(Mis)alignment between tender and practice

in Best Price Quality Ratio tenders

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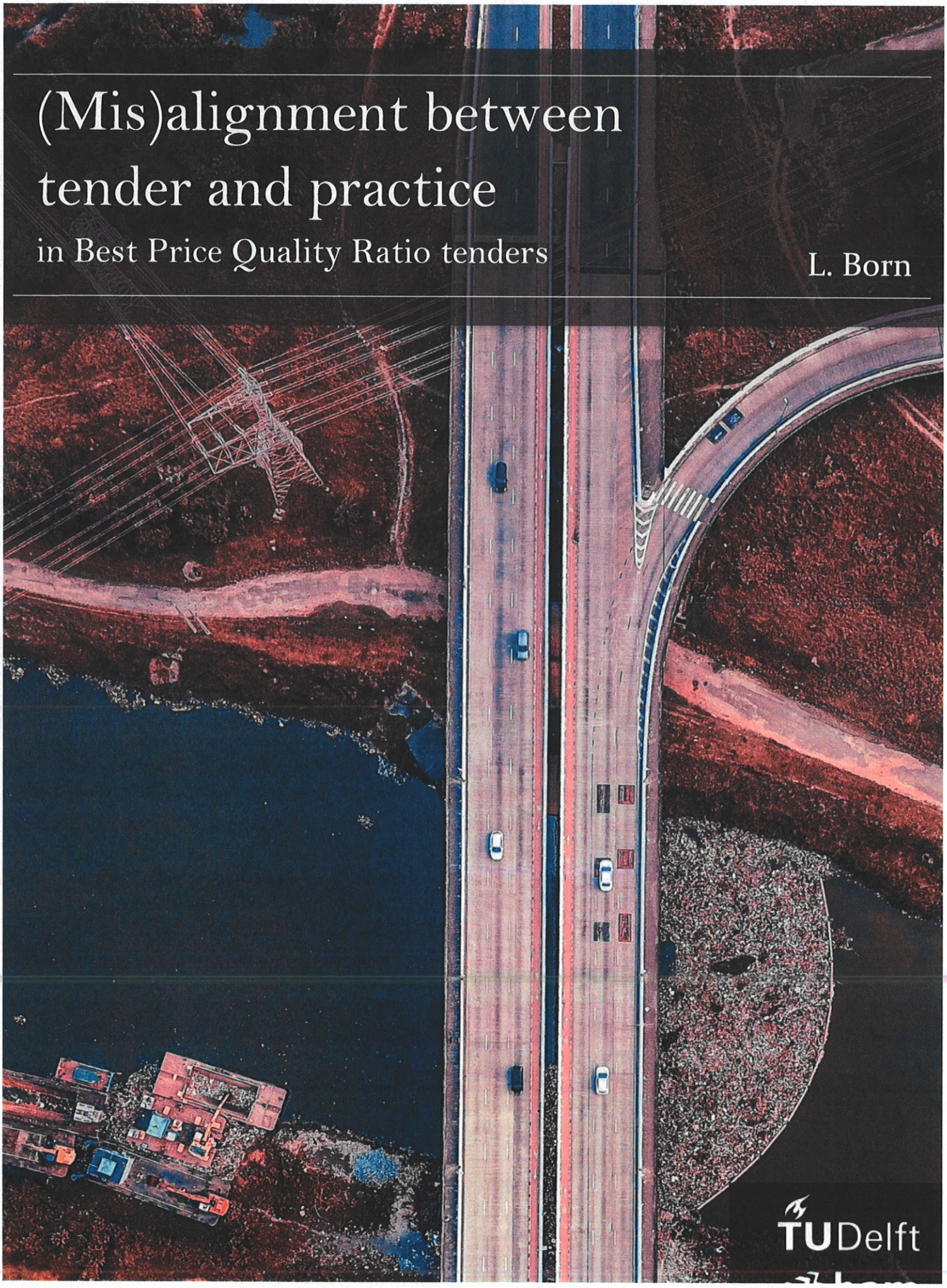

TU Delft

(Mis)alignment between tender and practice

In Best Price Quality Ratio tenders

A study on Dutch infrastructure projects publicly procured according to the Best Price Quality Ratio tender procedure

By

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Graduation Committee

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PREFACE

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Ever since I became aware of tendering, it intrigued me. It is a crucial activity for contractors to conduct their work, but it differs completely from a contractor's core business. Once a tender is won, the contractor is obliged to conduct the work as promised in the bid. Trustworthiness is thus expected. Being trustworthy is also one of my personal core values. Others not being trustworthy, can deeply hurt me.

Perhaps it is the combination of both why I could not get the article 'lying delivers' (Dutch: Liegen loont (Koenen, 2018)), out of my head. In this article both trustworthiness and tendering play a role. It states that contractors are intentionally making false promises in order to win tenders.

Over the past couple of months, I have dived into the subject of (mis)alignment between tender and practice. It is currently a hot topic in the Netherlands, but it turned out to be also a sensitive one. Gathering information was therefore interesting but also rather challenging.

Supported by my supervisors, my graduation committee, I have been able to tackle this challenge. Dear *committee,* instead of only being my supervisors, it felt more as if you were my coaches along the journey. Feeling supported and encouraged is for me the best environment to flourish. You did establish that environment for me and I am very grateful for that.

Marcel, thank you for your enthusiastic, warm attitude and constructive feedback during the meetings. *Bauke*, I would like to thank you for sharing your interesting, often new, insights with me. It has brought the research to a higher level.

Regien, I remember you saying 'women should help each other instead of compete with each other'. You live by those words. Without you I would have never been able to present my research to so many people within BAM Group already. Thank you for providing these opportunities to me.

Many thanks to *Marian* for giving me that smart and practical advice whenever I needed it. I always looked forward to our meetings, since I knew I would walk out the room with my thoughts a bit more structured than when I walked in.

A special shout out should go to *Maartje*: Thank you for your intelligent insights, helpful guidance, but most importantly, your never-ending support. It has been incredibly valuable (and pleasant) to have you at my side as my first company supervisor. Thank you so much Maartje.

In addition to that, I would like to share my appreciation to *BAM Infra*, for the opportunity the company gave me to conduct this interesting, but rather sensitive, topic. By providing room for this research, the company has shown its intrinsic motivation to be(come) a (more) trustworthy contractor.

Lastly, I would like to thank *my family and friends* for supporting and encouraging me, not only during this graduation process, but during my entire studies. I am very grateful to be surrounded by so many loving people.

My goal for this research was to go for the extra mile: to provide newly scientific insights, to leave something practical and valuable to the company, but most importantly to go through a process in which I had taken good care of myself and on which I could proudly looking back; a grand finale of my studies.

I am super proud to present you my grand finale,

Lotte Born

SUMMARY

The application of the lowest price tender as the main procurement method in the Dutch construction industry, in combination with the economic crisis, led to an unhealthy situation with fraudulent manners and low value project outcomes as a result. Since July 2016, the **Best Price Quality Ratio (BPQR) tender procedure** was therefore made **mandatory for public authorities**. In order to overcome this situation BPQR applies to tender projects with a contract sum above a certain threshold and stimulates more high-value project outcomes.

Since the introduction of BPQR tendering, specific (non-financial) tender elements in the bid can also be decisive for winning the tender. These so-called **qualitative aspects** are therefore important means in the tender **to distinguish a bid from competing bids.**

Although competition is believed to enhance a fair quality price ratio in the tender phase, this study points out that safeguarding the competition principle throughout the execution phase is not guaranteed. It turns out, **added value of a measure in the execution phase, does not always coincide with the promised value in the bid (=misalignment).**

The **objective of this research** was to determine to what extent distinctive tender elements are aligned with added value during or after project execution for projects procured with the BPQR tender procedure. Besides, the aim was to define what underlying mechanisms in the BPQR tender process are causing eventual (mis)alignment. In this regard, the following research question has been drawn: *What underlying mechanisms cause (mis)alignment between distinctive BPQR tender elements and the actual added value during or after project execution?*

Three research phases are being distinguished in this investigation: the exploration, the analysis (consisting of phase A and phase B) and lastly the synthesis.

The **exploration phase** involved a literature study in which the aim was to gain full understanding of the theoretical aspects surrounding the topic of research.

It was found that misalignment is mainly perceived as both disadvantageous for the client as well as for the losing bidders. As a result, **the current focus is on alignment between tender and practice**. This explains initiatives like SMART formulation of measures and the introduction of fines for non-fulfilment. Even new 'out of the box' ideas emerge like involving the losing bidders of the tender in auditing the execution of the project. All these approaches aim at maximizing alignment, assuming misalignment would be disadvantageous for the client.

The first phase of the analysis involved the analysis of the BAM Infra **tender results.** This analysis is used to create a general image of the tenders on which BAM Infra did perform outstanding and thus was able to distinguish itself. Furthermore, this analysis enables a proper selection of the tenders to conduct the case study research.

The analysis showed that [redacted]

[redacted]

Subsequently, [redacted]

Quality or its value can be a rather vague concept. In literature, a common notion or definition of it lacks. Nevertheless, frequently in tendering a distinction is made between internally and externally focussed value. The first restricts itself to the conformity with specifications and demands (in the tender), whereas the latter encompasses the broader sense of expectations of the client related to a specific quality aspect.

Apparently, this **broader sense of quality is difficult to define**, given [redacted]

The second phase of the analysis therefore explores the impact of quality aspects, both in the tendering as well as in the execution phase of a project. This second phase involves a **case study on four strategically selected projects** regarding the distinctive character of the tender bid for each project. Subsequently, the study assesses how these elements turn out in practice, by conducting interviews with both the client and the contractor.

The first finding is that measures can be divided in **four quadrants**:

1. Measure not implemented; effect not achieved (Q1)
2. Measure not implemented; effect nonetheless achieved (Q2)
3. Measure implemented; effect not achieved (Q3)
4. Measure implemented; effect achieved (Q4)

Only measures in the fourth quadrant are examples of alignment, since in those examples both the implementation and the effect are aligned with the original promise formulated in the bid.

Literature refers to, among other causes, strategic behaviour of contractors (adverse selection, moral hazard and strategic misrepresentation) as **the cause** of misalignment between tender and practice. The researcher did however identify **four main causes** for misalignment: Change of situation (A), enhanced / new insights (B), strategic behaviour (C) and bad luck (D).

Subsequently, the total set of measures determining the distinctive character of the bid has been analysed. Resulting from this analysis, the researcher composed a categorization and a list of characteristics that measures can have.

The **categorization** is both Mutually Exclusive and Collectively Exhausting (MECE) and it involves a distinction between process vs. product measures and temporary vs. permanent measures.

Furthermore, the researcher did formulate **seven characteristics**. These characteristics are not MECE, which implies one measure can have multiple characteristics and the list might not necessarily be limited to the seven characteristics listed below.

- Integral measures
- Performance measures
- Technical specification
- Sexy measures
- Beads (Dutch: Spiegels en kraaltjes)
- Commercial-off-the-shelf measures
- Multi-applicable measures

Thereafter, the measures are mapped in the quadrants and subsequently analysed on **commonalities**.

It was found that although their abundance in the set of most distinctive measures is roughly equal, **product measures are more frequently implemented** and more often achieve the intended effect than process measures.

Furthermore, it turned out that measures that are not implemented whilst the effect is achieved, are always process measures. However, most process measures involved concerned situations in which the added value was absent.

Besides, temporary measures are most coincide with process measures and, hence, score for the majority similar with these process measures (measures not implemented prevail). Temporary measures are less often implemented than permanent ones.

Also, **performance measures seemed to be the perfect measures** in order to achieve alignment. Nevertheless, the room for distinguishing on this type of measures is questionable. But since the promised effect is very likely to be achieved by these measures, criteria of high importance of the clients could best be formulated as a performance measure.

Commercial-off-the-shelf measures are preferred by contractors since they are easy to implement and are proven concepts. Yet, the clients state that these measures do not add value, since they would also have been conducted anyway.

Sexy measures come with a large reputational risk for the client. This also relates to the responsibility public authorities have: generating public value. If public expenditures do not generate the value expected; public authorities will encounter social discontent.

Based on the findings of this research, the following conclusions are drawn that answer the main research question: *What underlying mechanisms cause (mis)alignment between distinctive BPQR tender elements and the actual added value during or after project execution?*

This research pointed out several causes for misalignment, of which strategic behaviour is one category. Strategic behaviour does however not dominate. It was however found that presumably, changes of circumstances are stimulating strategic behaviour of contractors.

Issues underlying causes of misalignment are amongst others: multi-headedness of both the client as well as the contractor; lack of full-openness (of both parties) during the competitive dialogue and the use of inappropriate criteria to mitigate future maintenance costs in a construction contract. This results in misunderstanding, or a lack of (correct) information. In this respect it was learned that higher similarity in team composition (i.e. linking pin principle) between tendering and execution phase, can avoid loss of background information on important measures in a project.

The research did also reveal that **alignment is no holy grail**. The focus on alignment not always generates value. Of the identified causes for misalignment, several cases are found in which fulfilment of the measure appeared to be disadvantageous for the client (!). This is especially the case when new insights occur and unforeseen added value appears. Yet, this study reveals that in those cases the specific measure involved often is not implemented. So, **client satisfaction can also be achieved in case of misalignment.**

Although important, **alignment is no cure for contractual discussions**. A rigid focus on alignment may even have a negative impact on the provided added value for the client (and thus a negative impact on public value). Discussions whether measures are righteously implemented or not, consume time. And time – delay – means money. Given the fact that most clients are public bodies, this would involve loss of taxpayer's money. In addition, rigid focus on alignment will put strain on the element of trust in the relationship between contractor and client, bringing the positive outcome of other future discussions in jeopardy.

This reflection implicitly emphasises that a more externally focused value approach may have its advantages. Initiatives such as mixed client-contractor construction teams (Dutch: Bouw teams), that have an entirely different approach of project definition before the tendering phase, anticipate on that. In other words: currently **the aim is to maximise internally focused value** (=alignment of tender and practice) but in the end the evolving relevant issues all seem to indicate more **externally focused value generating approaches in the future.**

With respect to further, future research the following **recommendations** are drawn. It is recommended to study measures that did not make the winning bid distinctive and yet resulted in added value. Identification of those could lead to a reassessment of the characteristics that make a measure distinctive. Besides, a study involving multiple contractors could shed some more light on strategic behaviour. The latter remains a concept hard to graph. Furthermore, it would be interesting to examine the concept of 'added value' in a broader sense, i.e. concerning also the social relevance. It would also be of interest to examine whether the increase in communication between the parties in both the tender (i.e. by means of 'the dialogue') as well as in the execution phase leads to better alignment between promised measures and realized added value. Lastly, BPQR tendering is very focussed on being distinct and promising a certain value, but it seems that contract management on those promises is lagging behind. A study on how to enhance contract management in this regard might be of interest.

The most important **managerial implications for the contractors** involved the consideration of the use of an account manager to keep a clear eye on the current perception of the client concerning the alignment; and the implementation of human linking pins between teams to maximise the amount of background knowledge of the origins of measures. Furthermore, it is recommended to always insist on a written assessment of the tender bid. The main **implications for the client** involved the clear definition of the project scope and context at the start of the tender. Besides, it is recommended to verify a common understanding with the contractor of the BPQR promises; and to have a change management plan available. Lastly it is advised to maintain the dialogue, wherever possible.

SAMENVATTING

Het gunnen van projecten op de laagste prijs als belangrijkste aanbestedingsmethode in de Nederlandse bouw, in combinatie met de economische crisis, leidde tot een ongezonde situatie met als gevolg de bouwfraude en tot laagwaardige projectresultaten. Sinds juli 2016 is de aanbestedingsprocedure voor de **beste prijskwaliteitsverhouding (BPKV)** daarom verplicht gesteld voor overheidsinstanties bij het aanbesteden van projecten met een contractsom boven een bepaalde drempelwaarde om deze situatie te ondervangen en meer hoogwaardige projectresultaten te stimuleren.

Sinds de introductie van BPKV-aanbesteding kunnen specifieke (niet-financiële) tenderelementen in de bieding nu ook doorslaggevend zijn voor het winnen van de aanbesteding. Deze zogenaamde **kwalitatieve aspecten** zijn daarom belangrijke middelen in de aanbesteding **om een bieding te onderscheiden** van concurrerende biedingen.

Hoewel verondersteld wordt dat concurrentie een eerlijke prijs-kwaliteitverhouding in de aanbesteding bevordert, wijst deze studie erop dat het waarborgen van het concurrentieprincipe bij de uitvoering niet geborgd is. **Maatregelen worden vaak niet uitgevoerd en bereiken niet het beloofde effect zoals beloofd in de tender**(misafstemming = 'misalignment').

Het **doel van dit onderzoek** was om te bepalen in hoeverre onderscheidende tenderelementen zijn afgestemd op de toegevoegde waarde in of na projectuitvoering voor projecten die zijn aanbesteed met de BPKV-aanbestedingsprocedure. Daarnaast was het doel om te bepalen wat de onderliggende mechanismen in het BPKV aanbestedingsproces zijn die leiden tot uiteindelijke (mis)afstemming. In dit verband is de volgende onderzoeksvraag gesteld: welke onderliggende mechanismen veroorzaken (mis)afstemming tussen onderscheidende BPKV-tenderelementen en de werkelijke toegevoegde waarde tijdens of na de projectuitvoering?

In dit onderzoek worden **drie onderzoeksfasen** onderscheiden: de verkenning, de analyse (bestaande uit fase A en fase B) en tenslotte de synthese.

De **verkenningsfase** omvatte een literatuurstudie waarin het doel was om volledig inzicht te krijgen in de theoretische aspecten van het onderwerp van onderzoek.

Gebleken is dat 'misalignment' tussen tender en praktijk vooral wordt gezien als zowel een nadeel voor de klant als ook een concurrentienadeel voor de verliezende bieders. Dit verklaart **de huidige nadruk op 'alignment' tussen tenderbieding en praktijk** en initiatieven zoals SMART-formulering van maatregelen en de invoering van boetes voor niet-nakoming. Zelfs nieuwe 'out of the box'-ideeën komen naar voren, zoals het betrekken van de verliezende partijen bij de aanbesteding als auditor van de uitvoering van het project door de winnende aannemer. Al deze benaderingen zijn gericht op het maximaliseren van 'alignment', ervan uitgaande dat 'misalignment' nadelig zou zijn voor de cliënt.

De eerste fase van de analyse betrof de analyse van de BAM Infra **tenderresultaten.** Deze analyse is gebruikt om een algemeen beeld te krijgen van de aanbestedingen waarop BAM Infra uitstekend heeft gepresteerd en zich dus heeft kunnen onderscheiden. Bovendien maakt deze analyse een goede selectie van de projecten mogelijk om een case studie op uit te voeren.

Uit de analyse bleek dat [redacted]

Verder blijkt [redacted]

Kwaliteit of de waarde ervan kan een nogal vaag begrip zijn. In de literatuur ontbreekt een algemene definitie ervan. Niettemin wordt bij aanbesteding vaak een onderscheid gemaakt tussen intern en extern gefocuste waarde. De eerste beperkt zich tot de conformiteit met specificaties en eisen (in de aanbesteding), terwijl deze laatste het bredere gevoel van verwachtingen van de klant met betrekking tot een specifiek kwaliteitsaspect omvat.

Gezien [redacted], **blijkt kwaliteit moeilijk definieerbaar**.

De tweede fase van de analyse onderzoekt daarom de impact van kwaliteitsaspecten, in zowel in de aanbesteding als in de uitvoeringsfase van een project. Deze tweede fase omvat een **case studie van vier strategisch geselecteerde projecten** met betrekking tot het onderscheidend vermogen van de aanbesteding voor elk project. Vervolgens is onderzocht hoe deze elementen in de praktijk uitpakken door het houden van interviews met zowel de opdrachtgever als de opdrachtnemer.

De eerste bevinding is dat de maatregelen kunnen worden verdeeld over **vier kwadranten**

1. Maatregel niet geïmplementeerd; effect niet bereikt (Q1)
2. Maatregel niet geïmplementeerd; effect desalniettemin bereikt (Q2)
3. Maatregel geïmplementeerd; effect niet bereikt (Q3)
4. Maatregel geïmplementeerd; effect bereikt (Q4)

Alleen maatregelen in het vierde kwadrant zijn voorbeelden van 'alignment', omdat zowel de implementatie als het effect zijn afgestemd op de oorspronkelijke belofte die in de tender bieding was geformuleerd.

Literatuur verwijst onder meer naar strategisch gedrag van aannemers (ongunstige selectie, moreel risico en strategische onjuiste voorstelling van zaken) als oorzaak van een verkeerde afstemming tussen aanbesteding en praktijk. De onderzoeker noemde echter vier belangrijke oorzaken voor verkeerde uitlijning: verandering van situatie (A), verbeterde / nieuwe inzichten (B), strategisch gedrag (C) en stomme pech (D).

Vervolgens is de totale set van maatregelen, bepalend voor het onderscheidend vermogen van de bieding, geanalyseerd. Naar aanleiding van deze analyse heeft de onderzoeker een categorisatie en een lijst met kenmerken samengesteld die maatregelen kunnen hebben.

De **categorisatie** is zowel wederzijds exclusief als collectief uitputtend (MECE) en het maakt onderscheid tussen proces- vs. productmaatregelen en tijdelijke vs. permanente maatregelen.

Verder heeft de onderzoeker **zeven kenmerken** geformuleerd. Deze kenmerken zijn niet MECE, wat betekent dat één maatregel meerdere kenmerken kan hebben en dat de lijst niet noodzakelijkerwijs beperkt is tot de zeven op de volgende pagina vermelde kenmerken.

- Integrale maatregelen
- Prestatie maatregelen
- Technische specificaties
- Sexy maatregelen
- Spiegels en kraaltjes
- 'Commercial-off-the-shelf ' maatregelen
- Multi-toepasbare maatregelen

Daarna zijn maatregelen geplaatst in de kwadranten en onderzocht op **overeenkomsten.**

Er is gevonden dat, hoewel hun aantal in de set van meest onderscheidende metingen ongeveer gelijk is, **productmaatregelen vaker worden geïmplementeerd** en vaker het beoogde effect bereiken dan procesmaatregelen.

Verder bleek dat maatregelen die niet zijn geïmplementeerd en (nog) niet het effect hebben bereikt altijd procesmaatregelen zijn. De meeste proces maatregelen betroffen echter situaties waarin de toegevoegde waarde afwezig was. Bovendien worden tijdelijke maatregelen meestal afgestemd op procesmaatregelen en dus scoren ze hoofdzakelijk vergelijkbaar met deze procesmaatregelen (niet-geïmplementeerde maatregelen hebben de overhand). Tijdelijke maatregelen worden minder vaak geïmplementeerd dan permanente.

Ook leken **prestatiemaatregelen de perfecte maatregelen** om 'alignment' te bereiken. Niettemin is de ruimte om onderscheidend te zijn met dit soort maatregelen discutabel. Maar omdat het bereiken van het beloofde effect zeer waarschijnlijk is voor deze maatregelen; kunnen criteria die van groot belang zijn voor opdrachtgevers het beste worden vastgelegd in prestatiemaatregelen.

'Commercial-off-the-shelf' maatregelen hebben de voorkeur van aannemers, omdat ze gemakkelijk te implementeren zijn en bewezen concepten zijn. Toch hechten de klanten aan deze maatregelen geen toegevoegde waarde, omdat ze ook zonder kwalitatief aspect in de aanbesteding zouden zijn uitgevoerd.

Sexy maatregelen hebben een groot reputatie risico voor de klant. Dit heeft ook betrekking op de verantwoordelijkheid die overheidsinstanties hebben: het genereren van publieke waarde. Als overheidsuitgaven niet de verwachte waarde genereren, zullen de instanties te maken krijgen met maatschappelijke onvrede.

Op basis van de bevindingen van dit onderzoek worden conclusies getrokken als antwoord op de belangrijkste onderzoeksvraag: welke onderliggende mechanismen veroorzaken 'misalignment' tussen onderscheidende BPKV-tenderelementen en de werkelijke toegevoegde waarde tijdens of na de projectuitvoering?

Dit onderzoek wees op verschillende oorzaken voor 'misalignment', waarvan strategisch gedrag één categorie is. Strategisch gedrag domineert echter niet. Gebleken is echter dat veranderende omstandigheden strategisch gedrag van aannemers vermoedelijk stimuleren.

Mechanismen die aan deze oorzaken ten grondslag liggen, omvatten onder meer: meer-koppigheid van zowel de klant als de aannemer, het ontbreken van volledige openheid (van beide partijen) tijdens de op concurrentie gerichte dialoog en het gebruik van oneigenlijke criteria om toekomstige onderhoudskosten te vermijden middels een bouwcontract. Dit resulteert in misverstanden, of een gebrek aan (juiste) informatie. In dit opzicht is duidelijk geworden dat een hogere overeenkomst in teamsamenstelling (dat wil zeggen het linking-pin-principe) tussen aanbesteding en uitvoeringsfase het verlies van achtergrondinformatie over belangrijke maatregelen in een project kan voorkomen.

Het onderzoek toonde ook aan dat **'alignment' geen heilige graal** is. De focus op 'alignment' genereert niet altijd waarde. Van de geïdentificeerde oorzaken voor 'mis-alignment' worden verschillende gevallen aangetroffen waarin de vervulling van de maatregel nadelig bleek voor de cliënt (!). Dit is vooral het geval wanneer nieuwe inzichten zich voordoen en er onvoorziene waarde wordt toegevoegd. Gelukkig laat deze studie zien dat in die gevallen de betreffende specifieke maatregel vaak niet wordt geïmplementeerd. Dus **klanttevredenheid kan ook worden bereikt in geval van 'mis-alignment'**

Ook niet onbelangrijk, **'alignment' blijkt geen remedie voor contractuele discussies**. Een rigide focus op 'alignment' kan zelfs een negatieve impact hebben op het leveren van toegevoegde waarde voor de klant (en dus een negatieve impact op de publieke waarde). Discussies over of maatregelen correct worden geïmplementeerd of niet, kosten tijd. En tijd - betekent geld. Gezien het feit dat de meeste klanten overheidsinstanties zijn, zou dit verlies van belastinggeld betekenen. Bovendien zal starre focus op 'alignment' het element van vertrouwen in de relatie tussen contractant en klant onder druk zetten, waardoor de positieve uitkomst van andere toekomstige discussies in gevaar komt.

Deze reflectie benadrukt impliciet dat een meer extern gefocuste perceptie van meerwaarde voordelen kan hebben. Initiatieven zoals bouwteams, waar op een geheel andere manier het project wordt gedefinieerd, al vóór de aanbesteding, anticiperen hierop. Met andere woorden: op dit moment is het doel om **intern gefocuste waarde te maximaliseren** (= alignment tussen tender en praktijk) maar uiteindelijk lijken de evoluerende problemen op dit gebied allemaal erop te wijzen dat **meer extern gerichte benaderingen van meerwaarde de toekomst zijn.**

Met betrekking tot **verder toekomstig onderzoek** worden de volgende **aanbevelingen** getrokken. Het wordt aanbevolen om maatregelen te bestuderen die de winnende bieding niet onderscheidend hebben gemaakt en toch hebben geleid tot meerwaarde. Identificatie hiervan kan leiden tot een herbeoordeling van de kenmerken die een maatregel onderscheidend maken. Bovendien zou een studie waar meerdere aannemers bij betrokken zijn, meer licht kunnen werpen op strategisch gedrag. Dit laatste blijft een concept dat moeilijk te schetsen is. Verder zou het interessant zijn om het begrip 'meerwaarde' in bredere zin te bekijken, d.w.z. ook met betrekking tot het maatschappelijk belang. Het zou ook relevant zijn om te onderzoeken of de toegenomen communicatie tussen de partijen in zowel de aanbesteding (bijvoorbeeld d.m.v. 'de dialoog') als de uitvoeringsfase leidt tot een betere afstemming van beloofde maatregelen en gerealiseerde toegevoegde waarde. Ten slotte is de BPKV-aanbesteding erg gericht op het onderscheiden en het beloven van een bepaalde waarde, maar lijkt het nagaan va het behalen van die beloften nog achter te lopen. Een studie naar het verbeteren van contract management op deze punten zou daarom relevant kunnen zijn.

