

**Incomplete contracts and behavioural aspects – a case study in  
the construction and IT industries**

Fei Carlo Tong

Student Number: 97019624

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## Abstract

Contracts capture an agreement between two parties to exchange a resource in the future (ex-ante), however the future is not certain. Only after the event has happened, might the two parties compare the resources they have received to what they expected (ex-post). Entering into a contract with unknowns gives rise to incomplete contracts theory, the focus of which includes the study of human behavior. Relational contracting is currently being studied as a method of reducing the transaction costs and incompleteness of contracts.

Using case studies, this research aimed to reach a conclusion regarding why certain contractual projects run over budget. Overruns are often related to a variation agreement that is incomplete and open to interpretation. Understanding what the issues are and how to mitigate contractual risks was thus a key focus of this research.

The research examined two industries - construction and IT. From the case studies, 16 interviews were conducted and 12 contracts reviewed. The least concern for all the parties was disputes, as the parties find solutions to address issues not considered when drafting contracts. Industry specific experience and knowledge is needed to mitigate some unknown contractual risks, however.

Relational contracting was also very evident in resolving issues outside of a contract. Further studies into ancillary contracts will reveal more insight into behavioural and relational contracting.

## Keywords

Incomplete contracts, Contract theory, Human behaviour, Relational contracting

## Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

5<sup>nd</sup> of November 2017

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Fei Carlo Tong

# Acknowledgement

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# Chapter 1: Introduction to the Research Problem

## 1.1 Introduction and description of the problem

A major research topic in economics is the role of contracts in society. Contracts in an economy are reciprocal agreements or a bi-lateral co-ordination arrangement between two or more parties to exchange resources in the future. The transactions are not captured in arms-length spot markets, but in a series of short-term and long-term contracts. These contracts restrict parties' actions, but there will be an offsetting of benefits in choosing between short-term and long-term contracts; a party would not enter into a contract that limits their flexibility (Lafontaine & Slade, 2013). Over the past 30 years, contracts have given rise to the central notion of economic studies in three principals: incentives, transaction cost economics and incomplete contracts (Brousseau & Glachant, 2002).

Contracts are drafted at ex-ante, which is Latin for 'before the event', for an outcome that cannot be verified until after the actual return has happened. The term for the actual return in Latin is ex-post, which means 'after the fact'.

Without the ability to foresee all the possible outcomes and contingencies of a contract, there will be an inefficient allocation of the risks and surpluses of that transaction (Williamson, 1979). Transaction costs result from enforcing contractual terms between parties as a consequence of disputes to resolve issues ex-post. During the contractual period, the party that feels they are being treated unfairly or may be receiving less of the surplus than they expected, may force a renegotiation of the contract (Masten & Saussier, 1971).

The incomplete contracts theory, which was developed by Grossman and Hart (1986), states that not all transactions and outcomes can be considered in the contract at ex-ante. Asymmetrical information and bounded rationality leave contracts incomplete, as predicting unforeseen contingencies is very difficult. Making such predictions and inserting volumes of clauses in contracts for every possible outcome can also be costly and time-consuming, and may still not result in a complete contract. Outcomes can only be verified ex-post or even possibly by an independent third party.

With uncertainty and renegotiations, parties may enter into either a fixed or flexible contract. Flexible contracts allow for changes in future circumstances, but through

laboratory empirical testing, they have been found to have the most shading, i.e. additional profits earned above what would be considered a fair share. Fixed contracts were found to have the least amount of shading, but are unable to take into account any future changes in the market (Fehr, Hart, & Zehnder, 2009).

Since contracts are entered into for every business transaction, the question is how they are currently accounting for contractual incompleteness without being aware of this theory. Contracts currently being concluded are either flexible or fixed, or even insufficiently drafted for possible known contingencies. Businesses could be compensating for the incompleteness in ways that have not been studied theoretically before, or other theories may be used in practice.

Businesses could mitigate the risks caused by incomplete contracts by entering into relational contracts, where both parties work together towards a win-win situation by sharing information and coordinating activities. In this situation there is also a compromise between them in areas of disputes and unknown circumstances (Ling, Ong, Ke, Wang, & Zou, 2014).

Relational contracts are not isolated, as behaviours from both parties play a role in the relationship between the parties. Parties may behave in a certain way so as to mitigate the risks of uncertainty, for example asking for a deposit before an order is made (Iyer & Schoar, 2015).

Incomplete contracts theory may not be evident in every contractual or business transaction; some may go unnoticed if no issues are raised or if disputes are resolved through verbal agreements on the side (relational contracting).

To understand the impact of an incomplete contract, a mini-case study is introduced based on an interview with a contract expert with 15 years' experience in drafting contracts and litigation. This case study is on a construction project that was ongoing during this research. The cost of the project had overrun its budget by double its amount to R135 billion over the last estimate seven years ago.

