Conflicts in Best Value

A research into the causes of conflicts in the execution phase of

Best Value projects and what actions to take to prevent them

TUDelft

Dawn Tulling
Master Thesis

Conflicts in Best Value

A research into the causes of conflicts in the execution phase of Best Value projects and what actions to take to prevent them

Master Thesis

By Dawn Tulling

TUDelft

Colophon

Preface

This thesis is the final product for the degree of MSc in Construction Management and Engineering at the Delft University of Technology. The process of this master thesis started with thinking about topics that interested me the most. I have always had an interest in tenders, innovations and looking at how things can be done differently. Researching a new and innovative way of collaborating in tenders seemed like the perfect opportunity to combine all of these interests. It has been quite a process to find the perfect topic for this research. However, finding an issue with a real need for answers provided a lot of motivation to execute the research for everyone using Best Value. The last couple of months have been an intense period of ups and downs. A master can be quite a lonely process. However, as so many people have helped and supported me with this research, I would like to take this opportunity to thank them.

I especially want to thank my supervisors Sicco Santema, Frank Steller and Leentje Volker. You have pushed me to get the most out of this research. You made me think bigger and bolder when I was being too careful, which resulted in a thesis that I am proud of. Thank you for asking me the difficult questions at the right time and for all the constructive feedback. Thank you!

I would like to thank all of the interviewees for their cooperation, openness and honesty during the interviews. These interviews provide a lot of inside knowledge of Best Value in practice. You also kept me enthusiastic about the research and showed the value of researching new ways of collaborations in the construction sector.

I would like to thank *Best Value Nederland* for their trust in letting me organise an expert session with their members. It showed that the community of Best Value expert is very active in The Netherlands and committed to ensuring the paradigm shift to make working together in projects more efficient, but also more fun. I want to thank all the experts that gave feedback and showed their enthusiasm towards my research.

I would also like to take this opportunity to thank my friends for always being there, and for all the good times that we had and still have. You are the reason that I will look back on my student time as the best time of my life. Finally, I want to thank my parents. You have always supported me in everything that I wanted to do. Thank you for everything you have done for me!

Thank you all very much for the inspiration and support!

Dawn Tulling
Delft, March 2018

Samenvatting

Introductie

Best Value gelooft in het gebruik maken van de expertise uit de markt om waarde te maximaliseren en verwacht dat aannemers zichzelf onderscheiden met hun expertise en vermogen om initiatief en verantwoordelijkheid te nemen gedurende het project. Tijdens een Best Value project hebben de klant en aannemer beide een nieuwe rol en dit is niet comfortabel of intuïtief voor iedereen. Gedurende conflicten kunnen mensen zich irrationeel gedragen door een stress reactie in de hersenen. In projecten zullen er altijd conflicten zijn, omdat projecten complex en multidisciplinair zijn. De theorie van Best Value focust zich voornamelijk op de aanbestedingsfase. Project managers worden in het diepe gegooid tijdens de concretiseringsfase en uitvoeringsfase. Het doel van dit onderzoek is om een actie set te ontwerpen die gebruikt kan worden om conflicten te voorkomen in Best Value projecten. Dit resulteert in de volgende onderzoeksvraag: Wat veroorzaakt conflicten in Best Value projecten en wat moeten klanten en aannemers doen om dit te voorkomen?

Opzet onderzoek

Het eerste deel van het onderzoek focust zich op het identificeren van de oorzaken van conflicten in Best Value projecten. Een literatuuronderzoek naar conflicten in constructie projecten vormt een theoretisch kader. Veertien interviews met projectmanagers van organisaties van klanten en aannemers zijn de basis van dit onderzoek. De interviews zijn kwalitatief geanalyseerd om de effecten van Best Value in conflicten te begrijpen. Deze analyse is gebruikt om terugkerende thema's te ontdekken. Deze worden gezien als de hoofdoorzaken van conflicten in Best Value projecten. Het tweede deel van het onderzoek focust zich op het vinden van acties om de conflicten te voorkomen. De interviews en input van experts is gebruikt om activiteiten te verzamelen. Deze activiteiten zijn geanalyseerd op terugkerende thema's om acties te identificeren voor de klant en aannemer in Best Value projecten.

Literatuur onderzoek

Er zijn vele definities van conflicten, maar dit onderzoek bekijkt situaties waar iemand of een groep vindt dat de acties van een ander de eigenbelangen negatief beïnvloedt. Conflicten kunnen drie hoofdoorzaken hebben: (1) technisch-gerelateerde conflicten, (2) proces-gerelateerde conflicten en (3) relatie-gerelateerde conflicten. Deze conflicten kunnen op individueel of groepsniveau afspelen en een positief of negatief effect hebben. De druk op de markt heeft erin geresulteerd dat projecten van lage kwaliteit worden geleverd en al het meerwerk wordt geclaimd. Klanten zijn daardoor argwanend richting aannemers over de motieven en integriteit wat leidt tot wantrouwen. Vertrouwen kan helpen om conflicten te verminderen. Er zijn diverse manieren om vertrouwen te typeren en dit onderzoek gebruikt een categorisatie voor vertrouwen in constructie contracten wat resulteert in drie verschillende soorten vertrouwen: (1) systeem vertrouwen, (2) cognitief vertrouwen en (3) affectief vertrouwen.

Analyse

Onderliggende oorzaken van conflicten

Best Value bevordert een gezondere houding ten opzichte van het business model van aannemers door hen de mogelijkheid te bieden om geld te verdienen aan kwaliteit. In de interviews spreken de aannemers hun waardering uit hierover en de mogelijkheid om een betere reputatie op te bouwen. Uit de interviews blijkt dat de rol van de expert moet zijn dat ze initiatief nemen, oplossingen bieden en advies geven met objectieve informatie. De klant neemt nog steeds de beslissing. De klant kan er dus nog steeds voor zorgen dat zijn belangen voorop staan. Daarom is het *moral hazard* probleem niet verhoogd vanwege Best Value. Uit de interviews blijkt dat Best Value een positief effect heeft op het adverse selectieprobleem; vanwege transparantie en vanwege de herinnering Best Value biedt dat onderbuik gevoelens en aannames tijdens discussies worden geëlimineerd. De klanten vinden het echter nog onwennig om de verantwoordelijkheid over te laten aan de aannemer. Daarnaast, wil de klant niet alleen dominante informatie zien, maar willen graag meegenomen worden in het proces van de aannemer.

Conflict types

De coördinatie over het project wordt besproken met de projectteams. De beheerders of regionale managers zijn echter vaak de echte klanten, maar ze hebben geen officiële betrokkenheid bij het project en voelen zich niet verantwoordelijk voor het project tijdens de uitvoering. Ze hebben echter een sterke mening en moeten de finale goedkeuring geven om het project over te dragen. Uit de interviews blijkt dat de klanten wel wensen en eisen hebben, ook als ze deze niet expliciet hebben gemaakt. Deze zullen uiteindelijk uitkomen en leiden tot technisch gerelateerde conflicten. Uit de interviews blijkt dat objectiviteit en de concretiseringsfase een positief effect hebben op proces gerelateerde conflicten, omdat er geen ruimte is voor discussies over de eerlijkheid van verzoeken om meerwerk. Relatie gerelateerde conflicten in Best Value kunnen grotendeels worden teruggevoerd op het feit dat iemand niet volledig type A is, wat bepaalde vaardigheden zijn die niet altijd nodig worden geacht. Daarom wordt een relatie gerelateerd conflict niet te persoonlijk. Het leidt vaak tot een verandering in het team, wat ervoor zorgt dat de klant of aannemer een persoon kiest die beter geschikt is. Dit heeft een positief effect op de verdere samenwerking. Een andere oorzaak van intra-persoonlijke conflicten is dat cliënten niet altijd een algemeen beeld hebben van de voortgang van het project omdat er geen details worden besproken. Daarom zijn ze niet in staat om alle vragen met betrekking tot het project te beantwoorden. Door een goede relatie met elkaar te hebben, wordt het eenvoudiger om korte communicatielijnen te hebben met de aannemer.

Vertrouwen

Uit de interviews blijkt dat systeem vertrouwen in een Best Value project gebaseerd is op het feit dat beide partijen instemden met het contract. Hierdoor ontstaat een wederzijds begrip van het contract,

waardoor discussies over de interpretatie ervan tijdens de uitvoeringsfase wordt beperkt. De interviews laten zien dat cognitief vertrouwen in een Best Value project vooral gebaseerd is op competentie. De analyse toonde aan dat vertrouwen in de integriteit van de aannemer belangrijker is, in vergelijking met competentie, voor een fundament van vertrouwen. Een uitdaging van cognitief vertrouwen is de kans dat de beoordeling van dit vertrouwen subjectief kan zijn. Dit komt overeen met de analyse van de interviews. Er lijkt sprake te zijn van een subjectief wantrouwen jegens de betrouwbaarheid van de aannemer. De interviews laten zien dat in een Best Value project affectief vertrouwen wordt ontwikkeld door positieve interacties met de competentie en integriteit van individuen. De literatuurstudie stelt dat affectief vertrouwen belangrijker is in eerdere fasen van het project omdat er nog geen positieve op cognitie gebaseerde ervaringen zijn geweest. In Best Value projecten is dit echter andersom.

Hoofdoorzaken van conflicten in Best Value projecten

De klant van de klant

Het is nodig om de hele organisatie van de klant te betrekken om een succesvol project af te leveren. Best Value bevordert de integratie van de supply chain om efficiënter samen te werken en daardoor waarde te creëren. Uit de interviews blijkt dat deze integratie bestaat tussen de projectteams, maar niet voor de rest van de supply chain. De interviews tonen aan dat dit conflicten veroorzaakt op meerdere niveaus wat leidt tot traditioneel gedrag. Als de aannemer de klant van de klant niet betrekt, kunnen ze de eisen van de echte klant niet begrijpen. Uit het interview blijkt dat het een uitdaging is om andere afdelingen van de klant te betrekken, vanwege een gebrek aan verantwoordelijkheidsgevoel en vanwege tijdsgebrek. Er is een gedeelde verantwoordelijkheid om de betrokkenheid van de supply chain te verzekeren. De klant en de aannemer moeten de verantwoordelijkheden voor deze integratie in de concretiseringsfase definiëren. De constructie sector wordt gekenmerkt door unieke projecten, waardoor het moeilijk is om de supply chain te integreren. Daarom moet de nadruk liggen op de partijen verbinden door middel van duidelijke informatieprocedures.

Wantrouwen in betrouwbaarheid

De analyse heeft aangetoond dat de concretiseringsfase een cruciaal element is in de oplossing van veel van de conflicten. Tijdens de uitvoeringsfase zullen echter risico's en nieuwe kansen ontstaan. Deze moeten besproken en opgelost worden op basis van vertrouwen. De analyse illustreert dat vertrouwen, systeem, cognitief en affectief, gebaseerd is op informatie en objectiviteit. Uit de analyse blijkt echter ook dat er nog steeds een groot wantrouwen is jegens de integriteit van de aannemers. Vertrouwen kan niet worden beheerst omdat het iets is dat gegeven moet worden. Best Value zegt dat de aannemer alleen verantwoordelijk is voor wat hij of zij kan beheersen, wat betekent dat ze zich niet hoeven te concentreren op het bouwen van vertrouwen. De betrouwbaarheid kan echter wel worden beheerst, omdat deze gebaseerd is op informatie. Daarom moet de aannemer zich concentreren op het garanderen dat ze hun betrouwbaarheid en integriteit kunnen bewijzen. Uit de interviews blijkt dat de

meeste aannemers dit doen aan het begin van de projecten. Ze bewijzen het echter vaak niet tijdens het project. Aannemers moeten ervoor zorgen dat ze weten wat de klanten willen zien om vertrouwen te hebben in hun betrouwbaarheid.

Acties voor Best Value projecten

Er zijn twee stappen nodig om de acties te definiëren. De eerste stap is het definiëren van activiteiten uit de interviews en de sessies met A + en A-gecertificeerde Best Value-experts. Dit resulteert in een uitgebreide lijst van activiteiten die tijdens de uitvoeringsfase van Best Value projecten kan worden gebruikt. De activiteiten zijn gegroepeerd in categorieën van acties om de beheersbaarheid van de activiteiten te waarborgen. De belangrijkste of meest impactvolle activiteiten binnen de categorieën zijn de voorgestelde acties voor klanten en aannemers.

De gezamenlijke acties zijn te zien in Figuur 1 en zijn onderverdeeld in drie categorieën: 'leidt teamleden op in Best Value', 'stem verwachtingen af en 'creëer objectieve relaties'. De acties voor de aannemer zijn te zien in Figuur 2 en zijn onderverdeeld in vier categorieën: 'betrek onderaannemer in het begin al bij het project', 'toon het proces gedurende het hele project', 'maak het gemakkelijk voor de klant' en 'begrijp de klant van de klant'. De acties voor de klant zijn te zien in Figuur 3 en zijn onderverdeeld in twee categorieën: 'geef andere afdelingen voldoende tijd om betrokken te zijn' en 'definieer duidelijke verantwoordelijkheden voor andere afdelingen'.

Een team dat training in Best Value ontvangt, verhoogt de competentie van het team, wat helpt om cognitief vertrouwen op te bouwen. Het verkleint ook de kansen om terug te vallen in traditioneel gedrag. Een betrokken onderaannemer helpt ook om cognitief vertrouwen te vergroten, omdat de klant in staat is om de competentie en integriteit van de onderaannemers te zien. Een voortgangsrapport als toevoeging aan de wekelijkse rapporten biedt de mogelijkheid voor de aannemer om zijn competentie en integriteit in het project te blijven bewijzen. Een relatie tussen de klant en de aannemer helpt om affectief vertrouwen op te bouwen. De analyse toont aan dat een relatie helpt om conflicten te de-escaleren omdat de communicatielijnen korter zijn. De aannemer kan vertrouwen in zijn integriteit opbouwen door zich in te spannen om de klant van de klant te begrijpen, omdat de aannemer dan laat zien dat hij belang hecht aan de belangen en waarden van de klant. De acties voor de klant zijn erop gericht om ervoor te zorgen dat al hun afdelingen de mogelijkheid hebben om bij de projecten betrokken te kunnen zijn. Het contact tussen de andere afdelingen en de aannemer zal ook helpen om cognitief vertrouwen op te bouwen omdat de beheerders of regionale managers meer van de competentie en integriteit van de aannemer kunnen zien. Als de aannemer helpt om duidelijk te maken wat wordt verwacht en wanneer, wordt het voor het projectteam van de klant eenvoudiger om de extra tijd van de beheerders of regionale managers te vragen. Het afstemmen van verwachtingen helpt onnodige conflicten in de uitvoeringsfase te verminderen. De gezamenlijke sessies bieden ook een mogelijkheid voor alle stakeholders, afdelingen en onderaannemers om elkaar te ontmoeten.
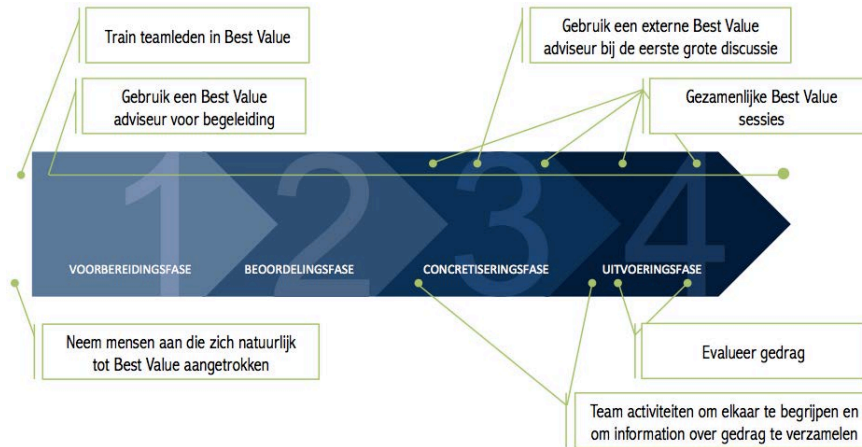
Figuur 1. Gezamenlijke acties
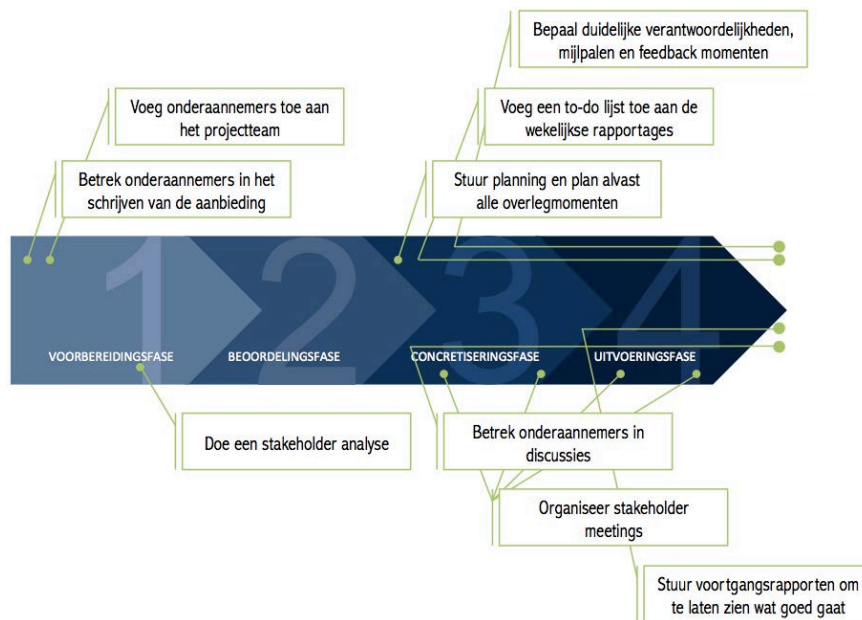
Figuur 2. Acties voor de aannemer

Figuur 3. Acties voor de klant

Executive summary

Introduction

Best Value believes in making use of the expertise of the market to optimise and maximise value and expects (possible) contractor(s) to distinguish themselves with their expertise and their ability to take the lead and responsibilities, where possible, during the project. The client and contractor both have to take on a new role and this is not a comfortable or intuitive role for everyone. People can behave irrationally in conflicts, due to the stress reaction in the brain. Conflicts in projects are bound to happen, due to an increased complexity and pressure on time and money. The theory of Best Value mainly focuses on the tender phase. Project managers are now thrown into the deep end when it comes to the clarification and execution phase. The objective of this research is to design a set of actions to prevent conflicts in Best Value projects. This results in the following research question: what causes conflicts in Best Value projects and what should the clients and contractors do to prevent this?

Research design

The first part of the research focuses on identifying the main causes of conflict in Best Value projects. A literature review on conflicts in construction projects is used to develop a theoretical framework. Data is gathered through semi-structured interviews with fourteen project managers from organisations of clients and contractors. A qualitative analysis of these interviews shows the effects of Best Value on conflicts. This analysis is used to find re-occurring themes, which are seen as the main causes of conflicts in Best Value projects. The second step of the research focuses on finding actions to prevent the conflicts. The interviews and expert sessions are the input for activities that could be used. These activities are analysed to identify actions for the clients and contractors in Best Value projects.

Literature review

There are many definitions of conflicts, but this research looks at situations when people or groups perceive that the actions of the other team negatively affect their interest. Conflicts in projects can be defined in several ways. The first categorisation on conflict type results in three categories, (1) technical-related conflicts, (2) process-related conflicts and (3) relationship-related conflicts. These conflicts can be on individual or organisational level and can have a positive or negative effect on the project. The pressure on the market resulted in a situation where poor quality is delivered, and all additional work is claimed. Clients are therefore always suspicious towards the motives and integrity of the contractor, which can lead to distrust. Trust between client and contractor can help to reduce conflicts. Trust can be conceptualised in different ways, and this research uses a conceptualisation for trust in construction contracts, which resulted in three different types of trust; (1) system-based trust, (2) cognition-based trust and (3) affect-based trust.

Analysis

Underlying causes of conflicts

Best Value promotes a healthier attitude towards the business model of construction companies by providing them with the opportunity to earn money from being excellent contractors. In the interviews, the contractors expressed their appreciation for the possibility to showcase their expertise and quality and have the ability to build a better reputation. The interviews show that the role of the expert should be of someone that takes the initiative, provides solutions and gives advice with objective information. The client still makes the decision. The client can therefore still ensure that their interests are taken into account. Consequently, the moral hazard problem is not increased due to Best Value. The interviews show that Best Value has a positive impact on the adverse selection problem; due to transparency and due to the reminder Best Value provides that gut feelings and assumptions should be eliminated in discussions. However, the clients are still ill at ease to leave the responsibility in the hands of the contractor. The interviews show that the client does not only want to know the facts, but they want to understand the contractor's process.

Conflict types

Coordination about the project is discussed with the project teams. However, they are not the actual clients. The asset or regional managers are the real clients, but they are not involved and mostly do not want to be included in the project. They do not have any official commitment towards the project and do not feel any responsibility towards the project during execution. They do however have a strong opinion and have to give the final ok before the project is finished. The interviews show that not providing requirements at the start of the project does not mean the client does not have wishes. These will eventually come out and will lead to technical-related conflicts. The interviews show that objectivity and the clarification phase have a positive effect on process-related conflicts because it does not leave room for discussions on the fairness of requests for additional work. Relationship-related conflicts in Best Value can mostly be traced back to the fact that someone is not fully type-A, which is a particular set of skills that is not always needed. Therefore, a relationship-related conflict does not become too personal. It often leads to a change in the team, which ensures that the client or contractor choses someone that is better suited for Best Value, which will have a positive effect on further collaboration. Another cause of intra-personal conflicts is that clients do not always have an overall view of the project's progress because no details are discussed. Therefore, they are not able to answer all questions regarding the project. By having a good relationship with each other, it becomes easier to have short communication lines towards the contractor's project manager.

Trust

The interviews show that system-based trust in a Best Value project is based on the fact that both parties agreed to the requirements of the contract. This creates a mutual understanding of the contract,

which limits discussions about the interpretation of the contract during the execution phase. The interviews show that cognition-based trust in a Best Value project is mainly based on competence. The analysis showed that trust in the contractor's integrity is a more critical factor, compared to competence, for a foundation of trust. A challenge in cognition-based trust is the chance that the assessment of this trust can be subjective. This is in line with the analysis of the interviews. There seems to be a subjective distrust towards the contractor's trustworthiness. The interviews show that in a Best Value project, affect-based trust is developed through positive interactions with the competence and integrity of individuals. The literature review states that affect-based trust is more important in earlier phases of the project because there have not yet been positive cognition-based experiences. However, in Best Value projects there is a possibility to rely on cognition-based trust in the early on in the project.

Main causes of conflicts in Best Value projects

The client's client

There is a need to involve the entire organisation of the client to be able to deliver a successful project because it ensures that expectations between all parties are aligned. Best Value promotes to integrate the supply chain to provide a more efficient collaboration and therefore create value. The interviews show that this integration exists between the project teams, but not for the rest of the supply chain. The interviews show that this causes conflicts on multiple levels, which leads to traditional behaviour. If the contractor does not involve the client's client, they cannot understand the demands of the client. The interview shows that it is challenging to engage other departments of the client, due to a lack of feeling responsible, and due to time restraints. There is a shared responsibility to ensure the involvement of the supply chain. The client and contractor should define the responsibilities for integration of the supply chain in the clarification phase. The construction sector is characterised by unique projects, which makes it difficult to integrate the supply chain. Therefore, the focus should be on connecting the parties in the supply chain through clear information procedures.