De belangrijkste **managementimplicaties voor de aannemer** betroffen de overweging van het gebruik van een accountmanager om de perceptie van de klant met betrekking tot de 'alignment' in de gaten te houden; en de implementatie van 'linking pins' tussen teams om de achtergrondkennis van de oorsprong van maatregelen in gedachten te houden. Verder is het verstandig altijd aan te dringen op een schriftelijke beoordeling van de bieding. De belangrijkste **aanbevelingen voor de klant** waren de duidelijke definitie van de projectomvang en -context aan het begin van de tender. Daarnaast wordt aanbevolen om de invulling van BPKV-beloften goed na te gaan en een verandermanagementplan beschikbaar te hebben. Tenslotte wordt geadviseerd om de dialoog, waar mogelijk, te handhaven.

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LIST OF ABBREVIATIONS

BPQR	Best Price Quality Ratio
BPKV	Beste Prijs Kwaliteit Verhouding [Dutch]
EMAT	Economically Most Advantageous Tender
EMVI	Economisch Meest Voordelige Inschrijving [Dutch]
FIDIC	International Federation of Consulting Engineers
GWW	Grond-, Weg- en Waterbouw
M	Million
PMCM	Program Management / Construction Management
RAW	Rationalisatie en Automatisering Grond-, Water- en Wegenbouw.
RWS	Rijkswaterstaat
RQ	Research-question
SD	Standard deviation
SMART	Specific, measurable, ambitious, realistic and time-bound
SQ	Sub-question
TS	Tender strategy [department at BAM Infra]
UAV-GC	Uniforme Administratieve Voorwaarden voor Geïntegreerde Contractvormen

LIST OF DEFINITIONS

There are some points of definition to be made at the outset of the research. These definitions are provided in this section.

Contract
'An agreement between two parties under which one party promises to do something for the other in return for a consideration, usually a payment. This places obligations on both parties to fulfil their part of the agreement' (Morris et al., 2004, p. 679).

Contracting authority or public client
A state, regional or local authority outsourcing work.

Contractor
A company performing work under a contract.

Procurement
The process of finding a suitable contractor to provide a certain product or service, often via competitive tendering processes.

Public procurement
Involves the procurement conducted by a public authority

Tendering [to tender]
A process of choosing the most suitable company to supply goods or services.

Tenderers / Bidders
Contractors competing within a tender

Lowest price tender
The process of selecting the contractor based on price only. The contractor submitting a bid with the lowest contract sum will win.

Best Price Quality Ratio [BPQR] tender
The process of selecting the contractor based on price and quality aspects. The contractor submitting a bid with the best price/quality ratio (often expressed in fictional price) wins.

Tender bid or proposal
A formal written offer to undertake work or services (Lewis, 2015)

Contract sum
The actual amount of money for which the contractor agrees to conduct the work. Contract sum is sometimes also referred to as 'price' of the bid.

Quality score
The client assesses the bid on several criteria. On each criteria the contractor will obtain a score. The total of all scores is the quality score.

Fictional discount
A quality score comes most often with a fictional discount. This discount involves no real financial discount (i.e. the client pays the contract sum) but will be subtracted from the contract sum in order to define the fictional price.

Fictional price
The fictional price is the result of subtracting fictional discount from the contract sum. Fictional price = contract sum – fictional discount. In a BPQR tender process, the bid with the lowest fictional price is concerned to be the most advantageous and will be selected as winner.

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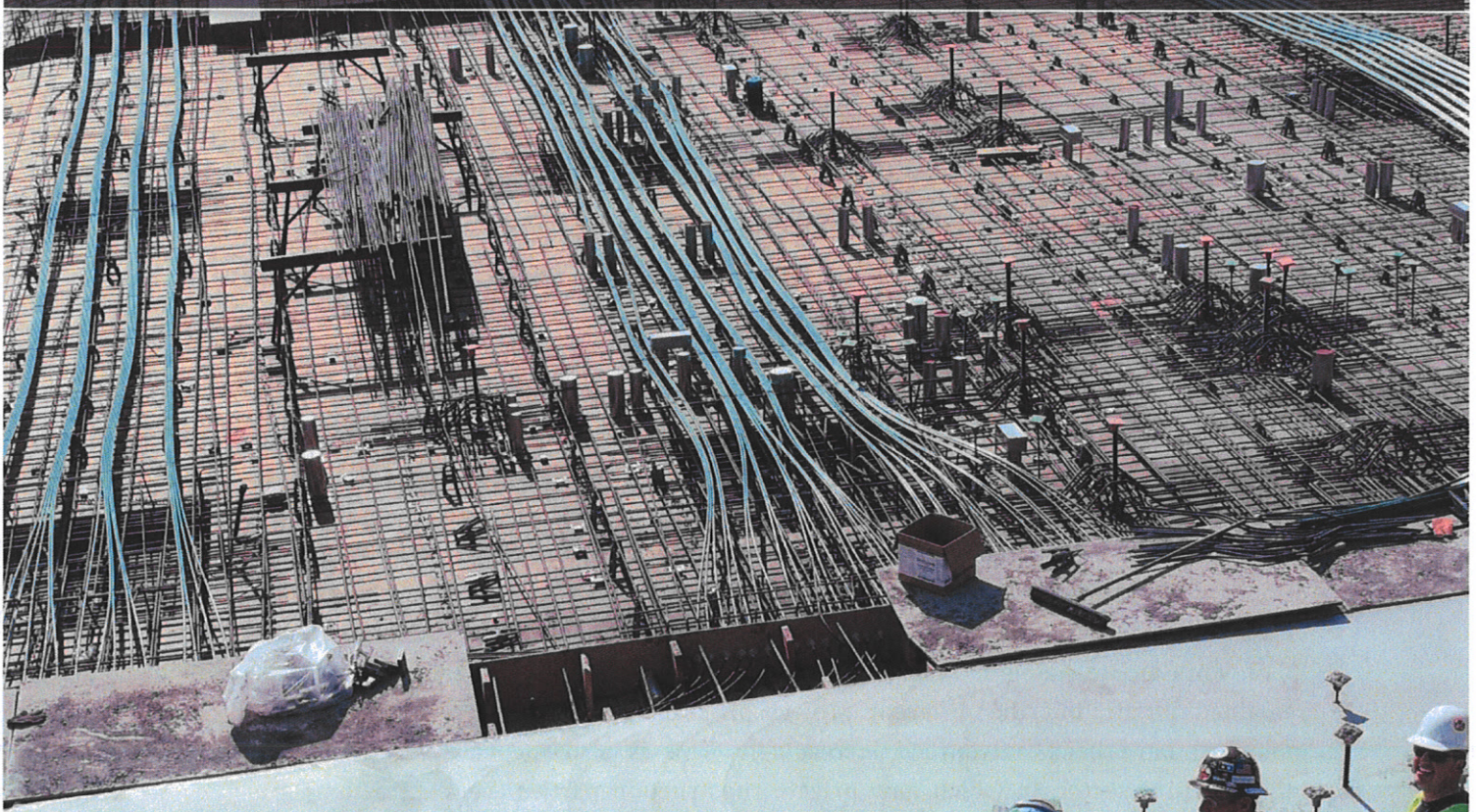
1. INTRODUCTION



1. INTRODUCTION

The topic of this research involves a procurement method referred to as the Best Price Quality Ratio (BPQR) Tender. In order to place this research into its context it is important to have background knowledge of the historical evolvement of this method. This chapter will therefore introduce the concept of tendering (section 1.1), the development of tender procedures (section 1.2) and the BPQR tender procedure (section 1.3). Furthermore, the concepts involved with this procedure will be discussed, i.e. the importance of distinctiveness (section 1.4), the concept of quality and value (section 1.5) and the area of tension in the tender process; (mis)alignment (section 1.6). The facilitating company will be introduced in section 1.7. Lastly, the research structure is provided in section 1.8.

1.1. THE INTRODUCTION OF TENDERS

Traditionally, public services in Europe were provided by public owned monopolies. However, in most of the European countries many sectors are now privatized in order to stimulate further development within a competitive market (Künneke, Correljé, & Groenewegen, 2005). Since WWII the public enterprise sector (i.e.: those public bodies that order the construction public works: Municipalities, Provinces, Waterboards and the Ministry of Infrastructure) in the Netherlands is characterised by continual privatization and depoliticization, especially stimulated by cabinet Lubbers in the 1980s (Stellinga, 2012; van Damme, Aalbers, Gielen, & Sylvester, 2002). In general, the public body itself remained public, but the different project phases (design, procure, build, finance, maintain) have been outsourced increasingly. This is also the case for the Dutch infrastructure sector, in which now private construction parties (i.e. contractors) are responsible for the execution of many public works. Because public bodies in the Netherlands are the largest provider of infrastructural works, contractors thus do rely for a large part of their revenue on public clients.

To secure a fair level playing field in the private market for these public works, EU directives apply for all members alike of the EU Treaty (Europa decentraal, n.d.). The directives prescribe that, in contrast to private parties, governmental bodies are not allowed to deliberately choose one specific partner to enter in contract with. Instead, public bodies should follow particular procedures when selecting a contractor (Europa decentraal, n.d.; European Commission, n.d.). Since 2013 these European directives have been transposed into Dutch legislation by means of the 'Dutch public procurement act (Dutch: Aanbestedingswet). This law prescribes that if an assignment exceeds certain European financial thresholds (in 2019: € 5.548.000 for a work), the governmental organizations must procure the contract according to the European procedures (Rijksoverheid, n.d.). The procedures oblige that assignments above the thresholds should be put to tender, the definition of which is '*to invite bids for a project*' (Investopedia, 2019). As a result, contractors now have obtained a large additional task to fulfil: winning tenders in order to be able to conduct work.

The remainder of this chapter will focus on the historical evolution of the tender process in the Netherlands, which explains how currently both price and quality determine the selection of the best bid.

1.2. THE DEVELOPMENT OF TENDER PROCEDURES

To appoint a winner, selection mechanisms have been drafted. The lowest price tender has been the dominant procurement method in the Netherlands for years (de Ridder & Noppen, 2009; Dreschler, 2009) and will be discussed in section 1.2.1. Nowadays methods combining price and quality aspects predominate, these types of methods are introduced in section 1.2.2.

1.2.1. Tendering solely based on (lowest) price

For 79% of all the publicly procured tenders, price was the only criterion for awarding the contract (Economisch Instituut voor de Bouw (EIB), 2012). The application of this procurement method, called lowest price, is simple. Contractors submit their bids, which are checked on compliance with the set of requirements. After rejection of the bids that do not comply, the contractor with the lowest bid is recognized as winner (Dreschler, 2009). So, the only way in which contractors could distinguish themselves was regarding price (i.e. contract sum).

The application of the lowest price tender as the main procurement method in the Dutch construction industry, in combination with the economic crisis, led however to an unhealthy situation from an economic point of view (Dreschler, 2009). The shortage of work due to the crisis created an atmosphere in which the competition between contractors was tough. With the focus on price only, the contractors had no other choice than distinguish themselves by submitting bids with extreme low prices (Dorée, 2004), even if this implied a contract sum below their cost price.

The seriousness of this unhealthy situation became especially clear during the Dutch building fraud. Forced by competitive pressure Dutch contractors had decided to make arrangements about who was going to win which tender (Openbaar Ministerie, 2006). The 'losing' parties were paid a certain compensation by the 'winning' contractor benefitting all involved contractors. In total 394 contracts were procured between 1996 and 2001 in this fraudulent manner. The total contract value of this collusion was €6.8 billion, of which 90% was spent on infrastructure projects (PricewaterhouseCoopers (PwC), 2002). On average contracts were priced 8,8% more than when fair competition would have been taken place (Enquêtecommissie Bouwnijverheid, 2003).

Although this fraud has been detected, the causing unhealthy situation was not resolved. Due to the competitive atmosphere in the tender phase, the awarded contractor often showed strategic, opportunistic behaviour in the execution phase (Duren & Dorée, 2008; Rijkswaterstaat, 2017b). Since projects were awarded for very low prices, the executing contractor started searching for loopholes, or contractual gaps, to obtain additional work in order to still achieve a reasonable profit (Dorée, 2004). As a result, no more than the minimum requirements was delivered. Providing extras could even work out negatively for the contractor, as this might only steer the costs upward (Dorée, 2004;

Rijkswaterstaat, 2017b). Consequently, minimum requirements became the maximum value and low project outcomes were the norm (Bergman & Lundberg, 2013).

1.2.2. Tendering that combines price and quality aspects

Meanwhile, a growing number of studies showed great potential in changing tender processes and thereby increasing the quality of the project results. According to Duren & Dorée (2008) an optimization of the tender process could stimulate more high-value project outcomes with concurrent price/quality ratio. Dorée (2004, p.1) stated that to overcome the problems with the lowest price procurement method *'an alternative approach allowing for a balance of competition and collaboration with a wider number of selection criteria variables would create a more dynamic, competitive process over a longer timeframe and would develop an innovative, efficient and profitable industry.'*

On this regard a search for a new way of procurement started. Consequently, new contracting regulations were put into force in the Netherlands on the first of April 2013: the Procurement law 2012 (Dutch: De Aanbestedingswet 2012). Besides implementing the European directives, this new act made it mandatory for public contracting authorities in the Netherlands to use the Economically Most Advantageous Tender (EMAT) as a procurement method (Economisch Instituut voor de Bouw (EIB), 2013).

This new procurement method does not only involve price but also quality aspects in the assessment of the tenders. In this way, the contractor is stimulated to offer more value than is minimally required. In the amended procurement act of July 2016, the meaning of EMAT has been changed. Since then EMAT has become a term encompassing three types of award criteria (Rijkswaterstaat, 2017b)

- Best Price Quality Ratio
- Lowest cost based on cost effectiveness (lifecycle)
- Lowest price

What was designated in the previous Directive as EMAT (Dutch: EMVI) has become Best Price Quality Ratio (BPQR; Dutch: BPKV) (Rijksoverheid, 2016; Rijkswaterstaat, 2017b) since the first of July 2016.

The conclusion of this historical retrospect is that currently Dutch tendering for public civil works contains both financial and qualitative aspects in which contractors can distinguish their bids of competitors. This research will focus on one specific type of tender: the BPQR tender.

1.3. THE BPQR TENDER PROCEDURE

It has become clear from the foregoing section that the BPQR tender procedure was introduced in the Netherlands to stimulate the provision of extra quality, or in more commonly used terms 'added value' (PIANOo, n.d.-a). This chapter will elaborate on how the formal tender process is put in practice.

1.3.1. The BPQR tender process step by step

The European guidelines prescribe several public procurement procedures: Mainly the **open and restricted procedures** are being distinguished. The difference depends on the

accessibility of the selection phase. Whereas in the open procedure all contractors may submit a bid, the restricted procedure is only open to those who are pre-selected (Your Europe, n.d.). Pre-selection is based on, for example, data like the experience, resources and the financial position of the companies participating (de Ridder & Noppen, 2009).

In case of complex contracts the **competitive dialogue or the competitive negotiated procedure** may be applied (Dreschler, 2009). The latter differs mostly from the open and restricted procedure in the way of requesting (Rijksoverheid, 2009). Optimally, a competitive dialogue uses the expertise and creativity of the participating tenders. A dialogue enables contractors to present initial solutions after which the request as well as the offer will be adjusted to an optimum solution at a reasonable price (Rijksoverheid, 2009).

As the focus of this research is on the Dutch market, the typical Dutch approach will be described. However, the same procedure is generally followed abroad (de Ridder & Noppen, 2009). The **standard procedure** is as follows (de Ridder & Noppen, 2009):

1. Invitation to pre-qualify
2. Analysis of received pre-qualification data
3. Selection of tenderers (invitation to tender)
4. *In case of competitive dialogue: a dialogue*
5. Submission of tender documents (the bid / proposal)
6. Adjudication of all bids
7. Decision on contract award
8. Acceptance and awarding of the contract

In case of an open procedure step 1 – 4 will be skipped. In case of a competitive dialogue, a dialogue takes place between the selected contractors and the client after pre-qualification. In case of a restricted procedure all steps except step 4 apply.

Step 1 involves the invitation to pre-qualify, which is published in relevant newspapers such as the Cobouw.

After data such as experience, resources and the financial position of the companies have been analysed (**step 2**), the tenderers for further application are being selected.

The tendering party, the client, provides these tenderers (potential contractors) with an invitation to tender (**step 3**). This invitation contains further information such as the project scope, requirements and criteria (de Ridder & Noppen, 2009). The criteria should only contain issues that are 'nice to have' (Rijkswaterstaat, 2017b). Essential matters for the project, must haves, should not be adopted in BPQR criteria but should be part of the project requirements (Rijkswaterstaat, 2017b). By formulating relevant criteria in the invitation to tender, tenderers are stimulated to generate added value, since this will provide the tenderer with a better competitive position (Rijkswaterstaat, 2017b). Competition thus takes place on price and quality.

In case of a competitive dialogue **step 4** applies and involves a dialogue between the client and each contractor separately. The contractor can use this dialogue to test potential means to meet the project objectives (Burnett & Oder, 2009).

Subsequently, the tenderers submit their bid, or proposal (**step 5**). This bid includes a total price and a qualitative part in which tenderers anticipate on the criteria and try to optimally meet the desires of the client. The function of a bid, from a contractors' point of view, is to obtain work through a competitive response to the client's requirements. From the client perspective however, the purpose of the process is to identify which contractor is likely to deliver the best value (Lewis, 2015).

Thereafter, the client assesses the bids in accordance with the evaluation criteria (**step 6**) (de Ridder & Noppen, 2009). Bids that are non-conforming with the requirements are being rejected (de Ridder & Noppen, 2009). Most often further assessment takes place in accordance with a monetised scoring system (Rijkswaterstaat, 2017b). Within this system the client has established beforehand a maximum obtainable fictional quality value per criterion. The total obtained quality value is translated into a fictional discount. This fictional discount (monetised in euro's) is being subtracted from the contract sum of the bid, resulting in a fictional price. The tenderer having the lowest fictional price will be selected as the winner of the tender and will be awarded the concerned project (**step 7**) (Rijkswaterstaat, 2017b). After both parties agree on the contract, the contract will be signed **(step 8)** (de Ridder & Noppen, 2009).

An example of the calculation of the fictional price is given in Table 1 below. The lowest contract sum is offered by tenderer 3. However, Tenderer 2 is the winner, since the contract sum minus the fictional discount results in the lowest fictional price. The example shows that tenderers not having the bid with the lowest contract sum can win. Even more so: in this example the tenderer with the highest contract sum wins.

	Bid of tenderer 1	**Bid of tenderer 2**	**Bid of tenderer 3**
Contract sum	€ 18.300.000	€ 19.100.000	€ 16.900.000
Fictional discount	€ 6.100.000	€ 7.500.000	€ 3.800.000
Fictional price	€ 12.200.00	€ 11.600.000	€ 13.100.000

Table 1. Example of fictional price calculation

The example is simplified, though. In order to calculate the fictional discount, there are multiple methods, sometimes even involving highly complex mathematical formulas (Dreschler, 2008). The final result of this, though, is that a fictional discount is subtracted from the contract sum, yields the fictional price.

So, the final results of this BPQR tender process are offered quality aspects which are translated in a financial (fictional) discount on the contract sum. Subsequently, the tenderer that offered the bid with the lowest fictional price wins the tender. As such, quality contributes to the distinctiveness of the bid and is expected to be delivered upon in the subsequent execution phase of the project.

The underneath concepts are thus of importance within the BPQR tender process.

- Distinctiveness in the bid
- Added value in/after project execution
- Alignment between those two concepts [Chapter 3]

1.4. THE IMPORTANCE OF DISTINCTIVENESS

The previous section described the evolution of tender procedures resulting in the BPQR tender procedures. In order to win a BPQR tender, one should offer the lowest fictional price. This requires a tenderer to be distinct from other tenderers. This section describes what this importance of distinctiveness entails.

1.4.1. Only the best tenderer will win

The tender process requires that the (pre-selected) tenderers should submit a competitive tender bid. Lewis (2015, p.5), a leading authority on proposal development and tendering, who has devoted his professional career to improve and rationalise the process of tender writing and tender evaluation internationally, states *'there is little point in submitting a bid unless it has distinctive benefits to offer the client, and unless it is designed to be as competitive as it can be in terms of both technical quality and value for money'*. Indeed, that is what it is all about in a tender process. Being good makes no sense, since only the best tenderer will win. So, it is vital for a tenderer to distinguish itself from the others. *'To defeat them on quality, your bid has to possess an extra dimension that sets you apart from them, a distinctive edge that represents the benefits you are uniquely placed to offer the client'* (Lewis, 2015, p.179).

Since the final selection of the winner is based on the fictional price, a composition of price and quality, distinguishing within a BPQR tender is possible on both contract sum and quality. The combination of both will define the fictional price, on which the final selection of awarding is based.

To recapitulate, distinctiveness makes the difference in the tender outcome. The next section discusses how a tender bid can distinguish itself from the competitors.

1.4.2. Distinctive winning elements.

Distinctive winning elements in a tender, as defined by Tiong & Alum (1997), are those elements that give the winning bid the distinctive advantage over the bids of other competing tenderers. Merely talking about the contract sum, this is self-evident: A bid with a lower contract sum has the competitive advantage over bids with higher contract sums. Distinction on a qualitative level is more difficult to grasp. According to Lewis (2015) the challenge is applying your insights, ideas and experience in such a way that it shows the 'benefit' you – and only you – can bring the client.

Figure 1. The value-cost model (de Ridder & Noppen, 2009)

Figure 2. Three value-cost relations (de Ridder & Noppen, 2009)Figure 3 shows the value-cost model. The figure gives an overview of a transaction between two parties in which both seek for benefit (de Ridder & Noppen, 2009). The mutual benefit here is the difference between value and cost. Distinguished by price, the benefit consists of two parts, a consumer benefit and a producer benefit (profit) (de Ridder & Noppen, 2009). In case of a construction project a transaction takes place between a client and a contractor. The client is the consumer and the contractor the producer. The producer benefit is evident: the revenues after subtracting the costs from the price of the product or service.

The consumer benefit is often referred to as a certain level of quality, or value (de Ridder & Noppen, 2009; Lewis, 2015).

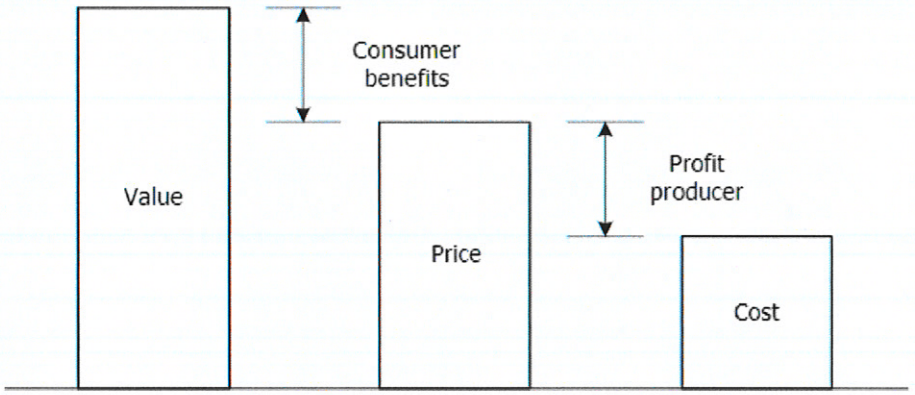


Figure 1. The value-cost model (de Ridder & Noppen, 2009)

So, distinctiveness can be achieved by either distinction on contract sum or on quality (the latter being the scope of this research). Distinctive winning elements concerning quality are those aspects that represent a certain value for the client, which in the case of a public client also involves public value.

1.5. THE CONCEPT OF QUALITY AND [ADDED] VALUE

The previous section denoted the importance of distinctiveness in contemporary tender processes. In order to be distinct, tenderers promise a certain level of quality. Quality, also often referred to as added value, is however a broad concept. There is no clear definition of quality or value. As quality and value play a major role in the BPQR tender process, as well as in this research, these concepts will be explained in this section.

1.5.1. A definition of quality

The many definitions available are mainly divided into two groups: definitions of quality focused internally and definitions of quality focused externally (Maylor, 2010).

An **internally focused** view defines quality as conformance with specifications, requirements or internal procedures. The aim is to overcome any mistakes and maximise internal efficiency. Here quality implies that a deliverable is fit for the intended purpose. This is a **product-based view**. (Maylor, 2010; Nicholas & Steyn, 2017).

According to more **externally focused** definitions, quality goes beyond specifications and tries to fulfil customer expectations. In this sense quality is the result of expectations and perceptions that can be managed through two-way communications (Maylor, 2010). This is a **process-based view**. According to Maylor (2010) success is not on choosing one type of quality over the other, but using internally and externally focused quality in a combined manner.

1.5.2. A definition of value

In the construction industry the term 'value' seems to be preferred over the use of the term 'quality' (Volker, 2010). There appears to be no clear distinction between the definitions of quality and value, although the definitions regarding value seem to focus

more on the external perspective of quality. Besides, the focus on the perception of the client is evident in most definitions regarding value. According to Nicholas & Steyn (2017) a project is of high-value in case it meets the requirements and satisfies the needs and expectations of all key-stakeholders. Maylor (2010) relates value to a judgement of quality expected, relative to quality perceived.

The previous sections already introduced the terms satisfaction, perception and expectation. These terms are, according to Maister's law of service interrelated to each other (Maister, 2005). This law describes satisfaction with the following formula: **Satisfaction = expectation - perception**. Reflecting this on a construction project, clients' expectations are being nailed down when awarding a tender according a tender bid. Here the contractor makes promises, the client interprets these promises in its own way and has a certain expectation. During the execution of the project or when delivering the project, the client perceives the results of those promises. These results can be as expected, but also below or above expectation. The satisfaction of the client is then determined by the difference between expectation and perception. When the client is perceiving a higher level of service than expected, it will be satisfied. When a client is perceiving a lower value of service than expected, it will be dissatisfied. According to Maylor (2010) the greatest cause of dissatisfaction is developing unrealistic expectations. Maylor also links this statement to the tender process. Competitive tendering is pushing contractors to reach the limits of what they can realize in order to win the contract (Maylor, 2010). These limits set the level of expectation that is reminded when the project is assessed later on (Maylor, 2010).