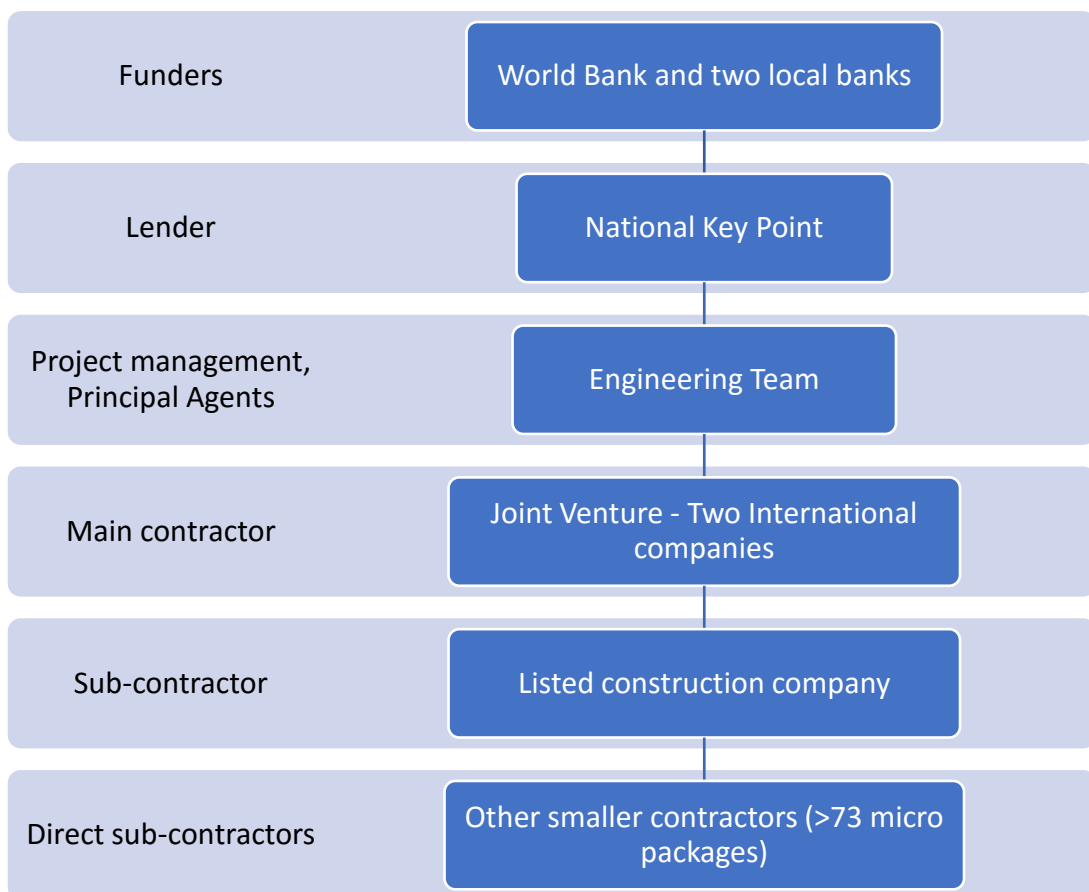
Contracts ideally record a relationship and a "meeting of minds". Unfortunately they do not record the intentions of the parties, but may indicate or signal an intention of a party in the transaction. The contract expert found it peculiar to combine the theory of incomplete contracts and contract law, yet after explaining to him about incomplete contracts theory, the current situation at the project and the reasons for the overruns became clearer.

In the mini-case study, an incomplete contract was used to benefit one main contractor. The project involves the following parties: the World Bank, local banks, a National Key Point, an engineering team, the main contractor and various sub-contractors.

For the National Key Point to obtain funding for this construction, the World Bank was approached for a loan, which was granted on the back of an international construction contract called FIDIC. FIDIC is the International Federation of Consulting Engineers, which is based in Switzerland. The organisation was founded with the objective of being the authority in consulting engineering best practices.

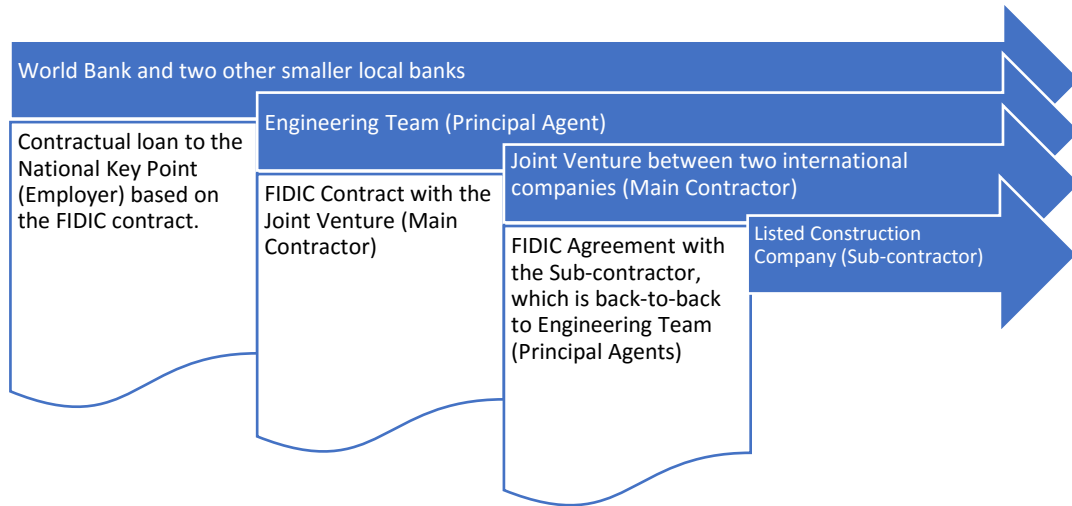
The objective of the National Key Point is to sell its products; as it is not in the business of construction, an engineering team was formed comprising quantity surveyors, architects and engineers, i.e. the team is the Principal Agent to oversee the construction process.

**Figure 1: The organisation diagram of the construction project**



The FIDIC agreement was issued back-to-back between the engineering team and the main contractor, and between the main contractor and sub-contractor.

**Figure 2: FIDIC agreement flow between the Principal Agent through to the sub-contractor**



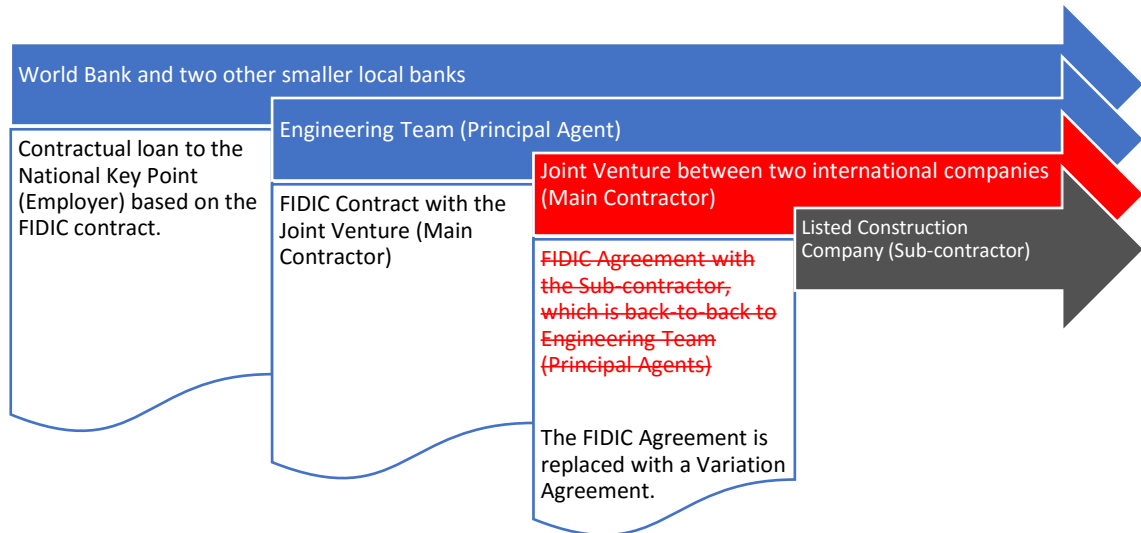
In 2008, a problem arose when the construction site was ready, and the sub-contractor took occupation of the site and was waiting for the information and steel work to be provided by the main contractor. The main contractor was not aware that the sub-contractor had taken occupation of the site due to the cultural differences in the main contractor's joint venture between the two international companies and local staff. The internal issues caused the engineering team to not function cohesively and focus their attention on the construction project.

