bear the cost of the investment. In traditional contracting of projects both financing and funding are done by the government.
- An important characteristic of DBFM is the idea of transferring risk between the public party and the private party. In traditional tendering almost all risks of a project often lies with the government. In the DBFM the risks lies with the party that is able to control these risks in the best way.
- The role of the project financier is a new aspect in the relationship between the public and private parties.
- DBFM contracts have a longer duration then traditional contracting. The average duration of a DBFM contract in the Netherlands is somewhere between 15 and 30

years. The duration of the contract depends on several factors such as, the availability, the return on investment and redemption of debt (Kennispool, 2012).

- The relation between the public and private party is hierarchical. There is no equal partnership relationship.
- The role each party takes is the same. The public party focuses on leading the project, while the private party is just executing it.

### 3.4 Benefits of DBFM.

DBFM is a form of Public Private Partnerships with a clear allocation of tasks and risks. The public party is leading the project but the implementation is done by the private party. Which is responsible for the design, building, financing and maintenance of the project. The government pays for a service (Kennispool, 2012). DBFM brings certain benefits with it (Eversdijk & Korsten, 2009):

- DBFM makes it possible to get value for money, by optimizing the life-cycle. By integrating the different building disciplines such as, design, build, project financing, and maintenance in one contract the private contractor is able to optimize its means. The contractor will use its creative and innovative insights to tune the cost of the investment, the realization and maintenance of the project. This life-cycle approach makes it possible for the private consortium to make an optimal cost analysis. This is something that is not possible with traditional contracting where contracts are assigned to individual parties. This life-cycle approach ensures a cost benefit, "value for money", for the public party.
- The integrated approach of DBFM eliminates coordination risks between the separate phases such as design, build and maintenance. This is an advantage for the contractor (Kennispool, 2012).
- The involvements of financiers such as banks enables a strict compliance of the contract by the private parties (consortium). Involvement of private financiers has a positive effect on cost control. The private financiers can help the contracting party choosing the optimal balance between investment costs and maintenance costs. It can also assist in finding risks in the construction and maintenance period. The bank can keep an eye on the risk allocation within the consortium, the repayment of debt and the cash flow of the DBFM-agreement. The bank (financier) is therefore an useful actor for the government.

- With DBFM there is an optimal risk allocation between the contractor and the government, the risks are with the party that is able to control them. Risk should be transferred from the government to private party, only if the private party is able to manage them. A better risk control has led to cost reduction, which in turn will lower project costs (Kennispool, 2012).
- DBFM projects are often delivered on time and in some cases projects are delivered earlier than planned. The DBFM contract stimulates an on time or earlier delivery. An early delivery brings private parties financial benefits (Kennispool, 2012).

### 3.5 Limits of DBFM.

DBFM has its disadvantages however these are not always that clear in literature. Empirical evidence shows certain limitations that one can expect from DBFM contracts (Eversdijk & Korsten, 2009):

- In DBFM there is a hierarchical relationship between the private and public party. The private party is mainly concerned with executing its tasks. This brings certain disadvantages, like insufficient use of knowledge, experience and creativity.
- The involvements of banks can also be a disadvantage. Interaction, flexibility and taking risks are important factors in the creation of added value for Public Private Partnerships. However financiers are risk-averse to uncalculated risks, they want to avoid risks. For its finances the consortium will be depending on the bank and this in turn will limit flexibility to a certain extent.
- Another disadvantage are the higher transaction costs compared to traditional contracting. The preparation of the contract and design of the DBFM agreement demands a lot of complex financial and legal input.
- DBFM has a longer contracting term compared to traditional contracting. As a result tender teams of private contractors have to work for a longer time to arrange agreements, this in turn will lead to a rise in transaction costs.
- Inflexibility of DBFM contracts due to the agreed time frame of the contract is another limitation. During the contracting period there could be some changes in the demands or specifications of the contract. The contract could be adapted to these new changes, however DBFM contracts are very difficult to modify. In most cases, these adaptations are done by the private party that is already involved in the project, with almost no competitors this can have a cost raising effect and influence the value for money.

### **3.5 Results of DBFM.**

As mentioned the government uses tests to decide whether or not infrastructural projects should be conducted in DBFM format. Its final decision does not always depend on the outcome of these PPC and PSC tests. This raises questions on different aspects of these DBFM contracts (Eversdijk & Korsten, 2009). The government has certain goals that it wants to achieve with DBFM such as, exploiting the creativity of private parties, innovation and creating added value. This section will focus on the results that are achieved with DBFM. What are lessons that are learned from DBFM, did it result in innovation and added value at infrastructural projects. The first section will however elucidate which factors are influencing Public Private Partnership projects.

#### **3.5.1. Factors that influence the adaption of Public Private Partnerships.**

Van Ham and Koppenjan researched nine cases of infrastructural Public Private Partnership projects to find out what kind of problems occur during the realization phase of infrastructural Public Private Partnership. This research resulted in a list of 16 factors that influence in greater or lesser extent the realization of Public Private Partnerships (Eversdijk & Korsten, 2008). The sixteen influential factors are shown in table 3 and are classifiable in three categories; characteristics of the project, characteristics of the process and contextual factors. Van Ham and Koppenjan stated the influence that each factor has on the realization process of Public Private Partnership; these influences are shown in the table. The “Logic of division” at Public Private Partnerships states that the government as a principle (after a unilateral public project definition) should bring a clear division in the responsibilities through contractual agreements; the contract is the only connecting element. On the opposite the “logic of connecting” states that the parties have a joint perception of the project as equal partners heading towards interconnected goals, in which they are connected through mutual dependencies and trust. Commitment and a jointly vision are also key elements in the cooperative relationship (Eversdijk & Korsten, 2008) .

| <b>Factors</b>                                    | <b>Influences:</b><br>--= no or less influence: + = Has influence |
|---|---|
| <b>Characteristics of the project</b>             |   |
| Distinction between line and point infrastructure | --  |
| Expected profitability                            | +   |
| Complexity of the project                         | --  |
| <b>Characteristics of the process</b>             |   |
| Presence of risk-bearing private partners         | --  |
| Role of public parties                            | +   |
| Project environment                               | +   |
| Project content (scope)                           | +   |
| Knowingly selecting partners and content          | --  |
| Timing of involvement                             | --  |
| Interactive project development                   | +   |
| Role of the process manager                       | +   |
| Existence of support settings                     | +   |
| <b>Contextual Factors</b>                         |   |
| The role of procedures                            | --  |
| External developments                             | --  |
| Changes of institutional positions                | --  |
| Political-governmental developments               | +   |

*Figure 3.1 factors that influence the realisation of Public Private Partnerships.*

The “logic of connecting” is the central aspect of Public Private Partnerships. However, their research concludes that during the realization process risk averse behaviour was dominating both public and private parties. Apparently risks are not actively shared (Eversdijk & Korsten, 2008). According to Van Ham and Koppenjan public and private parties encounter great difficulties in finding an appropriate form to cooperate. In the transport infrastructure cooperation is limited through a strong separation via contracts, where public parties define the project content. The contractual division of responsibilities respects the existing institutional fragmentations. The complexity at the realization phase and the uncertainties and risks that this brings forces actors to take individual strategies, which often results in public



preparation of projects with limited input from private parties. The interaction between public and private parties is limited to formal procedures, tenders and contracts. Eventually, they choose a setting in which flexibility is minimal and risks are divided and avoided. Whereas interactions, flexibility, deliberate risk acceptance and equal partnership are needed to create added value. Due to this setting of important goals of Public Private Partnerships success as, an early involvement of private parties, a joint project process, realisation of added value for both parties and interlinking goals, will be jeopardized. Even though, the public parties like to follow the “Logic of division” this does not lead to a stronger position. Risks and uncertainties that are avoided in the initial phases, will resurfaces in the tendering phase and eventually it will be harder to manage these, which will result in delays and suboptimal outcomes (Eversdijk & Korsten, 2008). Two cases of the research of Van Ham and Koppenjan are successful in the realization process of Public Private Partnerships, due to intensive cooperation in the planning phase which enriched the project and therefore created a support base. Despite innovative ideas and ambitious plans the other seven cases were less successful. Due to the lack of common support base and/or hesitation and risk averse behavior of the public partner.

### *3.5.2 Achievement of innovation.*

Public Private Partnerships enables the use of different beneficial aspects of the market mechanism. The government expects new and innovative solutions from private parties. However the infrastructure development sector is known for its conservative character where proven technologies are often preferred. Private parties prefer proven techniques and known solution in settings that forces them to reduce prices and cover risks. Inexperience with new innovations solutions brings risks and has an unknown impact on the project. Because of this unknown impact it is hard to know what kind of consequences this innovation will have and therefore it is hard to give it a price tag. Therefore, the minister of infrastructure and environment does not want DBFM at projects in which non-proven technology or “products in development” are applied (Eversdijk & Korsten, 2009).

Empirical evidence of completed infrastructural DBFM project gives insides in some infrastructural cases. Initially the desire to have creative and innovative input from market parties played an important role in contracting the A59 as a DBFM Public Private Partnership. However, the evaluation report of the A59 Public Private Partnership states that during the project there was almost no space for creative or innovative input. The fact that there was already a detailed project roadmap was the main reason for this decision, deviating from this

road map could have lead to unnecessary project delays. The report concludes that the government could have earned millions if it had applied the alternative creative offers of private parties. A report that evaluated the Rijksweg N31 DBFM project concludes the same. Also, in this case the freedom to innovate was restricted due to a detailed project roadmap, a deviation of this roadmap could have lead to delays (Eversdijk & Korsten, 2009). Another inside is given by the HSL (Highspeed railway) case. It concludes that the involvement of private parties doesn't automatically lead to innovation and differentiation of services and products. Although initially there were some expectations that private parties would come with innovative proposals for certain phases of the project, an evaluating of biddings revealed that this was not the case. The market mechanism does not necessarily provide innovative products or services (Eversdijk & Korsten, 2009).