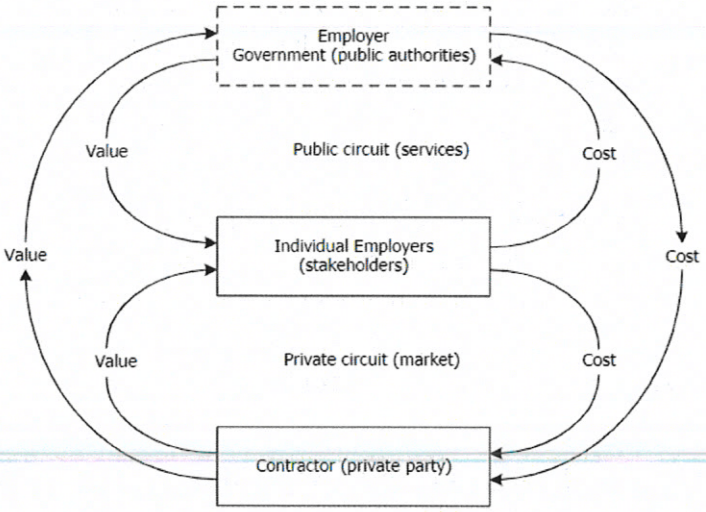


Figure 4. Three value-cost relations (de Ridder & Noppen, 2009)

In the foregoing part value was defined regarding the client. However, since the client is a public contracting authority, several levels of stakeholders are involved. Mainly three value-cost relations are being distinguished within the public domain, as can be seen in *Figure 4. Three value-cost relations (de Ridder & Noppen, 2009)*

Figure 5. Flags of BAM Group B.V.Figure 6 (de Ridder & Noppen, 2009). The lower internal circle defines the relation between individual employers (citizens) and contractors. This represents the 'common market' where goods and services are exchanged by means of payment (de Ridder & Noppen, 2009). The largest outer loop indicates the relation between public authorities and the contractor. This relation involves the scope of the research (de Ridder & Noppen, 2009). As the figure implies however, the public authorities are also part of another loop, representing the relation between public authorities and the citizens (de Ridder & Noppen, 2009). Although this loop is not taken as a scope of the research it is important to bear in mind that the public authority will act in the interest concerning their relationship with the citizens.

1.6. AREA OF TENSION RESULTING IN MISALIGNMENT

Sections 1.1 – 1.3 made clear that over time tender procedures were introduced and developed, resulting in the BPQR tender procedure. At first (lowest) price was the determining factor. Eventually, this led to illegal collusion among contractors in order to survive during economic crisis, also denoted as a way of strategic behaviour.

Nowadays the procedure has evolved such that it combines the pure financial contract sum with quality aspects. Section 1.2.2 pointed out that BPQR tender procedures are introduced to stimulate high value project outcomes. Within this procedure, tenderers are stimulated to generate added value because this would enlarge the chances to win (Dreschler, 2009; Rijkswaterstaat, 2017b).

Section 1.4 explained that distinctive qualitative elements represent a certain value for the client. In the case of a public client this also involves public value. As discussed in section 1.5 however, there is no clear definition of value. Although mainly internally and externally focussed definitions are being distinguished, 'value' itself remains a vague concept.

Introducing concepts as 'quality aspects' in the tender procedure therefore has implicitly made the tender awarding process less straight forward and the final outcome multi interpretable. This results in discussions about the extent of fulfilment of tender promises. Requiring SMART formulation of tender promises has been introduced to partly overcome this vagueness. But still, in almost every project there are discussions in this regard.

Besides, as argued in chapter 1.2.1, competition in the construction industry can be tough. This competitive atmosphere is currently still a matter of fact. Alfred Vos, Chief Operating Officer at VolkerWessels, one of the main contractors in the Netherlands, explains in an interview with van Gils (2018), that previously the company was about to win 1 in 4 tenders. With this ratio they were able to recoup the costs of the tender procedures. However, in the last one and a half years the ratio was 1 in 10 (van Gils, 2018). This had a considerable influence on VolkerInfra's results. Winning is becoming more difficult.

The above illustrates a certain area of tension. Due to the competitive environment and strong aspirations to win tenders, it is tempting for contractors to submit overly-ambitions bids since this will increase their chance of winning the tender (Lewis, 2015). These [over]optimistic bids are however less likely to turn out beneficial (i.e. generate the

added value promised). This tension is mentioned as one of the causes for performance often falling short of the promises made in the tender phase (PIANOo, 2013). Consequently this results in many discussions about the non-compliance of works with the earlier made promises (Koenen, 2018), i.e. misalignment between tender and practice.

Nevertheless, the elements providing distinctiveness in the tender phase are expected to be executed in the project execution phase. After all, the introduction of BPQR tendering was to stimulate more high-value project outcomes with concurrent price/quality ratio, not to stimulate only more high value tender bids with concurrent price/quality ratio.

Contractual agreements are in place to ensure the alignment between tender and practice. This makes sense since not conducting the works as described in the contract is considered unfair to the client (who did fulfil its part on the contract: payment) and to the lost tenderers (due to a competitive disadvantage in this regard).

No research has been conducted to define whether misalignment of distinctiveness of tender elements, and the added value in and/or after the execution phase, is really apparent. Besides, the underlying mechanisms influencing (mis)alignments are still unclear.

This research will therefore examine to what extent misalignment is actually the case, and investigate the causes for the evolvement of misalignment. Understanding the underlying mechanisms responsible for misalignment will provide more insight into what areas in the tender process lead to this misalignment. It might even be the case that not misalignment is the problem but the aspirations to obtain full alignment. This research deals with those questions.

1.7. THE FACILITATING COMPANY: BAM INFRA

This section will provide a short introduction of the company facilitating this research. The subsequent section will elaborate on the drivers for this company to support a study on alignment between tender and practice.

1.7.1. About BAM Infra

The study is being facilitated by the tender strategy department of BAM Infra. BAM Infra, part of the Royal BAM Group, operates in five home markets (Netherlands, Belgium, United Kingdom, Ireland and Germany) and has approximately 20.000 employees ("Organisation | Koninklijke BAM Groep / Royal BAM Group," n.d.).

Figure 7. Flags of BAM Group B.V.

BAM infra is specialised in integral solutions for the realisation of complex and multidisciplinary, as well as small-scale projects in the civil and road construction industry ("BAM Infra bv | BAM Infra Nederland," n.d.). They are able to manage the entire process from concept development, design and construction up to and including financing, maintenance and operation. As BAM Infra states on their website they ' *offer added value to clients by offering sustainable solutions and delivering high-quality performance'* ("BAM Infra bv | BAM Infra Nederland," n.d.)

1.7.2. Company's drivers for participation in the research

Clearly, BAM Infra is interested in optimising its chances to win tenders, since winning tenders is vital to their organisation's existence and the preparation and composition of a bid requires a lot of manpower and – hence – quite an investment.

The difficulty BAM is experiencing with tender processes is twofold. Firstly, the company experiences, just as most other contractors in the branch, an increasing competition in tender processes. Secondly, as a result of the previous phenomenon, BAM recognizes the challenge of aligning tender bids with project execution, as described in the previous section. BAM Infra aims on having sustainable long-term relationships with their clients (i.e. a satisfied client), but experiences that this is sometimes at odds with winning a bid.

In order to gain more insight in the factors influencing tendering success (i.e. winning) and alignment with project execution, BAM Infra was willing to participate in this research. The research also perfectly suits the company's business objective: Make the connection (Dutch: 'Maak de verbinding'). This connection also involves the transparency given by BAM Infra in this study. Conducted interviews give vivid examples of the struggle project directors have in balancing project interests (costs, time schedule) with sometimes promises made in the original bid.

1.8. STRUCTURE OF THIS REPORT

Figure 10. Thesis structure displays the structure of this report. In this chapter, an introduction to the topic is given. Subsequently, chapter 2 provides the research design in

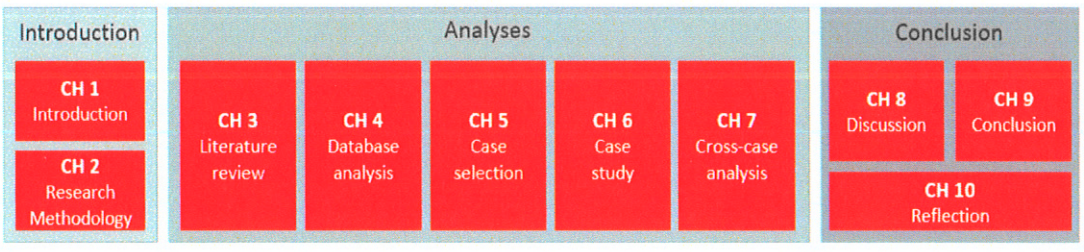


Figure 10. Thesis structure

which the methodology of the research is discussed. Chapter 3 involves a review of literature on current views on misalignment. In chapter 4 the tender results of BAM Infra are being analysed. Chapter 5 to 7 discusses the results of the empirical case study. Chapter 8 presents the discussion on the findings. Chapter 9 contains the conclusions of the research and provides recommendations for further research. Lastly chapter 10 involves a reflection on the research and on the functioning of the researcher.

2. RESEARCH FRAMEWORK

Figure 11. Overview of tender documents (own figure)

2. RESEARCH DESIGN

2.1. RESEARCH GAP

Since the introduction of BPQR tendering, specific (non-financial) tender elements in the bid can also be decisive for winning the tender. These qualitative aspects are therefore important means in the tender phase to distinguish a bid from competing bids. The elements responsible for the distinctive character of the bid, come however not always to its fruition in practice.

In this study, this latter phenomenon is referred to as the *'Misalignment between tender and practice'*. No research has been conducted on whether this misalignment of distinctiveness of tender elements and the added value in and/or after the execution phase is really apparent. Furthermore, causes for this (mis)alignment of distinctiveness are still unknown. Knowledge is required about the underlying mechanisms for (mis)alignment and the role BPQR tendering (can) play(s) in this.

Subject of this study is this (mis)alignment of distinctiveness of tender elements and the added value in practice. The research will examine to what extent misalignment is actually the case, investigates the causes for the evolvement of misalignment and discusses further underlying mechanisms.

2.2. RESEARCH GOAL

The objective of this research is to determine to what extent distinctive tender elements are aligned with added value in or after project execution for projects procured with the Best Price Quality Ratio (BPQR) tender. Furthermore, the aim is to identify the causes for eventual misalignment and – by this - define what elements in the BPQR tender process are causing (mis)alignment.

2.3. RESEARCH QUESTIONS

The main research question for this investigation is:

RQ What underlying mechanisms cause (mis)alignment between distinctive BPQR tender elements and the actual added value during or after project execution?

This main research question is supported by the following sub questions:

- **SQ1** In what type of tenders is BAM Infra able to distinguish itself?
- **SQ2** What (type of) measures are determining for being distinct in these tenders bids?
- **SQ3** How do these determining measures turn out during or after project execution?
- **SQ4** What are the causes for (non-)fulfilment of these measures?

2.4. RESEARCH SCOPE

The research is focussed on the BPQR tendering processes in the Dutch Infrastructure sector regarding public procurement processes.

Why BPQR? BPQR has been made mandatory for public procurement in the Dutch construction sector since 2013. Never since a scientific evaluation has been conducted into the alignment of tender and subsequent project execution.

Why the Netherlands? There are numerous amounts of BPQR tenders available in the Netherlands due to the introduction of the procurement law in 2013.

Why Infrastructure? The focus is on Infrastructure because the number of projects procured with BPQR in this sector provides sufficient data to execute a thorough analysis.

Why Public procurement? The focus is on public clients (excluding private clients) again because of the procurement law; which makes it mandatory to use BPQR for most of the cases that public clients procure.

So, the selected scope safeguards that the data to be analysed are alike, and the conclusions to be drawn are generic for Dutch publicly tendered infrastructural projects.

2.5. RESEARCH RELEVANCE

This section discusses the relevance of the research. Section 2.5.1 describes the social relevance. Thereafter the scientific relevance is being discussed in section 2.5.2. Lastly the relevance for the company the research is conducted for is given in section 2.5.3.

2.5.1. Social relevance

The vast amount of BPQR tenders carried out in the public domain impacts not just the client and (sub)contractors that are directly involved. Since the private market is responsible for conducting most of the public works, it is interesting to analyse that public-private interplay. More knowledge of the alignment of distinctiveness in BPQR tenders with added value in project execution can contribute to an optimization of added value in infrastructural projects. This will result in less wasted (public) expenditures and will thus be beneficial for the general public (the taxpayer). Research into the alignment of distinctiveness in BPQR tendered projects is therefore of social relevance.

It is of importance to mention that on an average annual basis the Dutch government procures about 73 billion euro's worth of work, services and supplies of which the most is being procured according to the BPQR tender procedure (PIANOo, n.d.-b). The impact of even a small optimization can be significant in savings on public expenditures.

2.5.2. Scientific relevance

The contribution of this research to science will encompass the following:

- Insight into what 'distinctiveness' in tender bids entails.
- Insight into the extent of alignment between tender and execution.
- Insight into the explanation of this (mis)alignment of tender and execution.
- Insight into what extent the BPQR tendering process supports the provision of added value in or after project execution.

2.5.3. Corporates' relevance

Furthermore, the research will be of relevance to the corporation, BAM Infra, that supported this research and provided access to the investigated data and cases. The contribution to the company will be the following:

- Insight into the company's tender results as input for future strategic choices.
- Insight into the most determining measures of four recently awarded projects.
- Insight into the extent of alignment of tender and execution within the organisation (related to BAM Infra's current objective: 'Maak de verbinding').

2.6. RESEARCH METHODOLOGY

This section contains a description of the chosen research methodology. Three research phases will be distinguished during this investigation: the exploration, analysis and lastly the synthesis. The following sections will explain these phases in more detail and elaborate on the research approach for each phase.

2.6.1. Exploration

The first phase of the research consists of gaining theoretical insights into BPQR tendering by means of a literature review. According to Verschuren & Doorewaard (2010) research into theoretic aspects surrounding the topic is necessary to obtain a full understanding of the topic. Also Yin (2009) underlines that it is essential to construct a preliminary theory.

The goal of this is to define what views currently exist with regard to the subject 'misalignment between tender and practice'. In order to do so, four context questions have been drawn.

CQ1. What is meant with alignment between tender and practice?
CQ2. What are current views on the (mis)alignment of tender and practice?
CQ3. What are current views on the causes of misalignment of tender and practice?
CQ4. What possible cures for misalignment between tender and practice are present?

2.6.2. Analysis

The analysis phase exists of two sub-phases:

- Phase A) A quantitative analysis of the BAM Infra tender results
- Phase B) A qualitative case study of a specific set of cases

Phase A) Analysis of the BAM Infra tender results (quantitative)

The first part will encompass the thorough analysis of the BAM Infra tender database, a large set of tenders of which certain characteristics are being documented by BAM Infra. This analysis will be used to ground first solutions on and to define focus for further research. The aim is to create a general image of the tenders on which BAM Infra did perform outstanding and thus was able to distinguish itself. Furthermore, this analysis enables a proper selection of the tenders to conduct the case study research.

In order to ensure validity of the findings, the results of this first phase analysis are evaluated during a staff meeting of the tender strategy department. In addition, the

director of TenderDesk, the department of Royal Bam Group responsible for assessing the major tenders of BAM Operating Companies among, is consulted to evaluate the results.

Phase B) A case study of a specific set of cases (qualitative)

The second phase of the analysis involves a case study approach. A case study is a useful method when dealing with specific case related events that are uncontrollable for the researcher and which require analysing multiple variables (Creswell, 2013; Verschuren & Doorewaard, 2010; Yin, 2009). Analysing the tender- and execution phase of a project meets these requirements. A case study can cope with a variety of variables by applying multiple sources of evidence. For example by using both documents, interviews as well as own observations (Yin, 2009). This variety of evidence is required when there is a need to take several sources into account. Furthermore, in order to be able to objectively investigate, no influential involvement of the researcher is desirable. For these reasons, a case study is an appropriate method.

According to Yin (2009) and Swanborn (2010) there are roughly two ways for conducting a case study. This can be either done by conducting a single or a multiple case study. There is often criticism on conducting a case study on only one case. It would not be possible to generalize from a single case, due to the unique conditions of that specific case (Flyvbjerg, 2006; Yin, 2009). This is however a major misunderstanding since the generalizability of the case depends greatly on the case chosen (Flyvbjerg, 2006). Nevertheless, a multiple case study is preferred over single case study, when replication logic is expected because this increases the external validity (Yin, 2009). A singular case study is used when the subject for the investigation is unique and cannot be repeated. Since the BPQR technique is frequently applied in the Netherlands a replication logic can be expected and therefore the multiple case study is an appropriate technique to use.

It is important to carefully select the cases to use (Yin, 2009). With selecting is meant: strategically choosing the cases to analyse (Verschuren & Doorewaard, 2010). How this selection is done will be described in section 5.2 A strategic choice of cases.

The analysis of this distinctiveness in tender bids focusses on the tender documents provided (See Figure 12. Overview of tender documents (own figure)

Figure 13. Research phasesFigure 14). This involves the information to tender (ITT) or guideline provided by the client, the documents that were submitted by the contractor (the bid) and lastly the assessment conducted by the client. When necessary, additional information is obtained by conducting interviews.

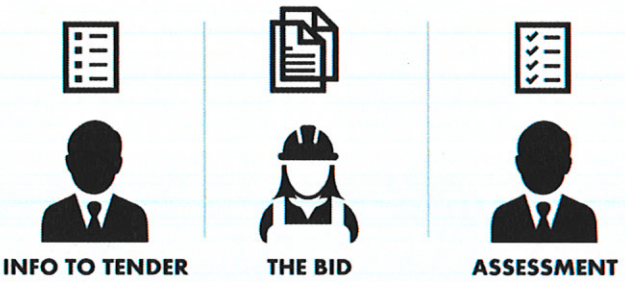


Figure 12. Overview of tender documents (own figure)

A BPQR tender contains certain criteria, established by the client, on which the tenderers can score (see section 3.4.3 for a further explanation). Only the criteria on which the winning tenderers showed distinctiveness, are taken into account in this research.

As will be described in section 1.4 distinctiveness is about providing *'an extra dimension that sets you apart from other tenderers'* (Lewis, 2015, p.179). Distinctiveness in a tender bid has therefore been translated into obtaining a significant better score than the other tenderers, i.e. acquiring the highest score. On these criteria the winner sets itself apart.

Furthermore, criteria on which the winning contractor acquired a 100% quality score are taken into account. Yet, there might be other tenderers as well that obtained the maximum score on this criterium. The ability to distinguish yourself within a tender bid is limited to the provided room for distinction given in a tender. A 100% score on a criterion means that the contractor was able to optimally exploit the room for distinction on that specific criterium.

Lastly, criteria on which the contractor was tied for a first place with (an)other tender(s) are taken into account. The highest score on a criterion reflects the maximum value the market could offer on that specific topic for this specific project. Again, this means that the contractor was able to exploit the room for distinction on that specific criterion.

Concluding, the scope of the case study is demarcated by the following criteria
- Criteria on which the contractor scored better than other tenderers (i.e. was best)
- Criteria on which the contractor obtained the maximum possible discount (100%)
- Criteria on which the contractor was tied for a first place.

With respect to the selected criteria, the specific measures most contributing to the distinctiveness have been investigated. After this set of measures has been defined for each case, it is analysed how these measures turned out in practice. For each individual case is checked whether the promised measure is implemented and whether the intended effect is achieved. In this regard people involved in the execution of the project from both the contractor and client side are interviewed, using semi-structured interviews.

Semi-structured interviews are relevant when the aim is to address certain specific topics as well as leaving space to offer new meanings (Baarda et al., 2013; Galletta & Cross, 2013). The goal of these interviews is not only to check the execution of certain specific measures, but also to gain more insight in situational circumstances for not conducting those measures. So semi-structured interviews are applicable. The interviews lasted 60-90 minutes. To secure careful gathering of data the interviews are audiotaped and transcribed. Afterwards a summary of each interview is made. In order to ensure the validity of the data this summary was sent to the participants to confirm the content. Only confirmed interview summaries have been included in the research.

2.6.3. Synthesis

After the data is collected, commonalities and differences in these cases need to be found in order to draw conclusions. A cross-case analysis will account for this (Ayres, Kavanaugh, & Knafl, 2003) and extends the investigators' expertise across a single case and enables understanding of certain relationships (Khan & Vanwynsberghe, 2008). This provides opportunities to learn from the cases and to come up with a proper strategy to deal with comparable future situations. Furthermore, an advantage of the cross case

analysis is its ability to deal with either qualitative and quantitative findings (Yin, 2009). In that regard it can incorporate both the outcome of the tender results analysis and the in-depth case study.

In order to answer the main research question, the answers to the sub questions have been evaluated. After a conclusion is drawn, it needs to be validated in order to prove that the formulated strategy is sound. This was done by conducting an expert review. Experts, having affinity with both tendering and project execution, were consulted during an expert meeting. During this meeting propositions resulting from this research have

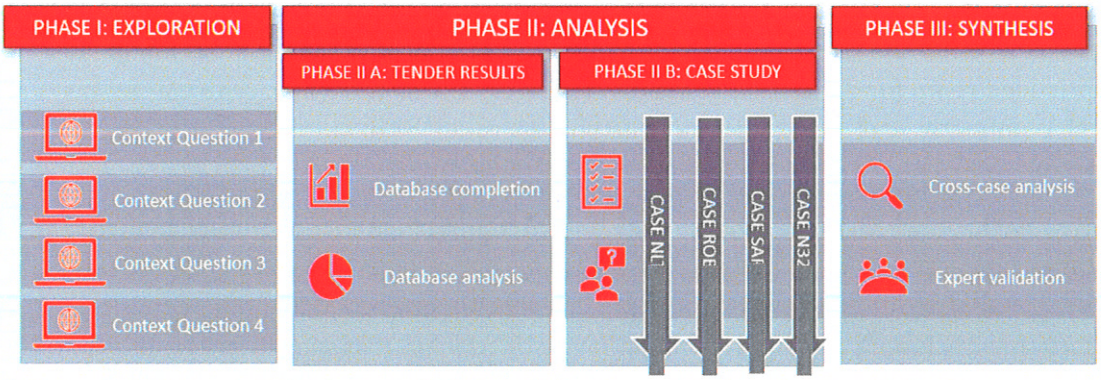


Figure 15. Research phases

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3. EXPLORATION

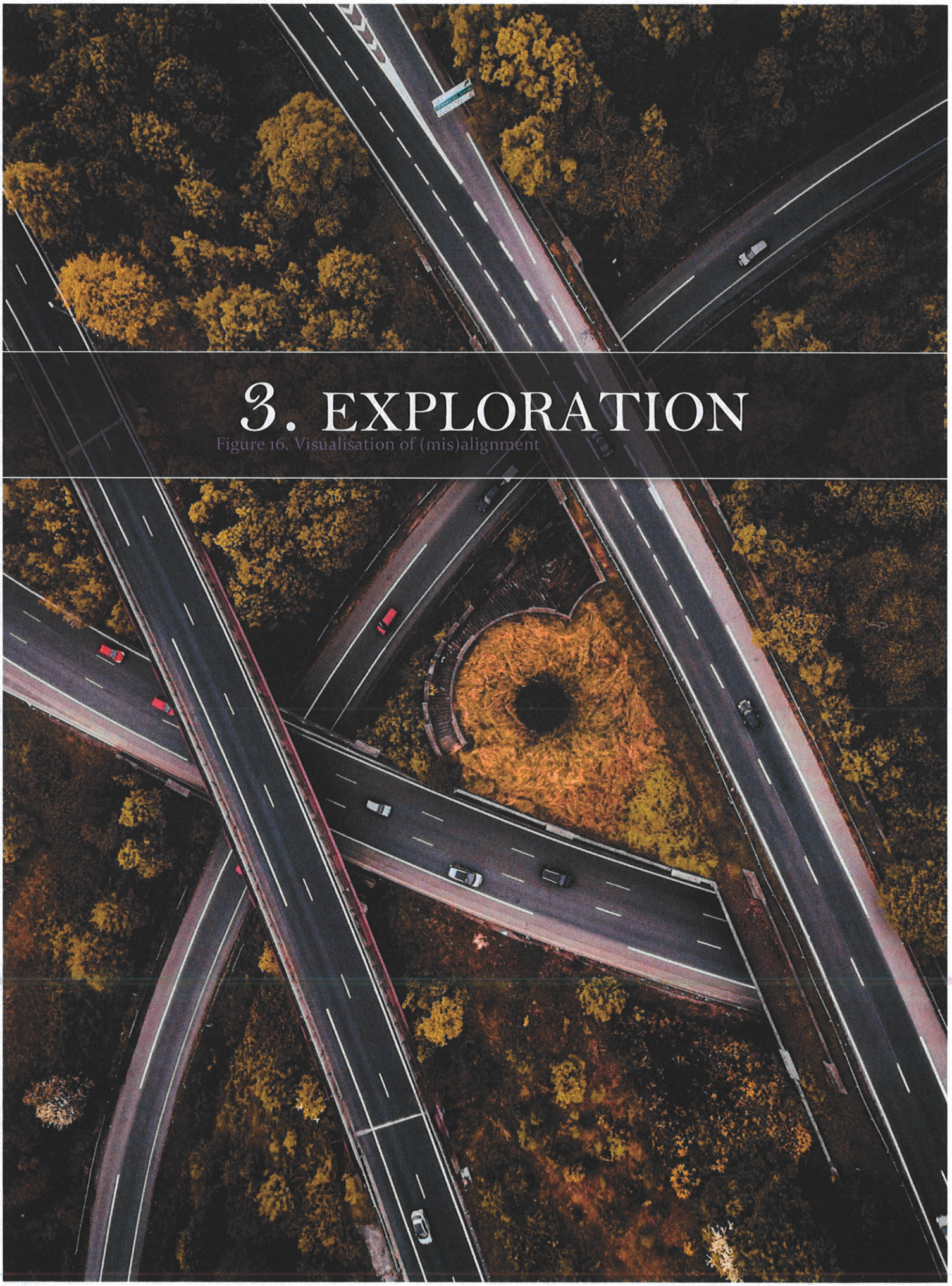

Figure 16. Visualisation of (mis)alignment

3. EXPLORATION OF LITERATURE

The goal of this chapter is to define current views on misalignment between tender and practice. Section 3.1 describes the methodology for defining those views. Section 3.2 elaborates on the concept of alignment. Subsequently section 3.3 discusses the available views on (mis)alignment, where after section 3.4 elaborates on the causes of misalignment. Possible cures for misalignment mentioned in literature are provided in section 3.5. Lastly section 3.6 summarizes the apparent views and discusses what research gap still exists.

3.1. METHODOLOGY OF THE EXPLORATION

The goal of this chapter is to define what theories and views currently exist with regard to the subject 'misalignment between tender and practice'. The aim is to define what interesting insights there are and to determine research gaps. To do so context questions have been drawn, as given below.

CQ1. What is meant with alignment between tender and practice?
CQ2. What are current views on the (mis)alignment of tender and practice?
CQ3. What are current views on the causes of misalignment of tender and practice?
CQ4. What possible cures for misalignment between tender and practice are present?

Relevant articles have been retrieved via Google Scholar, Scopus and the TU Delft repository. Search terms that have been used are: 'Best Price Quality Ratio tenders', 'BPQR', 'Beste prijs kwaliteit verhouding', 'BPKV', 'Economically Most Advantageous Tender', 'EMAT', 'Dutch public procurement', 'Non-fulfilment of tender promises', 'non-conformance of tender and project performance', 'misalignment between tender and practice', 'strategic behaviour in procurement processes', 'Violation of contractual equilibrium'

Furthermore, articles originating from the Cobouw (a weekly magazine about the Dutch construction industry) have been examined. It has however been taken into consideration that these articles are no scientific resources. These articles are thus mainly consulted to obtain more knowledge about current views on certain topics rather than perceived as factual, scientific, knowledge.

3.2. THE CONCEPT OF ALIGNMENT

This section will answer CQ1. What is meant with 'alignment between tender and practice?'. To do so, first a definition of alignment will be given in section 3.2.1, subsequently this definition will be reflected on the topic of research in section 3.2.2.

3.2.1. A definition of alignment

It is important to set a clear definition of alignment. The risk of not clearly defining this term is that different interpretations evolve of what alignment actually is. This might result in misperceptions of the research outcome, i.e. 'misaligned' views.