Distrust in trustworthiness

The analysis has shown that the clarification phase is a crucial element in the solution for a lot of the conflicts. However, during the execution phase risks and new possibilities will arise and those will need to be discussed and resolved on the foundation of trust. The analysis illustrates that trust, system-based, cognition-based and affect-based, is based on information and objectivity, which is something Best Value aims to achieve. However, the analysis also shows that there is still a high level of distrust towards the contractor's integrity. Trust cannot be controlled because it is something that has to be given. Best Value says that the contractor is only responsible for the things he or she can control, which means they do not have to focus on building trust. However, trustworthiness can be controlled, because it is based on objective information and transparency. Therefore, the contractor should focus on making

sure they can prove their trustworthiness and integrity. The interviews show that most contractors are doing so at the start of the projects. However, they often do not continue proving it during the project. Contractors should make sure they know what the clients needs to see or know to have trust in their trustworthiness.
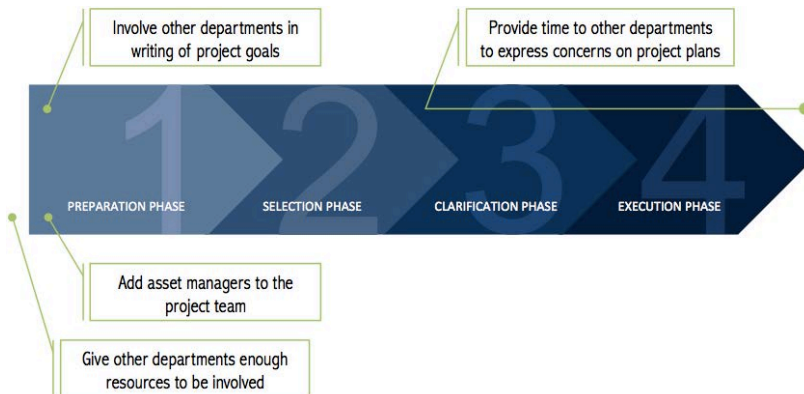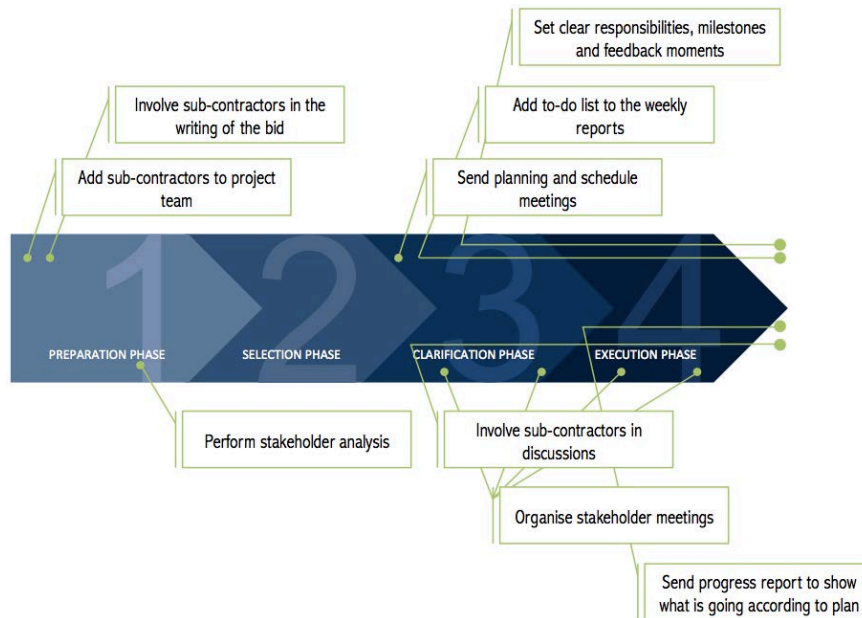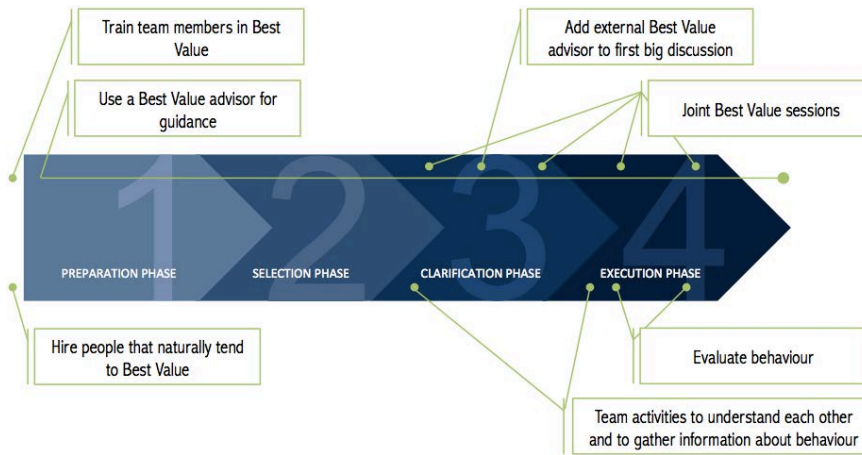
Actions for Best Value projects

Two steps are needed to define the actions. The first step is to determine activities from the input. The sources of input are the interviews and sessions with A+ and A certified Best Value experts. These sources of input resulted in an extensive list of activities that could be used during the execution phase of Best Value projects. The activities are clustered into categories of actions to ensure the manageability of the activities. The most important or impactful activities within the categories are included as actions for the clients and contractors.

The mutual actions are shown in Figure 4 and are divided into three categories: 'educate team members on Best Value', 'align expectations' and 'create objective relationships'. The actions for the contractor are shown in Figure 5 and are divided into four categories: 'involve sub-contractors early on in the project', 'show your process throughout the project', 'make it easy for the client' and 'understand the client's client'. The actions for the client are shown in Figure 6 and are divided into two categories: 'give other departments enough time to be involved' and 'define clear responsibilities for other departments'.

A team that receives training in Best Value increases the competence of the team, which helps to build cognition-based trust. It will also help to reduce the chances of falling back into traditional behaviour. An involved sub-contractor will also help to increase cognition-based trust because the client can know the sub-contractors' competence and integrity. Adding a progress report to the weekly reports provides an opportunity for the contractor to continue proving their competence and integrity in the project, which will help to continue building cognition-based trust. A relationship between the client and contractor will help to build affect-based trust. The analysis shows that a relationship helps to de-escalate conflicts because the communication lines are short. The contractor can build trust in their integrity by putting effort in understanding the client's client because it shows that they care about the client's interests and values, which will make it more likely that they make sure it is implemented in the project. The actions for the client focus on making sure that all of their departments can be involved with the projects. Contact between the other departments and the contractor will also help to build cognition-based trust because the asset managers or regional managers can see more of the contractor's competence and integrity. If the contractor helps to make it clear what is expected, it becomes easier for the client's project team to ask the asset manages or regional managers for extra time. This will help to get them more involved. Aligning expectations will help to reduce unnecessary conflicts in the execution phase. The joint sessions also provide an opportunity for all stakeholders, department and sub-contractors to meet each other.

Train team members in Best Value

Use a Best Value advisor for guidance

Add external Best Value advisor to first big discussion

Joint Best Value sessions

PREPARATION PHASE   SELECTION PHASE   CLARIFICATION PHASE   EXECUTION PHASE

Hire people that naturally tend to Best Value

Evaluate behaviour

Team activities to understand each other and to gather information about behaviour

Figure 4. Mutual actions

Involve sub-contractors in the writing of the bid

Add sub-contractors to project team

Set clear responsibilities, milestones and feedback moments

Add to-do list to the weekly reports

Send planning and schedule meetings

PREPARATION PHASE   SELECTION PHASE   CLARIFICATION PHASE   EXECUTION PHASE

Perform stakeholder analysis

Involve sub-contractors in discussions

Organise stakeholder meetings

Send progress report to show what is going according to plan

Figure 5. Actions for contractors

Involve other departments in writing of project goals

Provide time to other departments to express concerns on project plans

PREPARATION PHASE   SELECTION PHASE   CLARIFICATION PHASE   EXECUTION PHASE

Add asset managers to the project team

Give other departments enough resources to be involved

Figure 6. Actions for the client

Table of Contents

List of figures

List of tables

1 | Introduction

Introduction

In 2005 Best Value was introduced in The Netherlands. New procurement processes were needed to ensure added value and client satisfaction in projects (Cheung, Wong, Yiu, & Pang, 2011). Best Value is all about the (possible) contractor(s) distinguishing themselves with their expertise and taking the lead and responsibilities, when possible, during the project (van de Rijt & Santema, 2013). The approach ensures that everyone does what he or she is the expert in. Rijkswaterstaat decided to use Best Value Procurement in 2008 for sixteen big road projects in 2008, which gained more attention for Best Value. Over the years 98% of the Best Value projects have been on time and within budget, and there has been a 5% increase in vendor profit (de Jong, 2017).

1.1 Best Value

Best Value is a new approach or way of looking at procuring projects. However, a misunderstanding is that Best Value is just a procurement method. Best Value Procurement has grown from a procurement strategy to an overall philosophy for the whole project or company (van de Rijt & Santema, 2012). That is why the term Best Value Approach (Best Value in this report) is now used instead of Best Value Procurement. An example from the book *Prestatie Inkoop* (van de Rijt & Santema, 2013) explains the basic idea of Best Value.

> Imagine that you want to climb the Mount Everest. You will need someone to help you reach the top because it is quite the challenge to climb the Mount Everest without any risks. There are several options to find your Sherpa for the climb. (1) You can read about climbing, do your research on the needed equipment and with this knowledge make a set of requirements that are, in your opinion, necessary to climb the mountain. You will look for the Sherpa that will execute all your demands for the lowest price and up you will go. (2) You can also search for the Sherpa that has climbed the mountain before and who can prove to you that he or she succeeded the climb safely every time. He or she will tell you what routes to take and what equipment you need. You can choose your Sherpa based on the weighting factors you decided on quality and price.

The first strategy sounds ridiculous, but it is how projects are procured traditionally. The client describes what they want for the project, and the contractor performs what he or she is told. The second strategy relates to Best Value. Best Value believes in making use of the expertise of the market to optimise and maximise value (van de Rijt & Santema, 2013). Best Value requires the contractor to prove their expertise in a tender. The client does not give requirements but merely provides a deliverable and broad scope. It is up to the contractor to show their capability, expertise, and distinctiveness (van de Rijt & Santema, 2013). Best Value does not stop after the awarding of the project. The contractor takes the initiative to execute the plan and to minimise the risks. The client should not micro-manage the contractor, but trust on the proven competence of the contractor. Appendix A provides a more elaborate explanation of the principles and process of Best Value

1.1.1 Best Value in practice

After Best Value was introduced in The Netherlands, many companies educated themselves about the methods and principles of Best Value, especially about the procurement phases. Less knowledge is available about the difficulties of managing a project team in the execution phase of a Best Value project since fewer parties can do the actual execution of a plan after awarding (van de Rijt, Witteveen, & Santema, 2016). There are a lot of cases discussed in the books *Best Value Stroomt*, *Best Value Werkt*

and *Prestatie Inkoop*. These cases have shown, that during execution, a lot of project members unintentionally fall back into traditional project management roles (van de Rijt & Santema, 2013; van de Rijt & Witteveen, 2014; van de Rijt et al., 2016).

According to Ingrid van Oers (2016) from KPN, the success of a Best Value project depends on how the people in the team embrace Best Value. The traditional project manager used to have technical knowledge about the execution of the project. Best Value requires a leader instead of a manager, who can use the qualities of other employees to benefit the project. Traditional project managers like to direct, manage and control, instead of, for Best Value required, observe, listen and align. The technical employees also might find it challenging to embrace Best Value because they like to go into technical details of the project, instead of using dominant information (van de Rijt & Santema, 2013). This change for managers and employees is quite significant and would need a paradigm shift in the whole organisation. If this shift does not happen, traditional management styles will be used in the execution of a Best Value project (Rivera & Kashiwagi, 2016).

A different approach in management style requires a different attitude, role perception, and behaviour from the management team, but also the rest of the employees involved in the project. For some people, this might be too big of a paradigm shift to be comfortable in. Often the advice is given to provide continuous support from Best Value experts to remind everyone of the principles (van de Rijt et al., 2016). However, in stressful situations, such as conflicts, people don't always react rationally even when they have learned about the new approach. Klaas-Pieter Majoor (2016) explains in his case *Toeval bestaat niet* that in a conflict the amygdala in our brain provides a stress reaction, which ensures you to behave quickly. For most people Best Value is contra-intuitive, and therefore most people tend to unconsciously fall back into more comfortable or familiar working methods when a conflict arises (Majoor, 2016). Continuous updates on Best Value, therefore, might not be enough to eliminate the traditional behaviour.

1.2 Problem statement

Projects are becoming more complex and more disciplines are added to the design and execution process. The social and market pressure has increased to finish projects on time and within budget. Conflicts in projects are bound to happen with this pressure and complexity (Cheung & Yiu, 2006; Harmon, 2003; Jaffar, Tharim, & Shuib, 2011). The last paragraph has shown that Best Value demands a paradigm shift from people working on Best Value projects. The client and contractor both have to take on a new role and this might not be a comfortable or intuitive role for everyone. People can behave

irrationally in conflicts, due to the stress reaction our brain gives. It is only human nature to get wound up and forget about the new theory that was presented during a lecture.

The literature on conflict causes, consequences and management approaches is very extensive. The literature on the theory of Best Value is also extensive, but it is also still in progress due to the novelty of the approach, which can cause uncertainties about the interpretation. The literature mainly focuses on the tender phase, because until recently Best Value was seen as a procurement method. There is a gap between the theory of Best Value and the literature of conflicts in projects. Project managers are now more or less thrown into the deep end when it comes to the clarification and execution phase. They do not have an apparent oversight of the development of conflicts in these phases and on the actions they could undertake to prevent conflicts or to manage them and still hold on to the Best Value approach.

2 | Research Design

Introduction

The objective of this research is to design a set of actions to prevent conflicts in the execution phase of Best Value projects to help project teams of clients and contractors. The first part of the research focuses on identifying the main causes of conflict in Best Value projects. The second part of the research focuses on identifying the actions that can be taken to prevent the causes of conflicts. This thesis is a qualitative research where semi-structured interviews spread out over several projects were used for data collection. This chapter discusses the research questions and strategy used in this thesis and presents the outline of the report.

2.1 Research question

The objective of this research is to design a set of actions for conflicts in Best Value projects. The first step in the research has to be to find the causes for conflicts and the second part will focus on finding activities to prevent the conflicts. Therefore the following research question is used in this research:

What causes conflicts in Best Value projects and what should the clients and contractors do to prevent this?

The sub-research questions will help to develop the information needed to answer the research question. The sub-research questions are:

1. What are causes of conflicts in construction projects?
2. What are the main causes of conflicts in Best Value projects?
3. What can be done to prevent the causes of conflicts?

First, the main causes of conflicts in projects needs to be established. A more in-depth understanding of causes of conflicts and conflict types in construction projects is used to create a theoretical framework. This theoretical framework is used as a structure to analyse the effects of Best Value. The analysis starts with the effect Best Value should have if looked at the theory. A qualitative analysis of the interviews is used to discuss the effects of Best Value on conflicts in practice, which is compared to the theory. The analysis is used to find re-occurring themes, which are seen as the main causes of conflicts in Best Value projects. After the main causes are identified, activities that could be used to prevent the conflicts are identified. These activities will be analysed on overlapping themes to define the set of actions.

The research framework in Figure 7 shows an overview of the steps that are taken to answer the sub-research questions and the main research question. The choice for research method is explained in paragraph 2.2.

2.1.1 Scope

The scope of the projects helps to define the domain of the research to limit the possibilities. This ensures a manageable research (Verschuren & Doorewaard, 2010).

- This research will focus on projects in the public domain because these parties have to follow EU directives in procuring projects (Chao-Duivis, Koning, & Ubink, 2013). This limits the chances that hybrid models of Best Value are used.
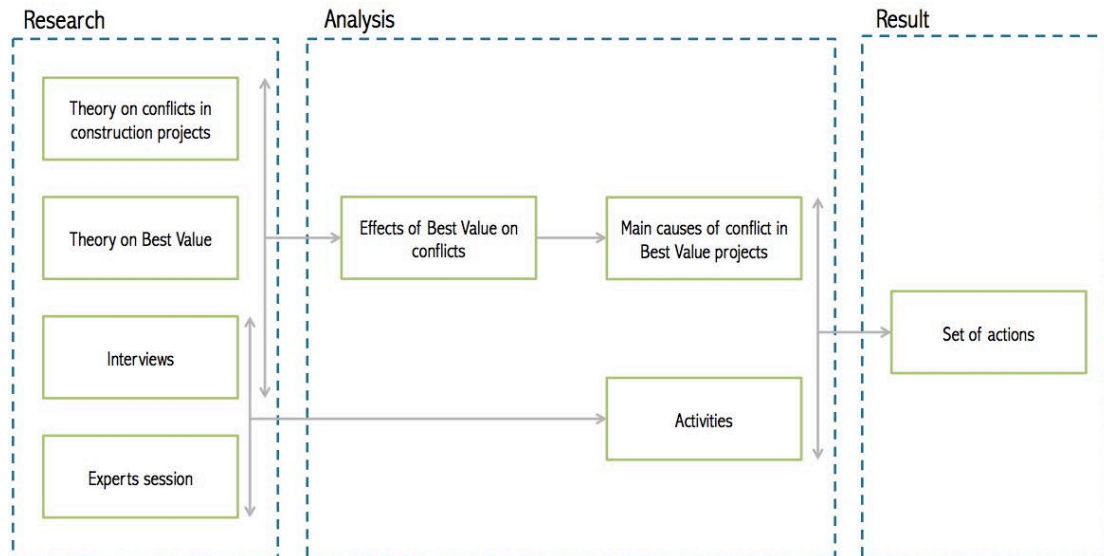
Figure 7. Research framework

- This thesis is conducted for the Master Program Construction Management and Engineering; therefore the focus will be on projects in the construction sector.
- The effects and responses to project management styles can differ in different cultures (Hofstede, Hofstede, & Minkov, 2010); therefore this research will focus on Best Value projects and teams in one country. The Best Value Approach is mainly used in The Netherlands and The United States of America. The focus will only be on The Netherlands, due to practical reasons.
- The focus of this research will be on the clarification and execution phase because in these phases the client and contractor have to work together and are seen as the most difficult phases and most sensitive for traditional behaviour (Verheul, Rydell, & Santema, 2013).

2.2 Research strategy

Three decision should be made when deciding upon a research strategy (Verschuren & Doorewaard, 2010). The decisions that need to be made are:

1. Should the research be broad or in depth?
2. Should it be quantitative or qualitative?
3. Should it be an empirical or desk research?

Researching conflicts and behaviour in projects is very challenging because it involves biased opinions, strained relationships and complex situations. This makes it difficult to research with reliable data if the

results are not thoroughly analysed and discussed (Stone, Perrenoud, & Sullivan, 2014); therefore this research is in depth. The effect of the conflicts on personal behaviour and project success is difficult to quantify, because of its subjective nature; consequently, the main research method is a qualitative approach. The aim of the research is to design action that helps clients, contractors and experts in the execution of their project, which entails a focus on the practicality of the approach. The research should be empirical to ensure the practicality of the design.

2.2.1 Interviews

The qualitative, in-depth and empirical strategy took the form of semi-structured interviews spread out over several projects. Interviews are used to see and understand phenomenon in social behaviour (Maso & Wester, 1996). Semi-structured interviews help to get more insight into the interviewee's viewpoints and perceptions because it provides them with the opportunity to speak openly about their experiences (Flick, 2006). Semi-structured interviews also leave room for unexpected answers and topics, which would not be possible with structured closed questions (Bryman, 2012). Interviews allow the researcher to learn about situations in the past and present where they could not be personally (Weiss, 1995).

The interview was designed with a list of topics that were discussed in each interview and a list of open questions to provide some guidance for the interviewer. The interview questions can be found in Appendix B. The topics and questions of the interview are based on concepts that are found in the literature review. These concepts help to develop expectations, which helps in recognising patterns or exceptions (Nievaard, 1996). Two exploratory interviews were conducted before the start of the actual interviews. One interview was a test-run to see the reaction of the interviewee to the type of questions. The responses in this interview were not satisfying; therefore the questions were adapted. A second interview was conducted with a Best Value expert to get a better understanding of practical problems that are seen in Best Value projects.

Project selection

It is hard to define a statistical grounded number of respondents needed in qualitative research. However, the following general rules can be applied (Rem, n.d.):

1. Minimum of twelve respondents
2. Continue until saturation

In conflicts, there are always more sides to a story. In interviews, people tend to brag, lie and talk about the perception of behaviour, instead of what actually occurred (Maso & Wester, 1996). To get a, as objective as possible, view on what transpired, at least two people involved in the project should be

interviewed. Therefore, the project managers of the client and the contractor were interviewed, when possible. First, a total of six projects were chosen to reach the minimum of twelve respondents. After twelve interviews were conducted, the decision was made that saturation was achieved, but to ensure this, two additional interviews were conducted. A description of the interviewees can be found in Appendix C.

There are different strategies to select the sample in qualitative research (Punch, 2006). The sampling strategy for this research was determined by providing criteria for the selection and to follow leads that came along the way, which is the opportunistic strategy (Punch, 2006). The scope of the research provides most of the criteria.

Criteria for project selection:
- The project is from a Dutch public client,
- The project is in the field of construction or infrastructure,
- The project is on going for a sufficient amount of time. Otherwise, there has not been enough time for conflicts to arise,
- Interviewee knows about the day-to-day developments in the project,
- Interviewee understands Best Value,
- There is a willingness to cooperate from the client and contractor.

The interviews are handled strictly anonymously. The references to clients and contractor used for the quotes in this report are random and only known to the researcher and supervisors. The audio and transcripts of the interviews are not part of this report and are only available for the researcher and the supervisors. This research is not part of a company or organisation, other than the Technical University of Delft; therefore there is no conflict of interest with the organisations that took part in the interviews.

2.2.3   Analysis

The analysis of the effects of Best Value on conflicts was done with a template approach. This approach entails that the data is coded with predefined codes, which are based on the literature review. This approach is recommended for researchers that do not have a strong background in the topic (DiCicco-Bloom & Crabtree, 2006). A list of the codes used for the analysis with the corresponding definitions can be found in Appendix D.

The analysis of the activities is through multiple cycles of coding. First, all activities mentioned in interviews and by experts are listed as an activity with the effect it had or should have. These activities were analysed for re-occurring themes to cluster the activities into more general activities. This cycle of analysing continued until a manageable list of activities was created.

The qualitative data analysis software ATLAS.ti (version 8.5.3 for Mac) was used to code the transcribed interviews. This software provided an overview of the total occurrence and co-occurrence of the concepts, with the matching quotations. These overviews were used as a basis for the analysis.

2.3 Thesis outline

The first chapter of this thesis started with a brief introduction of Best Value, and the challenges it faces within the execution phase of projects. This chapter has described the research design, which consists of two parts: (1) identifying the causes for conflicts in the execution phase of Best Value projects and (2) identifying actions to prevent the causes for conflicts.

Chapter 3 is a literature review into conflicts in construction projects, which results in multiple types of conflicts and types of trust. This is used as a theoretical framework for the analysis. The effects of Best Value on conflicts are discussed in Chapter 4. The concepts from the literature review are used to discuss the effects of Best Value on the different types of conflict and trust. The effect Best Value should have in theory is first discussed and followed by an analysis from the interviews to understand the effect Best Value has in practice. The reoccurring themes in this analysis are presented as the main causes for conflicts in paragraph 4.2. In Chapter 5 the activities that were found in the interviews or proposed by the experts during feedback sessions are discussed. The reoccurring themes in these activities result in categories of actions for the client, the contractor or mutual actions. These actions and the effect on the causes for conflicts are discussed in paragraph 5.2. In Chapter 6 the findings of this thesis are concluded and the results are discussed on limitations, and further recommendations for Best Value, the clients and contractors, and further research is given.

3 | Literature Review

Introduction

Over time, projects have become more complex and multidisciplinary, but also the pressure in time and costs has increased. This has led to an unhealthy situation between clients and contractors in the construction industry (Cheung & Yiu, 2006; Harmon, 2003; Jaffar et al., 2011). The literature on conflicts in projects, often specified on specific sectors, is very extensive. There is a lot of scientific research available that focuses on literature review alone. This paragraph will provide a summarised version of the literature to create a theoretical framework for the analysis of conflicts in Best Value projects. This is used to answer the first sub-research question; what are causes of conflicts in construction projects?

3.1 Definition of conflict

Conflict is derived from the Latin word *conflictus*, which means clash (Mele, 2011). Therefore a conflict is, according to Mele (2011), "a clash between divergent perspectives, interests, objectives, or behaviours" (p. 1378). Some definitions focus more on the operations of the project and other focus on the issue of perception. Operational conflicts focus on the disagreement about the execution or interpretation of tasks and obstructing each other in the tasks that need to be done (Jaffar et al., 2011). Levi (2001) focuses on the perception issue and uses the following definition: "Conflict is the process by which people or groups perceive that others have taken some action that has a negative effect on their interest" (p. 116). Wall and Callister (1995) define conflicts as "a process in which one party perceives that its interests are being opposed or negatively affected by another party" (p. 517).

If one person or party perceives that the other party is opposing their interests, it can lead to irrational behaviour of that party or person. In a Best Value project, this can change the dynamics of the new type of relationship between client and contractor. This can have a significant impact on the collaboration, the performance and can trigger more conflicts. The perception view on conflicts should therefore also be used in this research.

3.2 Underlying causes of conflicts

The unhealthy attitude in construction projects, as mentioned in the introduction, is due to the difference in the interests of the client and the contractor. The client wants to minimise their costs, and the contractor wants to maximise their profits (Cheung, Yiu, & Yeung, 2006; Nicholas & Steyn, 2017). This pressure on the market resulted in a situation where low quality is delivered, and the contractor claims every piece of additional work. This creates a lose-lose situation for both parties. Contractors should focus more on being customer-oriented to develop successful projects. However, the clients of projects should be more willing to understand the market position of contractors in projects if they want projects of high quality (Bryde & Robinson, 2005). These two elements have been noted as critical success factors in projects. However, the practice shows another reality. A survey conducted by Chan (2003) indicates that it is the client that finds it difficult to create this mutual understanding, which can be related back to social and market pressure to finish projects on time and within budget. The market pressure in public construction projects could stem from the lowest bid principle. Legally it is a robust criterion that promotes fairness and competition between market parties. However, in the US it has shown that this principle made companies offer the minimum required. This led public parties to increase requirements for the tender, which eventually led to high transaction costs and low

competition (Bergman & Lundberg, 2013). In the EU, the procurement law has shifted from the lowest bid principle to the most economical advantageous tender (MEAT). However, the extra qualities contractors present in the tender will still have to be transformed into monetary terms to justify the choice of the awarded contractor (Bergman & Lundberg, 2013). Therefore, it still lacks a certain focus on quality and still provides a pressure on the market to use the lowest price in their tender application.