Recent empirical evidence of Dutch experiences with DBFM concludes that there is no real evidence that infrastructural Public Private Partnership leads to innovation or financial added value. The chance that DBFM contracts lead to innovations is limited. The main reason behind this is the fact that the public party often limits space for initiative in its contracts. This is mainly caused by a drive to safeguard the different interests stakeholders have in an area, for example securing the rights of citizens. Conclusively, the tight legal procedures of DBFM at infrastructural projects lead to an optimal life-cycle approach but limits the realization of innovations (Eversdijk & Korsten, 2009).

### *3.5.3 Achieving added value.*

The government *expects* that DBFM creates added value. PPC and PSC are tools that can be used to *forecast* if DBFM will result in financial added value, but the real outcome is unknown. In many cases “the value for money” is an *expectation* and is mainly depending on the *expected* costs that the PSC forecasts. Additional “value for money” isn't always a decisive factor in policy making which is confirmed, in the DBFM review report of the A 59. Which concludes that value for money is an important element but isn't always a decisive factor in the decision making. Eversdijk (2013) case studies over a period of 2005-2011 also concludes that 60% of the projects had “value for money” but in the end weren't contracted as DBFM.

Literature concludes that when a private party designs an asset and is going to operate it, it is more likely that cost savings will occur in operations. However, there is some empirical evidence that Dutch DBFM projects resulted in financial added value. The N31-Waldwei and A2-Hooggelegen were delivered on time and within budget. DBFM minimizes financial risks,

uncertainties and with it government responsibility (Eversdijk, 2013). However, Eversdijks (2013) warns that it is too early to conclude a positive causal relationship between DBFM and financial added value. It seems that the first results, like time and cost reduction, are positive but there could be other negative elements that are not known yet.

| Project | Date Deal | Size         | Contract form | Design& Build period | Maintain Period | Cost-reduction |
|---------|-----------|--------------|---------------|----------------------|-----------------|----------------|
| HSL-IP  | 2002      | 3,41 billion | DBFM          | 5 year               | 30 year         | 2-5%           |
| A59     | 2003      | 244 million  | DBFM          | 2,5 year             | 15 year         | 14%            |
| N31     | 2003      | 120 million  | DBFM          | 4 year               | 15 year         | 19%            |

Figure 3.2 DBFM cost reduction calculation according to Klijn & Twist (2007)

### 3.6 Recommendation of Commission Ruding.

Prime Minister Mark Rutte expressed his worries about possible inadequacy of the current financial resources of the government to make the necessary investment in road and rail infrastructure. The Commission Ruding was tasked to look for opportunities to privately finance infrastructural projects and apply DBFM in a more structural way. This section of this chapter will sum up the findings of Commission Ruding (Ruding, et al., 2008).

- Private financing of infrastructure as part of DBFM delivers significant added value throughout the project.
- The added value of private financing lies in; a higher quality of infrastructure, lower cost/lower chance on budget overrun, faster delivery of the project, improved maintenance and an improved price-quality ratio. This can lead to a 10% costs reduction at new infrastructural projects.
- The private sector creates value in the form of private financing, higher efficiency, expertise, knowledge, experience, specialization and decisiveness.
- A combination of public and private financing creates added value by, decreasing transaction costs and eliminating barriers.
- Applying private financing at DBFM contracts is still too incidental in the Netherlands.

- The choice for Public Private Partnership with private financing, lacks substantial arguments and transparency.

In short, according to Commission Ruding private financing in infrastructure as part of DBFM contracts creates added value in the Netherlands and should be applied more often. However, to realize this barriers, mentioned above, should be overcome. The Public Private Partnership form is depending on the local specifications and specific governance policies. There is no advice on which Public Private Partnership form should be chosen.

## Chapter 4: Characteristics of the Digitale Delta

#### ***4 Characteristics of the Digitale delta.***

This chapter gives insides in the characteristics of the Digitale Delta. It starts with the introducing the added value of the Digitale Delta. Followed by a description of the Digitale Delta partnership and the governance structure of the Digitale Delta. The description of the executive organisation of the Digitale Delta with an organisation chart is also given. All these sections together form the characteristic of the Digitale Delta. The final section compares the differences in characteristics between infrastructural development and the Digitale Delta. Which will give insides in the Digitale Delta partnership compared to other Public Private Partnerships and will help to understand the Digitale Delta partnership.

#### **4.1 Added value of the Digitale Delta.**

The Digitale Delta started as an initiative of the private market, research done by IBM and TU Delft concluded that there is a need both from private as public parties for the Digitale Delta. Eventually, this vision for a Digitale Delta was picked up by the five core partners: Rijkswaterstaat, TU Delft, Hoogheemraadschap Delfland, Deltares and IBM. Within the “Topsector Water” the Digitale Delta is seen as a promising business case. These parties are tasked with the challenge to look for opportunities to improve existing and future water management projects in an efficient and effective manner. There are several societal developments which made the development of the Digitale Delta inevitable and crucial (Digitale Delta, 2014):

- Climate change will lead to increasingly extreme weather conditions, which will result in an increased pressure and intensive use of the water management systems. These expected developments forced policy makers to draw a new “Deltaplan” in which information and data exchange and smart water management will be a key factor.
- National and local authorities have the same limited means to handle greater challenges.
- The amount of relevant data is growing exponentially.
- The government is obligated to grant excess to data that is obtained with public money, the so called “Open data policy”.
- The top sector policy, knowledge and services regarding water are an interesting export product.

To counter these developments an increased and efficient cooperation between the national and local governments, business sector and knowledge institutions is needed. This in turn can lead to a decrease in the cost of water management. The goal of the Digitale Delta is to offer

data and knowledge in a uniform and accessible way to the water sector. The Digitale Delta is focussed on accessing, exchanging and retrieving different kinds of data and on the applications that needed to achieve this. Within the Digitale Delta there is space for different services that can/will be used to enrich data to information. In the operational phase the first product version of Digitale Delta will be developed. This should lead to efficiency and quality advantages for the government, through an increased exchange of water data, knowledge and development of relevant applications. The true potential/benefits of the Digitale Delta will be acknowledged in situations where there is an urgent need for information, like emergency situations and big and complex projects. Efficient use of information can also led to a decrease in maintenance costs of large infrastructural projects. The Digitale Delta offers a platform for the development of new applications and makes information accessible and uniform. This offers opportunities for the governments and provide export opportunities for private companies (Digitale Delta, 2014).

#### **4.2 The Mission of the Digitale Delta partnership.**

The Digitale Delta partners are planning to develop an open platform with open standards; to provide information, data, models, algorithms, tools and applications that are relevant for the water management of the Netherlands for both public, private and knowledge institutions. The realization of the Digitale Delta will contribute the following societal goals:

- Reducing the cost of information and herewith the water management of the Netherlands.
- Improving cooperation and information exchange in water management and herewith increasing safety in case of emergency situations (faster response time)
- Strengthen the competitiveness of the Dutch watersector by creating commercial opportunities for the Dutch industry.
- Realization of government goals by providing openness to data, so called “Open data Beleid”.

The operational phase will be activated in the second half of 2015. According to the original roadmap the Digitale Delta should have the following components by the end 2015:

- Connecting infrastructure where existing data and functionalities can be found and reused.
- Technical and semantic standards which enable the interchangeability of data, knowledge and other functionalities that are IT related.

- A catalogue where existing and reusable data sources and application for the whole watersector can be found.

The Digitale Delta provides a basic platform to share data, Spatial Data Infrastructure: SDI. The platform will not develop any applications that will compete with private parties. The Digital Delta is therefore to be accommodated in an organization with public management. This organization has the ambition to grow into a national and if possible an international water platform. It provides opportunities for public-private partnership initiatives; the opportunity to realize reusable solutions faster and with less effort and it provides private organizations with ways to develop for example app store or getting better accesses to data. A pilot platform is going to be realized in the operational phase. Once this platform has reached some degree of maturity private parties and knowledge institutions will be able to connect their own private platforms and use the data sources of the Digitale Delta. Goals for 2015:

- Partnership agreement between Rijkswaterstaat and the Waterschappen.
- Delivery of the first version of the Digitale Delta, accessibility and catalogue.
- Describing the processes of how to connect data sources and cases.
- Prepare at least two implementation cases for the second half of 2015
- Research design to look for more implementation cases and attract new users.
- Preparing the foundations for a public governance of the Digitale Delta.

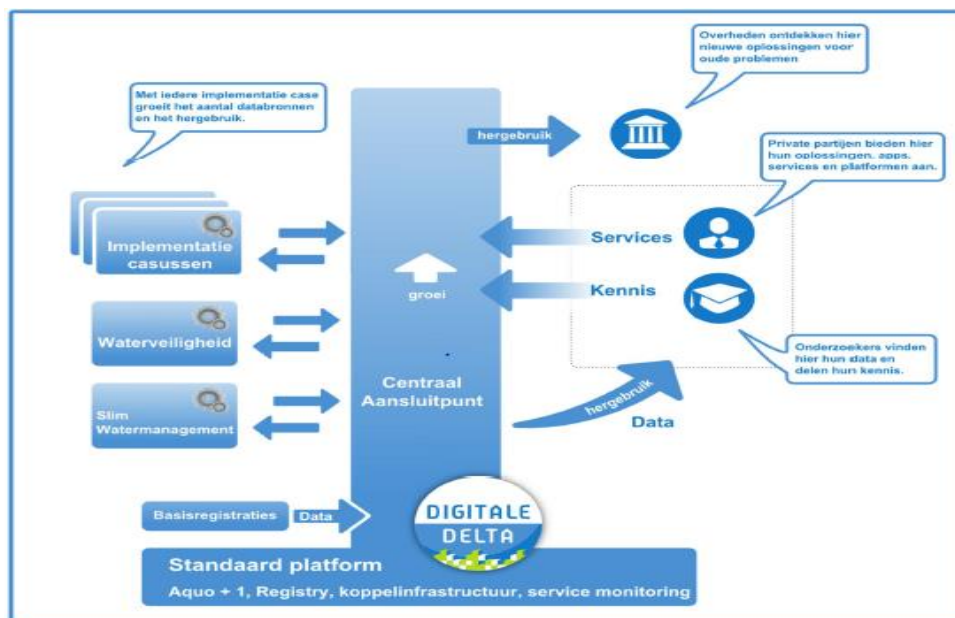


Figure 4.1 the concept of a successful Digitale Delta.