An early warning was issued by the sub-contractor to the main contractor to notify them of the issues and to rectify or remedy the situation to mitigate or reduce the damages. The main contractor started incurring a liability to the amount of R4 billion in penalties and damages. These penalties could not be escalated to the engineering team as it was the main contractor's fault for the delays.

The main contractor was suffering from a huge financial loss and possible liquidation. To settle this matter, they entered into a variation agreement without fully understanding it. The variation agreement was intentionally left open-ended and comprised of only 24 pages with annexures; a standard FIDIC agreement is 160 pages long with definitions, clauses and guidelines.

The variation agreement was left so vague and open that the main contractor had to go to the Dispute Arbitration Board (DAB) 17 times. They lost 15 times, and with every loss they suffered, a term or clause in the FIDIC agreement was taken out. A ruling by DAB is binding, and it sets a precedent for the contract going forward.

**Figure 3: FIDIC agreement flow between the Principal Agent through to the sub-contractor after the variation agreement**



Now that the FIDIC agreement had been rendered ineffective and was practically replaced by the variation agreement, the main contractor could not submit a claim to penalise the sub-contractor for project delays. In the meantime, the FIDIC agreement between the engineering team and main contractor was still fully intact with all the clauses and penalties in place.

This whole process was opportunistic and carefully planned by the sub-contractor. In the variation agreement, there are open-ends that could only be understood with a DAB ruling or interpretation. If a contract is intentionally left open, it means there is not a full intention to meet the other party at a certain level; expectations have changed, and there is no longer a meeting of minds.

The sub-contractor was well prepared from the beginning to take the main contractor to arbitration and knock out every clause of the FIDIC agreement. This process is called Litigation Management; every ruling made by the DAB exempted the sub-contractor from a specific clause in a step-by-step process.



The management of the agreements should have been done by specialists from the beginning, and management should have had an understanding of how the clauses in the construction contract worked and applied them carefully, not allowing the variation agreement to replace the contract leaving them with an open-ended agreement. The main contractor is now stuck with the current situation without any recourse.

*“To make a contract vague is a lawyer’s best dream because now it has interpretations.”* – Contracts Expert

A simple contract can be drawn up in three to four pages depending on what the intentions of the client are. In contract law, there is case law and common law; if the contract states the interpretation and clauses clearly, case law cannot be applied and vice versa. If you leave something out of the contract, you need to know exactly why you are leaving it out and that it is not covered somewhere else in the contract.

*“In theory, open-ended contracts are quite peculiar and strange to me, because there has always been a principle of the meeting of minds. Saying that, we have a contract as long as we understand the same thing. We understand that we expect this, and regarding that, there is a reciprocal duty to perform or deliver something. So, there is a meeting of minds.”* – Contracts Expert

There are other forms of construction contracts besides the FIDIC mentioned above, including the New Engineering Contract, a popular international construction contract known as the NEC. The first edition was published in 1993, and was a radical transformation from traditional contracts.

*“The NEC is the antithesis of effective management. It is the inability to react to a new circumstance... The main objective of the NEC is clarity and simplicity.”* – Martin Barnes CBE

When people include non-standard clauses at the end of a contract it is clear that they are not part of the contract as they are written in a different type of language. This introduces the problems inherent in the traditional drafting of contracts.

*“In the course of my career, I have done quite a lot of work on disputes, to do with engineering projects, including arbitration and court cases. A number of them, of things which end up in court. Which is a proportion of them are about what the words mean.”* – Martin Barnes CBE

The local construction industry is guided by the Joint Building Contracts Committee, commonly known as the JBCC®. The representatives of the committee are building

owners and developers, professional consultants and general and specialist contractors who contribute their knowledge and experience.

The IT industry is not guided by any formal institution as to how contracts should be drafted, yet since technology changes frequently and exponentially, how do businesses account for changes in circumstances and the market? Crypto-currencies, cloud storage and bespoke software are just some of the issues that are forcing procurement departments and internal legal advisors to change the way they draft their contracts and mitigate risks.

Contracts constantly evolve and are never static, particularly as the economy changes and South Africa is increasingly exposed to international agreements and trade. Globalisation and open markets expose local businesses to international contracts and guidelines that are no longer isolated to a specific country, and contracts are becoming very technical and specialised to each industry.

## 1.2 Purpose statement

The primary aim of this research project is to understand how the incompleteness of contracts influence human behaviours and the structuring of contracts in the construction and IT industries.

The construction industry has been established for many years, and there are local and international guidelines on how contracts and construction should be carried out. These guidelines are created through the collaboration of many experienced and knowledgeable professionals in the industry to prevent disputes from occurring, however changes are made to standard agreements which effectively give them a different meaning.

In the IT industry, contracts are structured differently to those in the construction industry, i.e. IT industry contracts are multi-layered, allowing for flexibility in projects. There are currently no established guidelines for the industry to follow regarding drafting their contracts, however the parties are able to mitigate or reduce their risks of uncertainty in the industry through termination clauses, negotiations and relationships.

The construction and IT industries are both undergoing industry changes. Construction companies are no longer one-stop shops with all the resources under one roof; they have become project managers and are now using contracts within contracts to manage their

operations. In the technology industry, the advancement in new resources like the cloud, intellectual property and bespoke software means that standard contracts can no longer be used in a space that is advancing rapidly.

This research aimed to study what changes are currently being made by companies in each industry, taking into account the changes in business modelling and the pace of technology. Open-ended questions were asked to understand what business is currently doing, given that it does not have tacit knowledge of incomplete contract theory. Some industries operate with guidelines, and questions are asked as to how these businesses deal with changes in the market while following industry guidelines. Other businesses are in an industry that experiences quick progressive changes in technology. This study aimed to understand how these businesses mitigate the risks caused by changing market conditions and contingencies that may arise in the future.