Projects characterise the construction sector. Turner (2003) describes three features of projects, which are that (1) each project is unique, (2) different approaches are used in every project and (3) it has a definite beginning and end. Turner (2003) argues that it is not time, cost and quality that create pressures for projects since that has to be managed as well in everyday operations. Projects are sensitive to conflict because projects are uncertain, have a high need for integration and have a sense of urgency (Turner & Müller, 2003). The definition of project success is not standardised and therefore sensitive to interpretation, which can create difficulties during the project (Gudienė, Banaitis, Banaitienė, & Lopes, 2013). In projects, there is an owner (principal) that chooses a project manager (agent) to execute the project. This decision leads to a temporary shift in power from the principal to the agent (Turner & Müller, 2003). This temporary shift in power creates uncertainty for the owner of the project. The project owner might fear that the project manager will maximise his or her interests, instead of the interests of the owner, which can lead to mistrust. This tension between the principal and agent is called the moral hazard problem (Müller & Turner, 2005). During the project, the agent will know more about the issues and progress of the project than the principal, and due to this asymmetry in information, the principal cannot be sure about whether or not the right decision is made. This problem is called the adverse selection problem (Müller & Turner, 2005). This adversarial relationship results in an imbalanced level of commitment between the principal and agent, which can harm the trust between the two parties (Chan et al., 2003).

Trust in a contract-based relation is essential because it creates a healthy and confident atmosphere. It helps to build a situation where both parties dare to be transparent because they do not fear opportunism. Trust can help to reduce conflicts, but it also works the other way around; fewer conflicts help in building trust (Rousseau, Sitkin, Burt, & Camerer, 1998). Trust is needed in projects due to uncertainties and risks throughout the project, but due to the temporary nature of projects, there is limited time to build trust (Laan, Voordijk, Noorderhaven, & Dewulf, 2011). People are selected on their availability or expertise, which can make it difficult to steer on a natural forming of trust between all the people involved (Pinto, Slevin, & English, 2009). The construction sector is a difficult place to build trust, due to past experiences and the high amount of disputes (Chan et al., 2003). The lowest bid principle in the construction sector has had quite some negative effects that have harmed the trust between client and contractor (Kadefors, 2004). The lowest bid principle creates a business model for contractors where they need to earn money out of claims for additional work. It is not beneficial for the contractor to mention mistakes found in requirements or contracts beforehand because it would mean

they could not claim it as additional work later on. This makes clients suspicious towards the contractor's motives even when they do mean well (Kadefors, 2004). The *Bouwfraude* is still a significant obstacle for clients in the public sector to trust contractors. Almost twenty years later this long period of unfair competition, due to secret price agreements between contractors, is still mentioned when certain parties do not trust an awarded tender (Geertsma, 2014). Both the client and the contractor want to resolve these trust issues with iron-clad contracts that specify as much as possible at the start of a project (Müller & Turner, 2005). However, it is not possible, or desirable, to specify every detail of the project before the start, because (1) it is impossible to indicate them in verifiable terms and (2) the transactions costs will become too high (Kadefors, 2004). Contracts cannot and should not be the base for trust in projects because it does not lead to an efficient collaboration between clients and contractors (Pinto et al., 2009).

3.3 Conflict types

Conflicts can be triggered by many causes, such as cultural differences; scope changes, economic difficulties, poor communication, availability of information, lack of team spirit, differences in values, differences in expectations, stress, power struggles etc. (Jaffar et al., 2011; Levi, 2001; Wall & Callister, 1995). The list of possible conflict causes is never-ending. Therefore, researchers have tried to cluster it into more general conflict types. This paragraph discusses these types.

3.3.1 Technical-, process- and relationship-related conflicts

Jehn (1997) performed qualitative research with six teams to discover the everyday causes of conflict. He found three different types of conflict, which are (1) tasks conflicts, (2) process conflicts and (3) relationship conflicts. The research of Jaffar (2011) discusses the literature of conflicts in the construction sector and also merges the conflict causes into three similar clusters, which are (1) technical problems, (2) contractual problems and (3) behavioural problems.

Technical- or task-related conflicts are the most common conflicts in construction projects due to the high amount of complex tasks in the construction sector (Jaffar et al., 2011). During the project, experts are working to clarify all the tasks by collecting all the needed and available information. It is impossible to have all the information; therefore it can lead to conflicts about the way certain tasks should be resolved (Jaffar et al., 2011). Technical-related conflicts can have a positive outcome for the quality of the project because it improves the decision-making process (Jehn, 1997). However, in projects, it is often about making sure 'stuff gets done' instead of performing the right tasks. This will lead to haphazard decision-making (Nicholas & Steyn, 2017). Therefore, technical-related conflicts take

place after the task is done (Jaffar et al., 2011); consequently, it loses its positive outcome for the project success. Technical conflicts can also evolve into relationship-related conflicts because disagreements about tasks are often seen as a personal attack. However, if appropriately resolved, this only happens in few conflicts (Jehn, 1997).

Process-related conflicts include conflicts about responsibilities and the decision-making processes (Jehn, 1997). The research of Jaffar (2011) calls these contractual conflicts, which "include definition, interpretation and clarification of the contract" (p. 198). When conflicts arise, which are not precisely detailed in the contract, the conflict is usually about the interpretation of the contract (Jaffar et al., 2011). High levels of process-related conflicts are harmful to the relationship between client and contractor because it causes a feeling of unfairness between the team members (Jehn, 1997). However, a small amount of process-related conflicts, which are managed properly, have a positive effect on the productivity of the collaboration, because the most efficient working style is found (Jehn, 1997).

Relationship-related conflicts between teams "include human interaction, personality, cultures and professional background" (Jaffar et al., 2011, p. 197). On a personal level, relationship related conflicts include "individual's ambition, frustration, dissatisfaction, desire for growth, communication and level of power" (Jaffar et al., 2011, p. 197). The interests between client and contractor in a project differ. However, people involved in the project have personal interests as well. People want to improve themselves during the project and feel appreciated. However, conflicts mostly arise from the fact that people are afraid to 'lose face' (Jaffar et al., 2011). Relationship-related conflicts tend to resonate in process-related and technical-related conflicts. Relationship-related conflicts should mostly be avoided because they almost never have a positive outcome on the project success or relationship between client and contractor (Jehn, 1997).

3.3.2 Individual and organisational conflicts

Pieterman (1993) distinguishes the two levels of individual and organisational conflicts into four types: (1) intra-personal conflict, (2) inter-personal conflict, (3) intra-organisational conflict and (4) inter-organisational conflict.

An intra-personal conflict is a conflict that one person has with him or herself (Pieterman, 1993). This can happen when someone has to perform an activity that goes against his or her personal beliefs, values or interests. It can also be a conflict due to a mismatch between individual role expectations and the expectations from the organisation about the execution of a role (Cox, 2003). Inter-personal conflicts are conflicts between two or more project team members. There is a strong relation between intra-personal and inter-personal conflicts, which seems rational. If someone is not happy with themselves, it can quickly affect relationships with other people (Cox, 2003).

Intra-organisational conflicts are conflicts within one team about goals or responsibilities of the team (Cox, 2003). Over the years organisations have become less hierarchical which creates more interdependencies and makes more people responsible for decision-making. This can create more tension within organisations (Jehn & Bendersky, 2003). Inter-organisational conflicts are conflicts between several members of different teams, which are the most common conflicts. Mostly these conflicts are about authority or the allocation of resources (Cox, 2003). In literature, inter-organisational conflicts are seen as the most serious, because it involves a large number of people, which increases the impact of the conflict (Jehn, 1997).

3.3.3 Positive and negative conflicts

Two different views on the effects of conflicts can be found in literature. The first view is that conflicts are dangerous by definition and should be eliminated by taking enough preventive measures. Preventive conflict management focuses on ensuring a harmonious working atmosphere by providing healthy competition and being transparent in information (Pieterman, 1993). This view is represented by the linear relation shown in Figure 8a. It shows that with an increase of conflicts during the project, the performance level goes down. The second view is less drastic and also sees value in conflict. If there are no conflicts in a team, it can be a sign of dominant leadership or an unhealthy decision-making process (Levi, 2001). This view believes that conflict can enhance creativity and development in a project. This view is represented in the U shape relation shown in Figure 8b. Performance levels go up when there is a moderate amount of conflict, but goes down when there are too many conflicts throughout the project (Duarte & Davies, 2003). Duarte and Davies (2003) researched whether the linear or U shape is more presentable of conflicts in projects. Their research showed that the linear function comes closer to reality and that theory on the U shaped relation between conflict and performance is weakened (Duarte & Davies, 2003).
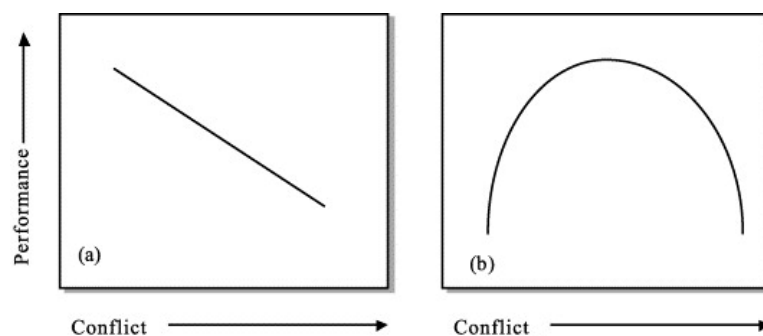
Figure 8. Two alternative views on the relationship between conflict and performance. Reprinted from "Testing the conflict–performance assumption in business-to-business relationships", by Duarte, M., & Davies, G., 2003, *Industrial Marketing Management, 32*(2), 91-99, p.92

It should be noted that a difference can be made between positive and negative conflicts, or sometimes referred as healthy and unhealthy conflicts. These different effects require a different management

approach. Whereas negative or unhealthy conflicts require being resolved or prevented, positive or healthy conflicts should be managed appropriately and sometimes even be encouraged (Leung, Ng, & Cheung, 2002; Levi, 2001). Positive conflicts are mostly based on technical-related issues, where there is a difference of opinion or values between experts from different fields (Levi, 2001). Values and ideas largely depend on personal training, expertise and previous experiences. Various experts have valuable information, and as long as these differences are used to stimulate decision-making processes about how to perform tasks, the effect should be positive (Leung et al., 2002). Positive conflicts have a perceived outcome of a win-win situation (Mele, 2011). Negative conflicts often come with a lot of emotion and stress and cause the conflict to divert from the task. It can be very damaging to communication, social relations and will continue to affect future conflicts (Levi, 2001). The perceived outcome of a negative conflict is either a win-lose situation or a lose-lose situation (Mele, 2011).

This paragraph discussed several ways to categorise conflicts by topic and level. The effects of these conflicts are different and can be either positive or negative. Table 1 (Jehn & Bendersky, 2003, p. 203) shows an overview of the different effects of the conflicts.

	Individual level	Organisational level
Task-related conflict	Being challenged increases effort Increases divergent cognitive processes Enhances task focus Increases anxiety and tension	Increases divergent opinions, interpretations and viewpoint Increases evaluation and assessment of alternatives Increases communication, shared information and problem identification Increases group problem-solving
Process-related conflict	Increases claim and blame perspective Feel personally attacked Unfairness and inequity primed	Increases re-evaluation of processes and standards Increases appropriateness of tasks and resource assignments
Relationship-related conflict	Distraction Misspent time Misspent effort Limits cognitive processes Decreases ability to assess new information Decreases commitment	Decreases cooperation and goodwill Decreases communication and understanding Group focus on resolving or retaliation Access to new information limited

Table 1. Positive and negative effects of different conflict types on individual and organisational level. Adapted from "Intragroup conflict in organisations: A contingency perspective on the conflict-outcome relationship", by Jehn, K. A., & Bendersky, C., 2003, *Research in organisational behaviour, 25*, 187-242, p. 203

3.4 Trust

Trust influences project success and the relationship between the client and the contractor (Pinto et al., 2009; Russell, 2011; Wong, Cheung, Yiu, & Pang, 2008). The advantages of trust in projects are the increase in information sharing, the decrease of transaction costs and controlling behaviour (Pinto et al., 2009), and it helps to overcome risks and uncertainty (Wong et al., 2008). Trust is defined by the willingness to be vulnerable and to have positive expectations (Kadefors, 2004; Lumineau, 2017; Rousseau et al., 1998). Mayers (1995) has a different view on this definition. He says that trust encompasses actually being vulnerable (Mayer et al., 1995).

Trust is a multi-layered concept, which means that trust in a client-contractor relationship cannot be based on one type of trust. Distrust is also a part of trust, and the two concepts can vary independently. Distrust can help both parties to stay alert and always try to find the best solution. It can help to create constructive feedback on each other's ideas (Lumineau, 2017). Trust it is a complex phenomenon, and many researchers have tried to identify different types of trust. Most models use a simple conceptualisation of two types of trust, which are affective trust and cognitive trust. Affective trust focuses on an emotional bond, and cognitive trust focuses on competence (Pinto et al., 2009). Other conceptualisations use the themes of trust as proposed by Mayer et al. (1995), which are benevolence, ability, and integrity. Wong et al. (2008) developed a framework to conceptualise trust specifically for construction contracts. This research focuses on Best Value projects in the construction sector. Therefore, this conceptualisation is used in this research. The conceptualisation of the study of Wong resulted in three different bases of trust (1) system-based trust, (2) cognition-based trust and (3) affect-based trust, as shown in Figure 9.
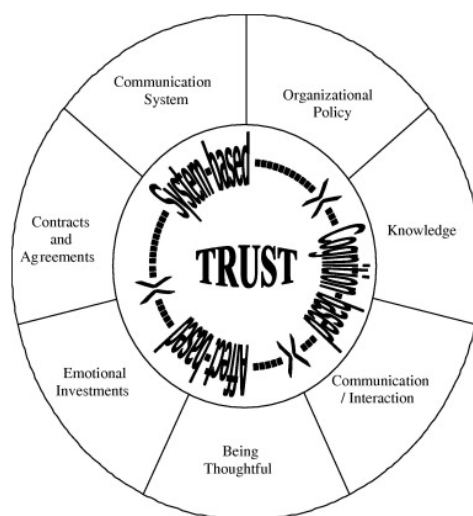
Figure 9. A framework for trust in construction contracting. Reprinted from "A framework for trust in construction contracting", by Wong, W. K., Cheung, S. O., Yiu, T. W., & Pang, H. Y., 2008, International Journal of Project Management, 26(8), 821-829, p. 824

System-based trust is based on rules and regulations, which can be both cultural and formal (Lewis & Weigert, 1985). Contracts, clearly defined communication procedures and organisational policy are used to enhance this trust (Wong et al., 2008). Contracts stipulate the requirements to perform the project and therefore help to reduce uncertainty, which enhances trust. Clear communication is needed to communicate the progress of the requirements in the contract to safeguard this trust. Organisational policy creates predictability in behaviour, which helps to develop this trust (Wong et al., 2008).

Cognition-based trust is a rational trust based on information. This trust is formed by competence, integrity and goodwill (Dowell, Morrison, & Heffernan, 2015), which together can be seen as trustworthiness (Parayitam & Dooley, 2009). In earlier phases of the project, integrity is the most important factor to form cognition-based trust, and during the project, competence becomes more critical (Dowell et al., 2015). Interestingly, the clients find competence more critical compared to contractors (Pinto et al., 2009). Communication and knowledge enhance cognition-based trust because it helps to obtain and translate information. Acquiring information about past performance, reputation, a person's role in an organisation and finances are essential to build this trust and to reduce conflicts in projects (Wong et al., 2008). A challenge in cognition-based trust is the chance that the assessment of competence, integrity and goodwill can be subjective or biased, which decreases the rationality of this trust (Jarratt & Ceric, 2015).

Affect-based is trust based on individual and emotional relationships (Wong et al., 2008). This trust is developed through experiences and interactions between team members over time (Dowell et al., 2015). Affect-based trust helps team members to communicate more openly, focus on team goals, and it helps to create a shared understanding of the knowledge (Parayitam & Dooley, 2009). Being thoughtful and emotionally invested in team members can enhance this type of trust and "reduces defensiveness, unhealthy competitiveness and disruption, eliminates frictions and enhances team spirit and morale in working relationship" (Wong et al., 2008, p. 824). Affect-based trust is more important in earlier phases of the project because the team members do not yet had enough experience to form cognition-based trust (Dowell et al., 2015).

4 | Best Value & Conflicts

Introduction

This chapter will look at the effects of Best Value on conflicts in theory and practice, because as the famous baseball player Yogi Berra said, "In theory, there is no difference between theory and practice. But in practice, there is" (as cited in Mikkelson, 2015). The practice is examined by analysing the interviews that were performed with fourteen project managers of clients and contractors that are currently in the execution phase of a Best Value projects. Re-occurring themes in the analysis are seen as the main causes of conflicts in Best Value projects. This is used to answer the second sub-research question; what are the main causes of conflicts in Best Value projects?

4.1 Analysis of the effect of Best Value on conflicts

This paragraph discusses the effects of Best Value on conflicts in theory and in practice. Fourteen interviews with project managers from clients and contractors give a better understanding of the reality of conflicts in Best Value projects. These interviews are analysed based on the concepts from the literature review. Appendix E shows the occurrence of the concepts in the interviews. A quick glance on this figure shows that there are not any distinctive differences in the amount of times certain concepts or principles were discussed between projects or clients and contractors. A more thorough analysis also showed that the views of the client and contractor or between different projects did not differ much.

Appendix F shows the co-occurrence of the concepts. This was used as a means to understand which concepts affect each other. For example, process- and technical-related conflicts often co-occur with inter-organisational conflicts. This is understandable, since these conflicts often occur between two project teams. However, the conflict types also often co-occur with intra-organisational conflicts, which also co-occurs often with traditional behaviour. Therefore, this could be an indication that these intra-organisational conflicts lead to traditional behaviour. The figure also shows a high co-occurrence between distrust and cognition-based trust. This is interesting since cognition-based trust should be objective and, as will be showed later in this paragraph, could be a solid foundation for trust in Best Value projects and relationships between client and contractors. Interesting occurrences and co-occurrences found in Appendix E and Appendix F were analysed by clustering quotes and interesting observations will be discussed in the following paragraphs.

The first part of each sub-section discusses the effects Best Value should have on conflicts if looked at the theory of conflicts and the principles of Best Value. Secondly, the analysis of the fourteen interviews is used to discuss the concepts and compared to the assumptions that are made. The effects of Best Value on the concepts in theory and practice is summarised in figures and the effects are indicated with symbols. The meaning of these symbols is shown in Table 2. The concepts are discussed separately, and re-occurring themes of the analysis form the base of the main causes of conflicts, which will be explained in paragraph 4.2.

Effect	Symbol
Positive	+
Negative	-
Neutral	0
Non-existent	/

Table 2. Legend for conceptual frameworks

4.1.1 Underlying causes of conflicts

Market pressure

The literature review showed that conflicts in a construction project could be caused by market pressure due to the lowest bid principle. It creates a situation where contractors earn money from claims for additional work during the project, which is an unhealthy business model and leads to distrust. Best Value gives contractors the opportunity to ease this market pressure because they are not awarded based on the lowest price, but on the level of expertise that they can deliver. It gives contractors the opportunity to improve their reputation and to create a more healthy business model, which is positive for the client as well.

In the interviews, it shows that contractors appreciate the possibility to showcase their expertise and to have the ability to build a better reputation. The clients also saw a positive effect of this possibility. However, some organisations are still afraid to bid with a higher price, but they do now first determine the level of quality and then find the best price, which is beneficial for client and contractor.

> *[Best Value] is a chance to make a difference, because we think we are the experts for specific projects, so that should show. However, we still go for the lowest price because we do not dare to do that yet. We are positive about it because we are not a contractor that can win at the lowest price. We must have it from quality. We do not want to fight on price, so it is a chance.*
>
> - Contractor 4

> *The weight of the price is much lower, but you have to watch out that price is not still decisive. With BV it is more about quality […]. If the contractor can do something for a reasonable price, then it is also more likely they can go for quality. It is unjust to ask the market to add money to projects, but if you do not pay attention, this situation will arise. You do not want that either.*
>
> - Client F

Moral hazard problem

In every project, there is an owner (principal) that chooses a project manager (agent) to execute the project. This decision leads to a shift in power from the principal to the agent. In a traditional project, this shift occurs within the same organisation, because the managing responsibility remains with the client. In a Best Value project the project manager of the contractor is responsible; therefore he or she becomes the agent. Consequently, the moral hazard problem could increase, since the interests of the contractor differ from the client's interest.

It is essential to understand the vision of the client and the contractor on the responsibilities of the expert to know how significant the shift in power is and consequently how much more significant the

moral hazard problem becomes, compared to traditional projects. The role of the expert can be seen in different ways. One view could be that the contractor is given the role of temporary project owner with a full mandate to make decisions. This will create a significant shift; therefore an increased moral hazard problem. Another view can be that the contractor should have the role of a consultant that gives advice, which is not a significant shift in power. Table 3 shows statements from clients and contractors on how they see the role of the expert. It shows that none of the contractors or clients said that the decision-making is solely for the contractor or that there should be a full mandate for the contractor. The role of the expert should be of someone that takes the initiative, provides solutions and gives advice with objective information. The client still makes the decision, but they should be able to follow the contractor blindly. Therefore, the client can still ensure that their interests are taken into account. Consequently, Best Value does not negatively affect the moral hazard problem.

View of the contractors	View of the clients
Indicate the best solution with objective information.	Come up with solutions, show the options and give advice on the preferred solution.
Stick to the plan and always have a plan.	Advise with authority.
Unburden client.	Gathering facts and doing analyses.
Tell client exactly what to do.	Advising how we can stick to the plan.
Take the initiative, have a plan and a solution.	
Show what you are doing and providing them with options.	
To oversee everything and know what that means now and in the future and what interests you have to take into account.	
Work together, distinguish small issues from real issues, escalate when needed and tell people their responsibilities.	

Table 3. Role of an expert as seen by clients and contractors

The interviews also showed that Best Value provides possibilities for the contractors to put the client's interests first because they do not have to fight for their own interests as much. However, clients and contractors still have a hard time trusting the integrity to take the interests of each other into account. This is not due to Best Value, but due to bad experiences in the past.

> *We can now talk to each other about what the customer wants, what is the customer's need and what value can we add to that. Why are we the best for the job? Then you enter a cyclical process in which you put the customer's demand first and put our added value in parallel.*
>
> *- Contractor 2*

Adverse selection problem

During projects there can be an asymmetry in information between the client and contractor, which is the adverse selection problem. The principle of no details could enhance this problem because the client does not know the progress of the project. However, the client is not the expert and therefore should not need to know the details to understand the progress. The principle of transparency and objectivity would be enough for the client to understand that the best decisions are taken because it shows that the chosen decision is the best.

The interviews show that Best Value indeed has a positive impact on the adverse selection problem; due to transparency and due to the reminder Best Value provides that gut feelings and assumptions should be eliminated in discussions.

> *We must also focus on the fact that we are talking about the facts and sometimes it happens that we think with our gut-feelings too quickly*
>
> - Client E

Best Value assumes that the contractor is the expert and the client does not know what the best solution is. However, the reality is more complicated than this assumption. The interviews show that the client does have expertise. Therefore, they have an opinion on the decisions made. It often happens that the client questions the information provided by the contractor, which is called a wicked problem (De Bruijn, 2008). In a wicked problem, there is not a disagreement about the facts, but there is a disagreement about norms (De Bruijn, 2008).

The clients are still ill at ease to leave the responsibility for design and execution entirely in the hands of the contractor. Good experiences are needed to take away this feeling and to ensure enough trust is built to let go of this distrust. Only dominant and objective information should be used in Best Value. In reality, it is almost impossible just to use dominant information and to be completely objective in decision-making. The interviews show that the client does not only want to know the facts, but they want to understand the process the contractor goes through. The contractors also find it hard just to use dominant information, because context can be essential for the decisions made.

> *[The dominant information] that you write down should be sufficient to steer, but in reality, there are so many events that are related to each other in projects, how do you write that in two sentences, because then it remains dominant. That is the realisation that you encounter.*
>
> - Contractor 2

Figure 10 shows the discussed effects of Best Value on the underlying causes of conflicts in construction projects.
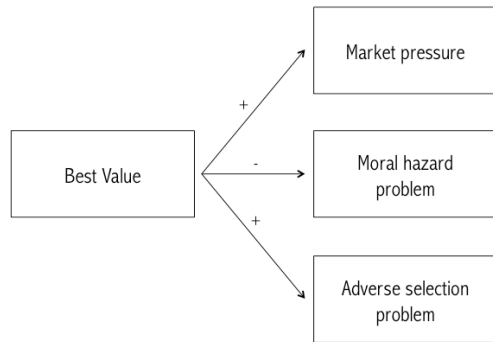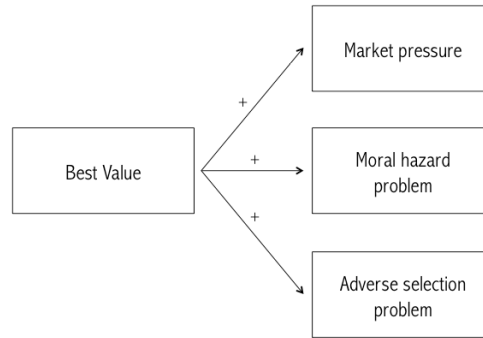
Figure 10. Effect of Best Value on underlying causes of conflicts

4.1.2 Conflict types

Technical-related conflicts

Technical-related conflicts should have a positive effect on projects because it improves the design process. Technical-related conflicts become harmful when they occur after the task is already completed. In a Best Value project, this type of conflict should happen at the start of the project because in the clarification phase the whole project is thoroughly prepared and discussed with the client. Therefore, the effect of Best Value on technical-related conflicts should be positive.