### 4.3 The Digitale Delta partnership.

The ultimate goal of the Digitale Delta is to develop a cooperative platform where, the government, private companies and knowledge institutions can adapt different roles. The parties will be able to change roles from time to time and adapt to the role it fits best. The different parties will be able to fulfill the following roles (Digitale Delta, 2014):

- Partners: Partners are all parties that signed the partnership agreement of the Digitale Delta and therefore obligated to pay for the expenses of the Digitale Delta for the coming years. The governance of the project is in control of the partners. Additional services by executive parties can only be provided if all partners agree. Partners of the project are Rijkswaterstaat and the Waterschappen, also knowledge institutions and private companies are able to become partners of the Digitale Delta.
- User: Every person with an account at the Digitale Delta is a user. Everyone is able to create a free account through registration and with that it is able to access certain areas of the Digitale Delta. The so called “open data” is also available without an account.
- Supplier: Every organisation (individual) that supplies the Digitale Delta with knowledge and services is a supplier. These parties will be able to make a special supplier account. Suppliers can utilize the supportive services of executive parties so that they can offer their knowledge and services to the Digitale Delta in the best way. The suppliers will be able to offer their knowledge and services for free. However, eventually a commercial supplier could be charged with fees.

Currently the Digitale Delta is not organised in a legal form. In this phase of the partnership mutual obligations are incorporated in a partnership agreement. The partners will act as a host for executive organisations.

### 4.4 Governance.

The Digitale Delta has a simplistic governance structure. For the operational phase of the Digitale Delta there will be a project organization (which is tasked with the realization of the Digitale Delta) and a management organization ( which will manage it after completion). Both organizations will be publicly managed. The so called “klankbordengroep” (which acts as a think-tank) will be preserved to ensure active participation of knowledge institution and private companies in the further development and implementation of the Digitale Delta. The project organization is mainly controlled by the Rijkswaterstaat (national government) and the

Waterschappen (regional governments) but will be supported by all representatives of the different organizations in the project board (Digitale Delta, 2014).

#### *4.4.1 Project board*

The project board of the Digitale Delta is formed by the directors of the partners. In the project phase these are (Digitale Delta, 2014):

- The director general of Rijkswaterstaat.
- The dijkgraaf of Delfland, on behalf of the union of Waterschappen.

On behalf of the partners, this project board is responsible for the assignment of contracts to the executive organization. The director of the executive organization (in the project phase, the project director) is subjected to this project board. The governance will stay with the partners that are financing the project. The members of the project board will actively contribute to the development of the Digitale Delta by emphasizing the importance and added value of the Digitale Delta at different layers of the government. The project board can monitor the progress of the project with the help of different indicators (Digitale Delta, 2014):

- The number of connected data sources.
- The availability of the connected data sources.
- The number of recipients and supplier of data and services.
- The number of new cases.
- The average lead time of new sources and cases.
- Potential savings of different projects.
- User satisfaction.

#### *4.4.2 “Klankbordgroep”/Think-tank.*

The “Klankbordgroep”/Think-tank consist of the most actively involved users and suppliers of the Digitale Delta. Different business-, knowledge institution- and government representatives are represented in the “Klankbordgroep”/Think-tank. The director of the executive organization (in the project phase, the project director) presents essential options (such as standards, agreements on data usage, services provided by the executive organisation, etc.) to members of this “Klankbordgroep”/Think-tank. The members of this group can actively interact and participate in the forming of the Digitale Delta Platform and in this way have a significant influence over the project. The “Klankbordgroep”/Think-tank aim to meet once in the two months in the transition phase. Within the “Klankbordgroep”/Think-tank different groups can be formed which can concentrate on specific projects (Digitale Delta, 2014). The aim is that all members of this “Klankbordgroep” will use the Digitale Delta.

## 4.5 The executive organisation.

The executive organisation of the Digitale Delta is tasked to fulfil the following tasks (Digitale Delta, 2014):

- The realisation and maintenance of an input point/connect infrastructure.
- Develop, determine and maintain technical and semantic standards in cooperation with users and suppliers.
- Realize and maintain a catalogue which has existing, reusable data sources and applications available for the whole water sector.
- Maintaining IT system on the same level as enterprise solutions.
- Supporting the partnership.
- Assisting implementation cases and the development of applications.

The role of the executive organisation can be further developed and determined in the cooperation agreement of the partners.

### 4.5.1 Tasks.

**Management:** The primary task of the executive organisation is the management of the platform on a functional level. The technical management of the project could be purchased based on a Service Level Agreement from a commercial supplier. The functional management of the catalogue/registry, portal for data, standards and up keep of users-/supplieraccounts will also be part of the management process.

**Services:** The executive organisation should put extra effort in assisting suppliers with their provision of services and knowledge to the Digitale Delta. To provide optimal service the executive organisation should create a service desk. Which can help finding solutions for technical and practical questions (Digitale Delta, 2014).

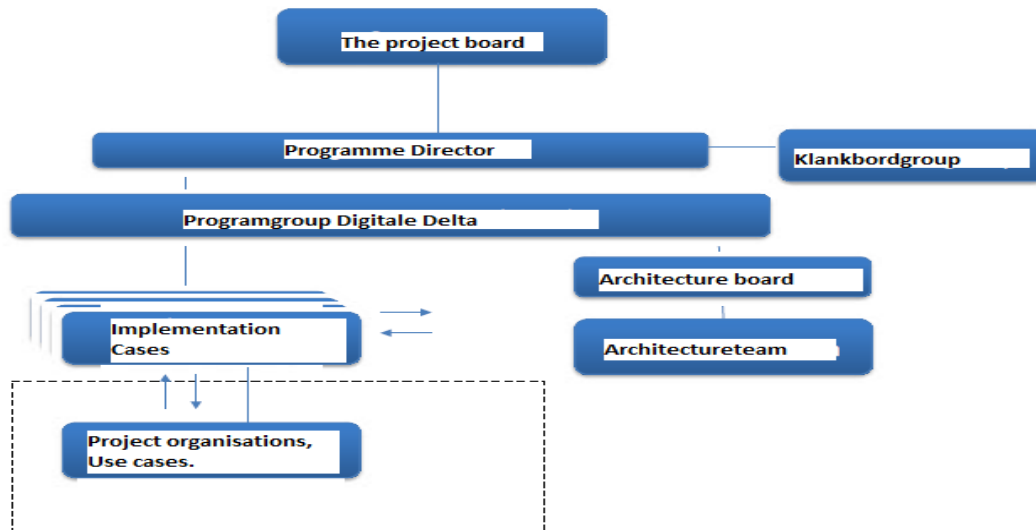
**Standards:** Together with the users and suppliers the executive organisation should develop, implement and manage the necessary standards. The executive organisation can help with the setting up temporary teams, consisting of users/suppliers, which can help with the develop of standards (Digitale Delta, 2014).

**Development:** The first couple of years the executive organisation will be busy with the further development of the Digitale Delta. Each phase of the project will be assigned by the project board on the basis of a project proposal (Digitale Delta, 2014).

Partnership: The partnership structure is essential for the Digitale Delta. The executive organisation will act as the secretary of the partnership and will be responsible for preparing meetings with the project board, “Klankbordgroep”/Think-tank and temporary teams (Digitale Delta, 2014).

#### 4.5.2 Organization chart.

This will be the organisational structure of the Digitale Delta (Digitale Delta, 2014):



**Figure 4.2 Organizational chart.**

The programme director is subjected to the project board and is integral responsible for the management of the Digitale Delta. The programme director also acts as a figurehead to external parties. The policy of the programme director will be adapted to the advice of the “klankbordgroep”.

## Chapter 5: Discussion

## **5 Discussion.**

In this chapter the documentations and empirical evidence that is gained through interviews will be analysed based on literature review and findings from infrastructural developments, the factors of Van Ham and Koppenjan will be leading in this. The findings will be reflected upon and discussed in the last two sections.

### **5.1 Factors that influence the adaption of Public Private Partnerships.**

Van Ham and Koppenjan (2002) did systematic research on nine cases of infrastructural Public Private Partnership projects to find out what kind of issues occur during the realization phase of infrastructural Public Private Partnership. This research resulted in a list of 16 factors that influence great or less extent the realization of Public Private Partnerships (Eversdijk & Korsten, 2008). The sixteen influential factors shown in *figure 3.1*, are can be deducted to three categories which are; characteristics of the project, characteristics of the process and contextual factors. Van Ham and Koppenjan stated to what extent each factor influences the realization process of Public Private Partnership. From these 16 factors only 8 have influence on the realization of infrastructural projects. However only 5 were of clear influence on the realization process of the Digitale Delta and thus has been used to further examine the Digitale Delta. The field research showed that the following factors are influential in the Digitale Delta Case and will be explained in the context of the Digitale Delta:

- Expected profitability
- Role of public parties
- Interactive project development
- Project content (scope)
- Existence of support settings

#### *Expected profitability*

The expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships. A Public Private Partnership projects have to cover expenses/be profitable in order to maintain the project, thus it can be a failure factor if a project is not profitable. However, expected profitability is not a compelling condition for Public Private Partnerships (Van Ham & Koppenjan, 2002); because this factor can be influenced by the factor; project content (scope). It is possible that a project is not profitable on micro-economical level. However, the public party (principle) can find different ways in getting private parties interested in the project for example; offering different kind of

profitable concessions that are related to the project content (scope) (Eversdijk & Korsten, 2008).