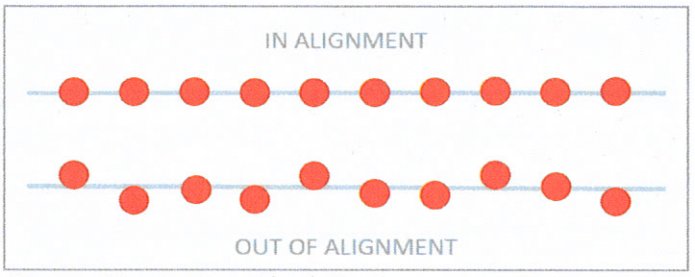

Figure 17. Visualisation of (mis)alignment

The word alignment describes, in its most simple definition, a state where everything is positioned in a straight line (Cambridge dictionary, n.d.). Figure 17. Visualisation of (mis)alignment

Figure 18 visualises alignment and misalignment accordingly to a set of dots.

The dictionary furthermore defines alignment as '*a state of agreement or cooperation among persons, groups, nations, etc., with a common cause or viewpoint*' (Cambridge dictionary, n.d.). This type of alignment is often referred to in an organisational context. Alignment in that sense concerns the harmonisation of organisational goals and organisational outcomes (Ignetica Ltd, n.d.). Misalignment is then the case when goals are not in conformance with the predefined key outcomes of the organisation.

Alignment is considered to be one of the success factors of an organisation (Ignetica Ltd, n.d.; McKinsey & Company, 2014). The main advantage of alignment within an organisation is that the focus could be less on deciding what to do, and more on doing (McKinsey & Company, 2014). In order to obtain organisational alignment communication between all people involved is perceived as the key.

3.2.2. Alignment between tender and practice

This research is about the alignment between tender and practice, or more precisely, about alignment between promises made in the tender phase and the actual added value of that promise in practice. This concept will be defined in this section.

Literature does not provide a clear definition of what this 'alignment between tender and practice' entails. A definition of alignment between tender and practice has thus been drawn by the researcher of this research and is given underneath.

> ***Definition of 'alignment between tender and practice'***
> *The conformance of the added value promised by the contractor to the client in the awarded tender, with the actual added value delivered in or after the execution phase of the project.*

In short; promised added value (in the tender bid) and provided added value (in or after the execution phase) should be in conformance to each other. When referred to alignment between tender and practice in this report, the above formulated definition is applicable. With misalignment is meant the non-conformance of the added value – promised by the

contractor to the client in the awarded tender bid – with the actual added value delivered in or after the execution phase of the project.

This section defined the concept of alignment. The subsequent sections will discuss the current views on (mis)alignment between tender and practice.

3.3. VIEWS ON (MIS)ALIGNMENT

This section will answer CQ2. What are the current views on the (mis)alignment of tender and practice? Several views on to what extent (mis)alignment between tender and practice is being perceived, and to what extent it is a problem, is discussed below.

In chapter 1 it has already been mentioned that the client expects the elements providing distinctiveness in the tender phase to be executed accordingly in the project execution phase. Tender and practice are thus expected to be aligned.

Contractual agreements are in place to ensure the alignment between tender and practice. All qualitative promises described in the winning bid become, after signing the contract, part of the contractual arrangement and should thus be treated as any other requirement in the contract (PIANOo, 2013). As is described in the list of definitions, a contractual agreement represents a strict obligation to the parties involved to fulfil their part of the agreement (Morris et al., 2004). Therefore a contract, cannot be modified or adjusted, at least not beyond the limits normally allowed (Racca, Perin, & Albano, 2011). Misalignment between tender and practice is therefore legally not allowed, except if both parties mutually agree on a certain change of the contract.

Since obligations in the contract come with certain efforts and/or costs for a winning contractor , not fulfilling (qualitative) promises made in the tender phase implies undue profit for the winner (Racca et al., 2011). Because the client paid for the services and/or products described in the contract, and fulfilled its obligations in that regard, non-fulfilment of these obligations is considered to be disadvantageous to the client (Racca et al., 2011). Not fulfilling obligations is therefore often destructive for the client-contractor relation.

In addition to that, not conducting the works as described in the contract is not fair to the lost tenderers, since any violation of the contract implies a change of conditions of the awarded tender bid (Racca et al., 2011). Changes or deviations of the contract during the execution phase thus violate in that sense the fair competition principle and infringe on the rights of the losing bidders (Racca et al., 2011).

Quality management practices such as audits, reviews, and verification are increasingly being implemented in order to reveal quality failures, quality deviations and nonconformances (Fayek, Dissanayake, & Campero, 2004). This development shows the strive for alignment between tender and practice.

Contractual arrangements and the implementation of quality management practices are only a few examples of the current 'cures' for misalignment. The implementation of these cures for misalignment thus indicates there is a desire (from the client side) to optimise congruence of what contractors promise and their actual performance and thus to overcome misalignment between tender and practice.

3.4. VIEWS ON CAUSES OF MISALIGNMENT

Now the concept of alignment and views on (mis)alignment have been discussed, several views on the causes of misalignment between tender and practice will be analysed. This will answer the third context question: What are current views on the causes of misalignment of tender and practice?

Views on causes originating in the tender phase are being discussed in section 3.4.1. Subsequently, views on causes situated in the execution phase are discussed in section 3.4.2. Thereafter strategic behaviour as a cause for misalignment is being discussed in section 3.4.3.

3.4.1. Misalignment due to issues in the tender phase (prior awarding)

There are several complaints on the way tender processes are currently been organised (Aeves, n.d.; Economisch Instituut voor de Bouw (EIB), 2013).

Competitive environment in the tender phase

The first phenomenon that is allocated as a cause for misalignment between tender and practice was already been introduced in chapter 1 and involves the competitive environment in the tender phase resulting in the tendency to submit overly optimistic bids in order to increase winning changes (Lewis, 2015).

Contractors have to deal with a lot of demands of the contracting authority, which all should be anticipated on in the tender process. Tender procedures are therefore costly and time-consuming (Aedes, 2011; PIANOo, 2013). Several contractors are competing in the tender process but after all, only one of the involved contractors will be selected. All the invested time, money and effort by the losing bidders will thus turn out to be fruitless.

Due to this competitive environment, it is tempting for contractors to submit overly-ambitious bids since this will increase their chance of winning the tender (Lewis, 2015) and thus be more likely recoup the costs in made in the tender phase. These [over]optimistic bids are however less likely to turn out beneficial for the client (i.e. will not likely generate the added-value promised). This tension is given as one of the reasons performance often falls short of the promises made in the tender phase (PIANOo, 2013). This results in both financial problems for the contractor as well as minimal value for the client.

Optimism bias & wishful thinking

A leading cause for non-conformance of the project outcome with the project plan is the occurrence of optimism bias and wishful thinking during the development of project plans (Maylor, 2010; Morris et al., 2004).

Optimism bias and wishful thinking are two quite similar concepts but differ slightly. Optimistic bias describes the cognitive bias of someone really believing he/she/it is more likely to experience future positive events than negative events compared to other bidders (Flyvbjerg, 2008; Sharot, 2011). Wishful thinking, though, is referred to as the perception of reality to what one wishes to be true or wants to believe (Maylor, 2010). In case of both optimism bias and wishful thinking, the person conducting this behaviour is not intentionally behaving this way (Sharot, 2011).

According to Morris et al. (2004), wishful thinking is almost always present when competing to win a contract. They state that '*once a contract is awarded, performance often falls far short of the promises, since the promises were based on wishful thinking and not on fact*' (Morris et al., 2004, p.1204).

Furthermore, underperformance of a project is often explained as being due to unfortunate circumstances and is not part of normal practice (Flyvbjerg, Holm, & Buhl, 2005). This explanation does involve optimism bias.

Unpredictability of the dynamic environment.

Another phenomenon denoted as a cause for misalignment is the unpredictability of the dynamic environment. Nowadays project execution takes place in '*highly dynamic environments*' (Bosch-Rekveldt, 2011, p. 2); one has to deal with multiple stakeholders with different perspectives and high complex technical challenges. As a result projects are characterized by uncertainties (Bosch-Rekveldt, 2011).

Tender bids however require the tenderer to define how the work will be executed. Due to the complex and uncertain nature of the environment of such projects, this 'prediction of reality' in the tender phase is perceived unrealistic by some. Especially when really short response time-frames are being imposed (Williams, 2002).

3.4.2. Misalignment due to issues in the execution phase (after awarding)

Rather than the cause for misalignment originating in the tender phase, others have the opinion the cause is to be found in the execution phase.

Project complexity

Projects complexity has also been mentioned as the cause for non-conformance with delivery (Williams, 2002, 2005). Bosch-Rekveldt (2011) even assumes there is a negative relationship between project complexity and project performance. Poor project performance due to misalignment between tender and practice could thus be attributed to the complexity of the project in the execution.

Lack of checking

The losing bidders often have complaints about contracting authorities not checking whether contractors keep to their promises made in the tender phase (PIANOo, 2013). They state that not checking whether the selected contractor fulfils its tasks as promised, provides room for non-fulfilment of promises and as such violates the competition principle and infringes the rights of losing bidders (Racca et al., 2011). The credibility of the contracting authority is at stake if alignment between tender and practice is not being checked (PIANOo, 2013).

3.4.3. Misalignment due to strategic behaviour (prior and after awarding)

This section elaborates on the underlying mechanism for the evolvement of strategic behaviour and subsequently introduce several types of strategic behaviour that can be apparent in client-contractor relation.

Information as critical business resource

Information has become the 'key organizational currency' (Davenport, Eccles, & Prusak, 1992, p. 53). It is one of the most critical business resources. Information is however not always equally divided. It is often considered as an information asymmetry within relations, which unavoidably stimulates strategic behaviour (ten Heuvelhof, 2016)

Ten Heuvelhof is a Dutch organizational theorist and professor of public administration at the Delft University of Technology. He does research into liberalisation, privatisation and deregulation of infrastructure-based utilities, which among others involved the issue of 'strategic behaviour'. Ten Heuvelhof (2016) does distinguish two elements of strategic behaviour. First of all, strategic behaviour involves behaviour that is serving the interest of the one conducting that behaviour. Secondly, strategic behaviour is being conducted intentionally (ten Heuvelhof, 2016).

The principle-agent theory

The principle-agent theory is at the basis of the development of strategic behaviour (ten Heuvelhof, 2016). An interplay between a client and contractor is a typical relation concerning this principle-agent theory (ten Heuvelhof, 2016). The theory points out that although the principle (in a construction context: the client) has the formal authority to control the situation it is often the agent (in this regard: the contractor) who is actually in charge. This power is due to the information advantage of agent over the principle.

Several types of strategic behaviour can occur within a client-contractor relation. Literature mainly comes up with respectively adverse selection, moral hazard and strategic misrepresentation as types of strategic behaviour present in client-contractor relations. The following paragraphs therefore further elaborate on these types.

Adverse selection

In the case of 'adverse selection' the actor with an information advantage manages to influence the other actor to make decisions that are disadvantageous for the latter (ten Heuvelhof, 2016). Adverse selection in the construction industry is one of the main reasons the lowest price tender method did result in low-value project outcomes (Morris et al., 2004). An example of this type of strategic behaviour is contractors submitting extreme (unrealistic) low bids in the tender phase with the intention to eventually act opportunistic during project execution by offering inferior quality or (making attempts to) charging the client for extra works (Morris et al., 2004).

Joost Haest, (construction)lawyer specialised in the legal process around non-fulfilment of tender promises, refers to this type of strategic behaviour as 'false promises' and states this is at the cause of non-compliance of work with the tender bid (Koenen, 2018).

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Moral hazard

Whereas adverse selection was related to strategic behaviour before awarding of the contract, moral hazard is strategic behaviour evolving afterwards (Morris et al., 2004). Moral Hazard involves the concept of taking advantage of a certain situation by taking risks others will pay for. In construction context this is seen when one of the parties makes attempts in changing the terms of the proposed contract during the execution phase, since the risk of losing the contract to competitors is then absent. With regard to the client, the main cause is often financial problems, whilst in case of the contractor moral hazard is seen when 'to take advantage of the easing of competitive pressure' (Morris et al., 2004).

Strategic misrepresentation

Strategic misrepresentation is the intentional distortion or misstatement of facts, i.e. lying (Flyvbjerg, 2008). It needs to be underlined that this type of behaviour is considered to be different than optimism bias and wishful thinking. The latter two describe a cognitive bias of someone really believing something is realistic whilst it is actually over-optimistic (Maylor, 2010; Morris et al., 2004). Strategic misrepresentation however is defined as behaviour that one is conducting intentionally (Flyvbjerg, 2008).

According to Flyvbjerg, Holm, & Buhl (2002) underestimation of elements in the tender bid cannot be explained by error and is best explained by strategic misrepresentation, or in other words: 'lying'. Strategic misinterpretations can be often traced back to political or organizational pressure (Flyvbjerg, 2008). This type of pressure also encompass fierce competition (Flyvbjerg, 2008).

Given the above types of strategic behaviour that a contractor can conducted intentionally for its own advantage (and most often the disadvantage of the other party, i.e. the client), one could expect many lawsuits in this regard.

However, lawsuits in the Dutch construction industry on the above types of strategic behaviour are rarely seen (Koenen, 2018). This is, according to Haest, however not because strategic behaviour is not apparent, but since strategic behaviour is very difficult to factually demonstrate. As a result Joost Haest argues, clients deal with the non-fulfilled promises by using it in exchange for additional work (Koenen, 2018). Non-fulfilled promises have therefore also become an organisational currency.

3.5. POSSIBLE 'CURES' FOR MISALIGNMENT

The previous sections provided insight current views on misalignment between tender and practice. In section 3.3 it became clear that the shared view is that misalignment should be prevented. Causes for misalignment have been discussed in section 3.4. This section answers CQ3: What possible cures for (mis)alignment between tender and practice are present?

Implemented cures

Since misalignment between tender and practice is perceived by most as something that should be prevented, already several concepts have been drawn aiming at more alignment between tender and practice. Some of these already have been introduced in section 3.3, but will elaborated more thoroughly in this section.

- *Quality management procedures.*

Verification and validation procures are intended to check whether the project outcome is in compliance with the requirements in the contract (Project Management Institute, 2011). In general, validation is concerned with 'are we building the right system?' whereas verification is about 'are we building the system right?' (Project Management Institute, 2011). Validation is thus more about compliance of the system with the customer's needs and verification is more about whether the system is technically well-engineered and functioning without any bugs (Carson, 2002).

- *Fines for non-fulfilment.*

Another manner to overcome certain behaviour is the use of sanctions. In order to prevent non-compliance of work with earlier made promises, fines are attributed to non-compliance of work (PIANOo, 2013).

For example, Rijkswaterstaat uses a fine 1,5 times higher than the BPQR value otherwise obtained with the submitted promises (PIANOo, 2013). This since the actual damage for the client is larger than the BPQR value considering the collateral image damage that is also at stake with non-fulfilment of promises. Furthermore, if the fine was equal to the BPQR value a competitive disadvantage for losing bidders could be the case (PIANOo, 2013)

- *Require SMART formulation of promises*

Furthermore SMART formulation of measures is implemented in order to simplify the assessment of the viability measures(PIANOo, 2013). Measures should be formulated SMART: specific, measurable, ambitious, realistic and time-bound (Economisch Instituut voor de Bouw (EIB), 2013). This makes it easier to check whether the promised added value of a measure is actually provided (PIANOo, 2013).

SMART formulation of prescribed promises is considered essential by clients as Rijkswaterstaat (Rijkswaterstaat, 2017b). These clients have also incorporated SMART formulation in their assessment of tender bids, which implies that promises less SMART formulated obtain lower scores than SMART formulated measures (Rijkswaterstaat, 2017b). A vague description of a measure is therefore a missed opportunity for the contractor (Economisch Instituut voor de Bouw (EIB), 2013).

Procedural enhancement in order to ensure alignment

- *Losing bidders as 'watch dogs'*

It is commonly accepted that, in order to have fair competition, it is required to provide every involved bidder with an evaluation of its offer including a substantiation (based on the predefined award criteria). According to Racca et al. (2011) this right should be safeguarded in the execution phase as well. '*Unsuccessful bidders should walk away from the competition knowing that not only did the winning bidder submit a better offer, but the winning bidder will execute the contract better*' (Racca et al., 2011, p.90). If this is not the case, the competition principle is infringed.

Therefore Racca et al. (2011) have an innovative and interesting solution in order to obtain more congruence between tender bid and project execution. They propose to

include losing contractors in the execution phase of the project as 'watch dogs' (Racca et al., 2011). This would be an efficient solution, since those contractors already have in-depth-knowledge of the conditions and specification of the contract at tender. According to Racca et al. (2011, p.91) the lost bidders would therefore be 'ideal subjects to be involved in the control of the exact execution of the contract by the winning bidder'

- *Second choice bidder in reserve*

It has also been recommended that the client should, where possible, keep a "*second choice*" bidder ready in reserve, as a counter to opportunism (Morris et al., 2004). This way the client could exchange the second choice bidder for the first choice bidder, based on the opportunistic behaviour of the latter (Morris et al., 2004)

Enhancing communication and collaboration

The above-mentioned possible cures focus mainly on controlling the executing contractor on fulfilling its promised tasks. This focus on control does not really encounter the movement in the Dutch construction sector aiming more on mutual trust, as described in the Marktvisie (Rijkswaterstaat & Rijksvastgoedbedrijf, 2016).

'Cures' that do more comply with ambitions described in the Marktvisie are the efforts to enhance mutual communication and collaboration between parties. The Marktvisie describes the desire to have discussions in an early phase of the project about risks, needs and dilemmas in order to prevent opportunistic behaviour from happening (Rijkswaterstaat & Rijksvastgoedbedrijf, 2016).

- *Add contractor – client dialogue to tender process*

A (partly implemented) cure that does respond to this desire is the addition of the dialogue to the tender process. This type of procurement procedure is better known as the competitive dialogue (See section 1.3.1). The competitive dialogue provides room for parties to come up with several solutions and use the dialogue to test which solutions best meets the needs of the contracting authority (Burnett & Oder, 2009; Rijksoverheid, 2009).

- *New tender procedures; such as 'Bouwteams'*

More intensified communication and collaboration is seen in new initiatives such as 'construction teams' (Dutch: 'Bouwteams'). This type of collaboration involves the project based partnership between a client and contractor in an early phase, even before awarding (Bouwend Nederland, n.d.). In comparison with other forms of tendering, the construction team is the best method to jointly arrive at a design (Bouwend Nederland, n.d.).

3.6. CONCLUDING REMARKS

This section summarises the knowledge that has been obtained during the exploration of literature, discusses the knowledge that is still required and lastly defines the knowledge that will be obtained in this research.

Available knowledge

This chapter provided the definition for misalignment between tender and practice, i.e.: the conformance of the added value promised by the contractor to the client in the

awarded bid, with the actual added value delivered in or after the execution phase of the project.

It was found that current processes are organised in a way that implies a pursuit of alignment between tender and practice. Besides, several causes for misalignment have been identified in either the tender phase, the execution phase or a combination of both. Also, strategic behaviour in both the tender phase and the execution phase is found as a cause for misalignment.

'Cures' for misalignment are mainly aiming at ways to obtain alignment between tender and practice. Mainly the cures focussed on enhancing verification and validation systems in order to ensure a project is executed as described in the tender bid. Furthermore, overcoming misinterpretations, by implementing contact moments in the tender processes, has been prosed as a solution. But, also innovative ideas such as involving losing bidders in the execution phase have been initiated.

Required knowledge

Scientific research determining to what extent misalignment between tender and practice is really apparent, has not been found. Furthermore, underlying mechanisms causing this eventual misalignment are not clear. Although several causes for misalignment have been identified in literature there is no clear insight in the underlying mechanisms of these causes.

To be gained knowledge

Due to the complexity of the topic and the interrelatedness with a broad range of other topics (winning tender elements, room for distinction in tenders, asymmetric information, strategic behaviour, effective measures etc.), which could all be topic of a study itself, it is not expected that this research will provide a full understanding of the phenomenon.

What however can be expected of this research is that it will enlighten in what way contractors currently can distinguish themselves in the tender phases. Furthermore, the research shows to what extent this distinction actually is providing added value in practice and lastly it elaborates on the most important underlying mechanisms, responsible for misalignment between tender and practice.

This research contributes to an enhanced understanding of the concept of misalignment between tender and practice.

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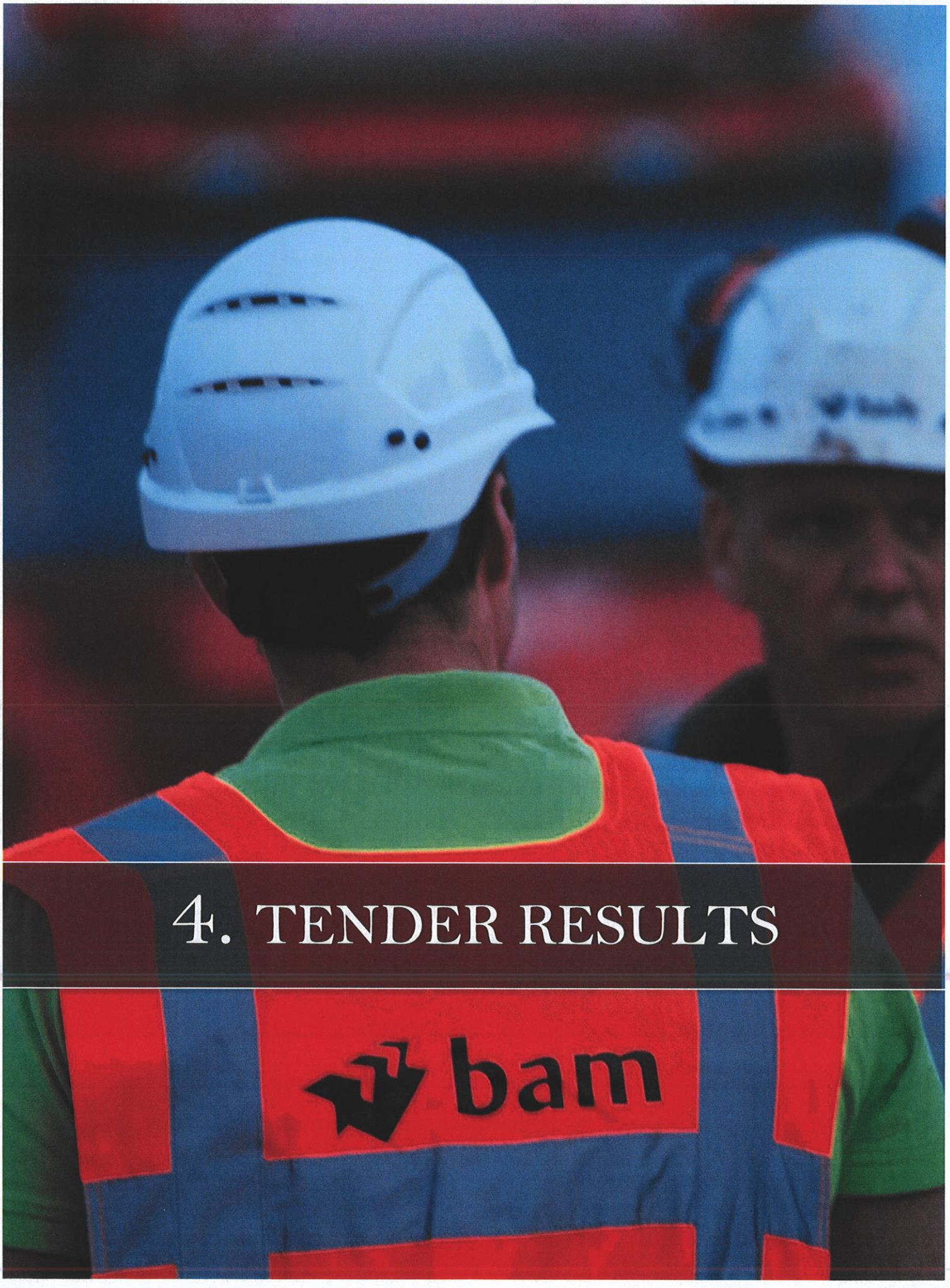
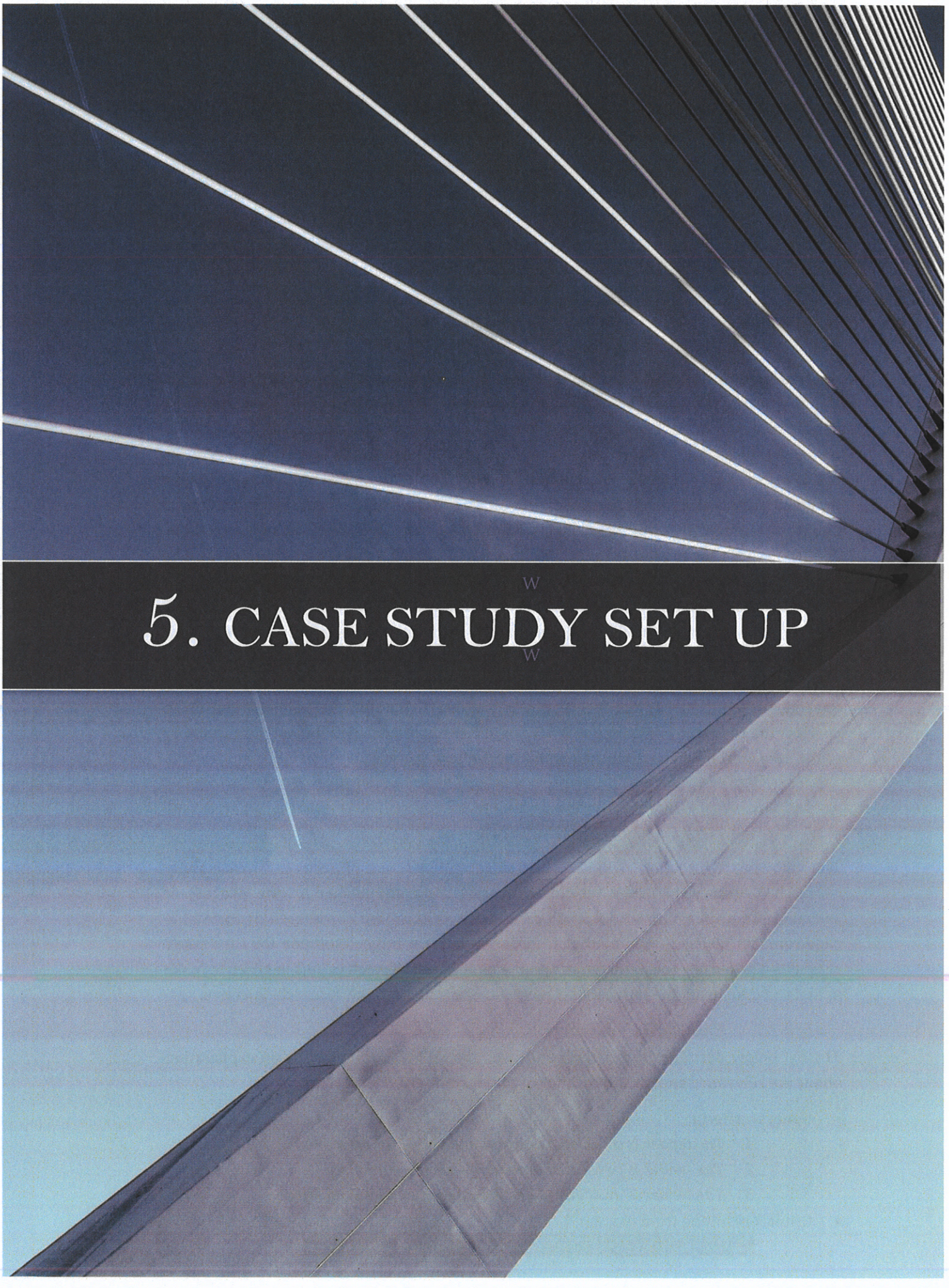


4. TENDER RESULTS

4. ANALYSIS OF TENDER RESULTS

This chapter aims to answer SQ1 *'In what type of tenders is BAM Infra able to distinguish itself?'*

This chapter is not publicly available due to confidentiality reasons.