There is a high co-occurrence with technical-related conflicts and the no requirements principle. According to the principles of Best Value, the client cannot have requirements. Contractors like this, because it makes them able to take on the role of the expert. The interviews show that not providing requirements at the start of the project does not mean the client does not have any wishes. These will eventually come out after the task is completed; consequently, lead to negative technical-related conflicts. This is also due to complicated organisational structures of clients. Coordination about the project is discussed with the project teams. However, they are not the actual clients. The asset or regional managers are the real clients, but they are not involved and mostly do not want to be involved. They do not have any official commitment towards the project and do not feel any responsibility towards the project during execution. They do however have a strong opinion and have to give the final ok before the project is finished. The project teams of the clients notice this difficulty as well. The contractor of one of the projects involved the asset managers in the clarification phase. They acknowledged the fact that there was a lot of knowledge in that department about design and execution and the contractor wanted to know all of this to be able to be an expert. However, the asset managers did not appreciate this and did not show up. Another example was an asset manager that did not want to check the documents of the client, due to prejudices about the quality. It appears that the project teams of the client are not able to change this behaviour.

The frustrating thing about Best Value is that we let the contractor do all the work, and then we ask a lot of critical questions from our alleged expert role. […] I have not been able to prevent getting remarks afterwards [from our asset managers] that we would like to know at the start. This would ensure that the project goes faster with less loss of hours, therefore more valuable and would provide a better collaboration.

- Client G

The principles of no requirements and no details have a high co-occurrence with technical-related conflicts. The combination of these principles lead to traditional behaviour because it makes the client feel that the contractor is working in their silo and that makes them anxious because they want to know what is going on. This leads to 'manage direct and control' behaviour, which takes away the contractor's motivation to deliver the best product. A lot of contractors expressed their displeasure towards the client not being able to let go on a technical level because it hinders them to be the expert, which has a significant effect on the project success. Clients said that they want to know details of the project because it helps them to be able to explain the process of the project to the rest of their team or their supervisors. Verweij and Kashiwagi (2016) state that if the client has to think about details of the project, the contractor has not been able to transparent enough about what they want to achieve with their actions, or it is not objective enough. However, only showing objective information, in, for example, the weekly reports creates a situation where the client and contractor do not understand each other well enough because it lacks context and therefore creates misunderstanding or conflicts.

It is a lot of picking in the weekly. Do they understand what we mean? We do not always understand their comments either. There has been a lot of irritation about that.

- Contractor 7b

The interviews show that the technical-related conflicts are mostly on an organisational level. Intra-organisational conflicts on the contractor's side are due to overpromising in the tender phase, which is traditional behaviour. They underestimate the time and costs of making sure all their promises are drawn into actual plans. On a board level, they only see the extra costs in an early phase and do not recognise the benefits this effort has later on in the project. This can create conflicts between the project team and the board of the contractor. Intra-organisational conflicts at the client's side derive from all the different departments within the organisations. Besides that, the clients are public parties, and therefore there can also be political pressure. These intra-organisational conflicts often evolve into inter-organisational conflicts as is shown in the quote below. However, it also shows the contractor's compassion has towards the client's situation.

They just get an internal memo that they have to pay attention to something, and then they go all out, or someone says that something is the most prominent risk and then they will dive into it all and ask questions. We are just busy with the project and find it weird that they come with all those questions. It hinders. I think that they are also confronted with it from their internal organisation, that the project team considers the contractor is doing just fine, but that once again there is a directive or policy from politicians that they have to do something with their projects. They are also confronted with it.

<div align="right">- Contractor 2</div>

The assumption was made that Best Value has a positive effect on technical-related conflicts because they are discussed at the start. However, the no requirements and no details principles have shown to have a negative effect on the commitment of the asset managers, the client's client, to help out at the start of the project and it causes traditional behaviour of direct, manager and control. The technical-related conflicts often still happen throughout the project or just before handover; therefore the assumed positive effect does not occur.

Process-related conflicts

Process-related conflicts are conflicts about responsibilities, decision-making processes and the interpretation of the contract. These topics are thoroughly discussed at the start of the project in the clarification phase, which means that it is less likely that there are still misalignments with the interpretation of the contract during the project. Therefore, Best Value should have a positive effect on process-related conflicts.

During the clarification phase, most of these conflicts could be resolved. However, the contract is not signed yet during, which can make contractors hesitant and creates a hierarchy in the relationship (Kadefors, 2004). The contractor's project team can experience intra-organisational pressure from their superiors to ensure the contract is signed. This can result in the traditional behaviour of over-promising by the contractor just to ensure the client is content. However, the clarification phase should focus on making a realistic plan where the contractor dares to say what is in and out of scope to make sure all expectations align. It hardly ever happens that the clarification phase does not end in awarding since the legal grounds for the client to do so are limited.

Financially [the clarification phase] is a big risk for [the contractor]. We tell them it will be okay, but then they say that they are not yet satisfied. Then we say how many BV projects have not gone through, in the end, so do not be too bothered about that, but then they say that they will just be the one.

<div align="right">- Client F</div>

The contractor wants the clarification phase to end sooner rather than later because it takes away time from the execution phase. They realise later on that this time is easily won back. Almost all clients and contractors said that they would have wanted to take more time in the clarification phase to make sure everything was discussed because it can be addressed without the emotion and pressure of money. However, it is not possible to know everything that could happen at the start of the project. One of the client's project manager mentioned that they should have had a process description for these cases to still ensure an objective view on the responsibilities in conflicts during the execution phase.

> *As a contractor, you are forced to say which assumptions you make, and it also makes it clear that if something is not in it, you can discuss whether or not it should have been included. You discuss it before you're in the hectic of the day, that's really good.*
>
> - Contractor 7a

The client is not supposed to have requirements for the project. As discussed before, this does not mean those wishes do not exist, which can lead to negative technical-related conflicts because they are addressed too late. Process-related conflicts had a high co-occurrence with no requirements as well. Theses conflicts occur because it becomes unknown who is responsible for making sure the contractor knows all wishes of the client's client. One of the client's project managers said that it is everyone's responsibility to make sure everything that they find essential is discussed because the client's project team does not want to operate as an intermediary. There are different ideas about this responsibility. Asset managers believe that it is not their responsibility to ensure all wishes and requirements they have, are discussed during the project because they have given this responsibility to the project team. However, they do not want to give away their mandate. Most contractors know this situation and try to act upon this, but this gains much resistance. It is interesting to see that it mostly does not affect the relationship between the project teams, due to the contractor's understanding of the client's situation and the openness of the client about their struggles.

Process-related conflicts had a high co-occurrence with no details as well. The analysis shows that all clients express that they want to be included in the process of the project to understand what is going on. This creates a problematic situation for the contractor. The contractors do not know how far they should take the client in their process and how much detail they should show, without having the risk of both falling back into traditional roles.

> *What we hear from the client is that they simply want to be included in the entire project. We find that very difficult. Where do you draw the line in the weekly then? You only want to report your risks that you see. That is really difficult. How far do you take them?*
>
> - Contractor 7b

The interviews show that objectivity has a positive effect on process-related conflicts because it limits room for discussions on the fairness of requests for additional work. It takes out the emotion of the discussion, which creates a situation where people can work more efficiently and be more rational (Jehn, 1997). The positive effect heavily relies on the quality of the risk dossiers and the in and out list. This determines the objectiveness of scope changes and requests for additional work.

> *[There is less hassle], because it is clear in advance what is in the offer and what is not. That helps because we know that if it occurs, why it occurs, what the consequences are in costs and who is at risk. So I am happy with [the in-out list and the risk dossier]. I think it's a good thing.*
>
> *- Client D*

Negative process-related conflicts occur when traditional behaviour towards risk is shown. The client tends to say 'you are the expert'; therefore the risk is yours. However, this is not the approach of Best Value. However, the outcome of these conflicts can become positive because it can lead to a better understanding of the Best Value method, which results in a better collaboration later on in the project.

> *The beauty of it is also that if you are discussing this with each other, then you also notice that the customer finds out, damn, we have written this down, and the contractor has correctly assumed this. He has read the contract well. Then you see that they are susceptible.*
>
> *- Contractor 6*

The effect of Best Value on process-related conflicts was assumed to be positive because responsibilities, decision-making processes and the interpretation of the contract are discussed in the clarification phase, which means that it is less likely that there are still misalignments with the interpretation of the contract during the project. Both the client as the contractor recognise the importance of the clarification phase to reduce process-related conflicts and understand the positive effect of the division of risks and responsibilities that Best Value provides. In practice, it shows that there are still a lot of process-related conflicts, but this is often due to inexperience.

Relationship-related conflicts

One of the principles of Best Value is that there should not be a relationship between the client and contractor. This is to ensure an objective decision-making process. This would mean that relationship-related conflicts would be non-existent in the project, which is positive because research has shown that the outcome of relationship-related conflicts is usually negative. However, relationship-related conflicts can also be about the behaviour that is shown by the team members. These conflicts can be present in Best Value projects, due to the different behaviour that is expected from the teams.

> *In theory, you would say we have a contract, in and out list and a risk dossier, so there is nothing that should become a discussion. But it appears that conflicts are still there, which then results in replacing a team member.*
>
> - Contractor 2

An underlying theory of Best Value is the Kashiwagi Solution Model, which distinct type-A and type-C people based on their ability to process new information. It states that only type-A people are suited to perform Best Value projects because they can handle new information quickly. However, not a lot of people are fully type-A; therefore, a lot of people will need to act outside their comfort zone. This can create intra-personal relationship-related conflicts. Relationship-related conflicts are usually seen as negative because it leads to a decrease in commitment, goodwill, understanding and communication. Relationship-related conflicts have a high co-occurrence with this theory. The relationship- or behavioural-related conflicts in Best Value can mostly be traced back to the fact that someone is not fully type-A, which is a particular set of skills that is not always needed. It does not mean they are not good at their job in other types of projects. Therefore, a relationship-related conflict does not become too personal. It often leads to a change in the team, which ensures the client or contractor to choose someone that is better suited for Best Value. This will have a positive effect on further collaboration.

> *The [client] showed us that [one of our team] was a risk because it was not a Best Value type […] First it was very personal, but at some point, you will look at the interests of the project*
>
> - Contractor 7a

In four projects a team member was changed. In three of those projects, he or she was changed due to traditional or inflexible behaviour, which led to distrust in the team member's competency. All of these team members were chosen on their expertise and substantive knowledge of the project, which is needed if the contractor wants to act as the expert. However, the reason for team change shows that an understanding of Best Value, especially for project managers, is also crucial.

> *We have had many changes in the team because we underestimated Best Value. We instructed people what to do at the start and then we noticed that people with a lot of experience cannot be flexible enough or get rid of old habits, which can be very harmful for us as a contractor.*
>
> - Contractor 6

The contractor and client should not have a relationship during the project according to Best Value. However, people like a relationship because it is close to their human nature (Washington, 2013). The energy and enthusiasm for the project has to come from both sides. Often the attitude from the contractors is that they can do it alone and the client does not want to put in the effort because the contractor should be the expert and arrange it all. This results in a lack of commitment and motivation.

We put so much energy into it, and it feels like he puts so little effort into it […] I think that it has to come from both sides. You have to have an energetic person on both sides. Although the client may lean more backwards, it is certainly nice that they pay attention to what is going on.

- Contractor 7b

The assumption was made that relationship-related conflicts should not exist in Best Value projects. However, the interviews have shown that relationships are still significant to the contractor and client and they put effort into this, which means that relationship-related conflicts also still occur. The conflicts discussed in the interviews are usually about the behaviour of people. Best Value requires a substantial paradigm shift in the collaboration style and there is an overall understanding that this might not be suited for everyone. Therefore, relationship-related conflicts are less personal and can stay more objective. Therefore, Best Value has a positive effect on relationship-related conflicts.

Figure 11 shows the analysed effects of Best Value on technical-, process- and relationship-related conflicts.
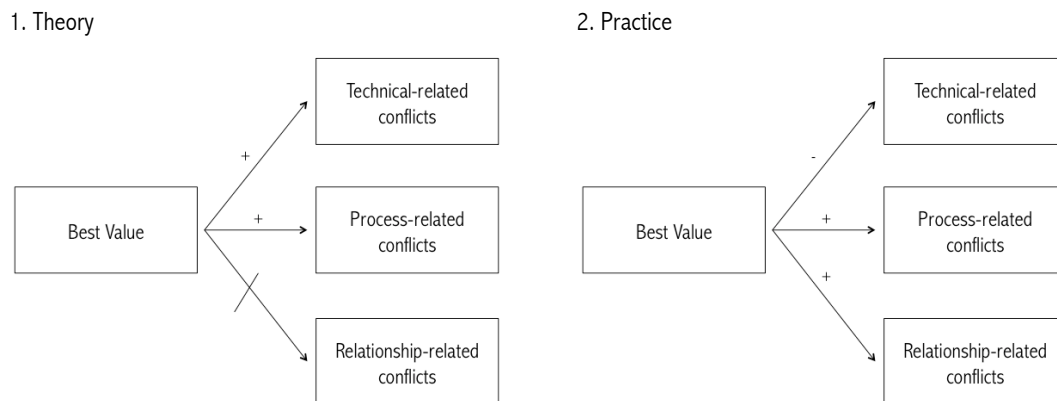
Figure 11. Effect of Best Value on technical-, process- and relationship-related conflicts

Individual and organisational conflicts

An underlying theory of Best Value is the Kashiwagi Solution Model. This model distinguishes people between type-A and type-C people. The model says that only type-A people will feel comfortable in Best Value projects. However, there are more type-C people. This makes it inevitable that type-C people will work in Best Value projects, which can create intra-personal conflicts. Intra-personal conflicts and inter-personal conflicts are very much related to each other; therefore it can be expected that inter-personal conflicts will also take place. However, this will not be due to Best Value. The interviews did show that a lot of people found it difficult to change their behaviour, which led to interpersonal conflicts as well. However, these did not turn out as negative as assumed by other literature. It often leads to a team change, which ensures a new team member that fits better into the expected behaviour for a Best Value project.

Another cause for intra-personal conflicts is that people are afraid to 'lose face'. Project managers of the client have to report the progress to their superiors and they are afraid to 'lose face' because they might not know an answer because no details are discussed. By having a relationship with each other, it becomes easier to have short communication lines towards the contractor's project manager. This could prevent that these intra-personal conflicts turn into controlling behaviour.

> *I have to be able to explain [the request for additional work] again. This is only possible if it is on paper. I cannot go to my boss with; I know what is going on and you do not and leave it at that. So that has to be a bit better.*
>
> - Client F

Intra-organisational conflicts arise when there is vagueness about responsibilities and goals. In a Best Value project, there will be less vagueness about these topics because goals are discussed at the start of the tender and responsibilities during the clarification phase. Inter-organisational conflicts will only play a role when the relationship between client and contractor is important. Best Value wants to eliminate any type of relationship between the client and contractor; therefore Best Value should reduce inter-organisational conflicts. The interviews show that responsibilities and goals are discussed between the project teams of the client and the contractor at the start of the project, but it still leaves a lot of uncertainty about responsibilities within the organisation. A lack of commitment from, for example, asset managers creates a problematic situation, because it establishes intra-organisational conflicts within their organisation, but also creates inter-organisational conflicts due to the irritations it establishes at the contractor's side.

Figure 12 shows the analysed effects of Best Value on individual and organisational conflicts.
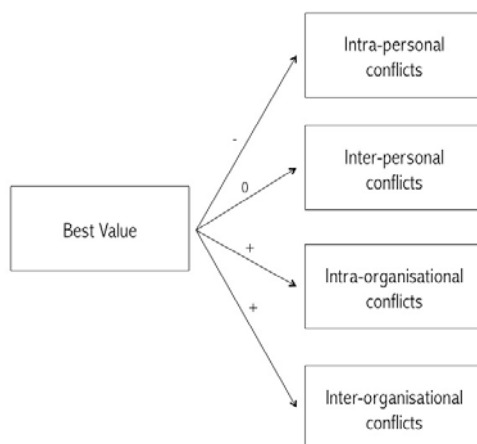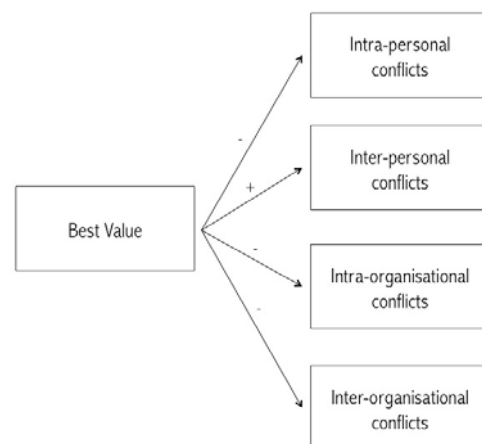
Figure 12. Effect of Best Value on individual and organisational conflicts

Positive and negative conflicts

One of the principles of Best Value is to make use of the contractor's expertise to find the best plan for a project or task; therefore Best Value should enhance positive conflicts. Positive conflicts can be even more encouraged when the client's expertise is used as well. A misunderstanding is that Best Value provides a 'super-expert' and that the client does not have to do anything for the project (Witteveen & van de Rijt, 2013). However, the contractor and the client both have their own fields of expertise in the projects. It is the job of the client and contractor together to achieve the goals of the project. An involved client that does not see Best Value as a 'way out' could stimulate positive conflicts, which will benefit the quality of the outcome of the project. In the interviews, it shows that the principle of no details and no requirements creates a feeling among the experts on the client's side that they do not have to do anything for the project anymore, leading to conflicts later on. However, if the asset managers are included before the start of the project, in the clarification phase, it has a very positive effect. Contractors and the client's project team both try hard to facilitate this, but it does not seem to happen, due to a lack of commitment or feeling of responsibility from the other departments.

Negative effects of conflicts arise when emotions and stress get involved in discussions. Best Value wants project members to only use dominant information, stay objective and not act upon emotions. The interviews show that Best Value indeed has a positive effect on eliminating emotions from decision-making because most discussions happen during the clarification phase without the everyday stress, emotion and pressure of money. These discussions can quickly evolve into negative conflicts if they had occurred during the project with the day-to-day demands. Negative conflicts have a high co-occurrence with relationship-related, and individual conflicts. The analysis already showed that these conflicts were related to the difference between type A and type C behaviour. These conflicts often led to an agreed upon team change, which does not negatively affect the future relationship.

Figure 13 shows the analysed effects of Best Value on positive and negative conflicts.

1. Theory
2. Practice
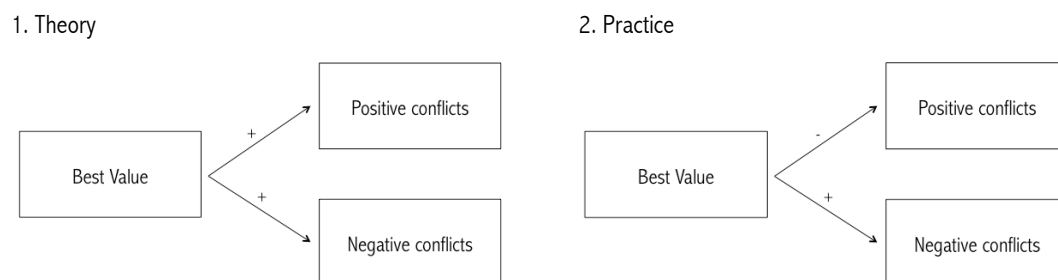
Figure 13. Effect of Best Value on positive and negative conflicts

4.1.3 Trust

The three types of trust were analysed by clustering the quotes from the interviews to understand what aspects are seen as essential to form the different types of trust in Best Value projects.

System-based trust

In traditional projects, contractors looked for any inaccuracy in the contract to create additional work, which does not enhance system-based trust. In Best Value, there does not have to be a contract, but the plans of the clarification phase should be enough. In practice, these agreements are translated into a contract. This means both parties agree to the contract at the start and both parties will not be able to look for inaccuracies, which helps in trusting each other's motives. Clear communication procedures are needed to safeguard this type of trust. The weekly reports provide a systemised communication procedure to update the teams on the risks and the control measures, which helps to safeguard this trust. In traditional tender procedures, the organisational policy is that the project manager does not get involved until after the tender phase has finished. Therefore, the trust that was build, will be lost again because the project manager was not there (Laan et al., 2011). In Best Value projects, the project manager is involved in the tender phase as a key figure. Therefore, the building of trust can start sooner and is more consistent. Consequently, Best Value should positively affect system-based trust.

The interviews show that clients and contractors appreciate that they can discuss the risks, responsibilities, scope and in and out list before the start of the project because it creates a mutual understanding of the contract. This helps to limit discussions about the interpretation of the contract during the execution phase.

> [The clarification phase] adds to trust because you have extensively discussed the scope and the in-out list before the start of the project.
>
> - Client B

The weekly report as a communication procedure does not have as much influence on system-based trust as assumed. The weekly report has a more significant impact on cognition-based trust since it provides objective information about the progress of the project and the competence of the contractor. The client and contractor do appreciate the opportunity to be involved earlier on. This provides more possibilities to start building a relationship, it ensures both teams stay on the same page, and trust in proven competence does not get lost.

The clarification phase could negatively affect system-based trust because this phase can be uncertain for the contractor. However, as discussed above, it also provides a critical positive effect because it establishes a mutual understanding of the contract. The uncertainty in the clarification phase should not be present if the contractor made a realistic bid and did not overpromise. If the contractor is just

providing more detail to their plan during the clarification phase, but it is in line with their initial proposal, the client does not have any legal ground to break off the collaboration and go for the second or third option. The clarification phase can also create uncertainty because the contract is not yet signed, which can create a hierarchy in the relationship (Kadefors, 2004). The project managers in one of the projects reduced this uncertainty by adding a go-no-go moment halfway through the clarification phase.

System-based trust in a Best Value project is based on the fact that both parties agreed upon the requirements in the contract before the project starts, which ensures that the client and contractor can actually trust it. This is the opposite of traditional project because clients knew that strategic decisions were made to not discuss requirements of the contract to be able to use errors or contradictions as requests for additional work. Therefore, the contract was not a mechanism to improve trust in traditional project and it is in Best Value projects.

Cognition-based trust

Cognition-based trust is based on objectiveness, which should fit perfectly in the approach of Best Value. Best Value wants to replace trust with facts about trustworthiness. The contractor has to show with verifiable performance information that they can execute the project and that they have been successful before, which should provide trust in the competence of the contractor. Integrity is also a part of cognition-based trust. Integrity is trusting that the other party will take your interests into account (Zaghloul & Hartman, 2003). The interests of the client and contractor are more aligned in Best Value projects, compared to traditional projects. Both parties want to have or deliver the project that has the 'best value', which decreases the focus on economic factors. As in system-based trust, communication is an important factor to maintain cognition-based trust. Key performance indicators (KPI's) are used in Best Value projects to show the competence of the contractor throughout the project, and the weekly reports provide insight into the risks and control measures. This should have a positive effect on maintaining this trust during the execution phase. Therefore, it is assumed that Best Value has a positive effect on cognition-based trust.

The interviews show that a lot of cognition-based trust is formed from the client towards the contractor in the selection and clarification phase. Interestingly, it also provides trust from the contractor towards his or her own performance. The interview is an essential element in the selection phase to build this type of trust. The clients appreciate the fact that they are talking to the persons that they will actually work with during the project and not a contract manager that will leave after the contract is signed. It also helps the client to be sure about their decision that the selected contractor is competent to perform the project.

> *Trust is based on the plan. That's where it starts. Then it's about the people that present and explain the project during the interview. Then you can really see if someone understands what he or she is talking about.*
>
> <div align="right">- Client F</div>

The contractor can continue to show his or her competence in the clarification phase, which provides a solid foundation for trust. The literature review explained that affect-based trust is more important in earlier phases, and cognition-based trust is formed later in the project. In Best Value projects, the base for trust is cognition-based. The tender phases are enough to establish a solid base for cognition-based trust. However, this is not enough to maintain trust throughout the execution of the project. During the project, it is essential for the contractor to continue proving their competence.

Many contractors expressed that they thoroughly discussed the project in the clarification phase, which means that both parties agreed upon the decisions made in that phase. Therefore, they want the contractor to stick to the plan. Not everything can go according to plan, but the contractor can show their competence by taking the initiative to make sure they still stick to the plan as much as possible.

For a client, it is essential that they are involved in the decision-making process from the contractor to maintain trust. The benefits for the contractor are that the client accepts the provided information more natural, which can speed up the decision-making procedures. It also provides a mutual understanding of the plans and can create goodwill, which can be helpful in situations of conflicts or unwanted events.

The interviews show that three aspects are essential to form cognition-based trust, which are (1) integrity, (2) objective information and (3) competence. The interviews show that respecting each other's interests, being open about the organisational interests and transparency are essential factors to demonstrate integrity in Best Value projects. It is crucial for both parties to trust that there are no hidden agendas. Clients and contractors find this hard due to bad experiences in the past. It would be helpful to express these prejudices to overcome this barrier.

> *We really show that we have no secrets and we really don't have them. So then it's easy to build trust.*
>
> <div align="right">- Contractor 4</div>

The weekly reports and the key performance indicators are sources of objective information in the execution phase to maintain cognition-based trust. The sources provide facts about the progress of the project, which makes it less problematic to talk about responsibilities in conflicts. Clients do find that

the contractor could do more to provide this objective information, especially for the key performance indicators. Contractors should look into the use of big data to support their information.