Eversdijk & Korsten (2008) state that the availability of private investments at infrastructural Public Private Partnerships is desired, because profitability is also depending on the control of cost during the execution of Public Private Partnerships. Private companies are better able to enforce financial accountability than public actors. At infrastructural Public Private Partnership, private consortium are largely dependent on the financiers which whom they form the consortium. The involvement of financiers in the project should have a positive effect on cost control, since they are pre-eminently aware of the balancing that is needed between investment costs and maintenance costs and the potential risks during the construction and maintenance period (Eversdijk & Korsten, 2008).

### *Role of public parties*

A reluctant and remote attitude of the government is a limiting factor for the realization of Infrastructural Public Private Partnerships. Research shows that the government often chooses for a safe and limited form of cooperation where the project is already defined before the involvement of private parties (Eversdijk & Korsten, 2008). This safe and limited form of cooperation is often reflected in the draft of a DBFM agreement. The principal unilaterally prepares the agreement (by hedging itself for uncertainties) before the market is approached. Subsequently, this drafted DBFM agreement forms the base for the tendering procedure, which should eventually lead to awarding the contract to the most suitable contractor. The adverse effect of an utmost effort to close the gaps in a contract is that it will leave limited space for creative and innovative ideas from the market; therefore this can be considered a failure factor.

However, there lies another important role for public parties which is too ensure political-governmental "commitment" (Eversdijk & Korsten, 2008). In many cases a project falls or stands because of commitment issues. Therefore, if there is political support to realize a project can be considered as a success factor.

### *Interactive project development*

A joint view and interweaving of goals are import conditions for a successful Public Private Partnerships, but an early involvement and consultation does not automatically mean that it is a joint project development. A joint project development occurs through an interactive process, which develops in trust, commitment and in the end this will enrich the project

(Eversdijk & Korsten, 2008). At infrastructural Public Private Partnerships there is often no interactive project development and therefore it is often fail factor for Infrastructural Public Private Partnerships. However if it is applied in the right way interactive project development adds value and thus considered a success factor.

### *Project content (scope)*

An important motivator for Public Private Partnerships is the project content (scope). A high imago level is also important for Public Private Partnerships (Eversdijk & Korsten, 2008) and therefore a success factor.

The project content is an import factor, but it is particularly defined by the public partner. Public principals try to assess the risks of a large complex project in advance try to close the gaps in the agreement to control as much as possible before market is approached. This limits the scope and works detrimental on the content of a project, because it limits private creativity and innovation. By doing it in this way joint imaging and target intertwining are compromised, which creates an adverse effect to pursuit individual interests and strategies. Instead of jointly investing in maximum potential one is aimed at minimizing risks, liabilities and responsibilities. Another disadvantage of a concession PPP is a public principal versus a private contractor, a traditional hierarchical relationship (Eversdijk & Korsten, 2008) and in this way it will lead to a sub-optimum and thus a failure factor.

### *Existence of support settings*

According to literature, support settings do not only bind parties but also divide them. Program groups and platforms often enhance interaction. Consultation on the other hand is an example of a support setting that often leads to division; it holds parties at a distance, is not binding and thus has an inhibiting effect on the efforts of private parties. In infrastructural Public Private Partnerships public–public settings are dominating and public private are mostly in the form of consultation which is considered a failure factor (Eversdijk & Korsten, 2008).

## **5.2. The experiences of the partners during the realisation of the Digitale Delta.**

### *5.2.1. Expected profitability*

The investment budget of the Digitale Delta across 2015/2016 will be equally divided between the partners, Rijkswaterstaat and the Waterschappen. An important aspect for both



public as private parties is that costs that are derived from the use of internal human resources will be for the organisation's own account. Also the costs from use cases are for the account of the involved public and private parties. The biggest expense for the investment budget will be the realisation of the technical platform. If it is possible to re-use a system for such a technical platform the cost will be lower than purchasing a new system. It is estimated that the total amount of external cost for the next 4 years will be 1,4 million euro, an estimated average of 350.000 euro a year. Which will be divided equally between the Waterschappen and Rijkswaterstaat which results in 175.000 a year per partner per year. These annual cost will be largely made up by operational costs of staff- and systems expenses. In the second half of 2015 the funding of the executive organisation will be further developed. The coverage of these costs will be agreed on in the cooperation agreement.

Within Rijkswaterstaat there are different kinds of parallel projects that have IT technical similarities with the Digitale Delta. When the Digitale Delta is realised some components of these projects will be unnecessary and in this way cost savings will occur. For example there is a project with an estimated cost of 4 million euro, 1 million of this budget is reserved for an Enterprise Service Bus. The purpose of this project is to do several test on weirs, it is a miniature integral solution. However, if the Digitale Delta existed this ESB would have been unnecessary since there will be an ESB within the Digitale Delta. In this way, a 1 billion budget for the ESB could have been saved or used for different purposes. In other projects similar kind of cost reductions can be achieved. A big part of the "expected profitability" for Rijkswaterstaat exists through indirect cost reduction. Rijkswaterstaat is currently not planning to charge the cost of the Digitale Delta internally to other divisions/projects (that uses the Digitale Delta), since the indirect cost reductions will be significantly higher than the operational/maintenance costs of the Digitale Delta. The cost of development of the IT system are relatively small compared to the opportunities it provides. However, it will take time to adjust the data streams to each other, but in the end it will lead to cost reduction and process improvements. Existing systems could also improve efficiency which will in turn lead to a reduction of employees.

It is expected that private and knowledge parties will also have indirect profitability from the Digitale Delta. The existents of Digitale Delta will make it easier for these parties to find water related data in one central accessible point. This will save huge amounts of time for knowledge institutions and companies, this is of great value for researchers. Another indirect

profitability of the Digitale delta is, that knowledge institutions and private parties will be able to develop new tools, applications and conduct research in a more efficient and probably cheaper way and sell these services to third parties. The government will also benefit the developments. The only way that a private party will gain direct financial benefit from the Digitale Delta is when it wins the contract to build the IT technical requirements or by participating in future use cases. However in this phase of the project this is irrelevant, since it is not clear how this will be tendered. There is also an opportunity to export the Digitale Delta. This is a goal for the near future since the Digitale Delta has to prove itself as a success in the Netherlands.

It is clear that both from public and private parties sees the financial potential of the Digitale Delta. The partners (Rijkswaterstaat and Hoogheemraadschap Delfland) which will finance the Digitale Delta, expect that most of their “expected profitability” will be through indirect earnings. Millions of tax money can be saved in a relatively simple way. The fact that the investment budgeted is relatively not that large makes it easy to earn back the investment and make it profitable. The realisation of the Digitale Delta will make the work of the other non financing partners cheaper and efficient. In other words, the Digitale Delta will save a lot of indirect costs but it is not clear how it will generate direct cash flow to compensate the costs of the project itself. The main partners are satisfied with the idea of the millions that they will probably save. However, since there isn't a direct turn on investment on the long term this can have a negative effect, since the project will have to be describable beneficial for participants.

### *5.2.2. Role of public parties*

A couple of years ago IBM and TU Delft proposed the idea for a Digitale Delta to Rijkswaterstaat. Rijkswaterstaat liked the idea but at that time it was simple not interesting enough. Eventually, the Waterschap Hoogheemraadschap Delfland showed interest for the idea of a Digitale Delta and all partners recognized the importance/potential of a Digitale Delta and were brought in. The participation of Rijkswaterstaat in the Digitale Delta was of great influence to create trust. All representatives of the five participating partners found the preliminary stage of the Digitale Delta quite exceptional. The partners were positive and participated with a lot of enthusiasm. There are lots of examples where the partners made gestures of good will towards each other. As one of the original initiator IBM did a lot of the work, but Rijkswaterstaat also made separate contracts/agreements with the other partners for which they were paid. Some partners were less able to finance certain parts of this stage

compared to others. In turn, these partners provided services for the cost price or supported the preliminary stage in other ways. In the cooperation the partners were equal but in the provision of their skills there is principle-contractor relationship. This somewhat equality between the partners had a positive effect.

Flexibility of this preliminary phase made certain agreements in the contract complicated; changes were made up to the latest moments to satisfy all partners. Most of the representatives of the five partners found the cooperation between each other quite exceptional; they experienced it as an open environment and sought to find mutual interests. There has been a joint reflection and brainstorming on how to shape the Digitale Delta. Rijkswaterstaat also invited other big private parties in the sector such as Hydrologic and Nelen-Schuurmans to inform them of the Digitale Delta and provide them with the chances to respond to the idea of a Digitale Delta. There was a lot of interaction between the different partners and outside parties. This more or less equal standing within partners and involving outside parties had a significant positive influence on the realization of the Digitale Delta.

There is a lot of political-governmental commitment for the Digitale Delta. The highest top officials of almost all partners (such as director-general of Rijkswaterstaat Jan Hendrik Dronkers and the Dijkgraaf of Hoogheemraadschap Delfland) are directly involved in the Digitale Delta. This is quite exceptional for a project that has a relatively small budget. Private parties such as IBM are also highly committed since they see the Digitale Delta as a promising business case and therefore invested heavily in the Digitale Delta. There has been active involvement and executive sponsorship from the very top of the company. Of course this commitment will have positive impact on the Digitale Delta, since there is high level support to establish this digital exchange platform.

### *5.2.3. Interactive project development*

Prior to the Digitale Delta IBM and TU Delft did a research on a Digitale Delta kind of platform the result was that there was great need for a development like this.