5. CASE STUDY SET UP

5. CASE STUDY SET UP

The next step in the research involves the case study. As mentioned in section 2.6.2, the strategic choice of the case increases the generalizability of the results (Ragin, 1992; Rosch, 1978). This chapter will therefore elaborate on what projects will be analysed in this case study. Section 5.1 discusses the amount of cases to be analysed, whereas 5.2 describes the strategic choice for the specific case selection.

5.1. AMOUNT OF CASES

As described in section 2.6.2 a multiple case study is most applicable for this research. Before starting the case study however, the sample size, the amount of cases analysed, should be determined. To do so, the purpose of the research and the credibility needs to be taken into account (Swanborn, 2010; Yin, 2009). For a multiple case study an analysis on two cases is obviously the minimum. Yin (2009) determined that conclusions independently arising from two cases will be more powerful than those coming from a single case alone. Drawing conclusions from three cases will even be more credible. Besides, cross-case analysis is only possible when having analysed multiple cases. For these reasons the choice has been made to conduct a case study on a minimum of three cases. Because of the great variation in BPQR criteria within tenders the more cases analysed the better. It should however also be kept in mind that there is a restricted amount of time available for this research. Since the goal of this case study is to increase understanding about a phenomenon (i.e. the alignment between tender and practice), analysis in depth, more than in breadth, is required. Therefore, it has been chosen to conduct the case study on a total of 3 – 5 cases. The final size depending on the suitability of the case, which will be discussed in the subsequent sections.

5.2. STRATEGIC CHOICE OF CASES

The following two sections will describe the careful selection of projects for case study research. Criteria and preferred characteristics are distinguished in the process of selecting the projects for an in-depth case study. Criteria are considered as inevitable requirements which should be met in order to make a project suitable for case study research. The preferred characteristics serve as supportive mechanisms in order to make a final selection from the longlist of projects, keeping in mind the research objective.

5.2.1. Case selection: criteria

The list below describes the criteria the cases should meet, followed by an explanation about the relevance and/or importance of this specific criterium.

- General criteria
    1. *The tender is conducted according to the BPQR principle*
    2. *The tender is conducted for a public client / authority*
    3. *The tender is awarded to and (thus) executed by BAM Infra*
- Criteria resulting from chapter 4

[redacted]

[redacted]

- Criteria regarding data availability

    6. *The project is in execution phase or already completed*

[redacted]

The first two criteria are general criteria involving the overall focus of the research. Since the research has a focus on public BPQR tender processes, this is taken as a first and second criterium. The third general criterium involves awarding to BAM Infra. This criterium is chosen since tenders awarded to BAM Infra are also being executed by the firm. Because BAM Infra is participating in this research, data will be easier available in projects BAM is executing.

The fourth and fifth criteria result from the analysis presented in chapter 4. [redacted]

Lastly, criteria six and seven, relate to the availability of data. In order to conduct a proper analysis sufficient access to potential data is required, either by interviewing people, reviewing documents or making observations in the 'field' (Yin, 2009). Actuality of the results is an advantage of analysis of recently awarded projects. However, especially recently awarded projects with large contract sums are often not yet in execution due to the long pre-definition phase. The necessary data for this research regarding the project execution is in that case not yet available. Projects that have been only in execution for less than half a year are therefore not taken into account.

[redacted]

5.2.2. Selection cases: preferred characteristics

Having selected optional cases for the case study research, the next step is to actually decide on a particular set of cases from the remaining set. The strategic choice of cases may greatly add to the generalizability of a case study research (Flyvbjerg, 2006). The main concern is to choose the cases that facilitate research into the topic of investigation: qualitative distinctiveness. Not every case is the most richest in information (Flyvbjerg, 2006). Cases in which distinctiveness was seen on a qualitative level are most relevant for this research.

	Client type	Client name	Object type	Contract type	Result Quality	Result €	Max. fictional discount
[redacted]							

Table 2. Set of projects after demarcation by criteria 1 - 7

The distinctive character is certainly there in bids where the contractor has won the contract without having the lowest contract sum. In these bids there were for sure other criteria than price on which the contractor has been awarded the contract. These are the relevant cases for this research. Regarding the set of projects in Table 2, this is the case for [redacted] and [redacted]. These two projects are therefore selected to investigate in depth.

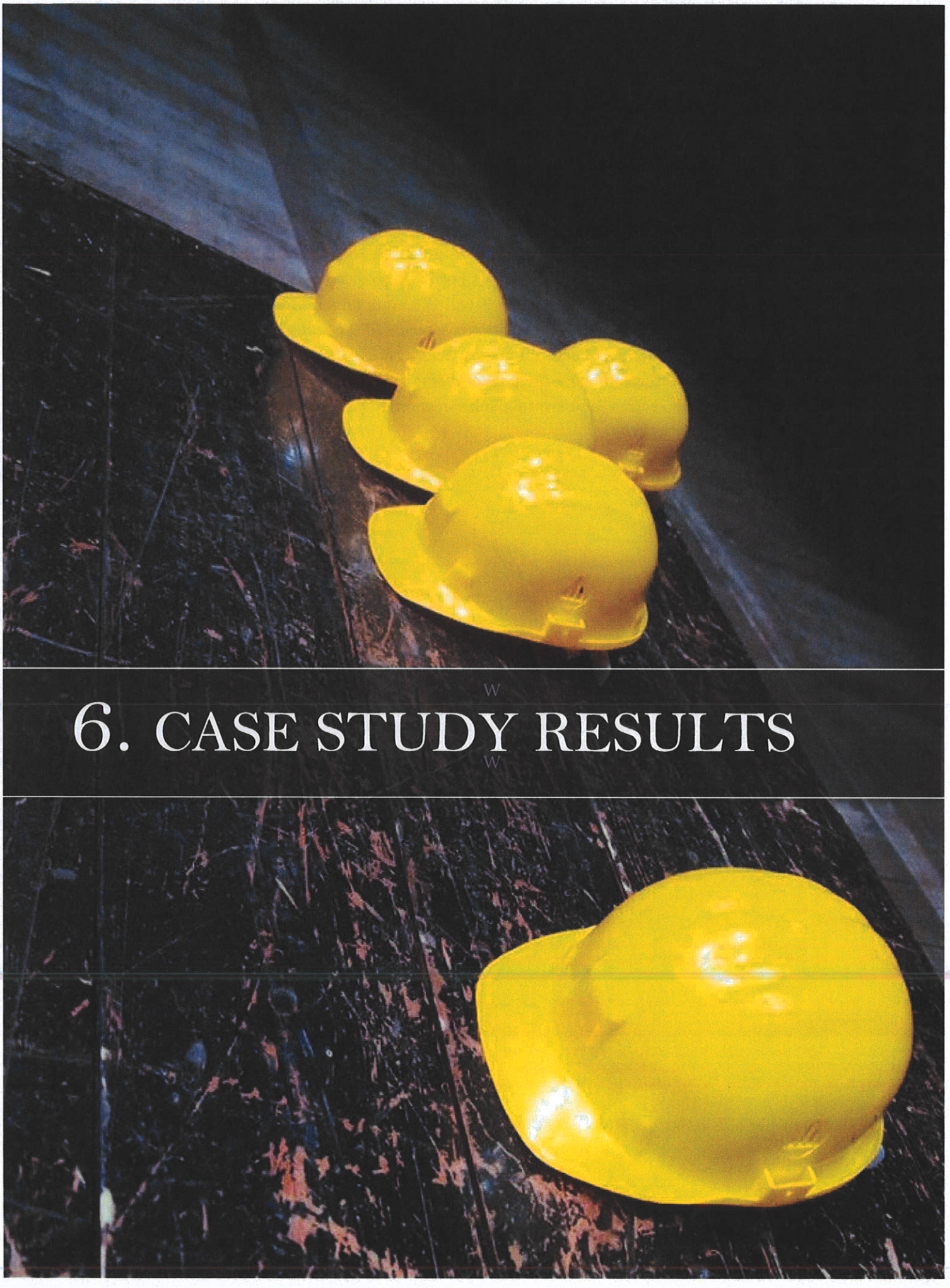
However, providing extra value does not always have to be inherent to an increase of price. The distinctive character can also be a combination of (a low) contract sum and (a high) quality score. This is the case for the [redacted] project, which is selected as third project.

Distinctiveness might be found in specific elements of a tender, although the overall result on quality might be lower than another tenderer. This is the case for [redacted] project. Although another tenderer had a slightly higher overall score on quality, the consortium in which BAM Infra took part was able to distinct itself significantly on a certain element within the tender. Since this research is not about qualitative success as a whole but rather examines specific elements, this case is relevant.

The final set of cases is given in Table 3.

	Client type	Client name	Object type	Contract type	Result Quality	Result €	Max. fictional discount
[redacted]							

Table 3. Final set of projects selected for case study research



6. CASE STUDY RESULTS

6. CASE STUDY RESULTS

This chapter presents the results of the in-depth case study on four infrastructure projects in the Netherlands, which has been conducted to gain more insight in the alignment of qualitative distinctive elements in the tender bid with the actual added value in practice.

The chapter is structured according to the four analysed cases. For each case, four sections are provided in this chapter. The first section will provide general information about the project and the corresponding case. Section 2 will elaborate on sub question 2: *'What (type of measures) are determining in these distinctive tender BPQR tender bids?'*. The third section elaborates on how these determining aspects turn out in practice and thereby covers sub-question three: *'How do these determining measures turn out in practice?'*. Additionally, a fourth section is answering sub question 4 *'What are reasons for non-fulfilment of these measures?'*

This chapter is not publicly available due to confidentiality reasons.

7. CROSS-CASE ANALYSIS

7. CROSS-CASE ANALYSIS

In chapter 6 the results of the case study have been provided. This chapter aims to identify the commonalities and differences of these results by a cross-case analysis. Section 7.1 shows what types of measures provide distinction in a tender. The next section provides a categorization of the causes for non-fulfilment of measures. Lastly, section 7.3 involves the synthesis in which the previous identified categorizations are combined in one overview on which over-all cross-case conclusions are drawn. The chapter ends with section 7.4 that is providing some concluding remarks.

7.1. THE MEASURES: CATEGORIZED AND CHARACTERIZED

This section aims to define what (type of) measures are determining in distinctive bids.

In this regard, the research did lump together all measures most determining for the high quality score and analysed these for similarities and commonalities. As a result of this analysis the researcher drew a categorization and characterisation of these measures. Section 7.1.1 discusses the drawn categorization. Subsequently, section 7.1.2 elaborates on the drawn characterisation.

7.1.1. Categorization of measures

When analysing the total set of most determining measures of all four cases, the researcher did identify two by two matrix of categories in which these measures can be categorized. The first categorization involves a distinction between a process measure and a product measure. The second categorization distinguishes temporary measures and permanent measures. A process measure can be either temporary or permanent of character, the same holds for a product measure. These categorizations are mutually exclusive and collectively exhaustive (MECE), which means, each measure cannot be both (both a process and a product measure or both a temporary and a permanent measure) but also not neither of it. An explanation of both categorizations is given below.

Figure 19. Categorization of measures

1. Product measures vs Process measures

First of all process and product measures have been distinguished. As has been explained in section 1.5 quality can be mainly divided in a process-based view and a product-based view. This division is also seen when analysing the measures prescribed in tender bids.

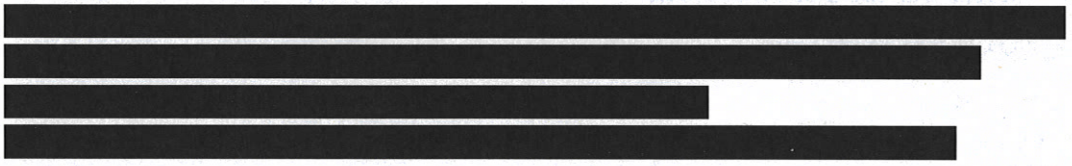
Product measures concern measures promising something that will be manufactured. This can be either something tangible but also an intangible good such as digital and virtual goods. On the contrary, process measures involve measures promising a series of steps in order to achieve something. It concerns the way in which things are organised,

not only involving project management process but also choices concerning technical implementation.

2. Temporary vs Permanent measures

Secondly, the researcher did identify a division in measures having a temporary or a permanent character. Temporary measures are measures that are limited in time. Within the context of the construction sector this limited period of time is concerned to be the contract duration. Controversially, permanent measures concern measures that (are intended) to last or remain unchanged. Civil structures are however not intended to be everlasting and often have a lifecycle of about 50 years. For this research permanent product measures are therefore considered as measures lasting beyond the duration of the contract and remain for the lifecycle of the civil structure.

Drawing the matrix of two by two categories results in four compositions: A temporary process measure, a temporary product measure, a permanent process measure and a permanent product measure. For each of these compositions an example is given below.



Permanent process measures are not identified in the studied cases. These type of measures are most often seen in works that involve the maintenance of an asset. Permanent process measures expand beyond the construction period, but are of course limited by the contract duration of that maintenance. Since this research is focussing on realisation works only, not including maintenance works, permanent process measures are thus less likely to be identified.

7.1.2. Characteristics of measures

After analysing the total set of most determining measures of all four cases, the researcher also identified certain characteristics measures can have. Whereas the categorization in the previous section was mutually exclusive and collectively exhausting (MECE), the characteristics of measures described in this section are not. Underneath, the characteristics identified by the researcher are summed up. Thereafter, a description of each characteristic follows, provided with one or two examples.

- Integral measures
- Performance measures
- Technical specification
- Sexy measures
- Beads (Dutch: Spiegels en kraaltjes)
- Commercial-off-the-shelf measures
- Multi-applicable measures

Integral measures

Integral measures involve measures that mitigate a certain risk or exploit a certain opportunity on an integral level. These measures are not only valuable regarding a specific criteria of the information to tender, but form a red line throughout the whole project plan. Two examples of integral measures are given below:

[redacted]

Performance measures

Performance measures are those measures anticipating on performance criteria. These performance criteria describe several levels, related to an amount of discount. The tenderers should indicate which level it is going to comply to. Beforehand it is clear to the tenderer how much fictional discount will be yielded on this criterion. The level that is indicated by the contractor is called a performance measure in this research. Underneath, two examples of performance measures are given.

[redacted]

Technical specifications

Technical specifications are measures in which specific technical choices or building methods are prescribed. An example of technical specification can involve the use of a certain material, as the measure below.

[redacted]

Sexy measures

Sexy measures are those measures clients like to flaunt and show off with. The client of the [redacted] project came up with this designation (interview 2.2). In political sense these measures are often exploited to create goodwill for a project. The result of this is that the measures come with a major reputational damage risk. This means that instead achieving the intended effect with implementing the measure, non-fulfilment of the measure works out controversially: Instead of resulting in the positive effect, these measures negatively affect the reputation of the client and/or project organisation when not fulfilled accordingly. An example of a sexy measures is given below. In the appendix on page **Error! Bookmark not defined.** a news article shows the flaunting that is done with this measure.

[redacted]

Beads (Dutch: Spiegels en kraaltjes)

With 'beads' those measures are implied that can be perceived as 'additionalities' or 'extras'. The measures have no recurring character within the submitted bid. Beads are often added afterwards to the bid in order to gather additional fictional discount. Clients can perceive these measures as 'nice presents' (interview 4.2) or as 'trifles' (Dutch: kruimeltjes) (interview 2.2). Two examples of such 'beads' are given below

[redacted]

Commercial-off-the-shelf measures.

With commercial-off-the-shelf measures, measures are meant that the concerned contractor is executing anyway, even when no quality component would have been involved in the tender. A commercial-off-the-shelf measure is for example:

[redacted]

Multi applicable measures

The characteristic 'multi-applicable measures' has been allocated to measures that are not specifically taken for a certain project. These measures are not fit-for-purpose but can be implemented on several projects in the same manner (i.e. they could be copy pasted). An example of such a measure is: Doing a Project Start Up (PSU).

7.1.3. Most determining types of measures

Table 4 (a total overview including the description of the measure is given in the appendix on page 98) provides an overview of all measures that caused the distinctive character of the bid (see chapter 6) and the, in the previous sections defined, ordering. The table indicates for each measure whether it involves a product or process measure and whether the measure is permanent or temporary (section 7.1.1). Furthermore, the identified characteristics (section 7.1.2) have been adopted in the overview. Given this overview it can be defined what (type of) measures are determining in distinctive tender bids.

Measure		Categorization		Characteristics						
Case	Nr.	Product vs Process	Permanent vs Temporary	Integral measure	Performance measure	Technical specifications	Sexy measures	Beads	Commercial-off-the-shelf	Multi-applicable measures
[redacted]	1.1.	Product	Temporary	x		x	x			
[redacted]	1.2	Process	Temporary			x				
[redacted]	1.3	Process	Temporary			x				
[redacted]	1.4	Product	Temporary	x		x				
[redacted]	2.1	Product	Permanent		x					
[redacted]	2.2	Product	Permanent	x			x			
[redacted]	2.3	Product	Permanent				x			
[redacted]	2.4	Product	Permanent				x			
[redacted]	2.5	Product	Permanent				x			x
[redacted]	2.6	Product	Permanent				x			x
[redacted]	2.7	Process	Temporary					x		
[redacted]	2.8	Process	Temporary					x		
[redacted]	2.9	Process	Temporary					x		
[redacted]	2.10	Product	Temporary	x		x	x			
[redacted]	2.11	Process	Temporary				x			
[redacted]	3.1	Process	Permanent	x						
[redacted]	3.2	Process	Permanent			x				
[redacted]	3.3	Process	Permanent			x		x		
[redacted]	3.4	Process	Permanent			x				
[redacted]	4.1	Process	Temporary	x						
[redacted]	4.2	Product	Permanent					x		
[redacted]	4.3	Process	Temporary					x		
[redacted]	4.4	Product	Permanent		x					
[redacted]	4.5	Product	Permanent		x					
[redacted]	4.6	Product	Permanent		x					
[redacted]	4.7	Product	Permanent		x					

It can be seen in Table 4 that both product measures and process measures are in about equal amount present for this group of measures. The proposition is therefore that, for submitting a distinctive tender bid, both process and product measures are of importance. The same holds for temporary and permanent measures.

Furthermore, Table 4 makes clear that a whole variety of characteristics occurs within the set of measures determining for the high quality score. These are both sexy measures, technical specifications, performance measures, integral measures as well as beads.

Table 4 depicts also that measures that not prevail in the contribution to the distinctiveness of the bid are the commercial off-the-shelf measures (no measure present in Table 4) and the

multi-applicable measures (only two measures present).

7.2. CAUSES FOR NON-FULLFILMMENT OF PROPOSED MEASURES

During the interviews several causes of not fulfilling tender promises came across. The researcher did analyse and compare these causes. Subsequently the researcher did draw a categorization of those causes. This section will discuss that categorization.

Table 5 provides an overview of the concerned non-fulfilled promises of all four cases. For each non-fulfilled promise the cause for non-fulfilment is provided.

For case 1 [redacted] it turned out that both unfulfilled measures have not been conducted due to enhanced insights (regarding rush hours of [redacted]). Due to this enhanced insight, there was no need any more for the contractor to keep this tender promise.

Regarding case 2 [redacted] enhanced insights pointed out that several measures were actually not providing added value. One measure however was not fulfilled due to a change of circumstances: The [redacted] ended the contract with the specific location, which made the measure unnecessary.

The third case [redacted] showed different causes for non-fulfilment. Strategic behaviour appeared to be the case for the non-fulfilment of several measures, according to the client. However, the contractor declares that requests for change from the client were due. Besides, an unforeseen event (human error) resulted in not achieving the intender results.

Case	Nr.	Description	Cause of non-fulfilment
[redacted]	1.2	[redacted]	There turned out to be no rush hours
[redacted]	1.3	[redacted]	[redacted]
[redacted]	2.7	[redacted]	[redacted] quitted contract with that location
[redacted]	2.8	[redacted]	Both involves stakeholders were unsatisfied with it
[redacted]	2.9	[redacted]	The piling did not cause nuisance
[redacted]	2.11	[redacted]	Reality turned out to be more complex than expected Besides; the urgency of measure was not felt.
[redacted]	2.12	[redacted]	Change of supplier due to suitability reasons
[redacted]	3.1	[redacted]	One keyperson changed on mutual agreement; One keyperson: [redacted]
[redacted]	3.2	[redacted]	According to the contractor: scope changes According to the client: strategic behaviour
[redacted]	3.5	[redacted]	They did not achieve the result due to an human error
[redacted]	3.6	[redacted]	They were audited on the 3rd level
[redacted]	4.1	[redacted]	Scope changes resulted in (many) more [redacted] closures
[redacted]	4.5	[redacted]	The approach turned out not to be sustainable
[redacted]	4.8	[redacted]	[redacted]

[redacted]	4.10	[redacted]	Unknown
[redacted]	4.11	[redacted]	Road manager did not see the added value

Within case 4 [redacted] all type of previously discussed causes for non-fulfilment are seen. Scope changes made fulfilment of a measure impossible. Furthermore enhanced and new insights evolved. For one measure it is still unclear whether the measure will be implemented.

Table 5 contains some measures that are marked blue. These measures were not part of the set of measures most determining for the distinctive character of the bid but these measures came up during the interviews. It has been chosen to add these measures into this part of the analysis (identifying causes for nonfulfillment) since the aim is to identify all underlying mechanisms for non-fulfilment. The measures came up during the interviews for a relevant reason. It is likely that interesting mechanisms are unravelled by analysing those measures as well.

Supported by the foregoing analysis the researcher did formalize a categorization encompassing all causes of not fulfilling tender promises (See *Figure 21. Categorization of causes for non-fulfilling tender promises*

). As can be seen in *Figure 21. Categorization of causes for non-fulfilling tender promises*

the categorization consists of four main categories (A-D) which encompasses several sub-categories. This categorization is MECE, which implies every cause finds its place in one of the categories. However, when locating measures in this categorization, they cán find multiple places since non-fulfilment of a measure is sometimes due to more than one cause. This makes the categorization MECE regarding causes, not regarding measures.

Categories A and B will be discussed below. The last category C was already described in the exploration, section 3.4.1.

Categorization of causes for non-fulfilment

A. Change of circumstances
   i. Scope change
   ii. Context change
   iii. Force majeure

B. Enhanced and/or new insights in the relevance of the proposed measure
   i. New information: the added value of the measure is not there
   ii. New perspectives: the added value of the measure is not perceived

C. Strategic behaviour of the contractor
   i. Adverse selection [prior to awarding]
   ii. Moral hazard [after awarding]
   iii. Strategic misrepresentation

D. Bad luck

Figure 21. Categorization of causes for non-fulfilling tender promises

7.2.1. Change of situation (A)

This category comprises all changes on the contract caused by external influences. Changes on a project plan are often inevitable, they can be expected in any project. Several types of changes within a construction project are being distinguished: Scope changes, context changes and force majeures.

Scope change (Ai)

The scope of a project involves all that needs to be achieved and needs to be done in order to deliver the project. A scope change thus involves a change in the works required.

Context change (Aii)

The context of a project involves the environment in which a project operates. This can be either the physical environment but also the political, legal and social context. A change of context involves thus a change of the environment of the project.

Force majeure (Aiii)

Lastly, a change of situation can take place in the form of a force majeure. Force majeures are unforeseen events or circumstances beyond the reasonable control of one of the parties within the contractual agreement. An example of force majeures is an extreme weather condition such as a tornado. Contracts often contains clauses on this regard.

7.2.2. Enhanced / new insights in relevance of the proposed measure (B)

The second main category for not fulfilling promises is enhanced or new insights on the relevance of the originally proposed measure(s). This category is subdivided into two subcategories. The one category involves enhanced or new insights which results into the evaporation of the added value of the (dismissed) measure. The second category encompasses situations in which the added value is not recognised as such.

The added value of the measure is not there (Bi)

The intended added value of the proposed measure turns out non-existent due to new information. In this regard a lack of knowledge occurred in the tender phase about the actual situation.

The added value of the measure is not perceived (Bii)

In this regard the measure indeed does have the ability to provide added value. However, this ability is not seen or perceived by the people involved in the execution phase.

7.2.3. Strategic behaviour (C)

This category involves strategic behaviour. Strategic behaviour is a broad context. Since literature describes mainly adverse selection, moral hazard and strategic misrepresentation as being apparent in procurement processes, these three have been adopted as subcategories. It is however likely that there will be more types of strategic behaviour. For a description of the subcategories of strategic behaviour the reader is referred to section 3.4.3.

Critical note: This category is probably the most difficult category to grasp since it involves behavioural concepts. Categorizing measures in this regard are mainly based on the researcher's interpretation of the data (tender documents and interviews), not on factual evidence. Note that in neither of the cases in which strategic behaviour has been identified, the contractor has acknowledged strategic behaviour.

7.2.4. Bad Luck (D)

The last category involves 'bad luck'. Sometimes a measure just did not work out as intended and expected. This is not always due to a change of situation (A), enhanced or new insights (B) or strategic behaviour (C), it can also just be 'bad luck'. This means that the contractor perfectly should have been able to conduct this measure, but it just did not work out this time.

7.2.5. Overview of measures and causes

The measures being discussed in the previous chapters have been clustered according to the categorization defined in the foregoing sections. Table 6 provides an overview of this clustering (A total overview including the description of each measures is given in appendix 12.4 on page 98).

Measure			Causes for non-fulfilment of promises								
			Change of circumstances			New or enhanced insights		Strategic behaviour			Bad luck
Case	Nr.	Description	Scope change	Context change	Force Majeure	Added value not there	Added value not seen	Adverse selection	Moral hazard	Misrepresentation	
[redacted]	1.2	[redacted]				x					
[redacted]	1.3	[redacted]				x					
[redacted]	1.4	[redacted]							x		
[redacted]	2.7	[redacted]		x							
[redacted]	2.8	[redacted]				x					
[redacted]	2.9	[redacted]				x					
[redacted]	2.11	[redacted]					x				
[redacted]	2.12	[redacted]				x		x			
[redacted]	3.1	[redacted]	x						x		
[redacted]	3.2	[redacted]	x						x		
[redacted]	3.5	[redacted]									x
[redacted]	3.6	[redacted]						x		x	
[redacted]	4.1	[redacted]	x								
[redacted]	4.5	[redacted]				x					
[redacted]	4.8	[redacted]					x				
[redacted]	4.9	[redacted]									
[redacted]	4.10	[redacted]						x			
[redacted]	4.11	[redacted]					x				

As mentioned, the categorization is MECE concerning the causes. However, since non-fulfilment of a measure may have more than one cause, several categories can be selected for one measure in Table 6. Besides, the interviews did not clarify on the cause of every measure. In case of contrasting perspectives of the client and the contractor, both perspectives have been taken into account and have been selected in the table.

7.3. SYNTHESIS.

So far, this chapter discussed the identified types of the most distinctive measures and the identified categorization of causes for non-fulfilment of those measures. This section aims on combining these previous results.

7.3.1. All parameters combined

In order to obtain a comprehensive picture of all that has been analysed, Table 8 presents an overview of all the relevant parameters that have been discussed so far.