Trust in competence consists of more than knowing that someone has the capabilities to perform the project. The interviews showed that clients also find it essential that the contractor is transparent about which aspects they are uncertain. In a Best Value project, it is also crucial to comprehend the Best Value method to receive trust. This can be established by getting a Best Value certificate or by hiring an external Best Value expert that helps to guide the team through the project. The contractor should also be able to take the initiative since this is one of the critical factors for clients to trust the competence of the contractor

> *Taking the initiative and taking the lead, that provides trust. The client should dare to let go, and the contractor should have the competencies to pick it up.*
>
> - Contractor 7a

Despite all the positive effects Best Value has on cognition-based trust, there is still a high level of distrust. The interviews show that there is often distrust in the integrity of the contractor or the information provided during the project. In some cases, this distrust is founded, which usually has to do with the individual skills of team members. However, in most cases the distrust in integrity or competence is subjective. This is difficult for contractors because they do not know how to act upon this distrust. It often evolves into conflicts, or it touches people personally. The hazardous aspect of this distrust is that is can lead to traditional behaviour of the client and contractor.

> *No, there is no trust. It completely lacks trust in many aspects. The client does not think we are genuinely working to achieve the project goals, but think we are working to get more money out of this project.*
>
> - Contractor 1

Cognition-based trust in a Best Value project is mainly based on competence. The literature review showed that clients usually find competence the essential factor for trust in contractors, but this analysis showed that trust in the integrity is a more important factor for a foundation of this trust. As stated in the literature review, a challenge in cognition-based trust is the chance that the assessment of cognition-based trust can be subjective or biased. This is in line with the analysis of the interviews. There seems to be a subjective distrust from the client towards the contractor's trustworthiness.

Affect-based trust

Affect-based trust is based on individual and emotional relationships, which does not fit the approach of Best Value. Best Value wants to eliminate any personal relationships because it can enhance

subjective decision-making. Therefore, affect-based trust should not exist in Best Value projects. In the literature review, it was stated that this trust is needed in the earlier phases of the project because the team members do not yet have the experience for cognition-based trust. However, due to the verifiable performance information and the clarification phase, it becomes possible to rely more on cognition-based trust in earlier phases.

Best Value wants to eliminate affect-based trust, but studies have shown that it can have a significant effect on how people perceive the quality of the project and it is easier to develop because it is closer to human nature (Washington, 2013). The interviews show that affect-based trust can be helpful to overcome other types of distrust. A relationship between client and contractor helped to resolve conflicts more natural, and it helped the clients to let go and let the contractor be the expert. A relationship creates communication lines between client and contractor and makes it easier and less formal to discuss concerns.

> *[There is trust], because we have a good relationship and we communicate well with the managers. You can see that there is trust and every one dares to speak up.*
>
> Contractor 6

The interviews show that only a small part of affect-based trust is seen as the 'classic' affect-based trust in the projects. Meaning, trust based on a connection between people or based on previous relationships. This is difficult to manage as a project manager and cannot be controlled. Therefore, Best Value wants to eliminate this type of 'classic' affect-based trust, which, as the interviews show, seems to work. The interviews show that managers try to use a more objective way to control affect-based trust, which is in line with the Best Value mentality. At the start of the project, the managers focus on gathering expectations about the way of working together. One project manager of a contractor used profiles of the client's team members based on drives, character and expertise to make sure their team would be a suitable fit for the client's team. Another approach to look at a relationship is to make sure you understand each other. On an organisational level, this can help to better understand each other's interests, decision-making processes and expertise. On a personal level, it can help to understand someone's reaction to a specific situation or overall behaviour. Evaluations were used to gather information to improve the relationship in the future. These evaluations took place during most projects to reflect on the project, but also the collaboration and relationship.

> *We have a team coach. We have a follow-up moment in between each phase. During these moments, both project teams get together and reflect on what happened and what we can learn from it. Our team coach gives feedback on how we act together as a team, and we look forward to the next phase to determine what we need and how we can achieve that.*
>
> - Contractor 2

The interviews show that relationships are formed during the project because both parties have had good experiences with the other team's competency and integrity. This indicates that it is wise to focus on proving your trustworthiness because it can be controlled and relationships will naturally follow. The interviews show that successes in a project also help to strengthen relationships and trust. The communication procedures in Best Value projects focus on discussing risks and control measures, but not on progress and success. It could be a positive addition to the weekly report to discuss what is going according to plan.

In theory, affect-based trust is based on individual and emotional relationships, which is developed through interactions between team members over time. In a Best Value project, affect-based trust is developed through positive interactions with the competency and integrity of individuals. The literature review states that affect-based trust is more important in earlier phases of the project because there have not been positive cognition-based experiences yet. However, in Best Value projects this is the other way around because it is possibly to rely on cognition-based trust in earlier phases.

Figure 14 shows the discussed effects of Best Value on trust.
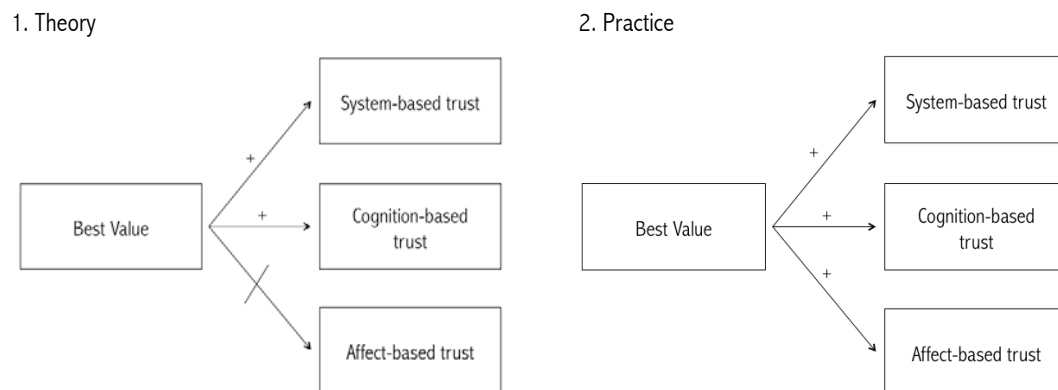
Figure 14. Effect of Best Value on trust

4.2 Main causes of conflicts in Best Value projects

Paragraph 4.1 analysed the effects of Best Value on conflicts in practice. It showed what causes are for conflicts and how trust is influenced. There are two reoccurring themes in the analysis, which are the difficulties to involve the actual client behind the client's project team and the distrust from the clients towards the contractor's integrity. These themes are seen as the main causes of conflicts in Best Value projects.

4.2.1 The client's client

It is often mentioned in the interviews that there is a need to involve the client's entire organisation to be able to deliver a successful project. Different experts from the supply chain are valuable to stimulate positive conflicts (Leung et al., 2002). Best Value promotes to integrate the supply chain to ensure a more efficient collaboration and therefore create value (Group, n.d.). In traditional projects, organisations think about 'I' and work from their silo, which can cause a misalignment of expectations throughout the project. Best Value promotes thinking in 'we' and making sure contractor and client work together to achieve value (van de Rijt & Santema, 2013).

Figure 15 shows the differences between the theory of Best Value and what the interviews have demonstrated. The theory of Best Value promotes an integrated supply chain; which is the green striped line. The interviews show that this integration does exist between the project teams of the client and the contractor, but not for the rest of the supply chain, which the blue shaded areas indicate. The analysis showed that this causes technical- and process-related conflicts on an intra-organisational and inter-organisational level. This can ultimately lead to traditional behaviour where the client wants to take control, which prevents the contractor to take on a problem-solving attitude.
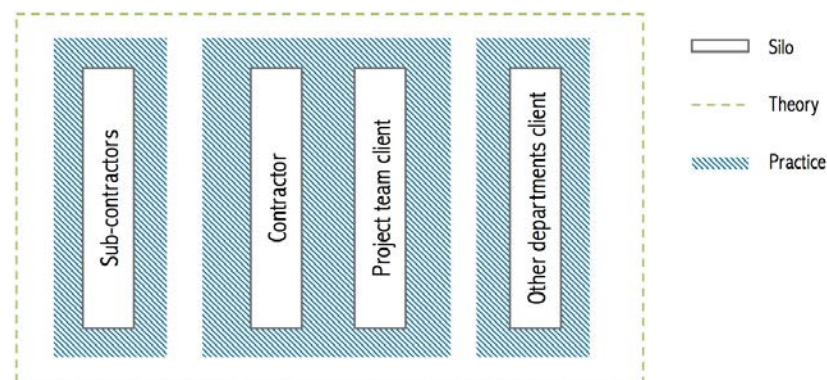
Figure 15. Silos in Best Value projects

In traditional projects, the departments of the client's organisation could ensure their concerns were taken away by providing a set of requirements. However, Best Value has a no requirements principle. This does not mean that these other departments do not have wishes. It is the contractor's job to ensure they know these wishes; otherwise, they cannot be experts. If the contractor does not involve the client's client, they cannot understand the underlying demands of the client. It is essential for clients and contractors to realise that they both have expertise in specific fields and that they should work together. The reality shows that it is challenging to have a committed relationship with the client's other departments. These departments do not feel it is their responsibility to be involved, but they also do not get the opportunity to be involved due time restraints and budget cuts. It creates a complicated situation, which is acknowledged by the client and the contractor.

There is a shared responsibility to ensure the involvement of all necessary parties. The client and contractor should define the responsibilities for the integration of the supply chain in the clarification phase. The contractor's responsibility is that they should make explicit assumptions in their bid and clearly list them. This will help them to understand when and for what they need their client during the project to clarify the assumptions. The client's responsibility is to ensure that their side of the supply chain is included in the project demands (Vrijhoef & Ridder, 2005). The clients should also provide their departments with the resources in time or money to be able to be involved at the start of projects and during projects. Current activities to include the client's client are focused on engaging them during the clarification phase. However, during the project, a lot can change, which means that the involvement should continue throughout the project.

The construction sector is characterised by projects, which makes it difficult to integrate the supply chain because every project is seen as unique, which would mean that every supply chain is unique (Barua & Mani, 2014). Therefore, the focus should not be on creating a functioning supply chain for each project, but the focus should be on connecting the parties in the supply chain through clear information procedures because these information chains can be transferred to other projects as well (Bekkers, van Duivenboden, Simons, Thaens, & van Venrooy, 2005). This information focused supply chains can be created by making agreements on the requested quality, format and type of information that has to be exchanged. If these agreements are minimal, robust and align with previously used standards, they can be adaptive for new projects (Bekkers et al., 2005).

The contractor's sub-contractor

The analysis did not provide examples of conflicts that were caused because the sub-contractors were not adequately integrated into the supply chain. The involvement of the sub-contractor is not critical when the sub-contractor has to perform a simple task within the project. However, when the job becomes more complex, an integrated approach is necessary to function as a Best Value team. A sub-contractor should be part of discussions in the clarification phase; otherwise, a contractor is not able to know for sure they are realistic in their project plan. If sub-contractors are not appropriately involved in Best Value, they will lack a pro-active attitude during the project.

4.2.2 Distrust in trustworthiness

The analysis showed that the clarification phase is a beneficial aspect of Best Value in the solution for a lot of conflicts. It does not prevent the conflicts, but discussing all technical- and process-related in the clarification phase will ensure that the conflicts remain positive. However, it is not possible to know and discuss everything during the clarification phase. During the execution phase, risks and new possibilities will arise and those will need to be discussed and resolved on the foundation of trust. Therefore, it is crucial that client and contractor trust each other.

The interviews illustrate that the trust, system-based, cognition-based and affect-based, in the Best Value projects is based on information and objectivity, which is something Best Value wants to achieve. However, the analysis also showed that there is still a high level of distrust in integrity between client and contractor. The positive aspects of Best Value, such as objectivity and transparency are not sufficient to overcome this barrier of distrust. It seems that all the bad experiences from the past, prevents clients to trust the contractor's trustworthiness and vice versa.

Onora O'neill (2013) discusses in his TEDx talk, that you cannot control trust because trust is something that someone has to give to you. Best Value says that the contractor is only responsible for the things he or she can control. This would mean they do not have to focus on building trust. However, trustworthiness can be controlled, because it is based on objective information and transparency (O'neill, 2013). Therefore, the contractor should focus on making sure they can prove their trustworthiness.

The interviews show that most contractors are proving their trustworthiness at the start of the project with the verifiable performance information and the interviews. However, the contractors often do not continue proving their trustworthiness during the project. Usually, the contractors do not want to involve the client too much during the project because they feel they are the experts. This could be seen as 'new' traditional behaviour. 'New' traditional behaviour occurs when the contractor thinks they know it all and that the client should blindly follow. This 'new' traditional behaviour can cause the client to become anxious about the project and the contractor's performance because they do not know what is going on and if the contractor is acting in an integer way. This could eventually evolve in the clients showing traditional behaviour as well. Contractors should make sure they know what the clients needs to see or know to have trust in their trustworthiness.

An interesting observation from the interviews is that the contractor has to prove their trustworthiness to the client, but not vice versa. However, the client's behaviour can be very harmful to the development of trust. Research by McEvily, Zaheer, and Kamal (2017) has shown that the buyer is more powerful in a buyer and supplier relationship. They showed that the more powerful party in the relationship has the most influence on trust. Therefore, the client should ensure they gain trust in the contractor's trustworthiness. The client will want to trust the contractor's trustworthiness when they think it is for their benefit, which could be, for example, future collaborations (Swärd, 2016). However, in the public construction sector, this is not certain because most projects are tendered. However, if clients act as good customers, they can become the contractor's preferred. This means contractors will want to take the extra mile to ensure the best service for their client. For example by sending their best possible team (Hüttinger, Schiele, & Veldman, 2012). For a client to become a preferred customer, they should have positive expectations of the contractor, understand the contractor's needs, be open in providing information and be open to new ideas (Hüttinger et al., 2012).

5 | Actions for Best Value projects

Introduction

The analysis of conflicts in Best Value projects resulted into two main causes of conflicts, which are (1) the involvement of the client's client and (2) the distrust from the clients towards the contractor's trustworthiness. It is important to understand what is causing conflicts, but it is better to know what to do about these situations. This chapter discusses the activities that were found in the interviews or proposed by Best Value experts in feedback sessions. This is used to answer the third sub-research question; what can be done to prevent the causes of conflicts? These activities are clustered into categories of actions for the clients and contractors in Best Value projects.

5.1 Input

The approach to gather activities and turn them into actions is illustrated in Figure 16. The approach consists of two steps. The first step is to define activities from the sources of input, which is discussed in this paragraph. The second part of the approach is to turn the activities into categories of actions, which is discussed in paragraph 5.2.
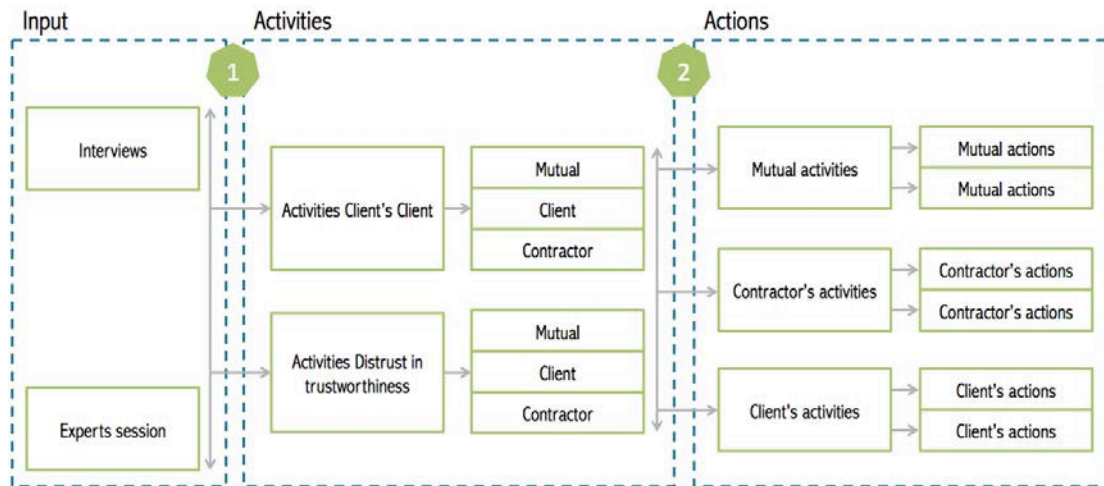
Figure 16. Approach activities to actions

Two sources of input were used to gather all the activities. The first source of input is the interviews. The interviews were analysed, and all mentions of activities that the project managers did or wished they did were coded, which resulted in a list of over eighty activities. These activities were not all specifically meant to involve the client's client or to build trust in trustworthiness, since these causes were not yet known during the interviews. The following approach was used to categorise the activities for a cause of conflict. The effect of an activity was defined and the activity was found appropriate for one or both of the causes if the effect of the activity matched the needed result to minimise or prevent the cause of conflict. An example; the effect of the activity 'joint education on Best Value' is that is creates a mutual understanding of Best Value. This will ensure that both teams know what is expected from them. It also ensures that all teams know from each other that the other team knows how to behave in certain situations. This will help to build trust in competence and integrity, which is trustworthiness. Therefore, this activity is a suitable activity to build trust in trustworthiness.

The second source of input is meetings with that were held with A+ and A certified Best Value experts. This session was organised to discuss the main causes of conflicts that were found in the analysis and to discuss possible activities for these causes. The main causes for conflicts were presented as statements to the experts and they were asked to propose activities that they would suggest to a project team. These

sources of input resulted in an extensive list of activities that could be used during the execution phase of Best Value projects.

Most of the activities that were mentioned in the interviews or proposed by the experts are assigned to one or both causes for conflicts. These activities are divided into activities that (1) the client and contractor should both perform or that they can do together, (2) the client should perform or (3) the contractor should perform. Table 4 up to and including Table 8 show the activities. Included in the tables it the amount of times the activities were mentioned in the interviews. The activities that are indicated with an 'E' in the mentions column, are proposed during the expert sessions.

5.1.1   Activities for the client's client

The activities for the cause 'client's client' focus on improving clarity on expectations and responsibilities of the different stakeholders that are involved in the project. The experts proposed most activities for this cause. This could mean that it is a complex cause of conflict to resolve because the project managers did not yet have solutions during their own projects. It could also mean that they see possible solution as something that is out of their control. Table 4 shows the mutual activities, Table 5 shows the activities for the contractor and Table 6 shows the activities for the client.

Mutual activities to involve the client's client	Mentions
Develop clear, overall and common goals during the clarification phase (shared vision to add to the project goals).	E + 6
Have one (external) team member to focus on the contact client, contractor and asset managers.	E + 1
Give constant attention to collaboration style (Best Value) in management and make sure higher management levels are involved.	E
Train other departments on Best Value to prevent endless discussions.	E
Respect each other's expertise.	7
Discuss expectations.	6
Have a mutual Best Value expert.	1

Table 4. Mutual activities to involve the client's client

5.1.2   Activities for the trust in trustworthiness

The activities for the cause 'trust in trustworthiness' focus on improving the integrity, building relationships, understanding each other and increasing objectiveness. The activities of the experts focus more on properly preparing the teams to ensure they become competent teams. This can be explained by how project teams use Best Value experts during the project. They use the Best Value experts to

prepare the tender phase and only a bit for guidance during the execution phase. However, the experts should be used as someone that will guide the teams through the obstacles of the project, which will probably not occur before the clarification and execution phase. This is possibly the reason that this activity is one of the most mentioned activities. Table 7 shows the mutual activities and Table 8 shows the activities for the contractor. There were no activities found for the client.

Contractor's activities to involve the client's client	Mentions
Involve sub-contractors in the Best Value approach.	E + 1
Define clear predefined feedback moments for the client.	E
Demand involvement asset managers during clarification phase.	E
Define expectations for providing information and knowledge by the client at the start of the clarification phase.	E
Give more attention to the role of sub-contractors in the clarification phase.	E
Do an early stakeholder analysis.	E
Add asset managers to the risk dossier.	E
Involve sub-contractors in the tender.	4
Add sub-contractors to project team.	2
Be open in what you cannot do.	2
Make a to-do list for the client.	1
Use sub-contractors that like Best Value.	1
Tell the client what their responsibilities are.	1
Make a long-term (looks further than one week) and short-term weekly (only looks at the week ahead).	1
Build an app for sub-contractors to show progress.	1
Ask the opinion of the client.	1

Table 5. Activities for the contractor to involve the client's client

Client's activities to involve the client's client	Mentions
Make autonomous teams.	E
Give asset managers a clear task, so they feel responsible.	E
Change organisations.	E
Get Best Value through to management level, to ensure more time to work on projects.	E
Give asset managers enough room to express their concerns in the clarification phase.	E
Add asset managers to project teams.	E
Involve client's client in drafting project objectives.	E
Create commitment from asset-managers.	2
Involve complete team and advisors in writing project-goals.	1

Table 6. Activities for the client to involve the client's client

Mutual activities to increase trust in trustworthiness	Mentions
Use a Best Value advisor throughout all phases.	E + 12
Do a project start-up focused on Best Value.	E + 3
Do a case study or role-play to gather information about behaviour, which helps to understand each other better.	E + 2
Case study or management game to see how scenarios would be resolved.	E + 1
Train team members, stakeholders and other influencers on a regular base on Best Value.	E
Include an independent Best Value advisor for the first big scope discussion.	E
Set up a shared 'code of conduct' in the clarification phase through which future conflicts can be resolved.	E
Do a project start-up that first focuses on the plan, facts, etc. and in the second part focuses on meeting each other.	E
Joint education of Best Value.	E
Create relationship.	17
Accept blame.	12
Certify employees on A or B level.	10
Choose a team on competence.	10
Change someone on the team when they do not fit well into Best Value.	6
Do an evaluation directly after a conflict.	6
Discuss expectations.	6
Recruit people that like the philosophy of Best Value.	4
Pick your battle; understand what is essential for the other party.	4
Do a project follow up focused on Best Value.	2
Celebrate success.	2
Have at least one experienced (Best Value) team member.	1
Work in the same office.	1
Speak out in case of distrust.	1

Table 7. Mutual activities to increase trust in trustworthiness

Contractor's activities to increase trust in trustworthiness	Mentions
Involve the client in your process.	31
Be open about the business model.	4
Send monthly or two weekly progress report to look back at what is done (instead of just a weekly that looks forward).	4
Use big data for KPI and VPI.	2
Be open in what you cannot do.	2
Make a cost-benefit analysis for different solutions.	1
Send planning and schedule meetings before project start-up.	1

Table 8. Activities for the contractor to increase trust in trustworthiness

5.2 Actions

The second part of the approach, shown in Figure 16, is to turn the activities in actions. The list of activities for the main causes is quite extensive, which does not make it practical for a project manager to use it. Therefore, the activities are clustered into categories of actions to ensure the manageability. An example will show how the clustering works. The following activities were mentioned for a client:

- Make autonomous teams;
- Give asset managers a clear task, so they feel responsible;
- Involve complete team and advisors in writing project-goals;
- Get Best Value through to management level, to ensure more time to work on the projects;
- Give asset managers enough room to express their concerns in the clarification phase;
- Add asset managers to project teams;
- Change organisation;
- Create commitment from asset-managers
- Involve client's client in drafting project objectives.

The activities 'make autonomous teams', 'get Best Value through to management level', 'add asset managers to project teams' and 'change organisation' focus on an organisational change that would make it possible for other departments to be involved, which has to be provided by upper-level management. Therefore, they are clustered together as the category 'give other departments enough time to be involved'. The remaining activities for the client focus on providing a clear task for other departments to increase their sense of responsibility towards the project. Therefore, they are clustered together as the category 'define clear responsibilities for other departments'. Appendix G provides an overview of all the activities that form each category. The following sub-paragraphs will discuss the categories. The most important, impactful or practical activities, according to the researcher, are includes as proposed actions. Figure 17 up to and including Figure 19 show the actions. It shows when in the Best Value process the actions have to take place and if this should be done once, continuous or multiple times during the project. The categories are divided into actions that clients or contractors can perform separately, and actions that the client and contractor should both do or that they can perform together.

5.2.1 Mutual actions

Educate team members on Best Value

There are activities in which the project teams receive education or guidance in the method of Best Value. It is important for the team members to have knowledge about Best Value because the analysis

showed that in most cases of a team change, the team member was changed due to traditional or inflexible behaviour. This category is based on activities such as; 'train new team members, stakeholders and other influencers on a regular base on Best Value', 'recruit people that like the philosophy of Best Value' and 'certify employees on A or B level'.

The proposed actions within this category are:

1. Use a Best Value advisor throughout all phases of the project. This helps to add experience and expertise of Best Value in the team. An external advisor also helps to have a different view on conflicts and to stay on the intended Best Value track.

2. Train team members in Best Value. This should be done at the start of the project so the team members know what is expected from them. It also provides the opportunity to see if people in the team might not be the right choice for the project because then there is still time to change them. An A+, A or B certification will help also to prove the competency of the team members.

3. Hire people that naturally tend to Best Value. This is an action that takes place outside of a project. This action will make it easier to have the right people available for a Best Value project.

A team that has received training in Best Value will increase the competence of the team, which will help to build cognition-based trust. This will help to build trust in the trustworthiness because they know from each other that they are adequately educated. It will also help to reduce the chances of falling back into traditional behaviour in the project. This will have a positive effect on conflicts because traditional behaviour causes a lot of irritation between the client and the contractor.

Align expectations

There are activities where the team of the client and contractor discuss the expectation of the project but also the expectations of what Best Value means to them. Best Value is still developing and sometimes used in a hybrid form. Consequently, it is vital that a mutual understanding of Best Value is developed to align expectations. This category is based on activities such as; 'have a mutual Best Value expert', 'include an independent Best Value advisor for the first big scope discussion' and 'joint education of Best Value' and 'do a project follow up focused on Best Value'.

The proposed actions within this category are:

1. Joint Best Value sessions. These sessions should be held multiple times throughout the clarification phase and the execution phase. At the start of the clarification phase, it can help to align expectations about Best Value and to make sure everyone understand what is expected within the phases. The sessions can also be used during the execution phase after scope changes or after conflicts to ensure everyone is still on the same page.