SME's/Government spend a significant amount of their project time to find data, providing it and making it usable. So if there is a way to instantly find and reuse data, it saves a lot of time, effort and eventually money. During the first phase of the Digitale Delta there has been a lot of interaction. Rijkswaterstaat spend a lot of time and effort to get various parties involved, including parties which did not enter the Digitale Delta as a partner like Hydrologic

and Nelen-Schuurmans. There were two levels, the consortium with partners and parties outside the consortium they were all invited to have input in the Digitale Delta through use-cases. The purpose of these use cases was to create a research environment that was accessible to other private parties and get their view on the Digitale Delta. The purpose of these use cases is also to show the enormous potential and benefits the system provides such as; save energy cost, more quality in water management, higher return on sensors, data research, faster development and implementation of new systems and savings that will occur on the management of IT infrastructure. There was a lot of transparency to create a support base for the Digitale Delta; different sessions, project board, project groups, use cases and klankbord groups have been organized to realize common ground and support. This is a very important aspect since a digital platform will only succeed if it has a sector wide support base, therefore it will have a positive effect on the realization of the Digitale Delta.

The original vision of the Digitale Delta was something very big but eventually it was scaled down to become smaller. The idea is to develop a roadmap that will help to grow the Digitale Delta towards larger proportions. The partners worked together to create a joint vision of what the Digitale Delta could provide, which resulted in a general vision of a platform that contains all data of the water managing Netherlands in one central point. In the end, this platform should save 200 million of tax money for Rijkswaterstaat and other governmental organizations. The partners support this goal and have the same main interweaving vision namely large-scale savings for the Dutch Government. However, there are still a lot of differences in how to get there, since each partner also has its own organization-related goals. The partners agree on the mainline but still have other views on how to overcome certain issues on ground level and how to specify goals in to sub-goals. The fact that there are still disagreements on ground level is a negative aspect, since it will be harder to bring this to one line in the operational phase.

The behavior and attitude of the partners during the project generated a high level of trust between them. They kept their promises and operated within the agreed conditions. There is also a personal trust between those that are directly involved in the project. Another issue that creates trust is the fact that the partners know more or less from each other why the other partners are involved in the project. For example, IBM is a commercial company whose main goal is to create profit from this project, which is logical since this is in the character of a commercial company. In the same time IBM is sincerely seeing the societal benefit of the

project and is willing contributing to this aspect as well. On the other hand the government has other tasks that it wants to meet. The fact that everyone knows what the main interest of the other partners are creates trust, since they will act according to these interest and make logical moves. There has been a lot of trust and open/honest discussions between the partners about the ideas and mutual agreements they have. All partners are very committed for realization of the Digitale Delta. The mutual trust between the partners is a positive element for the Digitale Delta.

#### 5.2.4. Project content (scope)

Within the Dutch water sector it is very hard to get data, tools or other kind of information from other parties. This is both the case for public and private parties. A common issue for public parties is often that when they assign a private party to build some kind of new system it is often the question if this new build system will cooperate with already existing systems. Currently it is often too expensive, too slow and too difficult to access certain data, which in many cases is government data. The Digitale Delta should provide easier, faster, transparent and reliable access. More sources should be made available through “open data” and at the same time make it possible to reuse data and development tools. Real time data will also be available in real time, the source of the data will stay at the source keeper and it will use methods to make data easy searchable. Overall the Digitale Delta will act as a digital water ecosystem which will make it possible to make tools from different private parties compatible and it will provide knowledge institutions and companies’ easier access to various layers of government water data. In the end the Digitale Delta will lead to a more open system, which will be faster and provide easy access and in this way it will save a lot of time and money.

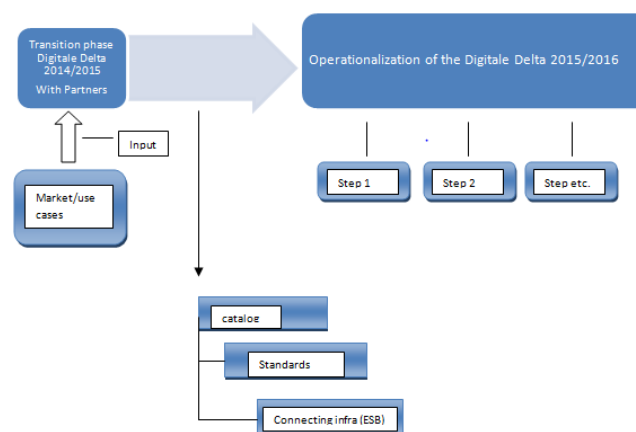


Figure 5.1 Approach of the Digitale Delta.

In the transition phase there has been a lot of interaction, but currently Rijkswaterstaat is in the procedure of tendering the Digitale Delta. It is working on a roadmap in order to get the Digitale Delta operational, to have control on the situation and avoid lock-in to a certain system it will be implemented and tendered in steps at the time. The progress of implementing technical elements will depend on problems and solutions that will be created to solve these. The infrastructural element will be arranged by the public parties and this will be provided to everyone. Private parties will be able to plug in their systems to this base infrastructure. The operational phase will take some time since Rijkswaterstaat knows which technical components are needed for system but in which order this will happen is still unknown. The most important element that they researching know is the organisation behind the whole system.

The first step will exist of developing a catalogue to find things, standards to make it compatible and a connection infrastructure. These three components will form the core of the Digitale Delta. However, Rijkswaterstaat did not start with the development of the ESB yet to avoid discussions on which company will deliver this technical IT system. Some private companies are doubtful of this connection infrastructure, since most of them have similar systems with app store kind of settings and this could form a threat for their own business. However, Rijkswaterstaat wants to provide this infrastructure to the market and will make it possible for other to connect. In this way it aims to provide a platform that can grow with other (private) systems that can be plugged in. Initially all data of Rijkswaterstaat and the Waterschappen will be provided, eventually others will follow. The more data sources are plugged in the system the more successful it will be. Business will be free to connect to the Digitale Delta. In the long run the Digitale Delta hopes to become requirement, not adjusting could mean loss of business. The catalogue will be developed; this will be a long term development since it will grow over the years. The solutions of the catalogue were presented for review to the other partners. In which they had the opportunity to respond. The standards and catalogue will be tendered as part of the roadmap. In the future use cases will be tendered in the style of the Digitale Delta, so that private parties will get an incentive to work in the style of the Digitale Delta. By tendering more of this kind of projects the connecting infrastructure of the Digitale Delta will grow.

The Digitale Delta has a lot of user potential, from the original 5 partners. TU Delft and Deltares will use the Digitale Delta for research purposes and to fulfill their customer need. IBM will be more interested in the actual building of the Digitale Delta. The main

responsibility of Rijkswaterstaat and the Waterschappen is to provide the public data to the system. The careful and joint approach to the project content (scope) is a positive element since this will lead to joint solutions, commitment and solidarity between the partners.

#### *5.2.5. Existence of support settings*

The “klankbordengroep” acted as a support setting for the Digitale Delta. It played a big role in preliminary phase of the Digitale Delta. There were different views in the “klankbordengroep” on the Digitale Delta, somewhere defensive, others where neutral but many where positive. Some parties just joined to see if the Digitale Delta was a threat for their business, other found it interesting but not interesting enough to invest and there were parties that were enthusiast in investing in the Digitale Delta. Initially it was used to assess interest from different parties, it helped in find solutions for the transition phase and to form questions about how to build the Digitale Delta. The “klankbordengroep” helped to find a middle way for the different parties and it played an important role in hearing outside views. A clear outcome of the “klankbordengroep” was that the government had to take the lead in forming the Digitale Delta, since no other party had real interest in making a Digitale Delta for the whole Dutch water sector. The “klankbordengroep” will go through a transition so that it can also have a saying in the operational phase of the Digitale Delta. The existence of support setting was definitely helpful for the Digitale Delta, it gave positive guidance to the project.

### **5.3 Digitale Delta factors compared to infrastructure factors and findings.**

This section will focus on bringing together the empirical evidence from the Digitale Delta with learning’s from theory and the factors stated in 5.1. To keep a clear overview this section will be in line with the factors discussed before.

#### *5.3.1 Expected profitability*

The financers of the Digitale Delta do not expect a direct return on investment on the Digitale Delta. A large chunk of the “expected profitability” for Rijkswaterstaat and Hoogheemraadschap Delfland will exists through indirect cost reduction. The private parties that are involved in the Digitale Delta see a lot of opportunities that may occur with a Digitale Delta. They are also financially “motivated” through loose contracts. This done in the transition phase through financing the parties that were active in use-cases and in the operational phase the same will be done through another setting.

The absence of private financier at the Digitale Delta could create problems in the long run, since the government is the main financier of the project and both theory and learning’s from

infrastructure indicates that it is desirable to have private financiers. There is a valid concern from an outside party that since the Digitale Delta is currently more, a vision than a real product, cost can be unpredictable and therefore a risk. In recent years, the Dutch government has been plagued by IT projects that resulted in financial fiasco. Government IT projects are often too expensive and complex - and if things go wrong the cost are for the tax payers, this often backfires. The last three years, the government wasted at least 1.2 billion euro to failed IT projects, IT projects are twice as often going wrong at the government compared to private business (Willems, 2011). However, Rijkswaterstaat and the Waterschap claim that the financial risks of this project are relatively small, since the budget will be couple 4/5 hundred thousand euro a year and therefore negligible. In their view the small size of the budget will tackle the financial risks of a project. The factor expected profitability can be considered a failure factor for the Digitale Delta, since its expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships. Though the involvement of other partners, financing the project could have a positive effect on cost control, since this can have a positive effect on their commitment.