In this overview the data (the investigated measures of all the four cases considered) have been lumped together and sifted primarily based on the quadrant approach that was presented in chapter 6. The quadrant of all four cases together can be found in the appendix (not publicly available). In fact this is another way of representing the quadrant approach: four different combinations are possible (Quadrant 1 – Quadrant 4)

Within each quadrant (the four horizontal bundles of measures in the now resulting Table 8) a sub ranking was made based on whether a product of process measure was involved and, finally, a ranking based on permanent or temporarily character of the measure was applied. Furthermore, it has been indicated whether the measure had been part of the most distinctive measures (by marking them blue, just as in Table 5). From the thusly composed table several conclusions can be drawn:

Product measures score predominantly in the 4th quadrant, i.e.: measure implemented and effect achieved: The vast majority of the measures in quadrant four are product measures. Only a couple of process measures are found there. This is in contrast with the 1st quadrant (measure implemented, effect not achieved) and even more in contrast with the 2nd quadrant (measure not implemented, effect achieved), where no product measures are found. The latter is a logical outcome: it is hard to imagine that a product requirement was not implemented and yet would generate the intended outcome. Regarding those measures that have not been implemented and yet the effect has been achieved: these are always process measures. Honesty however requires remarking here that most measures involved (5 of the 7 measures) concerned situations in which the added value was absent. It is therefore imaginable that the client did not press for the concerned measure to be conducted by the contractor (because the intended effect was achieved anyway).

Table 6. Non-fulfilled measures categorized on causes for non-fulfilment

Temporary measures are most often aligned with process measures and, hence, score for the vast majority similar with these process measures (measures not implemented prevail). Yet, all measures found in the 2nd quadrant (measure not implemented as prescribed, but effect achieved) are process measures. However, given the fact that the majority of those measures in the 2nd quadrant became obsolete due to

changed circumstances, the achievement of the intended effect cannot be assigned to be a process measure.

A possible cause might be adverse selection. In this regard the measures have been promised to mitigate a certain 'problem' but actually this problem was not really a problem in practice. Whether adverse selection was the case remains, however, unclear. The cause might also be a lack research due to a lack of time, information or resources in the tender phase.

Measure		Categorization		Characteristics							Causes for non-fulfilment								
											A			B		C			D
Case	Nr.	Product vs Process	Permanent vs Temporary	Integral measure	Performance measure	Technical specifications	Sexy measures	Beads	Commercial-off-the-shelf	Multi-applicable measures	Scope change	Context change	Force Majeure	Added value not there	Added value not seen	Adverse selection	Moral hazard	Misrepresentation	
✗✗		**Q1** [measure not implemented, effect not achieved]																	
[redacted]	2.11	Process	Temporary				x								x				
[redacted]	3.1	Process	Temporary	x							x						x		
[redacted]	3.6	Process	Temporary							x						x		x	
[redacted]	4.1	Process	Temporary	x							x								
[redacted]	4.8	Product	Temporary					x							x				
[redacted]	4.10	Product	Permanent				x			x						x			
[redacted]	4.11	Product	Permanent					x		x						x			
✗✓		**Q2** [measure not implemented, effect achieved]																	
[redacted]	1.2	Process	Temporary			x								x					
[redacted]	1.3	Process	Temporary			x								x					
[redacted]	2.7	Process	Temporary					x				x							
[redacted]	2.8	Process	Temporary					x						x					
[redacted]	2.9	Process	Temporary					x						x					
[redacted]	2.12	Process	Temporary						x					x		x			
[redacted]	3.2	Process	Temporary			x					x						x		
✓✗		**Q3** [measure implemented, effect not achieved]																	
[redacted]	3.5	Process	Temporary						x										x
[redacted]	4.5	Product	Permanent		x									x					
✓✓		**Q4** [measure implemented, effect achieved]																	
[redacted]	1.1	Product	Temporary	x		x	x												
[redacted]	2.1	Product	Permanent		x														
[redacted]	2.2	Product	Permanent	x			x												
[redacted]	2.3	Product	Permanent				x												
[redacted]	2.4	Product	Permanent				x												
[redacted]	2.5	Product	Permanent				x			x									
[redacted]	2.6	Product	Permanent				x			x									
[redacted]	2.10	Product	Temporary	x		x	x												
[redacted]	3.3	Process	Temporary			x	x												
[redacted]	3.4	Process	Temporary			x													
[redacted]	4.2	Product	Permanent					x											
[redacted]	4.3	Process	Temporary					x											
[redacted]	4.4	Product	Permanent		x														

	4.6	Product	Permanent		x						
	4.7	Product	Permanent		x						
	4.9	Product	Permanent				x				
	4.12	Process	Temporary					x			

Table 7. Overview of measures with all parameters

No performance criteria are involved for measures that have not been implemented. This makes sense since performance criteria are often important criteria for the client. So, it falls within the primary focus of the contractor.

No strategic behaviour is found to be connected to effective measures (i.e. situated in the 4th quadrant). However, this does not mean that no opportunistic behaviour has been conducted in regard to these measures.

Opportunistic or strategic behaviour is more likely to be identified in conjunction with negative project outcomes. Take for example wishful thinking, this probably remains unnoticed until the (overly ambitious) outcome is not achieved. If this outcome however for some reason is being achieved, it is unlikely the strategic behaviour will be revealed, since no one is experiencing the need to investigate it. In that case the saying: 'the end justifies the means' prevails.

Sexy measures only achieve their effect once implemented. If not implemented, as is the case for two measures, the interviews point out that non-fulfilment of these measures comes with a major reputational damage.

Lastly it is noticed that none of the main causes for non-fulfilment dominates. The causes vary over the three identified categorizations of change of circumstances (A), new or enhanced insights (B) or strategic behaviour (C). Within main B, however, it is found that in all cases except for one 'the added value is not there' instead of the added value not being perceived.

7.4. CONCLUDING REMARK

This section showed the interrelatedness between all parameters discussed. It became clear that several types of characteristic measures exist. Furthermore, a distinction was made between product measures and process measures. The same holds for temporary and permanent measures. Concerning causes for non-fulfilment a categorization was made encompassing three main categories. All discussed parameters have been combined in one overview on which conclusions are drawn. The next chapter, discussion and implications, will further interpret these findings.

8. DISCUSSION

Figure 22. Poster with statement used for the expert validation session.

8. DISCUSSION & IMPLICATIONS

This chapter contains the discussion on and implications of the research. Firstly, section 8.1 elaborates on the results of the expert review. Subsequently, a discussion on the research findings is covered in section 8.2. Section 8.3 provides the managerial implications for both parties involved in the tender process, being both the contractor and the client. Lastly, section 8.4 discusses the limitations of this research.

8.1. EXPERT VALIDATION

The expert validation is discussed in this section. First a description of the involved experts follows (section 8.1.1). Subsequently section 8.1.2 provides the expert validation approach. Lastly section 8.1.3 discusses the results.

8.1.1. The experts

Validation of the results has taken place by an expert meeting, involving seven experts. The experts had in common that they were all active in the civil engineering sector and experienced in both the tender and execution phase of a construction project. Furthermore, they were all head of a certain department BAM Infra (see Table 8. Expertise of experts at validation meeting). The experts differed regarding their specific field of expertise (from business development to technical installations). This way many fields of expertise involved in a tender and execution of a civil engineering project, were incorporated. As denoted, the experts were all working for BAM Infra. Due to the (company)sensitive information in this research, there was, in consultation with BAM Infra, chosen to only consult experts working at BAM Infra.

Experts	Function within BAM Infra
Expert #1	Head of Tender Strategy
Expert #2	Head of Civil Engineering
Expert #3	Head of SE and GIS
Expert #4	Head of BIM Services
Expert #5	Head of Maritime Structures
Expert #6	Head of Technical Installations
Expert #7	Head of Business Development / Procurement manager

Table 8. Expertise of experts at validation meeting

8.1.2. Expert validation approach

The expert validation session was divided into three phases. Firstly, the researcher started with a presentation about the research conducted thus far. Moreover, the findings of the database analysis were presented, since these findings were already validated in an earlier session (presentation at TenderDesk). This validation session focussed on the findings from the case study. Therefore, these findings were not yet incorporated in the presentation for the experts.

The second phase involved an individual assignment for the experts. The experts were requested to fill in a form with several statements, corresponding to the results. This form can be found in the appendix on page 93. This approach, to start with this individual assignment, was explicitly chosen in order to let the experts not be influenced by the choices of their peer experts present at the meeting.

For each statement the experts had to indicate on this form whether (and to what degree) they did (dis)agree with the statement. An example of such a statement is 'Performance criteria do not provide the contractor with room for distinguishing' and 'process related measures are more likely to be effectively implemented than product related measures'. Statements were sometimes formulated as a direct finding of the case study, however sometimes they were formulated contrasting, to not directly promulgate the results of the study and thereby influence the experts.

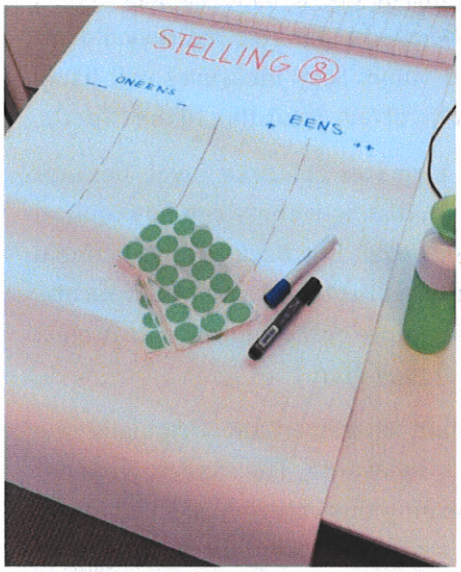


Figure 23. Poster with statement used for the expert validation session.

The third phase involved plenary discussions. For each statement a poster was composed by the researcher (see Figure 23. Poster with statement used for the expert validation session.

Figure 24). The experts were requested to place a dot on the poster corresponding to their answer given on the form for that particular statement. This would give an overview of the overall opinion on every statement.

Using these posters (one per statement), the statements were discussed one by one and the experts were requested to substantiate their choice. By doing so, relevant discussions evolved. The posters did thus serve as a documentation of the validation session as well as an overview to start discussions with and come up with substantiation (i.e. additional information). The results of this session are given in the subsequent section.

8.1.3. Expert validation results

This section will elaborate on the results of the expert meeting. The results of the validation will be discussed per topic and not per statement, since several statements did overlap in topics.

Product versus process measures

Product measures are more often being fulfilled than process measures. '*This is because we will be assessed on the product anyway*'. It is mentioned by the experts that this partly due to the people involved in the execution phase, which are mainly engineers. '*As engineers, we just start building and put the process aside*'. Furthermore, a product is more easily measurable by the client. It is more evident to check on fulfilment. In contrast, process measures are more easily lost out of sight. If the contractor not proactively steers on these process measures itself, they will get lost quickly. So, product measures are more easily aligned because it is 'in the genes' of all people involved.

This is however contrasting with the tender process, in which process measures often apply for being distinctive. The client values process measures in a tender bid.

Characteristics of measures

The experts did recognise the identified characteristics of measures. However, in their opinion, this set of characteristics may not necessarily be all-encompassing. Probably there are more characteristics to be found. The experts thus agree with the characteristics not being collectively exhausting as explained in section 7.1.2.

Concerning measures important for winning, the experts indicated the integral- and performance measures with a definite advantage to be of most importance for them. *Considering the important measures in terms of generating added value*, the opinion of the experts varied a lot. The integral measures, performance measures and technical measures were all considered to be of importance to the experts. The most points were given to the multi applicable criteria. Substantiation for the choice of this characteristic was based on the perspective of the expert: the contractors point of view. If a measure is conducted several times before, it is more likely to turn out beneficial. Once the experts look at the statements from the clients' perspective, they did not regard sexy measures as being of importance for the added value. Sexy measures will likely disrupt standard processes and are only of value for the client involved, according to the experts.

On performance criteria a bid cannot distinguish itself in terms of achieved level, because everyone will register at the highest level in their bid. However, distinctiveness can be acquired in the way (and the costs with) one achieves the prescribed level. But because the fictional discount is based on the score achieved, the means to achieve this will not yield a distinctive score. So, in the experts view proven measures of previous projects are more easily aligned than project specific (sexy) measures because of the non-standard nature of the latter.

Lastly, some feedback was given on the name of a certain characteristic. Originally the 'commercial off-the-shelf measures' were named 'opportunistic measures'. The experts were not satisfied with this name. According to them, measures concerning this category are just smart measures. *'If we do something sustainable already, why not writing it down and selling it as a sustainable solution?'* Opportunism would be the case if you design something of which you already know that it is difficult to achieve. On their advice, the term 'opportunism' has been exchanged for 'commercial-off-the-shelf measures'. This way the experts reiterate that successes of the past are more likely to be successfully implemented (i.e. aligned) in the execution phase and therefore have to be promoted more actively.

Reasons for non-fulfilment

The categorization of reasons for non-fulfilment has been assessed by the experts. The experts did think the categorization was encompassing the causes for non-fulfilment. Originally 'request for change' has been one of the main categories. However, based on the opinions of the experts this category was renamed in 'scope change', since a change can take place on the request of both the client and the contractor. In general, scope changes require excellent communication about the character of that change and are as such a likely cause for misalignment.

Strategic behaviour

First note: Strategic behaviour was explained to the experts as explicitly conducting adverse selection, moral hazard or wishful thinking. All involved experts agreed or fully agreed on the statement: *'BAM Infra is losing tenders due to the strategic behaviour of competitive tenderers'*. This was substantiated by the fact that the organisation lacks entrepreneurship on this regard. *'In the end were all engineers'.*

On the statement *'We behave strategically'* the experts mainly disagreed. They mentioned BAM Infra is not behaving strategically enough and it should behave more strategically in order to win more tenders. Apparently, the experts are willing to take more risks on alignment in order to win more tenders.

Tender team versus execution team

The intention is that someone of the tender phase is also involved in the project execution and realisation phase as well. However, due to the time gap between awarding and implementations (varying from several weeks to months) this is not often feasible due to planning issues. Any improvement in that respect could enhance the alignment between tender and practice.

The dialogue

Also the dialogue is being discussed. The experts conclude that any dialogue is better than no dialogue but the current way in which it is being conducted is far from optimal. Currently, the dialogue is more a game, for which parties even go in training. Whereas the original goal is to gain more understanding of each other's wishes and needs. This finding suggests that the experts are implicitly aware of the importance of taking into account the client's wishes in an externally focused manner, and therefore value elements as the dialogue in the BPQR tender procedure.

8.2. DISCUSSION ON RESULTS

This section involves a discussion on the findings. The findings of the study are interpreted and, if relevant, related to what in literature was already documented about the research topic.

Product measures

The study did find that the vast majority of decisive product measures is effectively being implemented. Presumably this is because products can be well defined and are easily measured relative to the original specification. Also, BAM Infra operates in a technical environment. Engineers are more used to handle with – and deliver upon – products rather than 'vague' processes. Also, the expert validation mentioned this as an explanation for the focus being on product rather than process measures. Given this natural focus on product measures, the changes of implementation in practice are significant.

Temporary and permanent measures

It was found that temporary measures are less often implemented than permanent measures. This might be because temporary measures are often aligned with process measures (which were also frequently found to be not fulfilled). Another explanation is that apparently – and correctly – 'temporary' is associated with something that passes by. Not delivering on them will eventually also pass by. In the end the final product (tunnel, bridge, building, etc.) will prevail and the temporary way to achieve it will be forgotten. Perhaps this image sticks to the designation 'temporary'. So, here the opposite of the previous paragraph is found: temporary measures lack a specific assessment moment (in contrast to product measures). This results in less focus and therefore a higher probability that misalignment occurs.

Performance measures; the ideal measures?

Performance measures (anticipating on performance criteria) were found to be decisive for distinction in a tender and were found to be implemented and effective in all the analysed cases. On the one hand this would be the perfect type of measure for both the client and the contractor to achieve alignment, since it contributes to winning and to added value. Yet, the interviews, as well as the expert valuation, point out that there is a lack of room for distinction on performance criteria. Due to competitive reasons it is clear in advance that the tenderers should subscribe on the highest level in order to be able to win. This sounds like a breeding ground for strategic

behaviour: all tenderers subscribe on the highest level. Adverse selection or strategic misrepresentation would be expected on this regard.

However, the conducted case study points out the performance measures all turn out to be implemented and effective as well. Apparently, prescribing a criterion as a performance criterion will ensure measures that have the full focus of the contractor involved and leads to guaranteed effectiveness and alignment of the measure, at least in the four cases studied here.

The question that arises is: Has strategic behaviour in the tender phase in a way stimulated the contractors to still fulfil their ambitious performance promises? Or have the strict boundaries, prescribed by the client, been (too) tight resulting in all contractors bidding the highest level and the awarded contractor always delivering on its promise?

In the latter situation the performance criteria are actually a requirement on which the contractors cannot compete. No freedom to distinguish themselves is left anymore. Yet this was exactly the intention of BPQR Tendering. Still, this situation is advantageous for the client. Since multiple tenders can offer (and apparently) achieve the highest level, contract sum is the criterion which will be determining in the end (assuming there will be only performance criteria).

Another possibility might be that strategic behaviour (adverse selection or strategic misrepresentation), was indeed apparent in the tender phase but due to implemented 'cures' for misalignment, such as fines and verification & validation systems, (see section 3.5), the contractor eventually did manage to implement the measure and achieve the desired effect.

Again, this situation is advantageous for the client. The implementation of procedures that aim to align tender and practice put presumably such a pressure on the contractor that it managed to fulfil the promise and as a result surpassed itself. The aim of what was intended with the implementation of BPQR tendering is by this achieved; challenging contractors to come up with innovative solutions. It could however be questioned whether this behaviour of the contractor in the tender phase was actually strategic behaviour.

Anyway, performance measures offer the best chance of successful alignment. So, although the underlying reasons might be of multiple character, more frequent use of them could lead to better alignment in general.

Strategic behaviour; or challenges set?

The interviews did point out that, according to the clients, changes are opportunities for the contractor not to deliver on promises. Without changes the work is straight forward. But the moment changes occur, the contractor can exploit this as a reason for not conducting a certain measure. It might be the case that from the identified causes for non-fulfilment, changes of circumstances are stimulating moral hazard.

Section 3.4.3 indicated strategic behaviour of the client being the cause of misalignment. This research pointed out several reasons for misalignment, of which strategic behaviour is indeed one category. The finding of this study however is that strategic behaviour does not dominate. All three defined categories of strategic behaviour were sporadically present in the cases.

Possibly this 'main cause of non-fulfilment' (i.e. strategic behaviour) represents mainly a feeling of clients, rather than being based on facts. The principle-agent theory as described in section 3.4.2 underscores the principle (client) having an information disadvantage over the agent

(contractor). The client is mostly aware of the fact the contractor is (most often) the most experienced party with regard to construction works. Unfulfilled promises might be perceived by the client as strategic behaviour, yet other causes might be underneath. As section 1.2.1 described, the construction industry has a fraudulent history. It might be that clients still do not fully believe in the trustworthiness of contractors and, due to this bias, point at strategic behaviour as a cause for non-fulfilment of promises.

Furthermore, what was designated as 'strategic behaviour' could actually be different in interpretations. Possibly both parties interpreted the promises in different ways. Since the BPQR process is concerning quality components, promises in this regard are susceptible to interpretation differences. Maylor (2010, p. 202) concludes about quality: *'the caveat with this discussion of definition is that no matter how far we explore this area, there will always remain an element of quality that is elusive and as individual as we are'.*

So, the observation here that quality is less easily defined unambiguously, can also contribute to more misalignment. That would be an adverse by-effect of BPQR tenders, since they were developed to increase more high-value project outcome and to tamper strategic behaviour

Commercial-off-the-shelf measures ; opportunistic or necessary?

Multiple clients did express dis-satisfaction with 'commercial-off-the-shelf' measures prescribed in tender bids. This corresponds with the case findings of the case study; no commercial-off-the-shelf measures were part of the set of most determining measures for the distinctive character of the bids. The clients state commercial-off-the-shelf measures do not add value, since those measures prescribed would also have been conducted if no qualitative part was involved in the tender. For example [redacted] of the [redacted] case was denoted by the client as 'a general market development' and therefore of no added value.

BPQR tendering was implemented to stimulate more high-value project outcomes. This is indeed achieved by project-related innovations. But would common innovative solutions not either contribute to high value project outcomes?

From an alignment point of view off-the-shelf measures are quite likely to be implemented during execution because the contractor is familiar with them. Yet, the client perceives them not as a clever solution but rather as a trick gaining additional fictional discount for things that would be implemented anyway. So, this makes off-the-shelf measures quite ambiguous: in itself they form a logical thing to do – enhancing the chances of alignment – but they also can damage the trustworthiness of the contractor in the eyes of the client.

A 'real' dialogue?

In order to fully improve the understanding between the client and contractor, some tender processes incorporate a 'dialogue'. The tender process for [redacted] and [redacted] involved a competitive dialogue procedure (see section 1.2.2 for a description) in which each tenderer separately was offered the possibility to have a conversation (the dialogue) with the client. The interviews as well as the expert's validation meeting pointed out some issues in this respect. Because of the importance of a 'fair level of playing field' in the tender, there is never full openness during the dialogue. A contracting authority will always carefully consider the impact of its answers. In order to overcome interpretational differences however, a 'real dialogue' would be very valuable.

Again, a dilemma is found here: the dialogue could improve the (background) information concerning quality measures in the tender, and hence lead to better alignment. However, it its current form the dialogue mainly demands additional efforts (and expenditures) from both the contractor as well as the client, which only increases the competitional atmosphere in the tender process without leading to more externally focused value.

Enhanced or new insights

The research also found that new or enhanced insights are possible reasons for non-fulfilment of promises. In this respect, the situation is considered to remain the same but only the insight has been changed / enhanced. In other words, a lack of knowledge in the tender phase exists about the actual situation. This can be due to several aspects. First of all, the limited amount of time available in the tender phase might be the cause: the actual situation could not have been fully assessed. It can also be the case that the required information was not available at the time of the tender phase. Another explanation might be insufficient knowledge of the people involved in the tender phase. This might be either at the contractor's side or at the client's side. Lastly, it could be that in the dialogue the wishes of the client were not clear enough. This makes it difficult for the contractor to anticipate on the wishes of the client. It also relates to the issue concerning the dialogue, as discussed before.

In case of new insights the measure does have the ability to provide added value. However, this ability is not perceived or valued by the people involved in the execution phase of the project. The basis of this problem is often related to the issue of both the client as well as the contractor being a 'multiple-headed-monster' or 'Hydra'. By this is meant that there is another team involved in the project execution than the team involved in the tender phase. This often results in different perspectives on what is valuable and what is not.

In terms of alignment: new insights occur based on new or additional information, which – in principle – can only makes measures better of more appropriate. Yet, the chances that lie here cannot come to fruition because of two reasons: either the insight is not recognised and awarded as such or the client or contractor is not willing to deviate from the original contract/promise. In both cases chances of better alignment might be missed here.

Clients & Contractors; multi-headed monsters

The multi-headed monster effect was also identified by the researcher as an important issue. Since the researcher had the desire to interview people responsible for the implementation of BPQR promises, this played a role in the selection of the interviewees.

The outcome often turned out not one person to be responsible. On the one hand this is logical, since the BPQR tender promises frequently encompass various fields of expertise. However, on the other hand lack of one executive in charge on either side often implied no one kept a sharp eye on those promises.

The interviewees from the contractors side of three out of four cases excused themselves at the start of the interview since 'they might not been fully aware of the tender promises' because a) it was such a long time ago the tender bid had been written or b) the interviewee had not been involved in the tender phase. Not being aware of tender promises obviously turns out to be breeding ground for non-fulfilment of promises due to other insights (cause of category B as explained in section 7.2.2).

The same does account for the client, although this multi-headedness is partly due to the additional responsibility clients have. As described in section 1.5.2 the client, being a public authority, is not only involved in the client-contractor relation but also has a client-stakeholder relationship. This implies that clients strive not only for value, but for public value as well. Often there appear to be new or enhanced insights regarding the wishes and needs of stakeholders, which results in the measure being deleted or adjusted (as was the case for measures 2.7, 2.8, 2.9, 4.1, 4.11).

The above observation is peculiar. Chapter 3 pointed out alignment is being perceived as of undisputed importance, and yet it is frequently observed that the actual measures that are to be aligned, are not known to the responsible persons in charge. Apparently, also a list of distinguishing quality measures (such as the quadrants that are composed in this research for the four case studies) is not available to key players in the execution phase. This makes alignment unnecessary difficult to achieve. Clearly there is room for improvement here. For instance, by appointing an account manager that is focussed on such a (check)list and on the interplay between client with other stakeholders.

Role of the contract

From the interviews, as well as the expert validation, it became clear that criteria are sometimes being exploited by the client as alternative mitigating measures given a certain choice of contract type. This is for example seen with respect to maintenance. In a tender for project contracts not encompassing a (long time) maintenance period, sometimes criteria are included to compensate for the type of contract. So, measures are included that are beneficial for the client in the operational phase of a finished work, but of which profit for the contractor during the duration of the contract is absent.

An example of this is seen at the [redacted] case. The tender involved the criterion concerning 'Minimization of Life Cycle Costs'. In this regard the contractor should come up with measures to minimize maintenance cost (e.g. use long lasting materials). However, no financial benefit is provided to the contractor in terms of a long-term maintenance period as part of the contract.

The experts as well as the interviewee for the [redacted] case, consider this phenomenon to be unfair towards contractors. This feeling of unfairness might again stimulate strategic behaviour. The original choice to not extent the contract with a long-term maintenance contract (due to a lack of trust in the contractor?) can then result in what was intended to overcome with it: an unhealthy situation as a breeding ground for strategic behaviour.

The finding here is that measures must make sense for the people involved during the execution phase. If not, misalignment is imminent. More information about the background of certain measures (for instance: in cases where a total-cost-of-ownership trade-off led to a specific measure to be demanded) might help to improve of acceptance of it.

A look at client satisfaction

Although client satisfaction has not been investigated explicitly, the researcher was able to interpret the satisfaction of the client about a measure, taking into consideration the responses of the interviewees.

Table 9 shows the quadrants 1-4 and the interpreted client satisfaction*. The numbers corresponding to measures in case studies have been marked green when interpreted as the

client being satisfied about and marked red if the client not being satisfied. For the measures in blue the client's satisfaction could not be interpreted (it had either not become clear from the interviews or no client interview had been conducted [redacted] case)).

(*A critical note must however be placed that satisfaction about a certain measure could be dependent of multiple factors, as for example the satisfaction about the overall project performance. The client of the [redacted] case was in general very unsatisfied. Controversially, the client of the [redacted] case was very satisfied about the project performance. This might have been influenced their view on certain measures.)

Remember Maister's law, stating satisfaction = expectation – perception (section 1.5.2). Since expectations of projects performance are set when submitting a tender bid, one would think that clients are satisfied as long as the prescribed measure is implemented and achieves its intended result. Looking into Table 9 it turns out that this is, at least for the four cases investigate, true.

Controversially, the non-fulfilment of a promise turns out not to be directly related to the satisfaction of the client. Take for example measure quadrant 2 (not implemented but effective) and quadrant 1 (not implemented and not effective) contain measures on which the client appears to be satisfied.

Due to confidentiality reasons, this table is not made publicly available.

Table 9. Quadrant with interpreted client satisfaction

This finding is striking since the proposed cures (as described in section 3.5) were mainly focussing on optimising alignment between tender and practice. Apparently, clients are, at least in the tender phase, of the opinion they will be only satisfied if tender and practice are aligned, but it appears that eventually this is not always the case. It appears misalignment can lead to added value as well.

So, does the end justify the means? The previous paragraphs showed that client satisfaction is not directly related to fulfilment of promises, i.e.: not directly related to alignment. It became clear that in quadrant 2 there were some non-implemented measures, but still achieving the intended effect.

The question that arises from the discussion above is whether awarding takes place on the intended effect, on the means, or on both? In case of the first (awarding on intended effect) it would clarify why the client is satisfied about at least more than half of the measures in quadrant 2 (not implemented but effect achieved). Probably 'the end justifies the means' (Dutch: Het doel heiligt de middelen) applies for those measures.