2. Add external Best Value advisor to first big discussion. This discussion will probably take place during the execution phase. This could be the first difficult moment to hold on to the responsibilities and risk distribution of Best Value, which could easily lead to traditional behaviour.

If expectations are aligned, the chances are higher that the demands of the client's client are better inserted into the project plans. This will help to reduce unnecessary conflicts during the execution phase. The joint sessions also provide an opportunity for all team members to meet each other. This would be an opportunity to involve more stakeholders, departments and sub-contractors in the sessions. It will also help to create a mutual understanding of Best Value. This will help to build trust in integrity because everyone agreed to a certain way of dealing with risks and responsibilities.

Create objective relationships

There are activities in which the project managers want to create a relationship by using objective information. This is achieved by gathering information about personal behaviour, and evaluating behaviour during the project. The method of Best Value states that there should not be a relationship between the client and contractor because it enhances subjective decision-making. However, the analysis showed that a relationship can be beneficial for the project and can be formed based on objectivity. This category is based on activities such as; 'case study or role-play to gather information about behaviour', 'a project start-up that first focuses on the plan and in the second part focuses on meeting each other' and 'evaluation directly after a conflict'.

The proposed actions within this category are:
1. Team activities at the start of the clarification phase and the execution phase can help the team members to get to know each other and to understand each other. This information can help to know who should form relationships.
2. It can happen that people react or behave surprisingly during the project. Therefore, it is important to evaluate behaviour on multiple moments throughout the execution phase to ensure the team members can still understand each other.

A relationship between the client and contractor will help to build affect-based trust. This type of trust should not be the foundation of trust in a Best Value project because it is subjective. However, the analysis showed that a relationship helps to deescalate conflicts because the communication lines are shorter. This helps in situations where the client has some doubts about the contractor's plans. Often the client would think that the contractor is deliberately dismissing the client's interests. However, if there were a relationship, the client would be more inclined to just get in contact with the contractor to discuss the questions they have. An objective approach to building a relationship fits Best Value because the relationships will be formed based on information.

Figure 17 shows the actions the contractor and client should both do or that they can do together to prevent conflicts in the execution phase of Best Value projects.
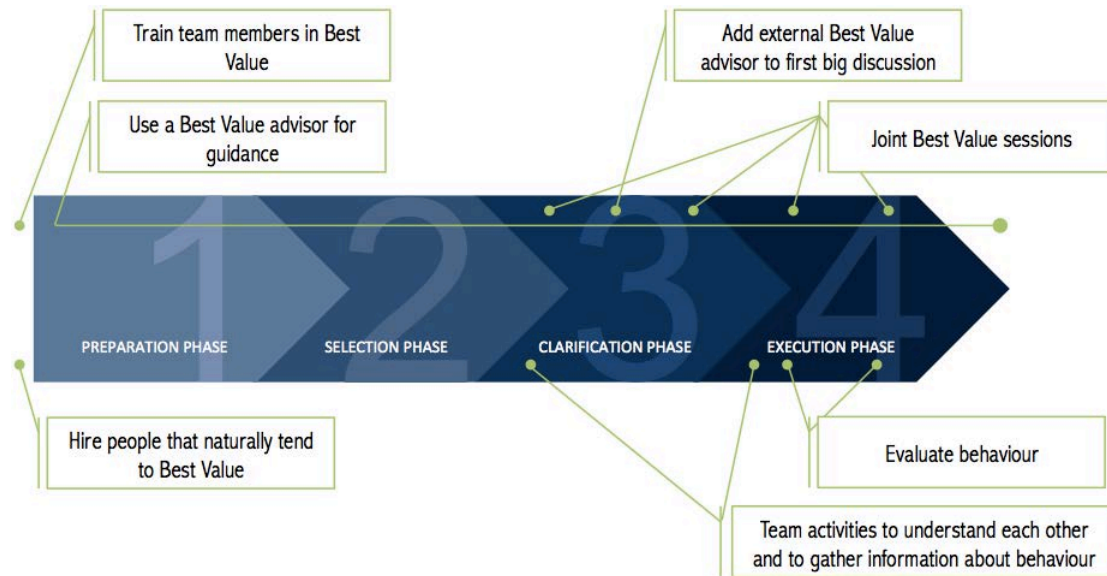
Figure 17. Mutual actions

5.2.2 Actions for the contractor

Involve sub-contractors early on in the project

There are activities to better involve the sub-contractors in the project. Sub-contractors will lack a proactive attitude during the project if they are not adequately involved in Best Value. It is the responsibility of the contractor to include the sub-contractors as early on as possible. A challenge for this action is that many sub-contractors are very traditional and will not care about Best Value or are not prepared to take the initiative in discussing risks or would not want to propose control measures. This category is based on activities such as, 'add sub-contractors to project team', 'involve sub-contractors in the tender' and 'build an app for sub-contractors to show progress'.

The proposed actions within this category are:
1. Add sub-contractors to project team at the start of the project to ensure all project schedules and plans align. This will reduce unnecessary conflicts during the execution phase of the project.
2. Involve sub-contractors in the writing of the bid during the preparation phase if it is not desired to include the sub-contractors in the team.
3. Involve sub-contractors in discussions during the clarification and execution phase if it is not desired to include the sub-contractors in the team.

In the interviews there were no signs of conflicts due to sub-contractors who were not involved enough in the project. However, it is still important to strive for an integrated supply chain, which includes the sub-contractors. This will also set an example towards the clients to put in the effort to integrate their side of the supply chain. An involved sub-contractor will help to increase cognition-based trust because the client is able to know the sub-contractor's competence and integrity. They will also be able to form some sort of a relationship, which will help to build affect-based trust.

Show your process throughout the project

There are activities where the contractor shows how the project is doing. This includes involving the client in the decision-making process and the progress of the project during the execution phase. This category is based on activities such as 'make a long-term and short-term weekly, 'make a cost-benefit analysis of different solutions' and 'send monthly or two weekly progress report to look back at what is done'.

The proposed action within this category is:
1. In Best Value projects, weekly reports are used to communicate the risks and control measures. This focuses on what is not going according to plan. However, it does not show an overall view on the progress of the project. Therefore, it is advised to have a part in the weekly report that focuses on what did go according to plan.

The contractors often prove their trustworthiness at the start of the project but not during the clarification and execution phase. Adding a progress report to the weekly reports provides an opportunity for the contractor to continue to prove their competence and integrity in the project, which will help to continue the process of building cognition-based trust. The analysis showed that a continuous positive experience with competence builds affect-based trust as well. The progress of the project can be given in dominant and objective information and will increase transparency.

Make it easy for the client

There are activities that focus on the contractor's responsibility to make the project as easy as possible for the client, which is an aim of Best Value. The contractor should take the initiative in setting clear responsibilities, milestones and feedback moments in the clarification phase. This category is based on activities such as 'define expectations for providing information', 'make a to-do list for the client' and 'send planning and schedule meetings before project start-up

The proposed actions within this category are:
1. Send planning and schedule meetings before the kick-off of the clarification phase. This helps to ensure the client's team members and people from other departments are available during

the meetings and will reduce the time spent on discussing the planning during the kick-off, which could then be used to focus on the project plans and Best Value.

2. Add a to-do list to the weekly reports to ensure it is completely clear to the client what is expected from them that week and they do not have to figure out their own actions from the information about the risks and control measures in the weekly report.

3. Set clear responsibility, milestones and feedback moments throughout the clarification and execution phase of the project. This action is also to ensure that the clients do not have to think about this themselves.

One of the causes of conflict is that it is difficult to involve the client's client, which are often asset manages or regional managers. This is often due to the lack of time or ambiguity about the tasks that they need to do. If the contractor helps to make this completely clear, it becomes easier for the client's project team to ask the asset manages or regional managers for extra time. It will also help to build cognition-based trust because the contractors show their competence by taking the lead and simplifying the project.

Understand the client's client

There are also activities that focus on understanding the client's underlying project demands. This can be an asset manager or regional departments, but also road-users, residents or other stakeholders. This category is based on activities such as; 'demand involvement asset managers', 'do an early stakeholder analysis' and 'ask the opinion of the client'.

The proposed actions within this category are:

1. Perform a stakeholder analysis at the start of the project to identify and understand all the involved stakeholders and to get a better view on the client's client and their values, interests, and demands.

2. Organise stakeholder meetings during the clarification and execution phase. The demands of the stakeholders or the project plans can change during the project. Therefore, it is important to keep engaged with the stakeholders to have a continuous view on the changing demand of the client's client.

With this action, the contractor can show that they want to understand the client's interests and values. This will help for the client to build trust in the contractor's integrity because it shows the client that the contractor cares about their interests. Consequently, it helps to build cognition-based trust. It also forces the contractor to involve client's client, which reduces the responsibility for the client to do so.

Figure 18 shows the actions the contractor should take to prevent conflicts in the execution phase of Best Value projects.
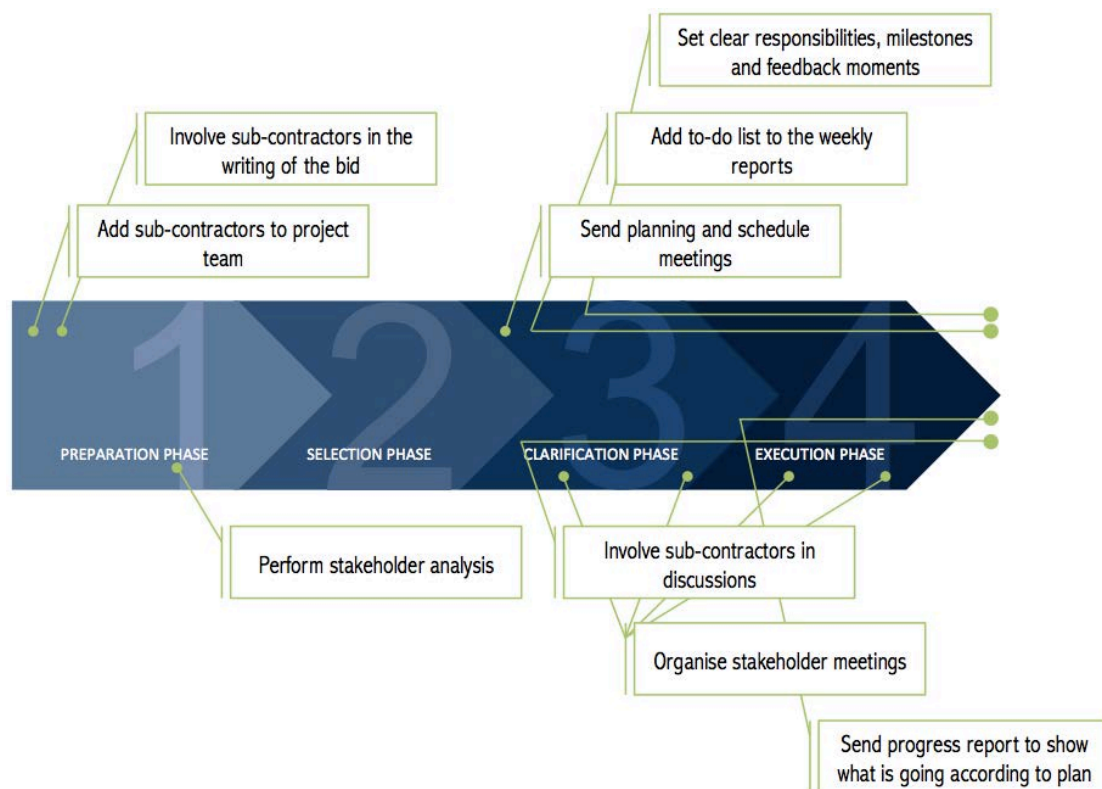
Figure 18. Actions for contractors

5.2.4 Actions for the client

Give other departments enough time to be involved

There are activities in which the experts or project managers want to change the client's organisational structure to integrate departments, which would enhance intra-organisational collaboration. Some activities are less extreme and focus more on changing team structures or providing the other departments with enough time to get involved with the projects. This can be challenging because these departments had nothing to do with the projects before. This category is based on activities such as, 'make autonomous teams' and 'get Best Value through to management level, to ensure time to work on the projects' and 'add asset managers to project teams'.

The proposed actions within this category are:

1. Give other departments enough resources to be involved. This is an action that takes place outside of a project. This has to be done by upper-level management. They will have to hire more people or reduce task so the people in their departments have time to be involved in the projects.

2. Provide enough time for other departments to express concerns on project plans. The client's project manager should be realistic in the time it takes for other departments, such as asset

managers to review the plans and give feedback. They should inform them on time of what is expected and ensure the contractor schedules enough time for this.

Define clear responsibilities for other departments

The interviews showed that it is difficult to include other departments because they lack a feeling of responsibility towards the projects. There are activities where the client's project team gives the other departments, such as the asset managers, clear tasks and responsibilities to increase this feeling of responsibility. This category is based on activities as 'involve complete team and advisors in writing project-goals', 'give asset managers enough room to express their concerns in the clarification phase' and 'involve client's client in drafting project objectives'.

The proposed actions within this category are:

1. Involve other departments in the writing of the project goals during the preparation phase. This will ensure the demands or requirements of the client's client are included in the goals, which makes it easier for contractor to meet them.

2. Add asset managers to the project team at the start of the project. This way they can be involved during the tender phases. This will ensure that the contractor has a shorter line towards the asset managers. This makes it easier to align expectations and discuss project plans, changes in the project and risks or control measures directly with asset managers.

Both of the categories for the client's actions focus mainly on making sure that all of their departments have the possibility to be involved with the projects, which would help with the cause of conflict 'client's client'. The interviews showed that in the construction sector, it is mostly the asset manager or regional manager that should be involved more. They usually have a lot of information and knowledge about the project, technique or the area. To the contractor it is only beneficial to have all of this information because it allows them to be the expert. Discussing conflicts with experts helps the conflicts to remain positive. It also helps the contractor to fully understand the demand behind the demand, which will help to deliver a more successful project. Contact between the other departments and the contractors will also help to build cognition-based trust because the asset managers or regional managers can see more of the contractor's competence and integrity. The analysis showed that positive interactions with competence could help to build a relationship, which will increase affect-based trust. These actions fit Best Value because they ensure the real experts are discussing the project and it provides the opportunity for the contractor to understand what the client actually wants.

Figure 19 shows the actions the client should take to prevent conflicts in the execution phase of Best Value projects.

Involve other departments in writing of project goals

Provide time to other departments to express concerns on project plans

PREPARATION PHASE   SELECTION PHASE   CLARIFICATION PHASE   EXECUTION PHASE

Add asset managers to the project team

Give other departments enough resources to be involved
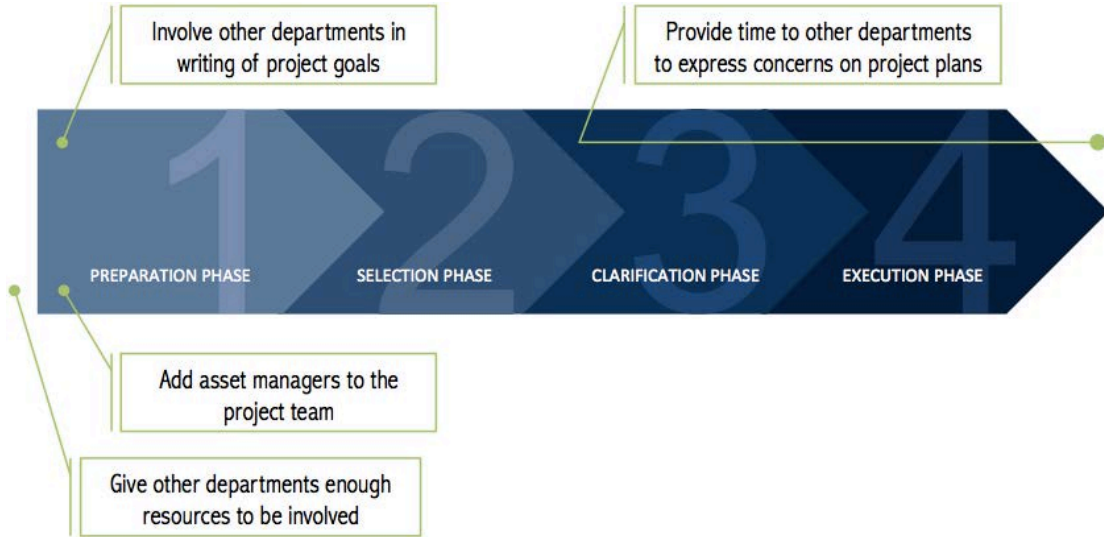
Figure 19. Actions for clients

6 | Conclusion & Discussion

Introduction

Conflicts will always exist in a project, due to complexity, and the pressures of time and money. Best Value is contra-intuitive, and in conflicts, people tend to behave irrationally, which can have a big effect on the collaboration style. Best Value provides a lot of guidance and tools in the tender phases. However, there are fewer tools in the phases that client and contractor have to work together. The objective of this research was to design a set of actions to prevent conflicts in the execution phase of Best Value projects to help project teams of clients and contractors. The first part of the research identified the main causes of conflict in Best Value projects. The second part identified preventive actions for these causes.

6.1 Conclusion

In this thesis report the causes of conflicts in the execution phase of Best Value projects in the Dutch public construction sector were analysed. Secondly, actions were proposed for clients and contractors to prevent these causes in their projects. The research started with identifying the causes of conflicts in construction projects, which provided a theoretical framework for the interviews and analysis (Chapter 3). Fourteen interviews were conducted with project managers from client organisations and contractor organisations. The results of the interviews were used to analyse the effect of Best Value on conflicts in theory and in practice. The re-occurring themes found in the analysis resulted in two main causes of conflicts (Chapter 4). The interviews and feedback of experts were used as sources of input to identify activities. These activities were clustered into categories of actions that can prevent the causes of conflicts (Chapter 5).

6.1.1 Research questions

This paragraph will first discuss the answers to the sub-research questions, followed by the conclusion to the research question.

1. What are causes of conflicts in construction projects?

Projects are sensitive for conflicts because projects are uncertain and they have become more complex and multidisciplinary. The pressure in the market also led to an unhealthy situation between clients and contractors. This is due to the difference in the interests of the client and the contractor. The client wants to minimise their costs, and the contractor wants to maximise their profits. This pressure on the market resulted in a situation where low quality is delivered, and the contractor claims every piece of additional work. It was not beneficial for the contractor to mention mistakes found in requirements or contracts beforehand because it would mean they could not claim it as additional work later on. This makes clients suspicious towards contractors' motives.

Conflicts occur if one person or group perceives that their interests are negatively affected by actions of other people or groups. Technical-related conflicts are the most common conflicts in construction projects due to the high amount of complex tasks in the construction sector. These conflicts can have a positive outcome for the quality of the project because it improves the design process. Process-related conflicts include conflicts about responsibilities, the decision-making processes and the interpretation of the contract. A small amount of process-related conflicts, which are managed properly, have a positive effect on the efficiency of the collaboration. Relationship-related conflicts can be conflicts due to clashing personalities or backgrounds, but also due to personal dissatisfaction or desire for growth. Relationship-related conflicts should mostly be avoided because they almost never have a positive outcome on the project success or relationship between client and contractor.

2. What are the main causes of conflicts in Best Value projects?

The interviews with the project managers were analysed to understand how conflicts originate or evolve in Best Value projects and to understand how the principles of Best Value influences the conflicts in the projects. This analysis showed two re-occurring themes that are seen as the main causes of conflicts in Best Value projects.

The first main cause of conflict found in the analysis is the lack of involvement from the client's client. There is a need to involve the client's entire organisation to be able to deliver a successful project. The interviews showed that the project teams of the clients and contractors are integrated, but the rest of the supply chain is not. If the contractor does not involve the client's client, they cannot understand the client's demands. The interview shows that it is challenging to engage the client's other departments, due to a lack of commitment and time constraints. It is difficult to integrate the supply chain in the construction sector because it is characterised by unique projects, which makes the supply chain unique for every project. Therefore, the focus should be on connecting the parties in the supply chain through clear information procedures.

Secondly, the analysis showed that there is still a high level of distrust from the client towards contractors' integrity. Best Value states that the contractor is only responsible for the things he or she can control and trust cannot be controlled because it has to be given. However, the contractor can control trustworthiness, which is done at the start of the project with the verifiable performance information and the interviews. The contractors often do not continue proving their trustworthiness during the project. Contractors should make sure they understand what the client needs to see or know to have trust in their trustworthiness. The client's behaviour can also be harmful to the development of trust. Research showed that the client is the more powerful party in the relationship and has the most influence on trust. Therefore, the client should ensure they gain trust in the contractors' trustworthiness to provide the possibility to build trust.

3. What can be done to prevent the causes of conflicts?

The interviews and sessions with A+ and A certified Best Value experts provided a list of activities that could be used during the execution phase of Best Value projects to prevent the causes of conflicts. The activities were clustered into categories. The mutual actions were divided into three categories: 'educate team members on Best Value', 'align expectations' and 'create objective relationships'. The actions for the contractor were divided into four categories: 'involve sub-contractors early on in the project', 'show your process throughout the project', 'make it easy for the client' and 'understand the client's client'. The actions for the client were divided into two categories: 'give other departments enough time to be involved' and 'define clear responsibilities for other departments'.

What causes conflicts in Best Value projects and what should the clients and contractors do to prevent this?

This research provided two causes of conflict in Best Value projects. The lack of involvement of the client's client leads to unnecessary process- and technical-related conflicts during the execution phase. Often the conflicts occur after tasks are completed and the hand-over takes place. Best Value forces the contractors to prove their trustworthiness towards the clients. However, contractors often do not continue to prove their trustworthiness, which makes the client anxious. This will lead to traditional and controlling behaviour. A set of actions was designed to help contractors and clients prevent conflicts in the execution phase of their Best Value project. The complete set of actions is illustrated in Figure 20. Some actions focus on making sure that the client's departments can be involved in the projects. If the contractor helps to make it clear what is expected, it becomes easier for the client's project team to ask the asset manages for extra time. This will help to get them more involved. Other actions focus on building up cognition-based trust during the project. Building competence in Best Value will increase this trust and reduce the chances of falling back into traditional behaviour. Showing the positive aspects within the project will help to increase the trust in the contractor's integrity. The analysis showed that a relationship or affect-based trust helps to de-escalate conflicts because the communication lines between the project teams are shorter and less formal.
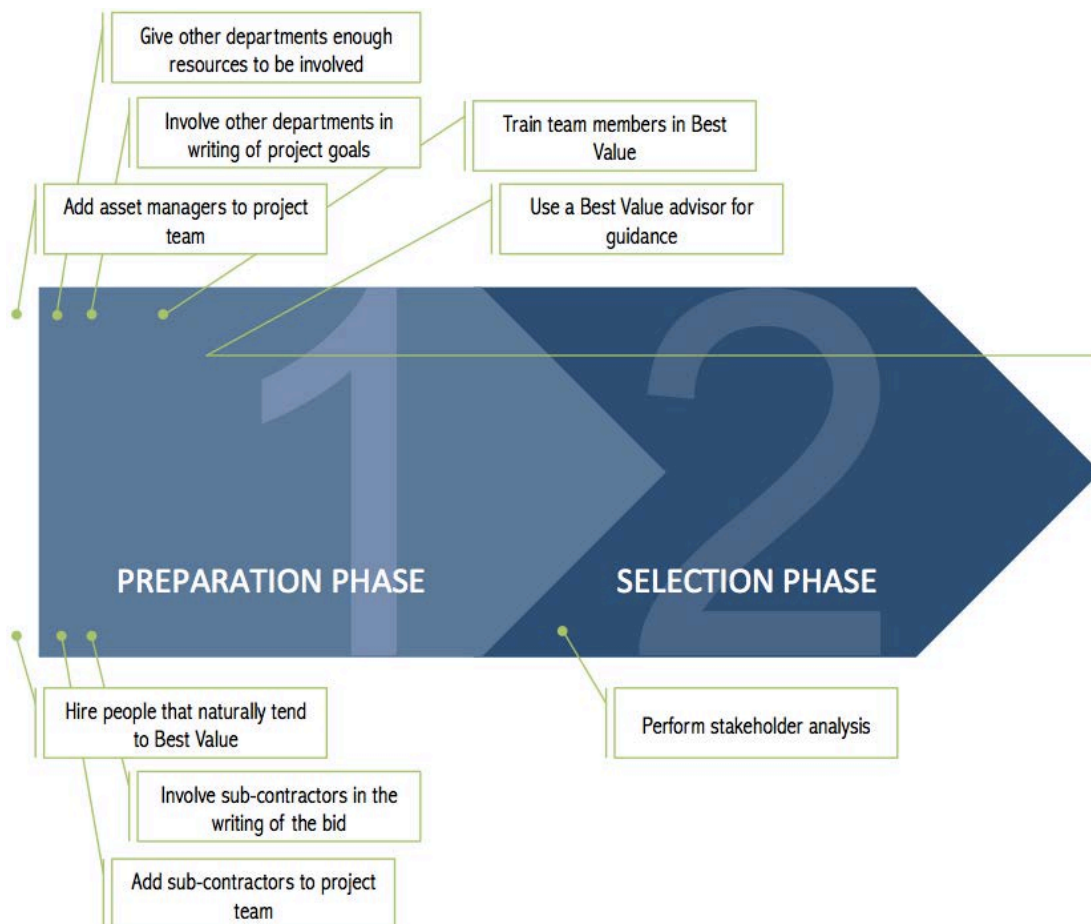
Figure 20. Set of actions for clients and contractors to prevent conflicts in the execution phase of Best Value projects

6.2 Discussion

6.2.1 Results

The literature on conflicts and trust in contract-based relationships is very extensive. A lot of research is done into the types, causes and effects of conflicts and trust. It is almost impossible to analyse all this information to understand which information is crucial to use in this research. Most research is specified to a specific sector, type of contract, tender procedures etc. This makes it difficult to distinguish which studies would fit this research and which would not. This might have led to a general theoretical framework and consequently to a general approach of analysing the data of this research. However, this general approach allowed to better understand the concepts and to better apply them to the situations described in the interviews.