### 1.3 Objective of the research

The objectives of this study are to explore how businesses in the construction and IT industries account, and mitigate risks from incomplete contracting. This research will further establish the cumulative knowledge and study of human behaviour in optimising the ex-post allocation of resources after the event has happened.

### 1.4 Scope of the research

The scope of this research was bound by the following definitions:

- Contract theory is defined as transaction cost economics and agency theory. These are the costs of maintaining and enforcing contracts.
- Incomplete contracts are defined as property rights, hold-ups, reference points and behavioural aspects.
- Relational contracting is defined as relationships and agreements that are captured by the parties outside of the written contractual agreement.

## 1.5 Chapter summary

In this chapter, contracts as an economic measure are introduced to capture the reciprocal relationship between two parties. The theory of incomplete contracts is a consequence of contracts that cannot capture all the possible changes and contingencies in the market, leading to an unequal distribution of surpluses ex-post.

A short case study was provided to show the impact of an incomplete contract on a construction project. The financial impact of the incompleteness is in the billions of Rands, and was still ongoing at the time of writing this research study. The purpose of the case study was to understand how the construction and IT industries cope with the incompleteness of contracts.

## Chapter 2: Literature Review

The challenges found in contracting into the unknown future, as well as an understanding of contract theory and incomplete contracts theory, will provide a foundation to explore deeper into how business approaches incomplete information. The two theories will provide the basic models to understand behavioural aspects, social norms and related themes in contracting.

The foundations of contract theory are first discussed in the context of the literature reviewed and studies examined. Past literature focused on understanding the theory, while more recent literature applies the theory to empirical studies conducted in a laboratory environment.

### 2.1 Contract theory

Contracts are a reciprocal agreement made between two parties in an arms-length transaction. The agreement can be seen as a bi-lateral co-ordination in an arrangement to exchange resources at a future date. The legal definition of a contract is to capture a “meeting of minds”.

Over the past 30 years, contracts have been captured as a central position in economics in three principal fields: incentives, transaction costs and incomplete contracts (Brousseau & Glachant, 2002). The principle fields of transaction costs and incomplete contracts are studied further in this research paper.

#### 2.1.1 Transaction Cost Economics (TCE)

Contract theory was developed from studies by Coase (1937), whose research questioned why, if the market is an efficient source of allocating profits, companies exist. It was not until the 1970s that the model of the firm came into existence through further studies by Williamson (1971; 1979), the Nobel Prize winner in 2009 for his work on transaction cost economics. Williamson's (1979) central work assessed how costly it is for firms to make relationship-specific investments.

An example of vertical integration could be that of a coal mine and an electricity generating plant (Joskow, 1987). A generating plant can sign a contract with a coal mine for a supply of coal and establish its generating plant at an adjacent location. The two parties have an agreement with one another for the supply of coal, and perhaps a sharing of revenue scheme is put in place. There is, however, a bargaining cost that must be taken into account; transaction costs from asymmetrical information and moral hazards may create inefficiencies in the distribution of resources between the parties' ex-post. This raises a question about incomplete contracts, as established by Grossman and Hart's (1986) study on property rights theory, which is expanded on in the next section.

Transaction cost economists acknowledge that the first role of contracts is to align marginal incentives and prevent wasteful efforts in redistributing existing surpluses. Contracts record the intentions of the parties and the profits of surplus distribution ex-ante. The second role of contracts is opportunism, in which efforts are made to evade performance or to force a renegotiation of the contract terms, i.e. parties disadvantaged regarding the initial contract will evade or renegotiate on the previous deal (Masten & Saussier, 1971). A party will force a renegotiation due to an imbalance in the distribution of the surplus or risks during a contract. The latter is a negative use of contracts and would relate more to the intentions of the party.

Transaction costs can also be complicated to calculate, hence some contracts are intentionally left open by having fewer clauses and definitions, which has an effect of having more interpretations, assumption and possibilities. The cost of adding a contingency or a division of profits is a sensitive matter depending on how closely the parties agree on how to divide the profits. Sensitivity is needed to avoid a moral hazard dilemma for the party with more information or residual property rights. The moral hazard stems from the parties' lack of incentive to guard against risk, which they are protected from. In a shared view, profit sharing will be optimal as both parties have the same information, whereas in an unshared view, there may be economic rents, where more profits may have earned above the normal share after costs for the one party. This led to an investigation on the asymmetry of information by Halonen-Akatwijuka and Hart (2013), who found that the sharing of profits may also be attributable to the history between the parties. If the parties have interacted with each other before, they may have grown to know and like each other, therefore the sharing of profits is more generous between them, and contracts become less complete between them over a long-term relationship.

Where the costs of being in a long-term contract outweigh the benefits, termination clauses and safeguards are important for a buyer-seller relationship. There are three reasons for this: firstly, they influence the buyer's and seller's ongoing relationship; secondly, they are intensely negotiated by the buyers and sellers; and lastly, they define the roles in exchanges between the parties. Buyers can maintain flexibility in the contract while reducing transaction costs, and extendibility and termination safeguard the buyer from opportunism by allowing them to alter the exchange durations (Weber, Mayer, & Macher, 2011). In contracts where the future is uncertain, and the contractual period is over a long period, termination and renewal clauses are useful tools.

Negotiating of termination clauses may either be mutual or aggressive. Chang (2014) took a different approach to termination clauses by adding "high-powered" incentives in sharing the risks ex-post, which should be greater than the threat of termination of the contract. Incentives alleviate the agency problem by allowing savings made by the seller to be shared with the buyer in fixed contracts, which on their own do not have any incentives for the seller to improve the process and hence the development of efficiency is lost. The incentive is also a tool to mitigate an issue called the 'hold-up problem'. Agency costs and the hold-up problem are components of incomplete contracts theory. Agency theory is when one party, the agent, has asymmetrical information and takes advantage of that, hence a surplus of profits is taken in by them. The hold-up problem occurs when a party feels aggrieved about the transaction and withholds the service or goods. The party may even start shading by cutting down on the quality of service or goods to compensate themselves for the aggrievement.