### *5.3.2. Role of public parties*

In early stages of the Digitale Delta, Rijkswaterstaat had a reluctant and aloof attitude, since it declined on the proposed idea of IBM and TU Delft, but eventually they showed interest and even took the lead in the project. To get a good understanding of what the market desired Rijkswaterstaat organized a lot of meetings etc. Contrary to infrastructure Public Private Partnerships but also compared to other cases, the representatives of the five participating partners found the preliminary stage of the Digitale Delta quite exceptional. They experienced an open environment and there was a lot of interaction between the different partners and outside parties, Quote “This is something I have never experienced before in a project. For a PPP it has a special construction”. This can be considered a success factor for the Digitale Delta, since they started in the wrong direction and followed the path of infrastructural Public Private Partnerships which in many cases leads to a fail factor but eventually adjusted their direction on time and turned it in a success factor, since the project is now more flexible and thus open for innovation and creativity. This however has been the case during the realization phase of the Digitale Delta. It is important to note that Rijkswaterstaat has to keep the same approach after the tender towards the operational phase of the program.



Political support to realize a project is considered as a success factor. This has also been the case with the Digitale Delta where not only top level government officials support the project but also high level managers from private companies. Since one should not take governmental commitment for granted, this has been a very positive step in the realization phase. This high level of commitment removed a major uncertainty for private partners/parties to jointly develop the Digitale Delta with the government.

### *5.3.3. Interactive project development*

A great advantage of the Digitale Delta is that the initiators were market parties, gradually this was picked up by the governmental parties. There was a lot of transparency to create a support base for the Digitale Delta. The partners support the Digitale Delta and have the same main interweaving goal. Unlike infrastructural Public Private Partnerships where there is not a lot of interaction, the interaction within the Digitale Delta gave space for innovative solutions and participation in the formation of the project. This approach created trust, commitment and enriched the project. This was however during the transition phase. It is important that the same interweaving of goals will be found in the operational phase, since there are a lot of differences on ground level in how to give shape to certain technical aspects. Rijkswaterstaat should follow the same line of involvement and market consultation. In contrast to infrastructural Public Private Partnerships, the Digitale Delta successfully interacted and therefore is a success factor.

### *5.3.4. Project content (scope)*

There is a need for the Digitale Delta. This is something that comes from both public as private parties. It is also expected that the Digitale Delta will be of great use for the Dutch water sector and eventually create export possibilities. The Digitale Delta will enable easier access to the market. Knowledge institutions and public parties will get easier access to data. It will provide private parties with opportunities to sell their applications to a much broader public and private parties without a proper infrastructure could plug in to the Digitale Delta and develop systems on their own. There is a possibility that the Digitale Delta will become brand and this will provide trust with water managers since brand will indicate a certain quality and interoperability of systems. The Digitale Delta will get a low entry barrier, in this way it will be easier for SMB. To get a broad market the Digitale Delta will be adjustable, for example a private party will be able to put its own catalogue in the Digitale Delta. High image level is also important for Public Private Partnerships and a success factor this is also the case with the Digitale Delta.

What is often considered a failure factor at infrastructural Public Private Partnerships is that the project content is often already defined and that there is a hierarchical relationship. This is not the case with the Digitale Delta and therefore a success factor for the Digitale Delta; there is a more or less equal partnership in which the different partners can share their ideas and visions. There has been a lot of interaction between the partners during the realization phase and they found a common vision on the Digitale Delta.

#### *5.3.5. Existence of support settings*

In infrastructural Public Private Partnerships public–public settings are dominating and public private are mostly in the form of consultation which is considered a failure factor. In the case of the Digitale Delta the program group had a positive effect on the relationship between the partners and therefore it was a success factor. The “klankbordengroep” helped to find the middle way for the different parties and it played an important role in hearing outside views. The feedback that it provided has been picked up by the partners. The “klankbordengroep” had a limited unifying effect with a limited result to bind outside private parties. After the first two elements (catalogue and standards) of the Digitale Delta have been built, the “klankbordengroep” will be informed for feedback and asked for their view about the connecting point.

### **5.4 Findings and General reflection of the realization phase of the Digitale Delta.**

The factors of Van Ham and Koppenjan have been used to analyze and compare the Digitale Delta with infrastructural Public Private Partnerships and literature, and led to the following failure and success factors of the Digitale Delta:

- The factor expected profitability: is a failure factor for the Digitale Delta, since its expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships.
- Role of Public Parties: is a success factor for the Digitale Delta, since they started in the wrong direction and followed the path of infrastructural Public Private Partnerships which in many cases leads to a failure factor but eventually adjusted their direction on time and turned it in a success factor, since now there is more equal partnership. Political support to realize a project this is considered as a success factor, this has also been the case with the Digitale Delta where not only top level

government officials support the project but also high level managers from private companies.

- Interactive project development: is a success factor, unlike infrastructural Public Private Partnerships where there is not a lot of interaction, the interaction within the Digitale Delta gave space for innovative solutions and participation in the formation of the project. Also, the mutual trust had positive effect on the interaction between the partners.
- Project content: is a success factor, since there was a joint development of the scope, a high imago level is also important for Public Private Partnerships and a success factor; this is also the case with the Digitale Delta.
- Existence of support settings: In the case of the Digitale Delta the program group and “klankbordengroep” had a positive effect on the relationship between the partners and therefore it was a success factor.

At successful Public Private Partnerships, parties should have a joint perception of a project as equal partners heading towards interconnected goals, in which they are connected through mutual dependencies and trust. Commitment and a jointly vision are also key elements, in the end this should lead to a “logic of connecting” like in the case of *alliances Public Private Partnerships*. Literature states that alliances Public Private Partnerships are the way to go and that more Infrastructural Public Private Partnerships should switch from concessional Public Private Partnerships to alliance Public Private Partnerships. In the main lines one can see this “logic of connecting” back at the realization phase of the Digitale Delta. At the start of the project the Digitale Delta was in line with the characteristics of an infrastructural Public Private Partnership, if it had followed that path it would have faced the same failure factors as in the case of infrastructural Public Private Partnerships. The Digitale Delta eventually adjusted its character and through its transformation to a more alliance Public Private Partnership it gained a lot of advantages that resulted in success factors. This had not been possible if it had followed the infrastructural line of Public Private Partnerships.

By following a more alliance Public Private Partnership approach the Digitale Delta was able to convert the failure factors of infrastructural (concessional) Public Private Partnerships into success factors. However it is clear that it has failed on the factor expected profitability. The Digitale Delta Public Private Partnership confirms what is already stated by theory namely, that alliances are the right way to follow. An important finding is that the Digitale Delta demonstrated that it is possible for a concessional Public Private Partnership to adjust its

direction, to a more alliance Public Private Partnership and by doing so turning failures in to successes. In order to successfully reach its goals it is very important for the Digitale Delta to have common support base. The thought that the whole sector is needed played a important role in the willingness to change. It should be noted that this is something that could be case specific and that one may not be able to find in other cases.

However there are signs that in its way to the operational phase there have been a slight shift towards a more contractual way of Public Private Partnership. This is an issue that one should be very careful with since this could lead to a relapse towards the “Logic of division” /concessional Public Private Partnership, where the contract is the only connecting element and may have a negative effect on the positive developments that were created during the realization phase of the Digitale Delta. In the realization phase the partners were enthusiast and positive, they shared the same vision. In the operational phase, the tendering will take place, during this phase the different ambition levels and expectations (which will diverge and for strategic reasons remain hidden) will become more apparent. Suspicions and desires are not always expressed to each other. The different gains for public and private parties could bring them in the operation phase into positions in which it could lead to risk aversion. Therefore it is important to follow the same interaction line in the operational phase as in the realization phase this could lead to a successful Digitale Delta.

# Chapter 6: Conclusion

## 6. Conclusion.

The main focus of this chapter is to answer the sub-questions, eventually the aim is to define an answer for the broader main question proposed at the beginning of this paper.

### 6.1 Sub-question one.

*What are Public Private Partnerships and how do they manifest themselves in infrastructural Public Private Partnership developments?*

Public Private Partnerships aim to create a durable cooperation between public and private actors, while developing common products/services they agree on sharing; risk, cost and revenues of the projects they are involved in. The general idea is to create added value by cooperating and while doing this achieving synergy effects or cost reductions for example. This underlines the dependency of different actors, inter-organisational coordination and the quality of governance which is important in the achievement of objectives. Public Private Partnerships have a lot of benefits (such as control of risks/costs, exploiting opportunities, early information exchange and greater commitment), but also a lot of risks (such as high transaction costs, innovative input is limited, non-cooperative behaviour before tendering and no optimal mutual trust) one may have to take in consideration during a Public Private partnership.

The difficulty of Infrastructural Public Private Partnership projects lies in the management of interactions. They tend to find their salvation in certain forms of contracting. The gains of such contracted certainties are often disappointing. The complexity at the realization phase and the uncertainties and risks that this brings forces actors to take individual strategies, which often results in public preparation of projects with limited input from private parties. The interaction between public and private parties is limited to formal procedures, tenders and contracts. Eventually they choose a setting in which flexibility is minimal and risks are divided and avoided. Infrastructural Public Private Partnerships should follow a more alliance PPP model, where interactions, flexibility, deliberate risk acceptance and equal partnership create added value. Due to the setting of infrastructural PPP, important goals of Public Private Partnerships success as; an early involvement of private parties, a joint project process, realisation of added value for both parties and interlinking goals, are jeopardized. Even though, the public parties like to follow the “Logic of division” this does not lead to a stronger position. Risks and uncertainties that are avoided in the initial phases will resurfaces in the tendering phase and eventually it will be harder to manage these, which will result in delays and suboptimal outcomes.

## 6.2 Sub-question two.

*How do the characteristics of infrastructural Public Private Partnerships and the Digitale Delta differ?*

In infrastructural development there is often one contract, the DBFM contract. The Digitale Delta has a partnership agreement with different partners. Partners of the project are Rijkswaterstaat and the Waterschappen. There is less emphasis on contracts and more on mutual trust, which is positive since it is a character of alliance PPP.