The analysis of the interviews resulted into two causes of conflicts in Best Value projects, which are (1) the involvement of the client's client, and (2) the distrust from the clients towards the trustworthiness of the contractor. However, these two aspects also cause conflicts in traditional projects. This research does not claim that the causes of conflicts do not appear in traditional projects. The assumptions on
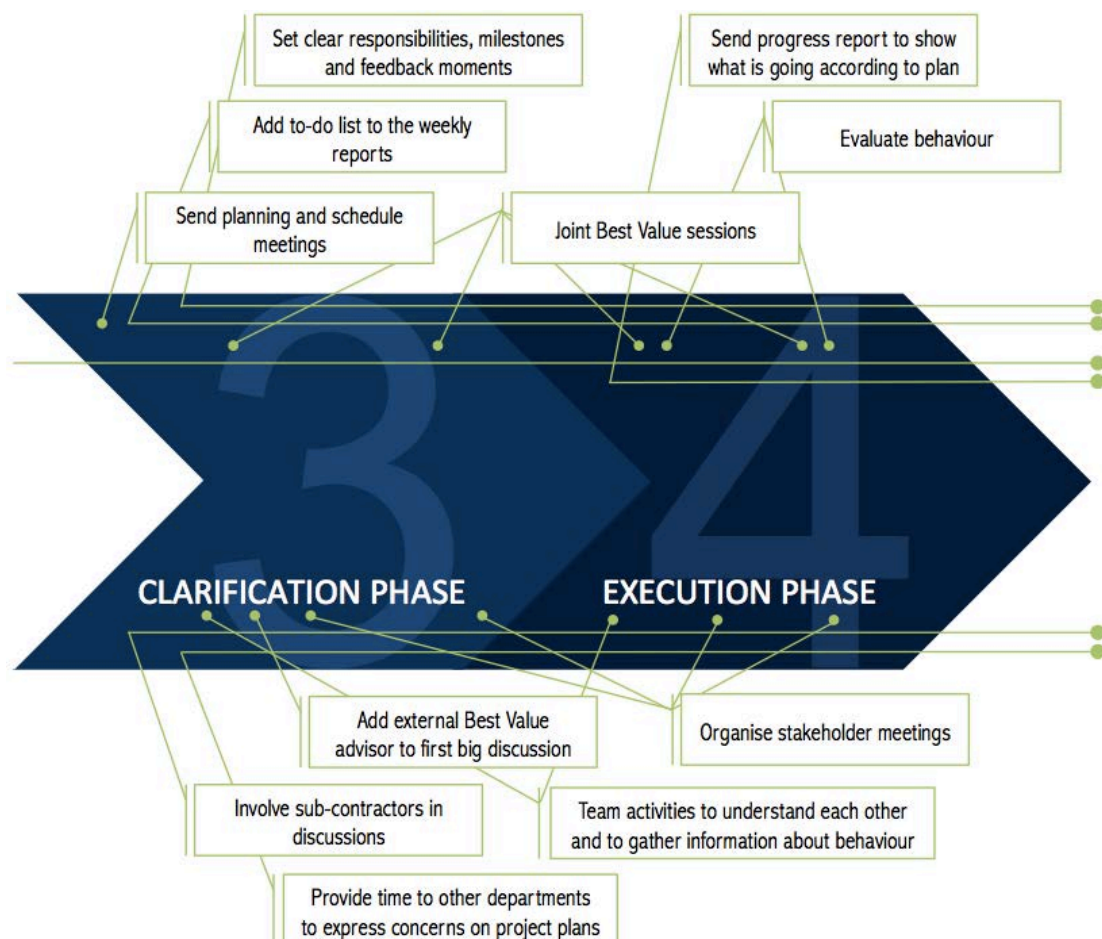
rationality and the principles from Best Value are often not in line with reality; consequently, the causes of conflict do not differ a lot from traditional projects. They might even be worse in the perception of people because Best Value is sometimes too much promoted as a solution for all problems, which can cause high expectations. Best Value still requires a lot of effort from the contractor and the client during the execution phase of the project to benefit from the positive effects of Best Value.

The activities for the causes of conflicts were found by gathering input from A+ and A certified Best Value experts and by analysing the interviews on activities that were used by the project managers. The activities proposed by the experts were specified for the causes of conflicts, but the activities derived from the interviews were not. It would have been a more robust result if the causes were discussed with the interviewees, just as with the experts, to derive the activities.

The literature review showed that there are two different views on the effects of conflicts. The first view is that conflicts are harmful and should be eliminated by taking enough preventive measures. The second view sees value in conflicts and believes that it can enhance creativity and development in a project. This research provided tools for conflicts in Best Value projects. These actions focus on the prevention of conflicts. This would match the first view on conflicts that they are negative and should be eliminated. However, positive conflicts should not be eliminated through too many preventive measures. Positive conflicts often include discussions with different experts, and the result is a win-win situation, which should be promoted. More actions that could stimulate or manage positive conflicts in Best Value project should be developed. This result of preventive measures is due to the retrospective character of the interviews and expert sessions, which was the input for the activities. This will mostly lead to activities that they wished they had done in advance to prevent the conflicts from happening. A simulation or observations would be a more suited approach to find activities that manage or stimulate positive conflicts.

6.2.2 Limitations of the research

The sample of the projects used in this research was limited, which makes the result and conclusion less generalisable. In total more contractors were interviewed compared to clients. Therefore, more information was available from the contractor's viewpoint compared to client's viewpoint, which could have influenced the results. Besides the smaller amount of interviewees from the client side, there is also a limited amount of public organisations included in the interviews. However, together they do represent the majority of the public tenders in the construction and infrastructure sector. This research has shown a strong opinion in regards to the organisational structure of public clients. However, it can show a coloured view, since the other departments are not included in this research and did not have the possibility to give their viewpoint on the situation.

This research heavily relies on the data that is gathered through the interviews. An interviewer should have certain qualities to ensure the quality of the interview. These qualities include, among others, being knowledgeable, structured, clear and open. Another important factor is that the interviewer should not lead the interviewee to guarantee the interview shows their own viewpoint and is not influenced by biased opinions of the interviewer (Bryman, 2012). An inexperienced researcher guided the interviews, which could have led to leading in the interview, due to enthusiasm and curiosity.

Coding can be sensitive for subjectivity since it relies on the researcher's perception on the data and the concepts. Therefore, the cycle of coding was performed multiple times with sufficient time in between to eliminate this subjectivity as much as possible. However, there remains sensitivity towards the interpretation of the results. Quotations of the interviewees and the concepts can have a subjective meaning for the analyser, which could show in the results. It is recommended to perform the coding process by multiple researchers to be sure about the objectiveness of the results. However, this was not possible due to limited resources.

This research only looked at projects from Dutch public clients in the construction sector. Therefore, results of this research only apply to the public construction sector in The Netherlands. The public sector differs from the private sector, since the private sector does not have to comply with European tender laws. This makes it possible for them to have more freedom in the way they apply Best Value in their projects. This could affect the results of this research. Therefore, it is unknown if the result of this research applies to the private sector as well. This research only focused on the construction sector and used literature about conflicts and trust that also focus on this sector. However, Best Value is used in many more sectors. Therefore, more research into other sectors is needed to make the results of this research generalisable for all Best Value projects.

Best Value is developed and used a lot in The United States of America. The Netherlands and The United States of America score very differently on the masculinity-femininity cultural index of Hofstede. The Netherlands is a very feminine culture and The United States of America is a very masculine culture. A feminine country attaches great value to relationships whereas relationships are not important in masculine countries (Hofstede et al., 2010). According to Best Value, there should not be a relationship between clients and contractors because it will influence the objectiveness of decision-making. However, this assumption is developed in a country where the culture does not attach value to relationships. This research was conducted in a country that does attach value to relationships. This could be an explanation for the result of this research that relationships and trust are still an important factor in the Best Value projects. The same research could be performed in different countries to understand the differences in perception towards Best Value due to different cultures.

6.2.3 Recommendations

For Best Value

The method of Best Value provides principles and steps that should be taken in the process. However, the explanations of these principles and steps sometimes differ in literature, which shows that it is still very much up to the own interpretation on how to apply Best Value. It can also be quite challenging to grasp the actual idea of Best Value. People tend to hold on too much to the method because the paradigm shift is too uncomfortable or difficult. The TONNNO principles of Best Value can be quite vague or general and the underlying theories of the Information Modelling Theory and the Kashiwagi Solution Model miss a connection to the practice. This makes it challenging to link the theory to practice, without getting an A+ or A certification. For example, the Information Model Theory is too simplistic. An assumption in this model is that decision-making is not necessary because if all information is present, only one situation is possible. However, in practice it is not possible to have all the information; therefore decision-making is necessary. An expert should be able to oversee all information and provide an objective explanation for a solution. However, experts are formed by their education, experiences and their values (Spruijt, Knol, Petersen, & Lebret, 2016). There is not one 'super expert' that would be able to define one situation that is better than all other situations based on all information. A different background can ensure different prioritisation of specific factors, such as values, which could lead to interpreting information in a different way (De Bruijn, 2008). Using facts in an underpinning of a decision should be self-evident. Therefore, the focus should lie on creating a mutual understanding on the prioritisation of values of the client.

Team members of Best Value projects often receive trainings to better understand Best Value. The focus of Best Value trainings should be on the desired behavioural change. The information on how to write the tender documents, the process to follow etc. can be explained quickly or just given on a hand out but should be submissive to the information on how to behave, the responsibilities and the division of risks. Simulation games could be used to learn the needed behavioural change for Best Value. These games are known for their learning cycle of thinking, considering and acting at the same time (de Caluwé, 2007). These games will help to change the team members' perception on the needed behavioural change. This will lead to actual behavioural change if this change in perception is strong enough. Best Value experts can help the team members to learn about the needed behaviour and on which points the current behaviour differs from the desired behaviour. A challenge of this action could be that it is vital to clarify the importance of a simulation game because people tend to not take it seriously.

For clients and contractors

The construction sector can sometimes be dysfunctional due to the high amount of negative distrust between organisations. Contractors should understand that they have been a big part of the high levels

of distrust, due to their unhealthy business model and making price agreements during the *Bouwfraude*. It is up to the contractors to prove that this is in the past. The distrust resulted in requirements from clients up to the level of specifying the font size for reports. Clients should consider what they want to achieve with their requirements and how they prescribe it. A significant attitude change is needed if contractors and clients want to implement Best Value successfully.

The contractor should do everything they can to improve the trust in trustworthiness since they have control over it. They can achieve this by providing objective information about their competence at the start of the project and their performance during the project. One of the project managers mentioned that big data or other technologies could be used more to enhance objectivity. Cost-benefit analyses could also be used to present different possibilities to the client and to substantiate why something is chosen, which will also help the client to understand the contractor's decision-making process. The literature review already proposed a challenge for this action, which is that there exists a chance that the assessment of trustworthiness can be subjective or biased. Therefore, the contractor needs to know what triggers the client's subjective distrust in the contractor's trustworthiness and make sure they solve this by using objective and dominant information.

It is essential to show vulnerability towards the other party to build trust. Contractors should be transparent in everything that they do not know, and both the client and contractor should explicitly accept blame when they are wrong. Early actions of goodwill show vulnerability, which helps to develop a willingness to trust. Clients can help to build trust with specific reciprocity towards the contractor's actions (Swärd, 2016). An early action of goodwill for the contractor could be to be utterly transparent in their price structures during the clarification phase, since there is no point in keeping this hidden since most public clients in the construction sector have enough experience in projects that they know this information anyway. This will help the client to trust the contractor's integrity. The client could return this vulnerability by stating that they will pay for costs made by the contractor during the clarification phase. This can have the same effect on trust, as when a store would show their vulnerability by saying they give back their money without questions when you would want to return an item. Most people would not use this service, but it provides a lot of trust in the store's integrity (O'neill, 2013).

Strong remarks have been made on the intra-organisational conflicts of the public organisations, due to their organisational structure. As said before, these remarks are coloured. However, there was an overall shared opinion on the difficulties of the organisational structure. This will not only cause conflicts in Best Value projects; it is just amplified due to the expert role of the contractor. An action is to provide resources to other departments so they can be involved in projects. This was instead of a costly and time-consuming reorganisation of the organisation. However, it would be recommended for clients to still look into the options of a reorganisation.

Further research

It would have been interesting to compare the development of conflicts in projects with experienced Best Value teams and inexperienced Best Value teams. However, most of the teams in this research were inexperienced; therefore it was not possible to give a generalisable conclusion about this difference. The results of this research are probably more relatable to inexperienced teams. The reality shows that a lot of teams that start a Best Value project are still inexperienced and that it will take a lot of time to have enough people with enough experience. Further research should be done to see if an experienced Best Value team will behave differently and if they can better follow the principles of Best Value during conflicts.

This research developed a set of actions to prevent conflicts in Best Value project. However, these actions are not developed or tested during a project. The discussed effects of the actions on the conflicts, trust and Best Value are assumed and based on the experiences gathered during this research. Further research is needed to develop the actions. Secondly, the actions should be tested in Best Value projects to fully understand the effectiveness of the actions.

The principles of Best Value can be challenging to understand and are still changing, due to the novelty of the theory. In a lot of the interviews, the project managers said that they do not fully understand the differences between traditional projects and Best Value projects. Higher management levels do not yet see the added value of Best Value on project success compared to traditional projects, which can create intra-organisational conflicts. It is recommended to perform cross-case analyses on Best Value projects and traditional projects to fully understand the differences in behaviour and to show the differences in project success.

Researchers are often reluctant to make a conscious division of male and female views in their research because it is seen as unnecessary. Results on these views should not be generalised to all men and women, but this does not mean it cannot be a parameter in research (Sen, 1987). Men and women can have different views. For example, men usually have a different perception on individualism compared to women (Sen, 1987). High levels of individualism can increase thinking in 'I' instead of 'we', which could have a negative effect on Best Value. It can create a focus on personal goals or interests. Low levels of individualism can have a positive effect on creating shared goals and interests. The interviewees in this research were almost all men (14 out of 16); therefore no conclusions can be drawn on the differences in perception between male and female. This might be interesting for further research to get a better view on how to create strong team compositions for Best Value projects.

7 | Bibliography

Barua, A., & Mani, D. (2014). Augmenting conflict resolution with informational response: A holistic view of governance choice in business process outsourcing. *Journal of Management Information Systems, 31*(3), 72-105.

Bekkers, V. J. J. M., van Duivenboden, H. P. M., Simons, M. E., Thaens, M., & van Venrooy, A. (2005). *Adaptief vermogen en architectuurontwikkeling in ketens en netwerken. Over het smeden van flexibele ketens en netwerken.* Rotterdam, The Netherlands: Center for Public Innovation.

Bergman, M. A., & Lundberg, S. (2013). Tender evaluation and supplier selection methods in public procurement. *Journal of Purchasing and Supply Management, 19*(2), 73-83.

Bryde, D. J., & Robinson, L. (2005). Client versus contractor perspectives on project success criteria. *International Journal of Project Management, 23*(8), 622-629.

Bryman, A. (2012). *Social research methods* (4th ed.). New York, United States of America: Oxford University Press.

Chan, A. P., Chan, D. W., & Ho, K. S. (2003). Partnering in construction: critical study of problems for implementation. *Journal of Management in Engineering, 19*(3), 126-135.

Chao-Duivis, M. A. B., Koning, A., & Ubink, A. M. (2013). *A Practival Guide to Dutch Building Contracts* (3rd ed.). The Hague, The Netherlands: Instituut voor Bouwrecht.

Cheung, S. O., Wong, W. K., Yiu, T. W., & Pang, H. Y. (2011). Developing a trust inventory for construction contracting. *International Journal of Project Management, 29*, 184–196.

Cheung, S. O., & Yiu, T. W. (2006). Are construction disputes inevitable? *IEEE Transactions on Engineering Management, 53*(3), 456-470.

Cheung, S. O., Yiu, T. W., & Yeung, S. F. (2006). A study of styles and outcomes in construction dispute negotiation. *Journal of construction engineering and management, 132*(8), 805-814.

Cox, K. B. (2003). The effects of intrapersonal, intragroup, and intergroup conflict on team performance effectiveness and work satisfaction. *Nursing administration quarterly, 27*(2), 153-163.

De Bruijn, J. A. (2008). *Management in networks: on multi-actor decision making.* Oxford, United Kingdom: Routledge.

de Caluwé, L. (2007). Using gaming simulation for change of organizations and for change of corporate culture. In W. Kriz (Ed.), *Gaming Simulation and Organizational Change.* Berlin, Germany: Wissenschaftlicher Verlag.

de Jong, V. (2017). Best Value Procurement. Retrieved from https://blackboard.tudelft.nl/bbcswebdav/pid-2929863-dt-content-rid-10188813_2/courses/39182-161703/170316-BestValueProcurement.pdf

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical education, 40*(4), 314-321.

Dowell, D., Morrison, M., & Heffernan, T. (2015). The changing importance of affective trust and cognitive trust across the relationship lifecycle: A study of business-to-business relationships. *Industrial Marketing Management, 44*, 119-130.

Duarte, M., & Davies, G. (2003). Testing the conflict–performance assumption in business-to-business relationships. *Industrial Marketing Management, 32*(2), 91-99.

Flick, U. (2006). *An introduction to qualitative research*. London, United Kingdom: Sage Publications Ltd.

Geertsma, P. (2014). Wat wordt bedoelt met de bouwfraude of bouwfraudezaak? Retrieved from http://www.technischwerken.nl/nieuws/wat-wordt-bedoelt-met-de-bouwfraude-of-bouwfraudezaak/

Group, B. V. (n.d.). Best Value. Retrieved from http://bestvalue-group.nl/best-value/?lang=en

Gudienė, N., Banaitis, A., Banaitienė, N., & Lopes, J. (2013). Development of a conceptual critical success factors model for construction projects: a case of Lithuania. *Procedia Engineering, 57*, 392-397.

Harmon, K. M. (2003). Conflicts between owner and contractors: proposed intervention process. *Journal of management in Engineering, 19*(3), 121-125.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: software of the mind: intercultural coorperation and its importance for survival* (3rd ed.). New York, United States of America: The McGraw Hill Companies.

Hüttinger, L., Schiele, H., & Veldman, J. (2012). The drivers of customer attractiveness, supplier satisfaction and preferred customer status: A literature review. *Industrial Marketing Management, 41*(8), 1194-1205.

Jaffar, N., Tharim, A. A., & Shuib, M. (2011). Factors of conflict in construction industry: a literature review. *Procedia Engineering, 20*, 193-202.

Jarratt, D., & Ceric, A. (2015). The complexity of trust in business collaborations. *Australasian Marketing Journal (AMJ), 23*(1), 2-12.

Jehn, K. A. (1997). A qualitative analysis of conflict types and dimensions in organizational groups. *Administrative science quarterly*, 530-557.

Jehn, K. A., & Bendersky, C. (2003). Intragroup conflict in organizations: A contingency perspective on the conflict-outcome relationship. *Research in organizational behavior, 25*, 187-242.

Kadefors, A. (2004). Trust in project relationships—inside the black box. *International Journal of project management, 22*(3), 175-182.

Kashiwagi, D., & Kashiwagi, J. (n.d.). Best Value Approach. Retrieved from https://ksmuniversity.ksm-inc.com/wp-content/uploads/2015/11/Class-Introduction.pdf

Kashiwagi, D., Kashiwagi, J., & Sullivan, K. (2010). *The Replacement of Client Decision Making with a Deductive Logic Structure.* Paper presented at the IIE Annual Conference. Proceedings.

Laan, A., Voordijk, H., Noorderhaven, N., & Dewulf, G. (2011). Levels of interorganizational trust in construction projects: Empirical evidence. *Journal of construction engineering and management, 138*(7), 821-831.

Leung, M.-y., Ng, S. T., & Cheung, S.-O. (2002). Improving satisfaction through conflict stimulation and resolution in value management in construction projects. *Journal of Management in Engineering, 18*(2), 68-75.

Levi, D. (2001). *Group dynamics for teams*. New York, United States of America: Sage Publications Ltd.

Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. *Social forces, 63*(4), 967-985.

Lumineau, F. (2017). How contracts influence trust and distrust. *Journal of Management, 43*(5), 1553-1577.

Majoor, K. P. (2016). Toeval bestaat niet. In J. van de Rijt, W. Witteveen, & S. C. Santema (Eds.), *Best value stroomt: Inzichten uit de praktijk, de jurisprudentie en de wetenschap* (pp. 175-196). The Hague, The Netherlands: Graphicom International.

Maso, I., & Wester, F. (1996). *The deliberate dialogue*. Brussels, Belgium: VUB University Press.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of management review, 20*(3), 709-734.

McEvily, B., Zaheer, A., & Kamal, D. K. F. (2017). Mutual and exclusive: Dyadic sources of trust in interorganizational exchange. *Organization science, 28*(1), 74-92.

Mele, C. (2011). Conflicts and value co-creation in project networks. *Industrial Marketing Management, 40*(8), 1377-1385.

Mikkelson, D. (2015). Did Yogi Berra Eloquently Explain the Difference Between Practice and Theory? Retrieved from https://www.snopes.com/quotes/berra/practicetheory.asp

Müller, R., & Turner, J. R. (2005). The impact of principal–agent relationship and contract type on communication between project owner and manager. *International Journal of Project Management, 23*(5), 398-403.

Nicholas, J. M., & Steyn, H. (2017). *Project management for engineering, business and technology*. Abingdon, United Kingdom: Taylor & Francis.

Nievaard, A. (1996). A four-step model for the qualitative interview. In I. Maso & F. Wester (Eds.), *The deliberate dialogue*. Brussels, Belgium: VUB University Press.

O'neill, O. (2013). What we don't understand about trust [Video File]. *TEDxHousesOfParliament.* Retrieved from https://www.ted.com/talks/onora_o_neill_what_we_don_t_understand_about_trust?language=en

Parayitam, S., & Dooley, R. S. (2009). The interplay between cognitive-and affective conflict and cognition-and affect-based trust in influencing decision outcomes. *Journal of Business Research, 62*(8), 789-796.

Pieterman, M. (1993). *De middle manager in confrontatie met de praktijk 1*. Baarn, The Netherlands: Nelissen B.V.

Pinto, J. K., Slevin, D. P., & English, B. (2009). Trust in projects: An empirical assessment of owner/contractor relationships. *International Journal of Project Management, 27*(6), 638-648.

Punch, K. (2006). *Developing effective research proposals* (3rd ed.). London, United Kingdom: Sage Publications Ltd.

Rem, M. (n.d.). Validiteit en betrouwbaarheid van kwalitatief onderzoek.   Retrieved from http://scriptieaf.nl/validiteit-kwalitatief-onderzoek/

Rivera, A., & Kashiwagi, D. (2016). Creating a new project management model through research. *Procedia Engineering, 145*, 1370-1377.

Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of management review, 23*(3), 393-404.

Russell, D. (2011). *Succeeding in the project management jungle: how to manage the people side of projects*. New York, United States of America: AMACOM American Management Association.

Sen, A. (1987). *Gender and cooperative conflicts*. Helsinki, Finland: Wider.

Spruijt, P., Knol, A. B., Petersen, A. C., & Lebret, E. (2016). Differences in views of experts about their role in particulate matter policy advice: Empirical evidence from an international expert consultation. *Environmental Science & Policy, 59*, 44-52.

Stone, B., Perrenoud, A., & Sullivan, K. (2014). Rescue Management of a Failed Project: An empirical case study of the Subordinate Expertise Empowerment (SEE) model. *Journal for the Advancement of Performance Information & Value, 6*(1), 1-21.

Swärd, A. (2016). Trust, reciprocity, and actions: The development of trust in temporary inter-organizational relations. *Organization Studies, 37*(12), 1841-1860.

Turner, J. R., & Müller, R. (2003). On the nature of the project as a temporary organization. *International Journal of Project Management, 21*(1), 1-8.

van de Rijt, J., & Santema, S. C. (2012). The Best Value Approach in the Netherlands: A reflection on past, present and future. *Journal for the Advancement of Performance Information & Value, 4*(2), 147-160.

van de Rijt, J., & Santema, S. C. (2013). *Prestatieinkoop: met Best Value naar succesvolle projecten*. Pijnacker, The Netherlands: Graphicom International.

van de Rijt, J., & Witteveen, W. (2014). *Best Value werkt: ervaringen uit de praktijk*. Pijnacker, The Netherlands.

van de Rijt, J., Witteveen, W., & Santema, S. C. (2016). *Best value stroomt: Inzichten uit de praktijk, de jurisprudentie en de wetenschap*. The Hague, The Netherlands: Graphicom International.

van Duren, J., van Bentum, A., & Braamhorst, M. (n.d.). *De Best Value Approach; meer dan een inkoopkunstje! Price is what you pay, Value is what you get!* Retrieved from http://www.yask.nl/oplossingen/whitepapers/

van Leeuwen, M. (2011). Using Best Value PiPS Procurement in Europe, Need for Compromise? *Journal for the Advancement of Performance Information & Value, 3*(1), 56-71.

van Oers, I. (2016). De kracht van een klein team. In J. van de Rijt, W. Witteveen, & S. C. Santema (Eds.), *Best value stroomt: Inzichten uit de praktijk, de jurisprudentie en de wetenschap* (pp. 197-208). The Hague, The Netherlands: Graphicom International.