However, the contrary is also seen; the client being satisfied about an implemented measure that is not achieving the intended effect. Take for example measure 3.5 [redacted]

This part of the discussion learns that a mere focus on alignment alone may not be the holy grail. Apparently, it is also about the client's perception of the intention of the contractor. If such an atmosphere is achieved alignment between client and contractor (in the sense of common views) can be a fact, even if alignment between tender and practice is not the case. Combining fulfilment of promises with client satisfaction would be an interesting topic for further research.

Alignment; no cure for contractual discussions

From section 1.6 it became clear that misalignment between tender and practice results in many discussions between the client and contractor. It needs however to be denoted that alignment does not by definition take these discussions away. Take for example measure 1.1 [redacted] This measure is implemented and achieving the intended result. But still there are many discussions concerning who is accountable for additional costs of pollution, found on the location of [redacted] There might even be more discussions than without implementation of this measure.

This observation amplifies the finding at the end of the previous paragraph: there is more to it than just achieving the alignment between tender and practice of specific measures. Presumably here also the aspect of granting comes into play between the parties involved.

Promises; an organisational currency

The focus on alignment by contractual obligations makes it tempting to use promises as 'an organisational currency', as was also mentioned before by construction lawyer Haest (section 3.4). In some cases (for example due to enhanced insights) implementation of the measure turns out to be useless, since implementing does not contribute to the intended effect anymore. Still, the client has the contractual 'right' on implementation of this measure. Since the client also knows implementation is useless, it can strategically use the non-implemented measures as currency in exchange for additional work.

This might be the case for measures 1.2 and 1.3. The contractor declares (interview 1.1) that they are held accountable for non-implementing the measures although implementation is useless. Moreover, no client interview was possible due to 'the current discussions about the interpretation of various contract requirements'.

Alignment between tender and practice; a sensitive topic

The rejection of the project director of the [redacted] case to interview the client is one sign the topic of this research is a sensitive subject. There were however many more indicators. Also the client interviews of the [redacted] and the [redacted] case were hard to establish. Finally, it was managed to conduct those interviews but only after the interview questions had been carefully perused by the stakeholder- or project manager from the contractor's side. Moreover, publishing of the interviews was out of the question and the interviews should only be available for the researcher and (temporarily) for the graduation committee concerned.

Although current movements such as the Marktvisie encourage to cooperate on the basis of mutual trust (see section 3.5); the difficulty surrounding the conducting interviews suggest the contractor-client relation is still subject to a lot of (mutual) distrust.

8.3. MANAGERIAL IMPLICATIONS

In section 1.4, the importance of distinctiveness on quality in BPQR tenders has been explained. A good quality aspect generates added value for the client. This requires though (as long as the project is not subject to context and scope changes) that the contractor can and will deliver on this quality aspects in the construction phase. This section provides areas of improvement that the contractor as well as the client can benefit from, once they are implemented in the modus operandi.

8.3.1. Managerial implications for the contractor

The managerial implications related to the contractor are being summarized in this section. Since the data are retrieved from one specific contractor, BAM Infra, the managerial implications are related to them. However, it is likely that these implications are generic for any contractor involved in BPQR tender procedures. The first set of managerial implications is therefore focussing on the contractor in general. The second set are managerial implications that specifically apply to BAM Infra.

- If possible, describe a measure in terms of a product to be delivered (and not as a process). This will greatly enhance the chance this measure will be implemented and effective. If not possible: formulate the process measure SMART in order to align the perception whether the process measure was implemented well.
- To designate a measure as 'temporary' does not help to achieve the intended (positive) effect of that measure.
- Put more effort in selecting the same employees for the execution phase that were also involved in the tender phase (linking pin principle), to maximise the amount of background knowledge of the origins of measures.
- Ensure implementation of sexy measures. Non-fulfilment causes reputational damages to the client and thus hampers the client-contractor relationship.

- Describe what conditions come with a promise. As a result, the consequences of a changing scope or context on the implementation or effectiveness of the measure are clear to both parties in advance. Critical note: it should be investigated to what extent this is legally allowed.
- Consider the use of an account manager to keep a clear eye on the current perception of the client concerning the alignment and the client's alignment with its stakeholders (which may influence the perception of the client).

Recommendations to BAM Infra specifically

- Invest more in data analysis and subsequently conduct data driven decision making. This research points out that in a considerable short amount of time, many data can be gathered, analysed and interpreted. It is a big opportunity for BAM to further develop itself on this regard.
- Combining the data from Tender Desk with the data of Operation Companies such as the data of the BAM Infra TS. This in order to complete datasets and overcome double work.
- Always plan an evaluation meeting to discuss the fulfilment of promises with the client. The [redacted] case points out that it can lead to much unexpected information about client satisfaction. Only when discussing this during the project, improvements can be made. This is a lesson that should also be learned at the [redacted] project.
- Make project directors aware of the importance to share their lessons learned with the tender strategy department of BAM Infra
- Make project directors aware of the importance to be fully knowledgeable about the measures prescribed in the tender documents.
- Always insist that a written assessment of the tender bid is made and is available as intermediate milestone between tender and execution phase. If non-existent (f.e. at the [redacted] case), make sure that minutes of a meeting (as an alternative) in which contractor and client assess the tender bid are approved by both parties and available for the project team in the execution phase.
- Take the initiative for a meeting, after awarding, between contractor and client to discuss which measure should definitely be implemented and which measures should be deleted. By this, the use of promises as an organisational currency in later project phases will precluded.
- Be careful when using off-the-shelf-measures in tender and execution phase. The perception of them it might vary greatly. Contractor: logical thing to do; client: gaining additional fictional discount trick.

8.3.2. Managerial implications for the client

This section summarizes the managerial implications with regard to the client.

- Make sure the project scope and context are clear at the start, in order to overcome non-fulfilment of tender promises due to a change of circumstances (category A). If that is impossible; clarify at the start of the tender process what scope or context is still unclear in order that the tenderers can anticipate on this.
- If the client really wants a measure to be executed and successful: list it in the performance criteria. this will ensure the full focus of the contractor involved and makes it more likely effective measures are being prescribed that will be implemented.

- Have a change management plan. Strategic behaviour seems to be related with changes of circumstances in the project. If change management is properly organised, it is clearer what the effects of changes will be.
- Carefully reconsider lead times of tenders with the goal of it in mind; getting full understanding or drawing an overall perspective? Then designate sufficient amount of time for the tender in order to overcome 'enhanced insights'.
- Make a BPQR verification mandatory, just as all requirements are being validated.
- Above anything: maintain the dialogue. Mutually shared information and a common understanding of it is the fruitful soil on which trust flourishes. If this can be achieved, parties are willing to grant each other benefits (e.g. effect achieved when no measure was implemented).

8.4. LIMITATIONS OF THE RESEARCH

The research methodology has been critically assessed. Research phase A, the BAM infra tender results, and phase B, the case study, have been distinguished.

8.4.1. Limitations of research into the tender results

The research methodology has been critically assessed. Research phase A, the BAM infra tender results, and phase B, the case study, have been distinguished.

8.4.1. Limitations of research into the tender results

Since the tender database was incomplete and a limited amount of time available for completing it, decided was to restrict the **sample size** of the tenders to the last two years. In order to have a representative set, all data for those last two years have been supplemented and complemented. Inclusion of more tenders (i.e. years) would have given more substance to the generalizability of the results.

Regarding the analysis of the tender results, the **sample size differs per analysis** and figure. This due to the fact that not all clients share the same information regarding the scores (of competitors) with the contractors after awarding. This limitation is not to overcome when conducting a research from the perspective of a contractor. Since clients possess all the information of all submitted bids, a research conducted for a specific client can only ensure completeness of data.

Besides **differentiation in tender characteristics**, also the process of coming to a bid differs greatly between tenders. There are different ways of working, processes and different people who conduct the tender. This always need to be kept in mind before generalisation takes place.

8.4.2. Limitations of the case study research

The **sample size** of the case study is limited to four cases. Additional cases would create more certainty about the generalizability of the results. Moreover, in one case [redacted] only the contractors' perspective has been analysed. This limits the credibility of the results regarding this case.

The **scope** of the case study has been demarcated to the analysis of 'most distinctive' elements. Since not all measures of the tender bids are being discussed no conclusions regarding the overall fulfilment of measures can be drawn.

In two cases, the clients' interview questions have been **censored** by the stakeholder managers of BAM for the specific project. To be specific: at two client interviews some topics had to be avoided. Although probably valuable information could have been gathered, especially from those topics, the request from BAM Infra has been respected. Since it only concerned a limited amount of topics for only two interviews, the impact on the overall results of this research will be limited.

The research will probably contain a so called '**social desirability bias**'. This bias affects the information that participants disclose in an interview. This is especially prevailing, when talking about a (company-)sensitive topics such as the topic of this research.

The categorization of the measures as well as the categorization of reasons for non-fulfilment can contain an **interpretation bias**. This limitation has been minimized by validating those categorisations by the employees of the tender strategy department and by the experts involved in the validation meeting.

Lastly, due to the (company-)sensitive information that is involved and obtained in this research, it is decided to only validate the findings of the research with experts working at BAM Group. The experts all worked at the same company and all had a **similar, contractors', perspective**. The experts did however all have different fields of expertise, in order to have a representative group of sectors for the construction sector in that regard.

Strategic behaviour is difficult to define. The variety in strategic behaviour is great and there is no obvious order available. On the one hand this is not surprising, after all, strategic behaviour is by its nature surprising and unpredictable (ten Heuvelhof, 2016). A complete and logical classification of all possible forms of strategic behaviour would be at odds with his characteristic.

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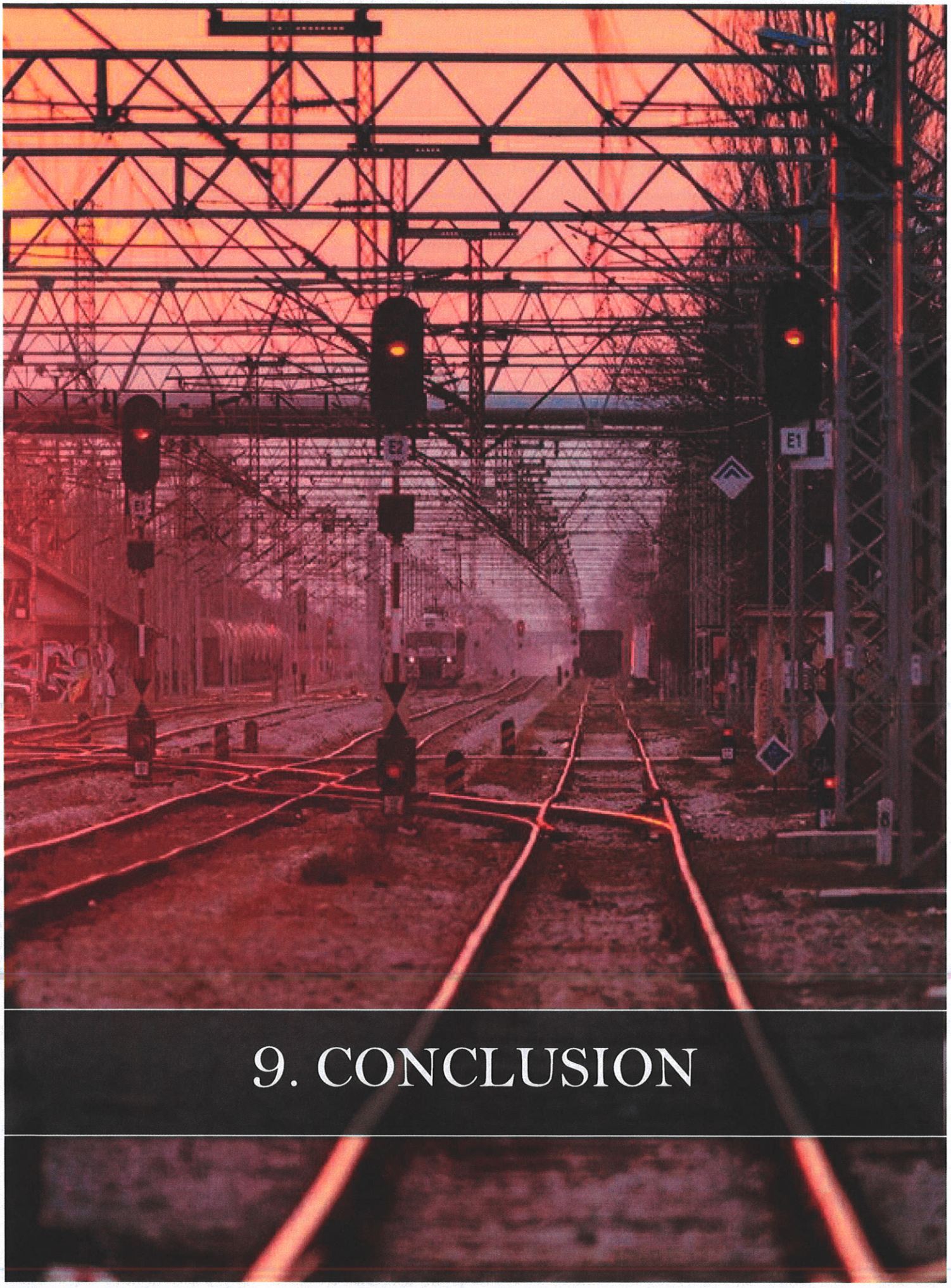

9. CONCLUSION

9. CONCLUSION

This chapter involves the conclusion. Section 9.1 gives a short recap of the research design. In section 9.2 each of the sub questions will be answered separately. Thereafter section 9.3 will draw the final conclusion and thereby answer the main research question of this research. Recommendations for further research are given in section 9.4.

9.1. RECAP OF RESEARCH DESIGN

This section answers the research question and corresponding sub-questions in order to fill the current research gap. To recapitulate; the following main research question had been formulated:

RQ What underlying mechanisms cause misalignment between distinctive BPQR tender elements and the actual added value in project execution?

The main research question was supported by the following sub questions:

SQ1 In what type of tenders is BAM Infra able to distinguish itself?

SQ2 What (type of) measures are determining for being distinct in these tenders bids?

SQ3 How do these determining measures turn out during or after project execution?

SQ4 What are the causes for (non-)fulfilment of these measures?

The objective of this research was to determine to what extent distinctive tender elements are aligned with added value in or after project execution for projects procured with the Best Price Quality Ratio (BPQR) Tender. Subsequently the goal was to define reasons for the eventual (mis)alignment and to describe what underlying mechanisms in the BPQR tender process are influencing this eventual (mis)alignment.

A study into the alignment between tender and practice is relevant due to several reasons.

First of all, an area of tension exists in the current BPQR tender process. Due to the competitive environment, contractors are tempted to submit overly-ambitions bids since this will increase their chance of winning the tender. These (over)optimistic bids are however less likely to turn out beneficial (i.e. generate the added value promised).

Secondly, media allegedly refers to strategic behaviour of the contractor as cause of this misalignment. They state that 'false promises' are at the root of misalignment between tender and practice. However, no scientific research has been performed on the causes of eventual misalignment.

Lastly, contractors, including the company facilitating this research, BAM Infra, are clearly interested in optimising their chances to win and therefore act on the cutting edge in the tendering phase. In the meantime, they also realise the importance of having a satisfied client. So, the challenge of aligning between tender and practice – the topic of this research – has their utmost interest.

9.2. ANSWERING THE SUB QUESTIONS

In this section, each of the sub questions will be answered separately.

SQ1 In what type of tenders is BAM Infra able to distinguish itself?

[redacted]

This figure is not publicly available due to confidentiality reasons

[redacted]

In the subsequent case study quality aspects in the tenders are the focal point of the research. It should be mentioned, though, that quality or its value can be a rather vague concept. In literature, a common notion or definition of it lacks. Nevertheless, in tendering frequently a distinction is made between internally and externally focussed value. The first restricts itself to the conformity with specifications and demands (in the tender), whereas the latter encompasses the broader sense of expectations of the client related to a specific quality aspect.

[redacted]

This figure is not publicly available
due to confidentiality reasons

[redacted] The second phase of the analysis therefore explores the impact of quality aspects of bids, both in the tendering as well as in the execution phase of a project. This second phase involves a case study on four strategically selected projects regarding the distinctive character of the tender bid for each project. Subsequently, the study assesses how these elements turn out in practice, by conducting interviews with both the client and the contractor.

SQ2 What (type of) measures are determining for being distinct in these tender bids?

For each case study the quality aspects (measures) most determining for the distinctive character of the bid are selected and discussed in order to find answers on sub questions SQ2, SQ3 and SQ4 of this research and to gain more insight in the alignment between qualitatively distinctive elements in the tender bid with the actual added value in practice.

The first finding is that measures can be divided over four **quadrants**:

1. Measure not implemented; effect not achieved (Q1)
2. Measure not implemented; effect nonetheless achieved (Q2)
3. Measure implemented; effect not achieved (Q3)
4. Measure implemented; effect achieved (Q4)

In other words: only measures in the fourth quadrant are examples of alignment, since there both the implementation and the effect are aligned with the original promise as formulated in the bid.

Subsequently, the total set of measures determining the distinctive character of the bid have been analysed. Resulting from this analysis, the researcher composed **a categorization and a list of characteristics** that measures can have. The **categorization** is both Mutually Exclusive and Collectively Exhausting (MECE) and it involves a distinction between process vs. product measures and temporary vs. permanent measures. Below a visualisation of this categorization:

Furthermore, the researcher did formulate **seven characteristics**. These characteristics are not MECE, which implies one measure can have multiple characteristics and the list might not necessarily be limited to the seven characteristics listed below.

- Integral measures
- Performance measures
- Technical specification
- Sexy measures
- Beads (Dutch: Spiegels en kraaltjes)
- Commercial-off-the-shelf measures
- Multi-applicable measures

In those tender bids where BAM Infra has been distinctive, various measures were responsible for the distinctive character of the bid. The **commonalities** of those measures have been identified by relating the above described quadrants to the categorization and characteristics of measures. Differences in implementation and effectiveness are seen at specific type of measures. The following results does thus not only relate to SQ2 but also cover SQ3:

SQ3 How do these determining measures turn out during or after project execution?

For being distinctive in a tender, both process and product measures are of equal importance. Indeed, they are equally involved in winning tender bids. The same holds for temporary and permanent measures. No clear discrimination in that respect was found either.

It was found however that product measures relate best to 'measure implemented and effect achieved': Although their abundance in the set of most distinctive measures is in roughly equal, product measures are more frequently implemented and more often achieve the intended effect than process measures. So, most of the **measures in quadrant four are product measures**. Only a couple of process measures are found there.

Measures that are not implemented and (yet) the effect is achieved: are always process measures. However, most measures involved concerned situations in which the added value was absent. Presumably, the client did not press for the concerned measure to be conducted by the contractor (because the intended effect was achieved anyway).

Besides, temporary measures are most often aligned with process measures and, hence, score for the vast majority similar with these process measures (measures not implemented prevail). **Temporary measures are less often implemented than permanent ones.**

No performance criteria are involved with measures that have not been implemented. This makes sense since performance criteria are often important criteria for the client and fall within the primary focus of the contractor.

Commercial-of-the-shelf measures are favourite at the contractor's side since they are easy to implement and are proven concepts. Yet, the clients state that commercial-off-the-shelf measures do not add value, since those measures prescribed would also have been conducted if no qualitative part was involved in the tender.

Sexy measures only achieve their effect once implemented. If not implemented, the research points out this comes with reputational damage. This also relates to responsibility public

authorities have: generating public value. If public expenditures do not generate the value expected; public authorities will encounter social discontent.

Thereafter, the causes for misalignment (non-fulfilment of the promises) have been identified and analysed on **commonalities**. This provided input for answering SQ4:

SQ4 What are the causes for non-fulfilment of these measures?

Literature refers to, among other causes, strategic behaviour of contractors (adverse selection, moral hazard and strategic misrepresentation) as to be the cause of misalignment between tender and practice. The researcher did however identify **four main causes for misalignment**: Change of situation (A), enhanced / new insights (B), strategic behaviour (C) and bad luck (D).

The first category (A), **a change of situation**, encompasses either scope changes, context changes and force majeures. It appears in this study that external influences (circumstances) can either make a proposed measure obsolete or generate the added value without an offered measure to be put in practice.

Category B encloses all causes for misalignment concerning **new and/or enhanced insights**. New or enhanced information can point out that the measure is not generating the added value initially expected. New perspectives evolving in the execution phase can cause the effectiveness of the measure not being noticed. For instance, due to other people being involved in the tender than in the project execution.

The third category (C) encloses causes for misalignment due to **strategic behaviour** (i.e. adverse selection, moral hazard and strategic misrepresentation). In this study strategic behaviour is not to connected to effective measures. However, this does not mean that no opportunistic behaviour has been conducted, since strategic behaviour is more likely to be identified in conjunction with negative project outcomes. Take for example strategic misrepresentation: this probably remains unnoticed until the outcome is not achieved. If this outcome however for some reason is achieved, it is unlikely the strategic behaviour will be revealed, since no one is experiencing the need to investigate it. This study turned out that strategic behaviour was present, although the experts of BAM Infra played down the contribution of strategic behaviour in their projects. This strategic behaviour is however not significantly apparent relative to the other reasons for misalignment.

The fourth category (D) is **bad luck** and involves misalignment without a specific reason. Things just did not work out as planned.

In conclusion: **none of the main causes for non-fulfilment dominates.** The causes vary over the four identified categorizations of change of situation, new or enhanced insights, strategic behaviour and bad luck.

9.3. FINAL CONCLUSION

So, answering the main question:

RQ What underlying mechanisms cause misalignment between distinctive BPQR tender elements and the actual added value in project execution?

The transaction between client and contract can be explained according to a value cost model in which the benefit for the contractor is a financial profit and for the client it is the generated value. In practice **distrust between client and contractor is a frequent phenomenon**. The client seems to be afraid that the contractor wants to maximise profit at the expense of the value for the client, for instance by not fulfilling promises made in the tender phase. Non fulfilment of promises is referred to in literature as 'undue profit for the winner' and potentially 'disadvantageous for the client'.

The BPQR tender process plays a major role in this. Although competition is believed to enhance a fair quality price ratio. BPQR tendering safeguards the rights of the bidders in the tender phase only. **Safeguarding a fair competition principle** in the execution phase is something that **is not yet the case**. Yet, if during execution the delivered value of a measure does not coincide with the promised value (=misalignment) the result is perceived as both disadvantageous for the client, as well as a competitive disadvantage for the losing bidders.

As a result, the **current focus is on safeguarding alignment**. This explains initiatives like SMART formulation of measures and the introduction of fines for non-fulfilment. Even new 'out of the box' ideas emerge, such as involving the losing bidders of the tender in auditing the execution of the project. All these approaches aim at maximizing alignment, assuming misalignment would (always) be disadvantageous for the client.

Product measures turned out to be far more often implemented and effective than process measures. Also, **performance measures seem to be the perfect measures** to achieve alignment. Nevertheless, this type of measures is so vital that any room for distinguishing on this type of measures is questionable. But since the promised effect is very likely to be achieved by these measures, criteria of high importance of the clients could best be formulated as a performance measure.

Furthermore, this research pointed out several causes for misalignment, of which strategic behaviour is one category. Strategic behaviour does however not dominate. It was however found that presumably, **changes of circumstances are stimulating strategic behaviour** of contractors.

Issues underlying causes of misalignment are amongst others: multi-headedness of both the client as well as the contractor; lack of full-openness (of both parties) during the competitive dialogue; and the use of inappropriate criteria to mitigate future maintenance costs in a construction contract. This results in misunderstanding, or a lack of (correct) information. **Communication is the key** to avoid this. In this respect it was learned that higher similarity in team composition (i.e. linking pin principle) between tendering and execution phase, can avoid loss of background information on important measures in a project.

The research did also reveal that **alignment is no holy grail**. The focus on alignment not always generates value. Of the identified causes for misalignment, several cases are found in which fulfilment of the measure appeared to be disadvantageous for the client (!). This is especially the case when new insights occur and unforeseen added value appears. Yet, this study reveals that in those cases the specific measure involved often is not implemented. So, **client satisfaction can also be achieved in case of misalignment.** Suggesting that the communication between the contractor and client did generate its beneficiary effect.

Although important, **alignment is no cure for contractual discussions**. A rigid focus on alignment may even have a negative impact on the provided added value for the client (and thus a negative impact on public value). Discussions whether measures are righteously implemented or not, consume time. And time – delay – means money. Given the fact that most clients are public bodies, this would involve loss of taxpayer's money. In addition, rigid focus on alignment will put strain on the element of trust in the relationship between contractor and client, bringing the positive outcome of other future discussions in jeopardy.

This reflection implicitly emphasises that a more externally focused value approach may have its advantages. Remember, Nicholas & Steyn (2017) also state that a project is only of high-value in case it meets the requirements and satisfies the needs and expectations of all key-stakeholders (= external focus). Initiatives such as mixed client-contractor construction teams (Dutch: Bouw teams), that have an entirely different approach of project definition before the tendering phase, anticipate on that. In other words: currently **the aim is to maximise internally focused value** (=alignment of tender and practice) but in the end the evolving relevant issues all seem to indicate more **externally focused value generating approaches in the future.**

9.4. RECOMMENDATIONS

With respect to further, future, research the following contemplations can be made.

- This study focusses on distinctiveness of measures and whether the promised added quality values is delivered upon. It would be of interest to study measures that did not make the winning bid distinctive and yet resulted in added value. Identification of those could lead to a reassessment of the characteristic that makes a measure distinctive.

- A study involving multiple contractors could shed some more light on strategic behaviour. Contractors are more willing to denote that kind of behaviour by competitors than by themselves. Audi alteram partem could identify more of this behaviour and the effect is has on both the tender ranking as well as on the added value.

- The concept of added value has been interpreted here in a narrow sense between contractor and client. The broader approach of the concept of 'value' could clarify the question whether added value for a client or contractor equals added value for society as a whole as well. Measures that appear beneficial in a narrow sense might not be so valuable after all for society as a whole.

- In general, a competitive dialogue tender involves a more intense interplay between client and contractor during the composition of the tender bid. It might be of interest to examine whether the increase in communication between the parties in both the tender (f.e. by means of 'the dialogue') as the execution phase leads to better alignment of promised measures versus realized added value.

- BPQR tendering is very focussed on being distinct and promising a certain value. But within contract management this is still of less importance. The added value in the implementation

is therefore also influenced by the method of contract management. A similar study on contract management might be of interest.

Managerial recommendations for the client and contractor had been elaborated on in the discussion. The main recommendations for the contractor involved:

- Describe measures, if possible, as permanent product measures.
- Ensure a linking pin between tender and practice
- Ensure implementation of sexy measures
- Describe what conditions come with a promise
- Consider the use of an account manager to keep an eye on clients' perception of alignment
- Always insist on a written assessment of the tender bid.
- Creating awareness by project directors about the importance of sharing lessons learned and to be knowledgeable about prescribed measures in the tender bid.

The main recommendations for the client involved:

- Make sure the project scope and context are clear at the start
- Most important topics: list it in the performance criteria.
- Have a change management plan.
- Carefully reconsider lead times of tenders with the goal of it in mind;
- Make a BPQR verification mandatory, just as all requirements are being validated.
- Above anything: maintain the dialogue.