Contrary to DBFM which has private financing and public funding. The Digitale Delta is financed and funded by the government in this case the partners. This is a negative point since this indicates that risks aren't shared well.

At DBFM the relation between the public and private party is hierarchical. There is no equal partnership relationship. While the Digitale Delta is a cooperative platform. Both parties private (Deltares, IBM and TU delft and government (Rijkswaterstaat and the Waterschappen) are involved in the design, construction and operation. They collaborate the whole process. They have the same goals and connections and they want to move towards a joint realization. The search for solutions are done in a joint process between public and private parties and not so much specified defined by the public party, which is positive since this is a character of the alliance model.

In DBFM contracts the role each party takes is the same. The public party is focused on leading the project, while the private party is just executing. This is also the case with the Digitale Delta. However, the Digitale Delta is cooperative platform where the government, private companies and knowledge institutions can adapt different roles. This is a point where there is similarity with infrastructural Public Private Partnerships.

The Digitale Delta is also looking for an expansion of scope (from the perspective of coherence) and tries to lay connections between important elements in the project with the help of implementation cases. The different parties that are involved with the Digitale Delta are given the possibility to come up with implementation cases. While at projects with DBFM there are clear distinctions and boundaries. Broadening of scope should be done within the areas of responsibilities. This is a negative development for the Digitale Delta since a lack of clear borders can be uncontrollable.

### 6.3 Sub-question three.

*How did the partners experienced the realisation of the Digitale Delta?*

It is clear that both from public and private parties see the financial potential of the Digitale Delta. The partners (Rijkswaterstaat and Hoogheemraadschap Delfland) which will finance the Digitale Delta, expect that most of their “expected profitability” will be through indirect earnings. This is also the case for private parties. However since there is not a direct return on investment on the long term this can have a negative effect, since the project will have to be describable beneficial for participants.

There has been a joint reflection and brainstorming on how to shape the Digitale Delta. Rijkswaterstaat also invited other big private parties in the sector such as Hydrologic and Nelen-Schuurmans to inform them of the Digitale Delta and provide them with the chances to respond to the idea of a Digitale Delta. There was a lot of interaction between the different partners and outside parties, they want this line to continue in the operational phase. This somewhat equality between the partners had a positive effect.

There is a lot of political-governmental commitment for the Digitale Delta. The highest top officials of almost all partners (such as director-general of Rijkswaterstaat Jan Hendrik Dronkers and the Dijkgraaf of Hoogheemraadschap Delfland) are directly involved in the Digitale Delta. Of course this commitment will have positive impact on the Digitale Delta, since there is high level support to establish this digital exchange platform.

There was a lot of transparency to create a support base for the Digitale Delta; different session, project board, project groups, use cases and “klankbordengroups” have been organized to realize common ground and support. This is a very important aspect since a digital platform will only succeed if it has a sector wide support base. The partners support this goal and have the same main interweaving vision namely large-scale savings for the Dutch Government. However, there are still a lot of differences in how to get there, since each partner also has its own organization-related goals. The partners agree on the mainline but still have other views on how to overcome certain issues on ground level and how to specify goals in to sub-goals. This is a very important aspect since a digital platform will only succeed if it has a sector wide support base, therefore it will have a positive effect on the realization of the Digitale Delta.

The fact that everyone knows what the main interest of the other partners are creates trust, since they will act according to these interest and make logical moves. There has been a lot of trust and extensive/honest discussions between the partners about the ideas and mutual



agreements they have. The mutual trust between the partners is a positive element for the Digitale Delta.

The Digitale Delta has a lot of user potential, from the original 5 partners. TU Delft and Deltares will use the Digitale Delta for research purposes and to fulfill their customer need. IBM will be more interested in the actual building of the Digitale Delta. The main responsibility of Rijkswaterstaat and the Waterschappen is to provide the public data to the system. This careful and joint approach to the project content (scope) is a positive element since this will lead to joint solutions, commitment and solidarity between the partners.

A clear outcome of the “klankbordengroep” was that the government had to take the lead in forming the Digitale Delta, since no other party had real interest in making a Digitale Delta for the whole Dutch water sector. The “klankbordengroep” will go through a transition so that it can also have a saying in the operational phase of the Digitale Delta. The existence of support setting was definitely helpful for the Digitale Delta, it gave positive guidance to the project.

#### **6.4 Sub-question four.**

*What are the main success/failure factors in general and how are they related to the Digitale Delta?*

The expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships. A Public Private Partnership projects have to cover expenses/profitable in order to maintain the project, thus it can be a failure factor.

The factor expected profitability can be considered a failure factor for the Digitale Delta, since its expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships. However, expected profitability is not a compelling condition for Public Private Partnerships because this factor can be influenced by the factor; project content (scope).

In the role of public parties adverse effect of an utmost effort to close the gaps in a contract is, that it will leave limited space for creative and innovative ideas from the market, therefore this can be considered a failure factor.

In early stages of the Digitale Delta, Rijkswaterstaat had a reluctant and reserved attitude, since it declined on the proposed idea of IBM and TU Delft, but eventually they showed interest and even took lead in the project. This can be considered a success factor for the Digitale Delta, since they started in the wrong direction but eventually adjusted their direction on time.

However, there lies another important role for public parties which is to ensure political-governmental "commitment", in many cases a project falls or stands because of commitment issues, therefore if there is a lot of political support to realize a project this is a success factor. This has also been the case with the Digitale Delta where not only top level government officials support the project but also high level managers from private companies.

Interactive project development is considered a success factor. However, at infrastructural Public Private Partnerships there is often no interactive project development and therefore it often fails on this area.

In contrast to infrastructural Public Private Partnerships, the Digitale Delta successfully interacted and there this is a success factor.

An important motivator for Public Private Partnerships is the project content (scope). A high imago level is important for Public Private Partnerships and therefore a success factor.

There is a possibility that the Digitale Delta will become brand and it is part of the "Topsector water", therefore it has a high imago level and thus it is a success factor.

A disadvantage is a public principal versus a private contractor, a traditional hierarchical relationship and in this way it will lead to a sub-optimum and thus a failure factor.

This is not the case with the Digitale Delta and therefore a success factor for the Digitale Delta; there is a more or less equal partnership in which the different partners can share their ideas and visions. There has been a lot of interaction between the partners during the realization phase and they found a common vision on the Digitale Delta

In infrastructural Public Private Partnerships public-public settings are dominating and public-private settings are mostly in the form of consultation which is considered a failure factor. In the case of the Digitale Delta the program group had a positive effect on the relationship between the partners and therefore it was a success factor. The "klankbordengroep" helped to find the middle way for the different parties and it played an important role in hearing outside views.

## 6.5 The main question.

*What are the success and failure factors of a Public Private Partnership in the development of a digital data exchange platform?*

The expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships. The factor expected profitability can be considered a failure factor for a digital data exchange platform, since its expected profitability and financial visibility of a project are of great importance for the realisation of a Public Private Partnerships.

Role of Public Parties is a success factor for the Digitale Delta, since they started in the wrong direction but eventually adjusted their direction on time and turned it in a success factor, since now there is more equal partnership. Political support to realize a project is also a success factor. This has also been the case with the Digitale Delta where not only top level government officials support the project but also high level managers from private companies. Interactive project development is considered a success factor. The Digitale Delta successfully interacted and therefore this is an important success factor for a digital data exchange platform Public Private Partnerships.

An important motivator for Public Private Partnerships is the project content (scope). A high imago level is important for Public Private Partnerships and therefore a success factor. There is a possibility that the Digitale Delta will become a brand and it is part of the “Topsector water”, it has a high imago level and therefore is it a success factor, thus digital data exchange platform Public Private Partnerships should look for ways in which they emphasis their imago. The Digitale Delta; there is a more or less equal partnership in which the different partners can share their ideas and visions. It is of importance for digital data exchange platform Public Private Partnerships to have lot of interaction between the partners during the realization phase and have equal partnership relationships since a support base is essential for successful platform.

In the case of the Digitale Delta, the program group had a positive effect on the relationship between de partners and therefore it was a success factor. The “klankbordengroep” helped to find the middle way for the different parties and it played an important role in hearing outside views. Digital data exchange platform Public Private Partnerships should develop interactive support settings, since these contributed to success at the Digitale Delta and is therefore a success factor.

It is clear that the alliance/partnership model is favoured by literature. However it is clear that the concessional model is still favoured at infrastructural Public Private Partnerships. At

Public Private Partnerships, parties should have a joint perception of the project as equal partners heading towards interconnected goals, in which they are connected through mutual dependencies and trust. Commitment and a joint vision are also key elements, and consequently this should lead to a “logic of connecting” like in the case of alliances Public Private Partnerships, which add the most value. In the main lines one can see many elements of “logic of connecting” back at the realization phase of the Digitale Delta.

At the start of the project the Digitale Delta was in line with the characteristics of an infrastructural Public Private Partnership, if it had followed that path it would have faced the same failure factors as in the case of infrastructural Public Private Partnerships. The Digitale Delta eventually adjusted its character and through its transformation to a more alliance Public Private Partnership. It gained a lot of advantages that resulted in success factors. This had not been possible if it had followed the infrastructural line of Public Private Partnerships. By following a more alliance Public Private Partnership approach the Digitale Delta was able to convert the failure factors of infrastructural (concessional) Public Private Partnerships into success factors. However, it is clear that it has failed on the factor expected profitability.