Agency theory contains little explicit discussion on the choice or durations of contracts. There is also very little empirical evidence collected on durations of contracts, as there is an overlap between agency theory and transaction costing economics. In a study conducted on the contracting practices of British engineering sub-contractors by Lyons (1994). it was found that a formal contract was adopted when a project involved specific customer designs and significant capital investments. Informal contracts were used when the sub-contractor employed expensive but flexible equipment to produce advanced technology products that made contract specification and enforcement difficult (Masten & Saussier, 1971).

### 2.1.2 Risks

When managing risks in contracts, suppliers often expect the payoff to be higher for risky projects than for less risky ones. The party that is also better able to bear the risks should carry most of them, however the optimal allocation would depend on the risk preferences of the parties. The party that is also able to bear the risk cheaply should be able to deduct the risk premium from the negotiated price. A key lesson from Wu (1995) is that a party should never bear risks above what they are adequately compensated for. The party's ability to bear risk is related to human behaviour and a perception of the transaction. Risks are closely tied in with the hold-up and reference points. A reference point is a measure used by a party to gauge his/her expectations ex-post. Reference points could be market returns, benchmarks, previous experiences, contracts etc.

The early empirical evidence explaining contracts in theoretical models of risk aversion was weak, and suggested that parties are risk neutral (Allen & Lueck, 1995). Further, the empirical evidence does not address complex and uncertain transactions that often require durable incomplete relational contracts. The choice between competitive bidding and the price regulations of a contract is dependent on whether the enforcement by the court or regulatory administrations is more effective in governing these agreements (Crocker & Masten, 1996). Later studies have, however, studied the risk adversity of the parties in a contract, as well as the influences of renegotiations on rebalancing the sharing of risks.

New studies in risk aversion show that long-term contracts tend to be more efficient when the buyer is risk adverse, as they will not want to renegotiate the contract. Profits and risks are optimally distributed ex-ante (Herweg, Karle, & Muller, 2017), as sellers may be opportunistic in the renegotiations, hence the buyer will be reluctant to allow a renegotiation of the contract.

Loss aversion may also become sticky and prevent the parties from adjusting the contract to a materially efficient allocation (Schmidt & Herweg, 2014). The stickiness from the buyer may be settled without further negotiation in the initial distribution of profits and risk at ex-ante, and fail to adjust for any subsequent events. The cause of the stickiness may come from the buyer's perception of risks and reference points in the ex-ante negotiations.



### 2.1.3 Minimum purchase requirements

Sellers who wish to reduce their risks may request a minimum purchase requirement. As buyers may also be risk adverse, they could opt to have a fixed contract negotiated upfront, which the seller can then counter. The contract designs are then modified to insert a “minimum purchase” provision. The economic rationale for this provision is that the buyer goes into liquidation for any breaches of contract. As long as the benefits received from the buyer are greater than those of the seller, the breach is efficient. The buyer would have to compensate the seller for the differences between the contract price and the deliveries made (Crocker & Masten, 1996). The Pareto efficiency study would be applied the buyer to understand the compensation for the differences.

In most fixed contracts calculated today, a fixed cost price is calculated upfront by taking the price multiplied by the quantity. The price is usually fixed, and the quantity will have a minimum amount to be produced or delivered. This ensures that the profits from the transaction will cover the costs.

### 2.1.4 Pricing

A source of inefficiency in long-term fixed contracts is that they fail to adjust for changes in contemporary market conditions. If minimum purchasing requirements or a similar tool tracking the market are not used to alleviate risk, the aggrieved party may force a renegotiation of the agreement.

Choosing a fixed or flexible contract will lead to a trade-off in the sharing of profits and risks, e.g. a fixed contract may constrain a seller from opportunism but fail to account for changes in the market conditions, in which case the seller may feel aggrieved, resulting in shading or a hold-up.

On the other hand, flexible contracts open the door to opportunism (Crocker & Masten, 1996), and a seller may be able to claim for a surplus beyond a reasonable share of the profits or level of risks. Flexible contracts, however, reduce the risks to the seller, which may come at a cost to the buyer (Triantis, 2000). Obtaining a balance between the two types of contracts is a challenge, and depends on the circumstances and the parties' intentions. For this reason, some contracts may be heterogeneous arrangements to adjust prices over time. Incorporating a price adjusting mechanism such as an index or

benchmarking into a long-term contract is thus desirable and will mitigate some of the risks.

## 2.2 Incomplete contracts

The common justifications for the use of incomplete contracts theory are transaction costs, bounded rationality and asymmetrical information (Spier, 1992). Bounded rationality is the inability to comprehend and include all the possible outcomes in a contract, while asymmetrical information results in the agency theory, whereby the information is not equal amongst the contracting parties. The party with the asymmetrical information may extract quasi-rentals from the agreement, which are profits above a fair distribution between the contracted parties.

Hart expanded the incomplete contract theory to include property rights theory, hold-ups and reference points.

### 2.2.1 Property rights theory

Williamson's (1979) study on transaction cost economics allowed Grossman and Hart (1986) to introduce the concept of property rights theory. The theory explains how two parties agree to a contract at date zero, where both parties are self-regulated to deliver an outcome that is subject to unverifiable conditions at that date. The benefits and costs are equal between both parties, as there is insufficient information for both of them. At date one, the seller invests capital in facilities to deliver the goods to the buyer, and would expect a return equal or greater than the capital invested. The buyer is committed to only pay the amount agreed upon at date zero for the benefits to be received, hence at this date, all the benefits accrue to the buyer. Information between the seller and buyer is learned at date two. The seller would then renegotiate the contract to acquire some of the benefits from the buyer, ex-post cost. The theory also reintroduces the boundaries of the firm from Coase (1937) and Williamson (1981), whereby the firm owns specific assets that entitle them to a share of the residual profits, which in turn form part of the property rights theory.

The contract facilitates a reciprocal performance from both parties; when new information comes to light, the value moves from the range that was mutually anticipated at the time

of drafting the contract (Triantis, 2000) and a new level is created. For this reason the contract is now in dispute between the parties. An incomplete contract would allow movement in the range, but is subject to the clauses of contract.

Neither party can predict or calculate the expected profit or risks ex-post, which is why an incomplete contract is entered into on date zero. The outcome of the contract can only be evaluated at the conclusion of the contract or by an independent third party, such as a court or arbitrator.