Verheul, D., Rydell, M., & Santema, S. C. (2013). *Prestatieverkoop: klanten winnen met Best Value*. Pijnacker, The Netherlands: Graphicom International.

Verschuren, P., & Doorewaard, H. (2010). *Designing a research project* (2 ed.). The Hague, The Netherlands: Eleven International Publishing.

Verweij, J., & Kashiwagi, D. (2016). Introducing the Best Value Quality Checklist in Procurement. *Journal for the Advancement of Performance Information & Value, 8*(2).

Vrijhoef, R., & Ridder, H. (2005). Supply chain integration for achieving best value for construction clients: Client-driven versus supplier-driven integration. *Proceedings QUT Research Week*.

Wall, J. A., & Callister, R. R. (1995). Conflict and its management. *Journal of management, 21*(3), 515-558.

Washington, M. G. (2013). Trust and project Performance: The effects of cognitive-based and affective-based trust on client-project manager engagements.

Weiss, R. S. (1995). *Learning from strangers: The art and method of qualitative interview studies*. New York, United States of America: Simon and Schuster.

Witteveen, W., & van de Rijt, J. (2013). Possible Barriers to a Successful Further Diffusion of the Best Value Approach in the Netherlands: Observations of Major Misunderstandings on the Concept and Theory. *Journal for the Advancement of Performance Information & Value, 5*(2), 79-88.

Wong, W. K., Cheung, S. O., Yiu, T. W., & Pang, H. Y. (2008). A framework for trust in construction contracting. *International Journal of Project Management, 26*(8), 821-829.

Zaghloul, R., & Hartman, F. (2003). Construction contracts: the cost of mistrust. *International Journal of Project Management, 21*(6), 419-424.

8 | Appendices

Appendix A   Best Value explained

In the introduction an example is given to show the basic idea of Best Value; instead of telling your Sherpa how to climb the Mount Everest, Best Value makes you find the best Sherpa with verifiable information. The theory of Best Value is explained in more detail by discussing the principles of the approach, the four different phases, from preparation to execution, and discusses what difficulties lies with Best Value on legal grounds.

The principles

An underlying theory of Best Value is the Information Measurement Theory (IMT) of Kashiwagi. The main concepts of this model are that all events are predictable, only have one outcome and that people are predictable (Kashiwagi & Kashiwagi, n.d.) This model describes how people can have different views on the same events when information is missing. When people have a slow processing speed, they think that information is missing and will then compensate this missing information with own experiences, which will enhance subjective decision-making (van de Rijt & Santema, 2013). Kashiwagi believes that decision-making leads to risks because people do not know the outcome or there are several possibilities. Best Value is designed to minimise this risk by letting the expert, contractor, be the decision-maker instead of the client because it can better oversee the outcome (Kashiwagi, Kashiwagi, & Sullivan, 2010). If you have all the information and the initial conditions, there is no need for decision-making, because there is only one option possible. However, in practice, it is not possible to have all the information. Therefore decision-making is necessary (Verweij & Kashiwagi, 2016). A contractor has gone through the learning cycle of observing, processing, applying and adjusting multiple times and therefore has the most information it can get. This helps them to be able to perform better because it minimises decision-making, which increases efficiency and accountability (Kashiwagi & Kashiwagi, n.d.). Best Value triggers contractors to show this learning cycle and be transparent about the performance levels (van de Rijt & Santema, 2013). According to the Information Measurement Theory, an expert should be able to "predict the future, because an expert perceives all initial conditions and all natural laws" (Verweij & Kashiwagi, 2016, p. 24).

A second underlying theory of Best Value is the Kashiwagi Solution Model (KSM). This model distinguishes different types of people based on the speed that they can take on information. A type-A person processes information quickly; a type-B person on an average rate and type-C persons are slow in processing new information. The big distinction is between type-A and C persons; therefore these two are used (van Duren, van Bentum, & Braamhorst, n.d.). A type-A person has more information, can use this more efficiently in their decision-making processes, are leaders instead of managers and aim for a win-win situation (van Duren et al., n.d.). Type-C persons behave in opposite ways, which is

seen as dysfunctional behaviour. Kashiwagi labels manage, direct & control as dysfunctional behaviour because it focuses on win-lose situations and does not let the experts do their work

Verweij (2016) describes the essence of Best Value approach as decision-free solutions. This can be achieved by following the TONNNO principles:

- Transparency: To be able to know the outcome of the event, the initial conditions are needed, which, according to the Information Measurement Theory is the task of the expert. To be able to do so, information is required; therefore Best Value requires client and contractor to be as transparent as possible about their information. If they are the expert, they should have the information anyways (van de Rijt & Santema, 2013).

- Objectivity: Best Value wants to minimise subjective decision-making and therefore promotes to only use dominant information (Verweij & Kashiwagi, 2016). This will ensure that decision-free solutions can be made because only one option is possible.

- No details: Using detailed information does not fit the ideas of Best Value. The uses of details usually is a sign of lack of expertise (Verweij & Kashiwagi, 2016). Especially technical details will provoke behaviour of manage, direct and control (van de Rijt & Witteveen, 2014). The focus should be more on why tasks need to take place instead of discussing how they will be executed.

- No requirements: The client should not give the contractor requirements because this will prevent them from taking their expert role. This will promote manage, direct and control behaviour. Instead, they should observe, listen and align project goals to ensure both parties want the same (Verweij & Kashiwagi, 2016).

- No relationship: Creating a relationship between the client and contractor can interfere with the decision-making process and can result in decisions made on subjective grounds. Therefore, Best Value says that relationships should be avoided (Verweij & Kashiwagi, 2016).

The contractor, the expert, is in the lead during the project. They should take the initiative throughout the project, manages and minimises risks, and chooses the best working method (Verheul et al., 2013). In *Prestatie verkoop* (Verheul et al., 2013) a description of the role of the expert is given. An expert should be able to show that they perform better than the client itself would. This can be done by (1) planning and managing the complete project, (2) recognising and managing of risk, (3) taking the interest of the client as project goals and (4) providing measurements of their project performance. Best Value lets the contractor design a project plan on how they think they should execute the project goals. During the procurement phase, they need to prove they are the best party to execute the plan. The procurement phase is therefore about finding the right contractor, instead of finding the right plan (van de Rijt & Witteveen, 2014). The above-described principles lead to a change in the way of working from traditional behaviour to the Best Value way of working. What this implicitly means is described in Table 9 (van de Rijt & Santema, 2013, p. 19).

Traditional	Best Value
1. The client is the "expert"; the contractor adapts to demand.	1. The contractor is approached as the expert and does what it is good at.
2. Shifting risks.	2. Minimise risks.
3. Management, Direct and Control.	3. No control, alignment of resources.
4. Making use of a lot of details.	4. Making use of dominant information.
5. "We know a lot about a lot (have to; see point 1) and know how projects should be realised and what it should cost.	5. Self-knowledge about competencies and distinctive capacity of the organisation.
6. Relative high effort of many contractors, which only pays off for the winning offer.	6. Efforts minimised at the start and only maximum for the ones actually involved in the execution of the project.
7. Giving opinions and making promises: we'll see after awarding how it is actually done.	7. Providing dominant information about capabilities.
8. Surprised by undesired events. Risks just happen to us.	8. Look for solutions for undesired events in advance.
9. We 'trust' the contractor on his or her blue eyes.	9. Contractor proofs capability with key performance indicators.
10. Contractor passive: waiting for information and guidance: what does the client think I should do.	10. Proactive: taking responsibility: what should I know given my field of expertise?
11. Thinking in 'I'.	11. Thinking in 'we'.
12. Client and contractor work in silos mostly out of own expectations.	12. Contractor explains the project plans to the client before the start and the client can express concerns that still exist.
13. Working with assumptions and (unspoken) expectations.	13. Both sides explicitly mention roles and expectations.
14. Clients drafts contract with the activities the contractor should do.	14. Contractor drafts contract with the activities they are going to do.
15. No performance measurement.	15. Performance measurements on a frequent basis.
16. Unclear about responsibilities for scope changes and consequences and no guarantees that it will happen again in the future, due to lack of preventive action.	16. Deviations (planning, finances, specs) are reported and become part of the evaluation. Responsibilities regarding the deviations are documented.
17. Procurement department as negotiator and to get other contract provisions on paper.	17. Procurement department as a process facilitator.

Table 9. Differences between traditional way of working and Best Value. Translated from "*Prestatieinkoop: met Best Value naar succesvolle projecten*" by van de Rijt, J., & Santema, S. C., 2013, p. 19, Pijnacker, The Netherlands: Graphicom International.

The process

The Best Value Approach consists of four different phases, as shown in Figure 21. In the pre-qualification phase, the initiative lies with the client. During this phase, the client forms a core team that will be in the lead during the whole project. They prepare a core document that will consist of the project goals, scope, planning, weighting factors and budget. This document is used as an invitation to tender. At last, an information meeting for potential bidders is planned to educate them about the Best Value Approach and to present the core document.

Figure 21. The four phases of the Best Value Approach. Adapted from "Best Value Support", by Best Value Group, n.d., Retrieved from http://bestvalue-group.nl/our-services/best-value-support/?lang=en

During the selection phase, a project team from the bidder will have to prepare three documents explaining their project capability, risk assessment, and value added, which are extra options on the requirements that the bidder offers. These documents, together with a proposed price, are delivered to the client. These documents should show the capability, expertise, and distinctiveness (van de Rijt & Santema, 2013). The core team of the client reviews these documents and a selection of bidders are invited for interviews. These interviews are conducted with a member of the client's core team and key figures from the bidder's side. In these interviews, the key figures have to be able to explain the project and risks in a relatively simple way and show that they understand the project. They also need to show that they understand the Best Value Approach (van de Rijt & Santema, 2013). The key figures should, therefore, educate themselves thoroughly about the project, but also in Best Value. The interviews and documents are used to choose the bidder that shows the most expertise of the project. This bidder will continue to the clarification phase as the possible contractor.

In the clarification phase, the initiative is given to the selected contractor. During this phase, it is up to the contractor to show that the bid matches the actual project plan (van de Rijt & Santema, 2013). The clarification phase starts with the kick-off or project start-up (PSU). The contractor presents what is in this phase and what they expect from the client. The contractor works out the project's planning, risks etc. during a four to six-week period. The client should listen to the plans of the contractor without steering too much. This phase should clarify what is in and out of scope, align expectations and come to an agreement between client and contract (van de Rijt & Santema, 2013). During this phase, it is important that client and contractor do not negotiate or add extra scope to the project because the clarification phase is still in the procurement phase (van de Rijt & Santema, 2013). The clarification

phase ends with the award meeting, which can take place when all issues are resolved, all risks are identified, and all options for added value are discussed and decided upon. This meeting should be a happy occasion where the contract is signed (van de Rijt & Santema, 2013). Ideally, there does not have to be a separate contract. The documents created in this phase should be enough security. However, since contracts are often needed for processes within organisations, a contract will be formed, which will mostly refer to the document of this phase (Verheul et al., 2013). This phase is seen as a problematic phase, because the first signs of traditional behaviour, manage, direct and control, can develop.

The thorough preparations in the first phases are intended to ensure a relatively simple execution phase where the contractor maps or solves most of the obstacles, and the client should not have to worry about checking the quality of the work that is done (Verheul et al., 2013). This phase is all about minimising risks, which is the task of the contractor. However, the financial risk stays with the client (van de Rijt & Santema, 2013). A weekly report, made by the contractor, is used to ensure transparency in the project and to make sure that actions can be taken in case of unexpected or undesired events (van de Rijt & Santema, 2013). This weekly report should be a simple document that only contains dominant information. The weekly report should give an objective overview of the progress of the project, with a transparent oversight of tasks and responsibilities (van de Rijt & Santema, 2013). The contractor should also work with key performance indicators (KPI's). These indicators can proof the quality of the performance within the project. The contractor can, therefore, show they are still the expert and that they are still performing well (Verheul et al., 2013)

Best Value and legal difficulties

This research focuses on construction projects with a public client. Therefore, the directives for procurement law, set by the European Union, have to be followed. These directives promote the principles of equality, transparency, proportionality and competition (Chao-Duivis et al., 2013). These principles should always be followed in tenders. Best Value seems to let subjectivity into the rating of the bids, which had led to some difficulties. The approach does leave room for interpretation of the tender for the contractor and therefore for the client as well in selecting the contractor (van de Rijt et al., 2016). The client should be completely transparent in their expectations towards the client and their evaluation framework (van Leeuwen, 2011).

The different phases of Best Value can create confusion between the client and the contractor on what is and what is not allowed. The phase with the most difficulties is the clarification phase (van Leeuwen, 2011). The contract between client and contractor is signed after the clarification phase. Therefore, this phase should still be seen as the procurement phase where the rules that come with that, still count. It also means that if the contractor cannot prove that they are fit for the job during this phase, they can still lose the tender (van de Rijt et al., 2016). Case *ECLI:NL:RBNHO:2014:2536* showed how this could

happen. The contractor that entered the clarification phase changed their financial statement and therefore could not meet the requirements of the client anymore. The contractor already committed to the earlier provided financial statements, and thus their tender became invalid. The client then decided to continue the clarification phase with the contractor that came second (van de Rijt et al., 2016). Something similar happened in case *ECLI:NL:RBDHA:2014:7938*. During the clarification phase, it became clear that the contractor would exceed the ceiling amount. Therefore, the client wants to make the tender invalid. The contractor argues that in the clarification phase, the client can only check whether or not the plan of execution matches the bid of the contractor. However, the judge ruled that the client can also check if the bid is in accordance with the tender, thus the ceiling price too (van de Rijt et al., 2016). Both cases show that the clarification phase is a difficult phase. This phase is meant to get to the bottom of the plans of the project and to be sure everything is correct. However, it is also a phase where the client and contractor cannot negotiate on the bid because this would be unfair to other parties.

Appendix B   Interview

Can you tell me how the first tender phases of the project went?

How were the team members selected for this project?
- Was this different than other projects?
- Has the team composition changed throughout the project?
- Why?
- What was the effect?

What does Best Value mean for you in the execution phase?

How were team members educated on Best Value?
- Was it needed to repeat this during the project?
- Why?

Are there any sub-contractors involved in this project?
- Do you use Best Value for them as well?
- Was that needed?
- Why?

How do different departments in your organisation react to Best Value?
- Does this cause any intra-organisational conflicts?

Best Value is all about creating a win-win environment
- Does this help in aligning project goals?
- What effect does it have?
- Is this different than in other projects?

Was there a level of trust between client and contractor?

Yes?   *No?*
- What was it based on?   - Why?
- How was it strengthened?   - How was it strengthened?

What can the expert do to strengthen the trust?

A contractor needs to show its expertise at the start of the project in a Best Value project

- Did this help to build trust?
- Why?

Best Value aims to use the expertise of the market, but does this leave enough room for all parties to use their expertise?

- Did this have a positive or negative effect on the collaboration?
- Why?

How would you describe the role of the expert?

What effect did the principle of transparency have on the team members?

- … and on the collaboration?

Do you think the other party is just a transparent?

- Why?
- What is the effect?

Risks are thoroughly discussed at the start of the project; do you also discuss why risks can take place?

What happened when risks or unwanted events occur?

- What was the decision-making process?
- Who was involved?
- Did this lead to conflicts?

Have there been any other conflicts in this project that we have not yet discussed?

How were conflicts resolved?

- Is your conflict management style focussed on prevention or resolving?
- How does this effect Best Value?
- Why?

What could you have done differently?

- What would have been the effect of that?

If you could change one thing of Best Value, what would you change?

Appendix C   Descriptions of the interviewees

Cl = Client	Role	Best Value experience
Client B	Build manager	Yes
Client D	Project manager	No
Client E	Contract manager & project manager	Use internal advisors
Client F	Project manager	Use internal advisors
Client G	Contract manager	No

Table 10. Interviewees of client organisations

Co = Contractor	Role	Best Value experience
Contractor 1	Project manager	No
Contractor 2	Project manager & Best Value advisor	Yes
Contractor 3a	Project manager	No
Contractor 3b	Project manager	Yes
Contractor 4	Project manager	No
Contractor 5	Project manager	Yes
Contractor 6	Project manager	No
Contractor 7a	Best Value advisor	Yes
Contractor 7b	Design manager	No

Table 11. Interviewees of contractor organisations

Appendix D   List of codes and descriptions

Code name	Definition
Cause 1: Market pressure	Market pressure due to the lowest bid principle
Cause 2: Adverse selection problem	During the project, the agent will know more about the problems and progress of the project, and therefore the principal cannot be sure about whether or not the right decision is made
Cause 3: Moral hazard problem	When the core interests differ between the parties, it is often expected that the party with the power, the agent, will act in the interest of their organisation and not always in the interest of the principal
Cause 4: Principal agent	In projects, there is an owner (principal) that chooses a project manager (agent) to execute the project. This decision leads to a shift in power from the principal to the agent
BV1: Positive of BV	Examples of aspects of Best Value that is perceived as positive for collaboration
BV2: Negative of BV	Examples of aspects of Best Value that is perceived as negative for collaboration
BV3: Transparency	Examples of effects of transparency in projects
BV4: Objectivity	Best Value wants to minimise subjective decision-making and therefore promotes only to use dominant information. This will ensure that decision-free solutions can be made because only one option is possible.
BV5: No details	Using detailed information does not fit the ideas of Best Value. The uses of details usually is a sign of lack of expertise
BV6: No requirements	The client should not give the contractor requirements because this will prevent them from taking their expert role.
BV7: No relationship	Creating a relationship between the client and contractor can interfere with the decision-making process and can result in decisions made on subjective grounds.
BV8: Role of the expert	Descriptions of what the role of an expert should be

BV9: Traditional behaviour	Mentions of traditional behaviour shown in the projects
BV10: Type A vs. Type C	Kashiwagi Solution Model (KSM). A type-A person processes information quickly, and a type-C person is very slow in processing new information.
BV11: Advantages clarification phase	Examples of situations where the clarification phase appeared crucial
C1: Task related conflicts	Conflict due to lack of information about complex systems and task complexity
C2: Process related conflicts	Conflicts about level and type of responsibilities (who) and decision-making (how) processes, conflicts due to interpretation of the contract
C3: Relationship related conflicts	Conflicts due to personal traits, dissatisfaction of team members, lack of communication
C4: Intrapersonal conflict	A conflict of one person with him or herself
C5: Interpersonal conflict	A conflict between two or more persons
C6: Intra-organisational conflict	A conflict within one organisation
C7: Inter-organisational conflict	A conflict between two organisations
C8: Positive conflicts	Mostly based on task-related issues, where there is a difference of opinion or values between experts from different fields
C9: Negative conflicts	Often come with a lot of emotion and stress and cause the conflict to divert from the task. It can be very damaging to communication, social relations and will continue to affect future conflicts
T1: System-based trust	Trust based on rules and regulations, which can be both cultural and formal.
T2: Cognition-based trust	A rational trust based on information. This trust is formed by competence, integrity and goodwill, which together can be seen as the trustworthiness of the other party or person.
T3: Affect-based trust	Affect-based is trust based on individual and emotional relationships. This trust develops through experiences and interactions between team members over time.
T10: Distrust	Mentions of moments of distrust between the client and contractor. Code is coupled with system-, cognition- or affect-based trust.

Table 12. List of codes and descriptions

Appendix E   Occurrence concepts

	Contractor 1	Contractor 2	Contractor 3a	Contractor 3b	Contractor 4	Contractor 5	Contractor 6	Contractor 7a	Contractor 7b	Client B	Client D	Client E	Client F	Client G
BV1: Positive of BVA	1	0	0	1	1	2	1	0	6	1	3	1	2	0
BV2: Difficulties of BVA	2	1	2	0	1	1	1	0	1	1	3	1	2	0
BV3: Transparancy	3	2	1	4	2	2	2	1	4	0	2	2	1	3
BV4: Objectivity	3	3	1	0	1	2	2	6	4	0	4	5	4	1
BV5: No details	7	6	0	3	1	0	1	3	5	1	7	8	4	3
BV6: No requirements	6	4	0	2	4	5	2	3	9	5	4	9	2	2
BV7: No relationship	2	4	5	1	3	3	3	3	6	0	2	2	6	2
BV8: Role of expert	2	4	1	4	3	6	1	2	4	0	3	3	2	2
BV9: Traditional behavior	9	9	0	3	3	4	3	2	5	2	2	7	4	3
BV10: Type A vs. type C	1	2	0	3	1	1	1	3	4	1	0	1	2	1
BV11: Advantages clarification phase	0	0	2	3	3	2	2	1	0	2	2	0	5	1
C1: Technical-related conflict	6	8	1	10	5	3	8	1	6	3	6	12	4	4
C2: Process-related conflict	6	11	2	6	4	6	10	4	8	6	11	7	7	8
C3: Relationship-related conflict	1	7	0	0	4	0	2	4	9	1	0	1	1	1
C4: Intra-personal conflict	0	1	2	0	1	4	3	4	6	2	5	1	2	2
C5: Inter-personal conflict	0	4	0	1	1	1	2	1	2	0	0	1	0	1
C6: Intra-organizational conflict	5	5	1	6	4	2	6	3	10	3	7	17	2	6
C7: Inter-organizationl conflict	8	18	2	11	8	8	11	1	9	7	7	8	9	4
C8: Positive conflict	1	3	1	4	1	3	8	2	7	0	4	4	8	0
C9: Negative conflict	5	16	0	0	0	0	3	0	1	0	0	4	1	1
Cause 1: Market pressure	1	0	3	4	1	1	0	1	3	0	3	0	2	0
Cause 2: Moral hazard problem	3	1	2	1	0	0	0	1	0	0	4	2	0	5
Cause 3: Adverse selection problem	2	5	1	0	0	1	0	0	1	0	1	5	5	2
Cause 4: Principal agent	0	1	0	1	0	0	0	0	0	0	0	1	0	0
T1: System-based trust	0	1	2	2	0	1	1	1	1	1	0	1	3	1
T2: Cognition-based trust	6	9	4	10	10	7	9	4	17	4	6	6	15	11
T3: Affect-based trust	3	3	7	3	6	3	2	3	4	1	3	3	5	3
T4: Distrust	5	4	0	4	2	0	2	1	6	1	1	1	4	9

Figure 22. Occurrence concepts in interviews

Appendix F Co-occurrence concepts

Figure 23. Co-occurrence concepts

Appendix G   Activities per category

Mutual actions

Educate team members on Best Value
Train other departments on Best Value to prevent endless discussions.
Have at least one experienced (Best Value) team member.
Train new team members, stakeholders and other influencers on a regular base on Best Value.
Recruit people that like the philosophy of Best Value.
Use a Best Value advisor throughout all phases.
Change someone on the team when they do not fit well into Best Value.
Certify employees on A or B level.

Table 13. Activities within category 'Educate team members on Best Value'

Align expectations
Have a mutual Best Value expert
Develop clear, overall and common goal during the clarification phase (shared vision to add to the project goals).
Discuss expectations.
Include an independent Best Value advisor for the first big scope discussion.
Do a project start-up focused on Best Value.
Do a project follow up focused on Best Value.
Joint education of Best Value.
Discuss expectations.

Table 14. Activities within category 'Align expectations'

Create objective relationships
Create relationship.
Do an evaluation directly after a conflict.
Do a case study or role-play to gather information about behaviour, which helps to understand each other better.
Do a project start-up that first focuses on the plan, facts, etc. and in the second part focuses on meeting each other.
Case study or management game to see how scenarios would be resolved.
Celebrate success.
Work in same office.

Table 15. Activities within category 'Create objective relationships'

Actions for the contractor

Involve sub-contractors early on in the project
Give more attention to the role of sub-contractors in the clarification phase.
Build an app for sub-contractors to show progress.
Involve sub-contractors in the Best Value approach.
Add sub-contractors to project team.
Involve sub-contractors in the tender.
Use sub-contractors that like Best Value.

Table 16. Activities within category 'Involve sub-contractors early on in the project'

Show your process throughout the project
Make a long-term (looks further than one week) and short-term weekly (only looks at the week ahead).
Be open in what you cannot do.
Use big data for KPI and VPI.
Make a cost-benefit analysis of different solutions.
Send monthly or two weekly progress report to look back at what is done (instead of just a weekly that looks forward).
Be open about the business model.

Table 17. Activities within category 'Show your process throughout the project'

Make it easy for the client
Define expectations for providing information and knowledge by the client at the start of the clarification phase.
Make a to-do list for the client.
Tell the client what their responsibilities are.
Define clear predefined feedback moments for the client.
Send planning and schedule meetings before project start-up.

Table 18. Activities within category 'Make it easy for the client'

Understand the client's client
Ask the opinion of the client.
Demand involvement asset managers during clarification phase.
Do an early stakeholder analysis.
Involve the client in your process.

Table 19. Activities within category 'Understand the client's client'

Actions for the client

Give other departments enough time to be involved
Make autonomous teams.
Get Best Value through to management level, to ensure more time to work on projects.
Add asset managers to project teams.
Change organisation.

Table 20. Activities within category 'Give other departments enough time to be involved'

Define clear responsibilities for other departments
Give asset managers a clear task, so they feel responsible.
Involve complete team and advisors in writing project-goals.
Create commitment from asset-managers
Involve client's client in drafting project objectives.
Give asset managers enough room to express their concerns in the clarification phase.

Table 21. Activities within category 'Define clear responsibilities for other departments'