The Digitale Delta Public Private Partnership confirms what is already stated by theory namely, that alliances are the right way to follow. An important finding is that the Digitale Delta demonstrated that it is possible for a concessional Public Private Partnership to adjust its direction, to a more alliance Public Private Partnership and by doing so turning failures into successes. However one can also see some elements of the infrastructural Public Private Partnerships’ “logic of division” back. The field research showed that many of the involved parties are happy with the current approach aside from minor differences, therefore the realization phase of the Digitale Delta can be considered a success. In order to successfully reach its goals it is very important for the Digitale Delta to have a common support base; the thought that the whole sector is needed played an important role in the willingness to change, it should be noted that this is something that could be case specific and that one may not be able to find in other cases. Hence, this predominantly alliance kind of approach of the Digitale Delta should be the line for other digital data exchange platform Public Private Partnerships should follow in the realization phase, since alliances offer added value and room for innovation and creativity, just like in the case of the Digitale Delta.

However, there are signs that in its way to the operational phase there have been a slight shift towards a more contractual way of Public Private Partnership. This is an issue that one should

be very careful with since this could lead to a relapse towards the “Logic of division” /concessional Public Private Partnership, where the contract is the only connecting element and may have a negative effect on the positive developments that were created during the realization phase of the Digitale Delta. In the realization phase the partners were enthusiast and positive, they shared the same vision. In the operational phase the tendering will take place, during this phase the different ambition levels and expectations (which will diverge and for strategic reasons remain hidden) will become more apparent. Suspicions and desires are not always expressed to each other. The different gains for public and private parties could bring them in the operation phase into positions in which it could lead to risk aversion. Therefore it is important to follow the same interaction line in the operational phase as in the realization phase this could lead to a successful Digitale Delta.

## **6.6 Limitations.**

This research is focussed on the realisation phase of the Digitale Delta, since the Digitale Delta Public Private Partnership is still in the tendering phase it becomes hard to predict the outcome in the operational phase of the Digitale Delta. Therefore, the results and findings that are drawn in this research can only be related to the realisation phase. After completion of the Digitale Delta, further researched will be needed to analyse the Digitale Delta as a whole and make a definite conclusion on the Digitale Delta Public Private Partnership.

The Digitale Delta is a digital data exchange platform Public Private Partnerships. However this is just one case and therefore there is no guarantee that if other cases follow its example they will achieve the same results, since cases cannot lead to generalization.

Another element is that most of the interviews have been held with partners and some other persons. However, the platform will be used by the whole water sector therefore this researched gives a somewhat limited view on the Digitale Delta since not everyone cannot be interviewed for their views on the projects.

## 6.7 Recommendations for further research for the Digitale Delta operational phase.

This section is added for the Digitale Delta team. In order to set out certain challenges that can arise during the operational phase of the Digital Delta and it needs further research in order to tackle certain growing challenges:

During the realisation phase there was a lot of trust between the partners, but now certain partners took a more cautious standing. Certain partners preferred a large tender instead of the currently chosen roadmap. Their fear is that since the project is scaled down that if this scaled down version is also going to be tendered in much smaller pieces this could lead to some problems. One of it is that it is important that all pieces fit within the same idea, architecture and technology. In this way you have a whole. Otherwise there will be several separate systems in which one has to put time and effort to adjust to one another. Another problem is that since it will be a relative small tender. Splitting it into even smaller parts this could repel certain market players since, the effort they will have to put in to the small tenders would not be worth it. They have the idea that progress has slowed down and there is still no specification of certain issues. The fact that it takes longer than some partners thought/liked has resulted in a more cautious approach. However, the political will and attention to join the operational phase is still strong.

There is a preference for the use of international standards. The Digitale Delta started with the idea of a platform that can be used on international level, currently this has been moved to the background and it is scaled down to local needs. This is an aspect that upsets some partners since they hoped for international standards. This has to do with the fact that the Digitale Delta has been scaled down and will follow a certain roadmap. Part of this roadmap is to have a pilot up and a running system, and therefore they focused it on local standards.

There is a slight misunderstanding in perception between Rijkswaterstaat and TU Delft. The TU Delft has the feeling that it has been put on a sidetrack. According to them they were not able to give their input in certain aspects that were related to the project content. On the other side, Rijkswaterstaat claims that this is not the case and they were able to have their input but did not take initiative.

There is commitment from Rijkswaterstaat and Waterschap Delfland for the Digitale Delta. However there are 24 Waterschappen which have all a different democratically elected board, all of these have to be convinced of the importance and potential of the Digitale Delta. Within the Waterschappen there is a “traditional” fear against Rijkswaterstaat. Hoogheemraadschap Delfland will take the lead in trying to convince the other Waterschappen to follow their

example, but this does not guaranty their participation. A lot of local governments are unknown with the vision of the Digitale Delta; most of them have heard of the name Digitale Delta but do not know what it stands for. There is a big gap between governance level and the people on the ground.

One of the outside parties had some criticism on the Digitale Delta. They share the same vision/idea of the Digitale Delta, but they indicated that it is still abstract and unclear what the product itself will be. Therefore it is hard for them to see a real before (no Digitale Delta) and after (Digitale Delta). They fear that the developments on IT will go too fast for the Digitale Delta to adapt successfully, in their experiences the government is often too slow to keep up with. They admit that there is a need for something like the Digitale Delta. However in their view keeping it up to date will be hard for the government, since successful platforms like Google, Microsoft Office etc. are not developed by governments. They question if the government is the most suitable party to do so, in their view the government draws too much to itself. The private parties have the feeling that apart from IBM they are standing a little off. The government on the other hand took the lead as they felt that no market party would take the initiative to develop an all Dutch water sector platform and on the other side they form a neutral party that could create trust in the market. The concern is that the current approach in the operational phase will lead to a too much of a top-down approach. The government should define the kind of service that it wants and give the market the free hand to develop. The private party is prepared to adjust itself to the standards of the Digitale Delta, because this will create flexibility, and increase performance. However the Digitale Delta will fall behind and to avoid this involvement of parties outside of the five original partners is necessary. If the market is not involved in the right way during the operational phase this will have its effect on innovation and creativity.

In Digitale Deltas way to the operational phase there have been clear signs on a slight shift towards a more contractual way of Public Private Partnership. This is an issue that one should be very careful with since this could lead to a relapse towards the “Logic of division”, where the contract is the only connecting element and may have a negative effect on the positive developments that were created during the realization phase of the Digitale Delta. Therefore it is important to follow the same interaction line in the operational phase as in the realization phase this could lead to a successful Digitale Delta.

## References

- Bult-Spiering, M. (2003). *Publiek-private samenwerking, de interactie centraal*. Utrecht: Lemma BV.
- Canoy, M., Janssen, M., & Vollaard, B. (2001). *PPS: een uitdagende huwelijk Publiek-private samenwerking bij combinatieprojecten*. Den Haag: Centraal Planbureau.
- Edelenbos, J., & Teisman, G. R. (2008). Public-private partnership: on the edge of project and process management. Insight from Dutch practice: the Sijtwende spatial development project. *Environment and Planning C: Government and Policy* , pages 614-626.
- Eversdijk, A. (2013). *Kiezen voor publiek-private samenwerking*. Den Haag: Boom Lemma.
- Eversdijk, A. (2009). *Publieke besluitvorming over publiek-private samenwerking*.
- Eversdijk, A. W., & Korsten, A. F. (2009). Concessionele publiek-private samenwerkingsrelaties, Feiten en ficties bij DBFM gebaseerde infrastructurele projecten. *Bestuurswetenschappen* , nr 3. pp.25-44.
- Eversdijk, A. W., & Korsten, A. F. (2008). De bestuurskundige mythe van verbindend PPS-management, De 'Tweede Coentunnel' als publiek-private samenwerking. *Bestuurswetenschappen* .
- Eversdijk, A., & Korsten, A. (2008). De bestuurskundige mythe van verbindend PPS-management: de Tweede Coentunnel als illustratie. *Bestuurswetenschappen* , 28.
- Hernandez, H., & Boendermaker, C. (2007). *De meerwaardetoetsen van Rijkswaterstaat*. rijkswaterstaat.
- Kennispool, P. (2012). *Samen bouwen aan de toekomst PPS bij natte en droge infrastructuur*. Den Haag: PPS Kennispool.
- Klijn, E., & Twist, M. (oktober 2007). Alliantievorming en het management van verwachtingen. *MO Nummer 3* , 15.
- Klijn, E.-H., & van Twist, M. (2007). PPS in Nederland: retoriek of bloeiende praktijk. *BSIK-onderzoek, Vernieuwende ruimtegebruik* , 15.
- Knibbe, A. (2002). *Publiek Private Samenwerking* . Alphen aan den Rijn: Kluwer.
- (2014). *Plan van aanpak Transitiefase Digitale Delta*.
- (2004). *PPS Voorgangsrapportage Van incidenteel naar structureel*.
- (nvenber 2004). *PPS voortgangsrapportage "van incidentieel naar structureel"*.
- Ruding, H., Derksen, W., Hazewinkel, H., Maas, C., Nijpels, E., Priemus, H., et al. (2008). *Op de goede weg en het juiste spoor, Advies commissie Private Financiering van infrastructuur*. Den Haag.: Vormvrijf.
- Twist, M., Klijn, F., Edelenbosch, J., & Kort, M. (november 2006 ). De praktijk van publiek-private samenwerking, hoe managers omgaan met complexe PPS-projecten. *M&O* , nummer 6 : 20.



Van bommel, K., Westein, E., Ovaa, E., de Rooter, H., Folbert, J., & Hoekstra, J. (2003). *Publiek-private samenwerking bij waterberging*. Den Haag: LEI.

Van den Hof, J. (2006). *PPS in de polder, De betekenis van publiekprivate samenwerking voor de borging van duurzame ruimtelijke kwaliteit op Vinex-locaties*. Utrecht: Koninklijk Nederlands Aardrijkskundig Genootschap .

Willems, P. (2011). Grossieren in IT-fiasco's, ICT overheid. *elsevier* , p. blz 51.