Incompleteness of information in long-term contracts has a drawback for investment purposes, as the future is unknown and there is a degree of uncertainty. Investment in asset specificity is reduced, which is an under-investment in the supplier. This impedes the development of the supplier and the efficiency in their delivery of the product.

Worthmann, Proch, Braun, Schlüchtermann and Pannek (2016) suggested using supplier chain incentives to commit to relationship-specific resources in mitigating inefficiencies due to incompleteness. The authors proposed a receding time horizon control scheme to mitigate possible contractual hazards, and dynamically extending contracts also enhances the supplier development process. This can be seen with manufacturers providing performance feedback, training suppliers' personnel, furnishing temporary on-site support, and enhancing further interaction, leading to an improvement in the supply chain and final product.

Where a product is not yet established, contracts may be entered into for the research and development of future products. In order to understand the impact of incomplete contracts in the context of research and development, two scenarios were tested by Kusterer and Schmitz (2017) with and without communication between the parties. Where communication was not allowed, ownership of the research material was kept with the buyer, however where communication and ownership were made clear ex-ante, the buyers were more willing to give ownership of the research to the seller when asked to do so. A change in ownership structure has a predicted impact on the division of the surplus ex-post. In an endogenous ownership contract, when the sellers give up the ownership of the research, the share of the profits or surplus is greater ex-post (Kusterer & Schmitz, 2017). This may be a useful tool when negotiating patents and intellectual property in the development of IT software.

### 2.2.2 Hold-up

When a seller makes an investment in a specific asset for the delivery of a good or service to a buyer, that seller may feel that they are not getting a fair share of the profits ex-post, and under-invest or shade their products or services. This is a source of inefficiency or under-optimisation in incomplete contracts theory, as the seller would induce a hold-up to force a renegotiation to share equally in the profits.

There are transaction costs associated with completed contracts, yet if they are sufficiently small, they will not affect the equilibrium. If the costs are high, most contracts will be left incomplete. In a real-world situation, there are contracts that do not specify any contingencies that may increase the transaction cost. In circumstances where incomplete contracts are rolled over and over, a problem arises as parties will be induced to cheat (Dagdeviren & Robertson, 2013). As the contracts are rolled over, the hold-up would be induced at later stages during the renegotiations.

In a quantitative study, Miller (2014) conducted a series of calculations to determine the actual costs of corrections made to construction contracts after the bidding process was finalised. In construction contracts, bids are usually made without the full information regarding the site; projects may go out to tender with a bill of quantities without the drawings, as they are still being finalised. There may also be unseen issues on site which warrant a change in costs.

When projects are large industrial construction projects, the costs of the overruns and hold-ups are significant, which creates questions about a firm's boundaries, i.e. the assets they specifically invest in and the rights to residual profits. Contractor companies can mitigate a hold-up by providing all the materials and labour in-house. If the risks of an overrun are small or if the project is on a small scale, the risks of a hold-up are reduced.

The incomplete contract debate regarding the theoretical foundations has not yet been settled, but has provided insight regarding the importance of contract complexity and the limited ability to foresee commitments and events into the future. The difficulty of allocating property rights and understanding behavioural assumptions are two areas that warrant future empirical studies to expand the foundation of incomplete contracts theory (Schmidt, 2017).

### 2.2.3 Reference points and behavioural aspects

Based on the literature on incomplete contracts, studies are being expanded into the areas of reference points and behaviours during the contractual process.

Contracts are written early in relationships, locking-in and anchoring the feelings of entitlements from each party to an agreement. External measures provided by the outside market determine what contributions are to be made by each party. This agreement will in turn limit subsequent disagreements, disputes and deadweight loss from shading (Hart & Moore, 2008).

Fehr et al. (2009) conducted laboratory experiments to determine the reference points that ex-ante contracts provide in ex-post trade, finding evidence of a trade-off between flexible and fixed contracts. A flexible contract will allow the trading parties to realise their share of the economic benefits according to the changes in the state of nature, however they may feel that the contract as a reference point may not be in their best interests. The party that feels aggrieved and disappointed may shade as a result. The parties can circumvent this shading by writing a fixed contract, but have the disadvantage of not being able to change the terms at a later stage.

In a follow-up experiment conducted, the importance of fundamental transformation was shown on contractual reference points. Set again in a laboratory setting, the shading between flexible and fixed contracts were the same when the terms were determined by a non-competitive environment. In the absence of fundamental transformation, sellers do not perceive a difference with contracts as a reference point. Future studies are, however, suggested to apply the model to different economic settings, to study how ex-ante contracts are concluded (Fehr, Hart, & Zehnder, 2011).

Aghion, Holden and Perspectives (2011) raised several questions about the model of incomplete contracts and property rights, including where reference points come from, and how they change in line with the market over time from the different points in the contractual period. They also asked to what extent a reference point affects the hold-up problem. The authors made reference to future developments of endogenising contracts by analysing the parties' learning abilities, risk appetites and competitiveness. Endogenous contracts are contracts drawn up from scratch, which incorporate analysis to form a new contract that is specifically tailored to the parties (Hoppe & Schmitz, 2011). This is a new area in the next generation of incomplete contract modelling.

Brandts, Charness and Ellman (2016) performed a test to understand how free communications affect the trade to be conducted. Their experiment found that with free communication and a flexible contract, a more efficient contract is created, with a dramatic increase in prices and quality and a decrease in rejections of proposed contracts. There was, however, a caveat; small information asymmetries could potentially distort and limit the power of communication. They called for further research into the understanding and experimentation of the effect in information asymmetries, moral hazard behaviour and adverse selections of contracts.

To counter the criticism received on their previous experiment, Fehr, Hart and Zehnder (2014) conducted a third follow up on the test and made two changes - the buyers were allowed to unilaterally “repudiate” the first contract, and communication was introduced before ex-ante. Communication before ex-ante is a non-binding state contingency, and it was found that in informal, flexible contracts there was a lower rate of shading, which was preferred. The reduction in shading between flexible and fixed contracts was, however, insufficient to offset the difference. Rigid contracts still had the lowest rate of shading and offered the buyers a greater payoff. With the ability to revise the contract, the payoffs were even higher for the buyer.