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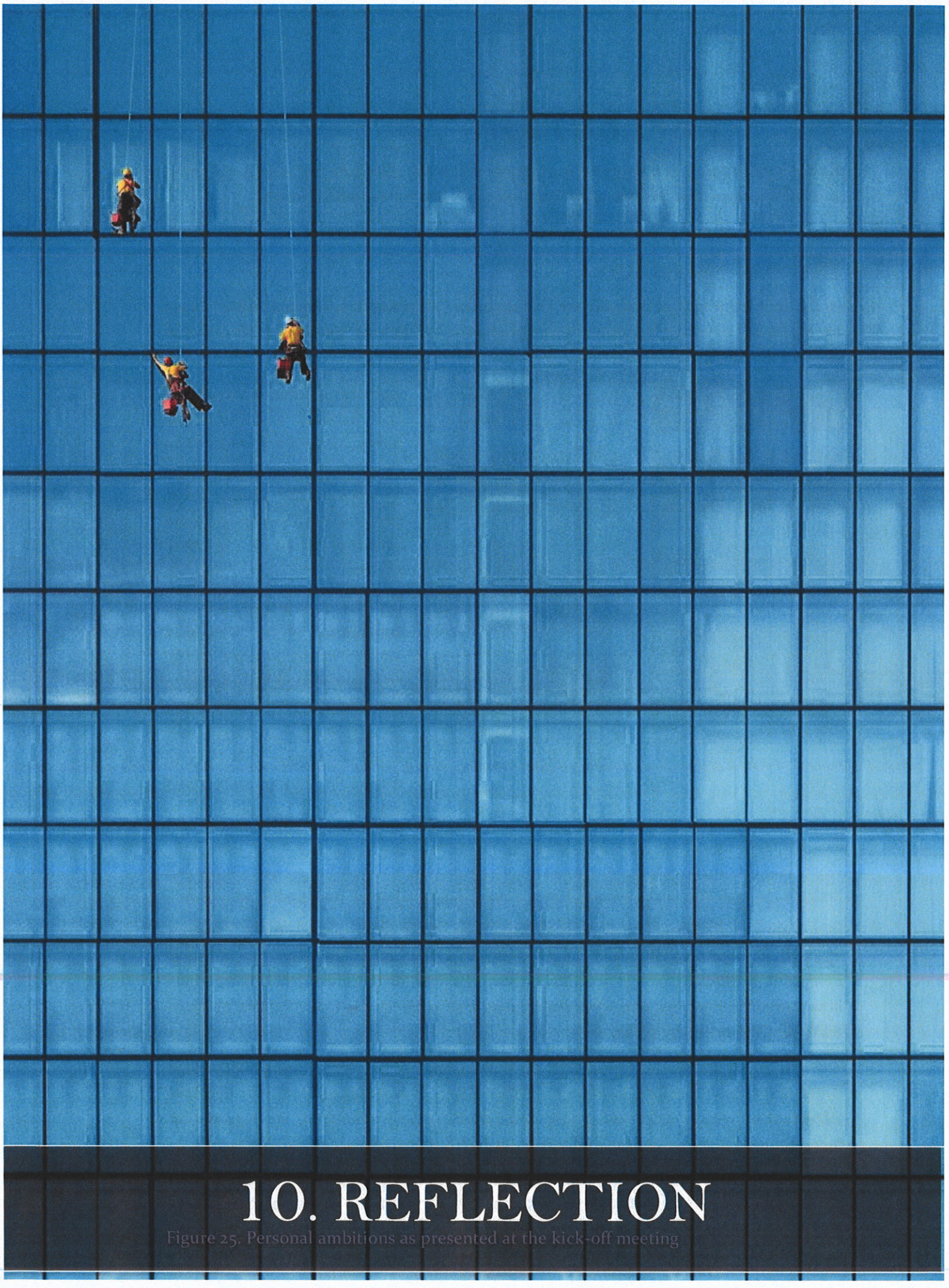

10. REFLECTION

Figure 25. Personal ambitions as presented at the kick-off meeting

10. REFLECTION

As last part of this graduation thesis, the researcher will reflect on her own functioning. Section 10.1 provides this self-reflection, and thus written in the first person.

10.1. SELF-REFLECTION

At the very beginning of this journey I set myself some ambitions. These ambitions have been presented to the graduation committee during the kick-off meeting of this research as given in Figure 26.

Figure 26. Personal ambitions as presented at the kick-off meeting

The clear distinction in process and product ambitions was intentionally made, since I had the tendency during my studies to focus on the product only, resulting in an unsatisfying and sometimes even an unhealthy process.

Because this project was the last project of my studies in which I could prepare myself for the working life, I decided to set myself the goal to make process and product of at least equal importance this time. In this self-reflection I will discuss both concepts separately.

The product

Regarding the product my goal was to create something to be proud of, creating useful insights for both science as well as BAM and in order to establish that, go the extra mile.

In my opinion I delivery very good work. BAM Infra I have given valuable input for future strategic choices regarding tendering. Moreover, I have provided insight in the most determining measures of four recently awarded projects. Furthermore, I have determined how measures have been implemented and what their effect was, observations of which BAM Infra can learn their lessons.

Besides, I have contributed to science on several aspects. I provided insight into what 'distinctiveness' in tender bids entails. Furthermore, I provided insight into the extent of alignment between tender and practice and found several underlying mechanisms for misalignment. Also, I addressed the role of the BPQR tendering process in this regard.

To achieve this, I went, in my opinion, the extra mile. I have encountered several challenges which I have been able to tackle during this research. At the beginning of the research the challenge was mainly gathering a complete dataset. Especially my supervisors of BAM Infra know what a #%$# of a job this has been.

Further in the process the difficulty has mainly been to conduct the client interviews that I have been stumbling upon. It became very apparent during this research that this topic is enormously hot, yet sensitive as well. Plenty of people are willing to share their thoughts and opinions on it, but only a limited amount prefers to stay committed when it comes down to address company or project specific 'issues'. Not to speak about audio taping and publishing the work. This made data gathering very difficult. Sometimes I almost wanted to quit, but I am very proud I did eventually manage to be allowed to conduct 3 out of four of the client interviews!

When finally able to plan most of the desired interviews, I had to travel all across the country ranging from [redacted] to [redacted]. This challenge has however only felt as a blessing, since I was given the opportunity to see so many cool projects! Even the journey to my interview in Groningen, which turned out to be irrelevant for my research eventually (error in selecting the projects due to my own mistake), was worth it. Process prevailed the product here!

The process

Regarding process my aim was to safeguard the balance between studies and relaxation. In order to achieve that, I set three sub-goals of which I know they are my pitfalls in busy stressful times: i) Take time for sports twice a week. ii) Do not take feedback too personally. iii) Use time efficiently (i.e. putting more time into it leads not per definition to better output).

I have experienced people being very dissatisfied with me, conducting research into projects of their responsibility. Sometimes this resulted in very unpleasant phone calls (people raising voices). Although I doubt whether this type of behaviour can be considered to be 'feedback', I still am proud the way I did handle these setbacks.

Regarding the last goal, the efficient use of time (iii), I could still develop myself more. Although I did start well on this point (e.g. I worked hard during office hours but in the evenings and weekends I took sufficient time for relaxation). However, in the last couple of weeks before the green-light meeting and before the final deadline I used to fall back into my old pattern, making incredibly long working days, taking no time for relaxation.

I excuse(d) myself for doing this by arguing this is 'going the extra mile' however this is a 'strategical misinterpretation' since going the extra mile in this regard was related to the product not the process.

Nevertheless, I think I did a good job. I tend to be satisfied only with the best, not with the good. But I am trying to alter that. Both regarding product and process there are points of improvement. But overall, I think I can be very proud.

Furthermore, I have learned an important lesson; Keep an eye on the process; that indeed benefits the product. Having learned this lesson (and – besides – having gained some knowledge about alignment between tender and practice), this graduation journey has been a valuable experience.

I feel prepared and excited to graduate and to become a young-professional!

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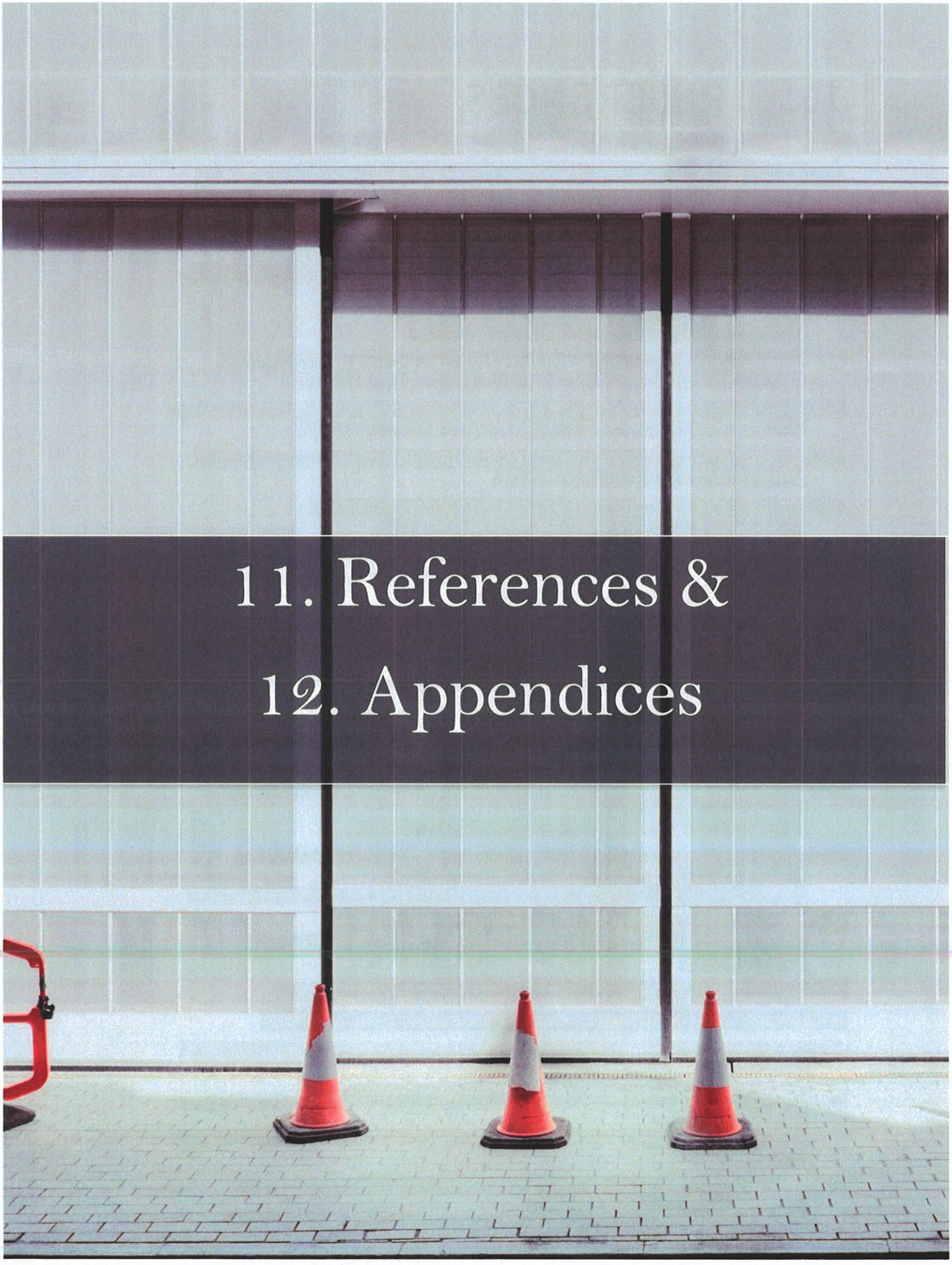

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12. Appendices

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The pictures used on the front page and at the beginning of each chapter are retrieved from http://unsplash.com, a website providing high-quality photos free to use.

12. APPENDICES [PUBLIC]

12.1. INTERVIEW PROTOCOL

DATUM	
PROJECT	
ORGANISATIE	
INTERVIEUWER	Lotte Born Afstudeerder TU Delft / BAM Infra
GEINTERVIEWDE	

Bedank de geïnterviewde voor het vrijmaken van tijd en om bij te dragen aan dit onderzoek. Vervolgens toestemming vragen om het gesprek op te nemen.

VOORSTELLEN

- Master '*Construction Management and Engineering*' aan de TU Delft
- Uitvoering van het Onderzoek in samenwerking met BAM Infra, Tenderstrategie
- Link naar 'Maak de Verbinding' leggen

DOEL VAN HET ONDERZOEK

Doel van het onderzoek is het bepalen hoe onderscheidenheid in de tenderfase en onderscheidenheid in de uitvoering zich tot elkaar verhouden. De onderzoeksvraag die leidend voor het onderzoek is klinkt als volgt: *In hoeverre geeft een EMVI tender aannemers de mogelijkheid onderscheidend te zijn*?

Als eerst is nagegaan waarin, op welke type tenders, BAM het meest onderscheidend is. De volgende stap is het kwalitatief onderzoeken van bepaalde case, waarvan **naam case** er één van is. Per case wordt bepaald wat de onderscheidende elementen in de tender en in de praktijk zijn en hoe deze zich tot elkaar verhouden. Met behulp van de resultaten wordt er een uitspraak gedaan over hoe de 'tool' EMVI aannemers de mogelijkheid geeft onderscheidend te zijn. Let wel, BAM is de scope van het onderzoek maar het doel is niet om BAM te toetsen.

DOEL VAN HET GESPREK

Doel van dit gesprek is het verkrijgen van inzicht in hoe op dit project het onderscheid wordt gemaakt tijdens de uitvoering. Daarnaast is het doel nagaan hoe dit onderscheid zich verhoudt tot het onderscheid wat gemaakt is in de tenderfase.

STRUCTUUR VAN HET INTERVIEW

Functie-gerelateerd

i. Wat is uw achtergrond?
ii. Hoe bent u betrokken bij dit project?
iii. Wat is uw functie en takenpakket?

Project-gerelateerd Algemeen

1. Waarom is dit project geïnitieerd? Wat is de scope?
2. Wanneer is het project gestart en wat is de verwachtte opleveringsdatum?
3. Waarmee maakt BAM Infra in de uitvoering het onderscheid?

Checken van specifieke maatregelen

4. Is maatregel X uitgevoerd? Is het beloofde effect van maatregel X behaald?*
5. Is maatregel Y uitgevoerd? Is het beloofde effect van maatregel Y behaald?*
6. Is maatregel Z uitgevoerd? Is het beloofde effect van maatregel Z behaald?*
7. .....

*Indien niet uitgevoerd of effectief: doorvragen naar de oorzaken hierachter.

Vragen omtrent Maatregelen

8. Zijn er bepaalde maatregelen beter uitgepakt dan initieel bedacht?
9. Zijn er bepaalde maatregelen minder goed uitgepakt dan initieel bedacht?

10. Zijn er nog zaken in de EMVI plannen aangeboden die BAM niet uitvoert?
11. Worden er nog extra werkzaamheden uitgevoerd die vooraf niet in EMVI plannen zijn benoemd? Zo ja welke?

Vragen omtrent BPKV aanbestedingsproces

12. Wat vindt u positief aan de toegepast aanbestedingsmanier BPKV?
13. Wat vindt u negatief aan de toegepast aanbestedingsmanier BPKV?
14. Sommige maatregelen in het ingediende plan, zoals de 'extra maatregelen' bij duurzaamheid zijn niet positief gewaardeerd, in de zin dat er niet op is gescoord. Toch zijn deze maatregelen contractueel bindend en moeten ze daarom worden uitgevoerd. Gebeurt dit in de praktijk?
15. En ziet u in de praktijk nu (wel) meerwaarde?
16. Heeft u kritiek, opmerkingen of aanbevelingen over het aanbestedingsproces in het specifiek voor dit project?
17. Heeft u kritiek, opmerkingen of aanbevelingen over het aanbestedingsproces in het algemeen?

12.2. INTERVIEWS [SUMMARIES]

The summaries of the interviews are not publicly available due to confidentiality reasons.

12.3. FORM VALIDATION SESSION [4 PAGES]

Expert validatie sessie t.b.v. Master thesis Lotte Born
'Alignment between tender and practice' 06-05-2019

***Doel**: Het valideren van resultaten die verkregen zijn uit het onderzoek naar de verbinding tussen tender en praktijk betreffende Beste Prijs Kwaliteit [BPKV] aanbestedingen.*

Beoordeel het statement vanuit jouw perspectief. Geef aan in hoeverre je het met een statement eens bent, aan de hand van de volgende verdeling: Helemaal oneens, Oneens, Eens, Helemaal eens, nvt.
Omcirkel het antwoord dat aansluit bij uw beeld van de situatie

Expertise / werkveld: .....

Ervaring tender JA / NEE

Ervaring uitvoering JA / NEE

DE STELLINGEN

Stelling 1: Een inschrijving met de hoogste kwaliteitsscore wordt vaker gegund dan een inschrijving met de laagste contract som.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Evt. toelichting.....

Stelling 2: BAM Infra is onderscheidt zich vaker op kwaliteit dan op prijs.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Evt. toelichting.....

Stelling 3: BAM Infra krijgt vaker kleine projecten [<10M] gegund dan grote projecten [>10M].

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Evt. toelichting.....

Stelling 4: In de uitvoeringsfase van een project blijven er personen uit de tenderfase betrokken om te zorgen dat er aandacht blijft voor de voorgeschreven maatregelen.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Evt. toelichting.....

Toelichting op stelling 5: Met dialoog wordt de officiële dialoog in een aanbesteding bedoeld. **Stelling 5:** Een dialoog is een goede manier om de wensen van de klant duidelijk te krijgen.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Toelichting.....

Toelichting op stelling 6: Zie de laatste bladzijde voor een toelichting op de typen maatregelen.
Stelling 6:Geef de belangrijkheid van de 'typen maatregelen' voor het winnen van een tender aan. Verdeel 10 punten. Je mag een maatregel ook 0 punten toekennen.

.... Integrale maatregelen

.... Prestatie maatregelen

.... Technische specificaties / werkwijzen

.... Multi toepasbare maatregelen

.... Opportunistische maatregelen

.... Spiegels en kraaltjes

.... Sexy maatregelen

Evt. opmerking.....

Toelichting op stelling 7: Zie de laatste bladzijde voor een toelichting op de typen maatregelen.
Stelling 7: Geef de belangrijkheid van de 'typen maatregelen' aan voor het bieden van waarde in de praktijk. Verdeel 10 punten. Je mag een maatregel ook 0 punten toekennen.

.... Integrale maatregelen

.... Prestatie maatregelen

.... Technische specificaties / werkwijzen

.... Multi toepasbare maatregelen

.... Opportunistische maatregelen

.... Spiegels en kraaltjes

.... Sexy maatregelen

Evt. opmerking.....

Stelling 8: Prestatie criteria bieden de aannemer geen ruimte voor onderscheidenheid

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Evt. toelichting.....

Stelling 9: Proces gerelateerde maatregelen zijn waarschijnlijker om effectief te worden uitgevoerd dan product gerelateerde maatregelen.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Toelichting.....

Stelling 10: Permanente maatregelen zijn waarschijnlijker om effectief te worden uitgevoerd dan tijdelijke maatregelen.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Toelichting.....

Toelichting op stelling 11: Zie voor een toelichting van 'strategisch gedrag' de laatste pagina.

Stelling 12: Wij verliezen tenders omdat andere inschrijvers strategisch gedrag hebben toegepast.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Toelichting.....

Toelichting op stelling 12: Zie voor een toelichting van 'strategisch gedrag' de laatste pagina.

Stelling 12: Wij winnen tenders door strategisch gedrag.

Helemaal oneens Oneens Eens Helemaal eens n.v.t.

Toelichting.....

TOELICHTING OP TYPEN MAATREGELEN
[Let op niet MECE! Mutually Exclusive and Collectively Exhaustive]

Integrale maatregelen
Dit zijn maatregelen die terug komen op een integraal niveau. Ze zijn niet alleen waardevol voor één specifiek tender criteria maar komen terug in het gehele plan. Ze vorm een rode draad door het plan. VB: [redacted]

Prestatie maatregelen
Deze maatregelen zijn een reactie op prestatie criteria, waar er gevraagd word om je op een bepaald niveau in te schrijven. VB: Wij behalen CO2 Ambitie niveau 5

Technische specificaties of werkwijzen
VB: Wij voeren de [redacted] uit in corrosie-bestendig materiaal.

Multi toepasbare maatregelen
Dit zijn maatregelen die op meerdere projecten van toepassing (kunnen) zijn. VB: Wij organiseren een Project Start Up (PSU)

Opportunistische maatregelen
Dit zijn maatregelen die ook zouden worden uitgevoerd als er geen EMVI plan hoefde te worden ingediend. Het is vaak 'current practice' van de aannemer. VB: [redacted]

Spiegels en kraaltjes
Maatregelen die door de klant worden gezien als 'kadootjes'. Deze maatregelen hebben geen terugkerend karakter in het project plan maar zijn een extra toevoeging. VB: [redacted]

Sexy maatregelen
Maatregelen waar de klant graag mee showt. Ze creëren vaak goodwill voor een project. VB: [redacted]

TOELICHTING OP STRATEGISCH GEDRAG

Adverse selection
Voordat een contract gesloten is, is bepaalde informatie over gedragingen en/of eigenschappen van de ene contractpartij verborgen voor de andere partij. Een voorbeeld is

Moral hazard [Dutch: Moreel riscio]
Gedragsverandering nadat bepaalde risico's zijn afgedekt. Het voorbeeld van verzekeringen wordt vaak gebruikt: men gaat zich risicovoller gedragen zodra men verzekerd is. Dus moral hazard m.b.t. tenders is dat de ene contractpartij haar gedrag aanpast nadat er een contract is gesloten is.

Measure			Categorization		Characteristics							Causes for non-fulfilment of promises								
												Change of circumstances			New or enhanced insights		Strategic behaviour			Bad luck
Case	Nr.	Description	Product vs Process	Permanent vs Temporary	Integral measure	Performance measure	Technical specifications	Sexy measures	Beads	Commercial-off-the-shelf	Multi-applicable measures	Scope change	Context change	Force Majeure	Added value not there	Added value not seen	Adverse select.	Moral hazard	Misrepresentation	
[redacted]	1.1	[redacted]	Product	Temporary	x		x	x												
[redacted]	1.2	[redacted]	Process	Temporary			x								x					
[redacted]	1.3	[redacted]	Process	Temporary			x								x					
[redacted]	1.4	[redacted]	Product	Temporary	x		x											x		
[redacted]	2.1	[redacted]	Product	Permanent		x														
[redacted]	2.2	[redacted]	Product	Permanent	x			x												
[redacted]	2.3	[redacted]	Product	Permanent				x												
[redacted]	2.4	[redacted]	Product	Permanent				x												
[redacted]	2.5	[redacted]	Product	Permanent				x			x									
[redacted]	2.6	[redacted]	Product	Permanent				x			x									
[redacted]	2.7	[redacted]	Process	Temporary					x				x							
[redacted]	2.8	[redacted]	Process	Temporary					x						x					
[redacted]	2.9	[redacted]	Process	Temporary					x						x					
[redacted]	2.10	[redacted]	Product	Temporary	x		x	x												
[redacted]	2.11	[redacted]	Process	Temporary				x								x				
[redacted]	2.12	[redacted]	Process	Temporary						x					x		x			
[redacted]	3.1	[redacted]	Process	Temporary	x							x						x		
[redacted]	3.2	[redacted]	Process	Temporary			x					x						x		
[redacted]	3.3	[redacted]	Process	Temporary			x	x												
[redacted]	3.4	[redacted]	Process	Temporary			x													
[redacted]	3.5	[redacted]	Process	Temporary						x										x
[redacted]	3.6	[redacted]	Process	Temporary							x						x		x	
[redacted]	4.1	[redacted]	Process	Temporary	x							x								
[redacted]	4.2	[redacted]	Product	Permanent					x											
[redacted]	4.3	[redacted]	Process	Temporary					x											
[redacted]	4.4	[redacted]	Product	Permanent		x														
[redacted]	4.5	[redacted]	Product	Permanent		x									x					
[redacted]	4.6	[redacted]	Product	Permanent		x														
[redacted]	4.7	[redacted]	Product	Permanent		x														
[redacted]	4.8	[redacted]	Product	Temporary					x							x				
[redacted]	4.9	[redacted]	Product	Permanent				x												
[redacted]	4.10	[redacted]	Product	Permanent				x			x						x			
[redacted]	4.11	[redacted]	Product	Permanent					x		x					x				
[redacted]	4.12	[redacted]	Product	Permanent					x											

Case	Nr.	Description	Product vs Process	Permanent vs Temporary	Integral measure	Performance measure	Technical specifications	Sexy measures	Beads	Commercial-off-the-shelf	Multi-applicable measures	Change of circumstances			New or enhanced insights		Strategic behaviour			Bad luck
												Scope change	Context change	Force Majeure	Added value not there	Added value not seen	Adverse selection	Moral hazard	Misrepresentation	
✗✗		**Q1** [measure not implemented, effect not achieved]																		
[redacted]	2.11	[redacted]	Process	Temporary				x								x				
[redacted]	3.1	[redacted]	Process	Temporary	x							x						x		
[redacted]	3.6	[redacted]	Process	Temporary							x						x		x	
[redacted]	4.1	[redacted]	Process	Temporary	x							x								
[redacted]	4.8	[redacted]	Product	Temporary					x							x				
[redacted]	4.10	[redacted]	Product	Permanent				x			x						x			
[redacted]	4.11	[redacted]	Product	Permanent					x		x						x			
✗✓		**Q2** [measure not implemented, effect achieved]																		
[redacted]	1.2	[redacted]	Process	Temporary			x								x					
[redacted]	1.3	[redacted]	Process	Temporary			x								x					
[redacted]	2.7	[redacted]	Process	Temporary					x				x							
[redacted]	2.8	[redacted]	Process	Temporary					x						x					
[redacted]	2.9	[redacted]	Process	Temporary					x						x					
[redacted]	2.12	[redacted]	Process	Temporary						x					x		x			
[redacted]	3.2	[redacted]	Process	Temporary			x					x						x		
✓✗		**Q3** [measure implemented, effect not achieved]																		
[redacted]	3.5	[redacted]	Process	Temporary						x										x
[redacted]	4.5	[redacted]	Product	Permanent		x									x					
✓✓		**Q4** [measure implemented, effect achieved]																		
[redacted]	1.1	[redacted]	Product	Temporary	x		x	x												
[redacted]	2.1	[redacted]	Product	Permanent		x														
[redacted]	2.2	[redacted]	Product	Permanent	x			x												
[redacted]	2.3	[redacted]	Product	Permanent				x												
[redacted]	2.4	[redacted]	Product	Permanent				x												
[redacted]	2.5	[redacted]	Product	Permanent				x			x									
[redacted]	2.6	[redacted]	Product	Permanent				x			x									
[redacted]	2.10	[redacted]	Product	Temporary	x		x	x												
[redacted]	3.3	[redacted]	Process	Temporary			x	x												
[redacted]	3.4	[redacted]	Process	Temporary			x													
[redacted]	4.2	[redacted]	Product	Permanent					x											
[redacted]	4.3	[redacted]	Process	Temporary					x											
[redacted]	4.4	[redacted]	Product	Permanent		x														
[redacted]	4.6	[redacted]	Product	Permanent		x														

(Mis)alignment between tender and practice in Best Price Quality Ratio tenders

Lotte Born, student at the Delft University of Technology did research into (mis)alignment between promises made in the tender phase and the actual added value provided during or after project execution. The main research question was '*What underlying mechanisms cause (mis)alignment between distinctive BPQR tender elements and the actual added value during or after project execution?*'

The study is conducted on Dutch infrastructure projects publicly procured with the Best Price Quality Ratio tender procedure.

First an analysis is made into the tender results of the facilitating company of this research; BAM Infra. Thereafter a case study is conducted.

The study provides some interesting insights. For example four main causes are being identified, responsible for misalignment between tender and practice. Moreover, the research did reveal that alignment itself is no holy grail. The focus on alignment does not always generate value and can even hamper the provision of value.

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In partial fulfilment of the requirements for the degree of Master of Science at the Delft University of Technology