Other important insights were that:

- when fixed contracts are revisable, the prices tend to be lower from the seller;
- when contracts are revised with mutual payoffs, the fixed contracts turn into flexible contracts with the same benefits;
- if the revision from the buyer is optimistic, the seller will perceive this as hostile and charge a significantly higher price; and
- sellers are even more willing to accept lower priced, inflexible contracts, possibly because the seller prefers to move the focus on revising the contract away from the buyer (Fehr et al., 2014).

Four theories are used to understand the psychology and economic decisions of individuals: loss aversion, present bias and time consistency, inequity aversion and Quasi-Bayesian. These models are, however, not portable, and are too narrow to understand incomplete contracts. With the incorporation of other psychological phenomena, other more likely influences can be added (Koszegi, 2014). Subsequent studies conducted included the study of risk aversion and its effects on contract negotiations.

The ability to renegotiate a long-term contract influences the design of the initial contract, and shapes the behaviour of the relationship during the contract, with the role of renegotiation being a remedy to an ex-post position. A restrictive contract is entered due to a buyer's inability to confront an information disadvantage, i.e. they would still enter into the contract knowing that there was a renegotiation clause that would allow a dynamically complete contract that would otherwise be incomplete (Roberts, 2014). A renegotiation clause can also be considered as equivalent to a termination clause, giving the buyers the option to either terminate the contract or renegotiate a new one.

Behaviour influences show that when a seller obtains a low price in the initial contract and is aggrieved, the seller will try to make up for the low price by charging a much higher price in the renegotiation. Buyers seem to accept this, which is in line with the models of fairness and social preferences. These theories alone cannot explain the observed behaviour, however, and a combination of these different behavioural effects are needed to understand the effect on contract renegotiations fully (Bartling & Schmidt, 2015). The result also shows an opposite finding from Fehr et al. (2014) experiment. The difference between the two results signify the importance of understanding how optimal contracts can be drafted.

An audit technology conducted in Chennai, India, collected and explored actual transactions, evaluating the bargaining power of participants and the characteristics of negotiators. The explorative study provided a view into actual transactions being evaluated for social norms, behavioural biases and reputational concerns affecting contracting parties. It found that tailors would rather allow trade to break down than be seen as taking advantage of their customers. This suggests that the cost of customers' aggrievement is very high. The authors devised another test to see whether the seller would induce a hold-up, finding that the sellers would require an upfront payment which would only cover 40% of the special order, exposing them to a large loss. The seller also did not charge a higher price at ex-post negotiations. This suggests that the upfront payment was used to screen the commitment of the buyer and to identify whether a breach of contract would occur. The tests conducted provided new information, but more research is needed to map out the full extent of the behavioural biases, social norms and reputational concerns that affect the behaviour of contracting parties in real market situations (Iyer & Schoar, 2015).

In a study to determine the fairness of a price, transaction experiences and endogenous fairness views were studied. The results of that study were backwards looking fairness reference points, and salience theory could explain the study into price fairness. The

experience and views of price fairness are shaped by the economic forces from the market and bargaining outcomes (Herz & Taubinsky, 2017). A buyer will start with a simple anchoring, which then adjusts accordingly to optimise the choice of action. Reference points are thus moved from past experiences to current situations.

Where reference points cannot be established, for instance in immature technology where the product's market value cannot be determined as it is a bespoke technology, knowledge and technical expertise counts. A knowledge-based trust, which provides a mitigation of completion risk to the buyer, has the highest probability of completing a bespoke software project. The deeper the trust before the business dealing, the larger the impact of the negotiations, especially when the granted patent is absent from the development stage of the innovation (Jensen, Palangkaraya, & Webster, 2013).

In continued contracts that are rolled over automatically, the first-period contract is used as a reference point, which can lead to a compromise between a short-term and a long-term contract. Continued contracts will perform well if the business remains as normal, yet if there are big changes, it may be more efficient to terminate the relationship. In rolling over the contract, outside options will also be considered. If the long-term contract is linked to a market-related index and tracked accurately, there may be no need to renegotiate a contract, however should the market index be insufficient or tracked inaccurately, a continuing contract with good faith bargaining may be a better option (Halonen-Akatwijuka & Hart, 2015, 2016).

Future studies of contracts should also include contextual constraints of relational capabilities. Group companies working with each other may be reluctant to share information due to the fear of expropriation of resources and knowledge, creating silos within organisations (Schepker, Oh, Martynov, & Poppo, 2014). Transaction costs in institutional and cultural environments should thus be considered as there is a cost to enforce the contracts and overcome the fear. There is a common story that in China, if a manufacturer fails to protect the patent or copyright of a product, the exchange is terminated forever. These contextual and relational contracts add to the incompleteness of the contracts.

Fixed contracts do not adjust according to changes in the environment. Hart (2017) commented that fixed contracts provide the least amount of shading, and with renegotiations, the efficiency of fixed contracts are improved further. In his latest paper, he called for continued research on incomplete contracts theory.



The recent studies and experiments discussed above indicate a new direction for incomplete contracts theory, yet each experiment needs further research and empirical evidence to substantiate behavioural aspects, reference points, social norms and reputation.

#### 2.2.4 Relational contracting

Due to the incompleteness of contracts, relational contracts subsidise the missing information in the relationship. When two parties are faced with completing a project on a deadline, the parties will tend to work together to achieve a win-win scenario (Ling et al., 2014). Research has shown that contracting parties with relationships at an interpersonal level yield good results, however the perception of corruption can be a barrier to the adoption of relational contracts.

Some relational contractual practices include having a collective responsibility, comprising of one person from each major contracting party to work as a team in equal shared risks, shared project information, collaborative working skills, and compromise on unclear issues (Ling, Ke, Kumaraswamy, & Wang, 2015).

Prior relationships have a U-shaped learning curve, reducing the time needed to negotiate a contract and to discuss sensitive issues such as termination clauses. Contracts drafted from previous experiences tend to improve on the subsequent contract drafts by adding or deleting clauses (Ariño, Reuer, Mayer, & Jané, 2014). Prior learning experience also reduces the time required for the renegotiating of contracts, as well as obstacles such as termination clauses.

## 2.4 Chapter summary

This chapter began with an understanding of *The Nature of the Firm* by Coase (1937), i.e. firms act as 'vehicles' to deliver the distribution of resources to various parties. Williamson (1979; 1981) added that firms will contract with each other to deliver the distribution of resources between them, but there are inefficiencies in the firms. To enforce the contracts there will be transaction costs incurred, which are a result of an imbalance of risks and pricing from ex-ante to ex-post.

Asymmetry of information, where the agent has more information than the employer, may result in the agent distributing more resources to himself by using that information. This idea gave rise to Agency Theory, which explains the uneven distribution of resource ex-post.

Various authors have studied incentives and described ways to mitigate the uneven distribution of profits, i.e. by having a long history of trade (Halonen-Akatwijuka & Hart, 2013), through termination clauses (Weber et al., 2011), or by using high-powered incentives (Chang, 2014).

Grossman and Hart (1986) introduced the theory of incomplete contracts and property rights theory. Property rights theory was explained from the vertical integration of a supplier and manufacturer, whereby the supplier would invest in specific assets to manufacture goods for the manufacturer, and hence would expect a return on the asset invested. The investment is a property right of the supplier to a share of the residual profits ex-post.

As determining the value of a profit ex-post is impossible at the time of drafting a contract, the contract is considered incomplete, hence the study of incomplete contracts.

The imbalance of the profit shared between the two parties, the supplier and manufacturer, would induce either party to induce a hold-up, which would be used as a renegotiating tool to redistribute the residual profits at ex-post (Spier, 1992). Parties would determine the imbalance of trade through reference points, which would be references to either the market prices, benchmarks or from previous experiences. Studies in reference points were conducted by authors including Fehr et al., (2014), Hart and Moore (2008), and others referred to in Table 1.

The study of reference points was expanded to the study of human behaviour, exploring where reference points come from (Aghion et al., 2011), risk appetites of the individuals (Koszegi, 2014), and preferences between a fixed and flexible contract (Fehr et al., 2014).

The study of human behaviour also included empirical testing in the informal markets (Iyer & Schoar, 2015) and laboratory settings (Fehr et al., 2009; 2011; 2014), while testing for communications at ex-ante was undertaken by Brandts et al. (2016). They found that free communication and a flexible contract were more efficient in the distribution of resources and also resulted in a higher acceptance of the contract.

Reference points were later expanded on by authors who examined judging price fairness (Herz & Taubinsky, 2017) and contracts that are rolled over continuously (Halonen-Akatwijuka & Hart, 2016). A study was also conducted on immature technology, where the product and outcome cannot be determined as they are part of a bespoke development (Jensen et al., 2013).

Transaction cost economics and incomplete contracts theory cannot be seen in isolation. Relational contracting is being used as a tool by construction companies to adjust the contractual relationship between the two parties, and allows for a more efficient way to deal with changes in the circumstances that are not accounted for in a contract.

Relational contracting has been empirically tested twice in the construction industry by Ling et al. (2014) and Ling et al. (2015). In both journal articles, it was found that relational contracting yielded good results in the construction projects, and they were able to develop a collective responsibility and resolve unclear issues.

Relationship contracting also allows for the quicker negotiation and adoption of new contracts between parties that have had a good relationship in the past. Difficult discussions around termination clauses are also concluded more amicably between the parties (Ariño et al., 2014).

This research study was conducted to understand how business is currently dealing with the incompleteness of information and contracts. An exploratory study was conducted in a case study format to understand how each party copes with contractual challenges in an established contractual environment, such as the construction industry, and in an immature contractual environment, such as the IT industry.

This research examined actual contracts, focusing on behavioural aspects, reference points, hold-ups and social norms during the different phases of the contract period, in the context of incomplete contracts between sellers and buyers. The study is conducted

as an explanatory qualitative research, using contract and incomplete contract theories as a toolbox. The actual contracts were revenue-based on goods and services bought and sold under competitive conditions. Monopolistic entities were discarded from the sample selected.

Exploratory research was conducted using open-ended questions to discover how businesses and individuals are compensating for the incompleteness of information in the construction and IT industries. Various studies have been conducted on transaction cost economics since the 1970s, highlighting the different approaches and viewpoints taken to understand the differences between fixed and flexible contracts. Which approach yields a more efficient result ex-post is still being debated, however.

In answering the questions, solutions are proposed that managers and business owners may utilise in negotiations and when making business decisions, to avoid pitfalls in poorly constructed contracts.

The study of human behaviour in risk aversion and relationships deepens the understanding of contractual negotiations and renegotiations. It seems as if the questions asked by Coase (1937) are still in the minds of economists, as most of the journal articles written in the past five years refer to Coase (1937) as a foundation to their theories. If markets are efficient in allocating profits, then why do we need firms?

A summary of the literature review has been provided in a table format, attached as Appendix 1.

## Chapter 3: Research Propositions

### 3.1 Propositions

**Frequent and regular communication at ex-ante will allow for the optimal establishment of a tailored mutual contract.**

Iyer and Schoar's (2015) field test revealed that sellers will ask for a deposit to determine whether a buyer will breach the contract, i.e. they are measuring the buyer's commitment. This could also form an informal, reciprocal contingent contract that will be the basis of future contracts (Fehr et al., 2014). Contracts with constant communication may persuade the buyer to accept the new terms as a reference point, therefore endogenising the contract (Hoppe & Schmitz, 2011).

**Contracts are drafted in a hybrid format to extract the benefits of both fixed and flexible contracts. Reference points are an important contributor to the contract structure.**

Sellers' prices are lower on fixed contracts to avoid renegotiations of contracts (Fehr et al., 2014). Fixed contracts results in lower profits for the sellers, hence the sellers may have asymmetrical information and therefore increase the risk premium, covering future contingencies (Spier, 1992). The flexibility in non-core products and services will allow sellers to stagger their pricing, therefore extracting a higher payoff from the buyer.

**The introduction of relational contracts can reduce hold-ups and optimise the allocation of risks and surplus between the parties.**

Contracts are incomplete and pertinent information may be missing, however relational contracts may fill the gap by allowing the parties to work together for a win-win solution (Ling et al., 2014) and make compromises on uncertainties (Ling et al., 2015).

**Termination clauses are used to reduce risks when buyers are risk averse. Negotiations are also based on reference points to limit risk exposure.**

During contract negotiations, buyers tend to use long-term contracts to mitigate opportunism during renegotiations. The contracts become sticky and prevent parties from negotiating an optimal ex-post allocation of surplus and risks (Schmidt & Herweg, 2014).

## Chapter 4: Research Methodology

The purpose of this research was to understand how incomplete contracts and human behaviours influence the negotiations of a contract design under changing and unknown circumstances, as South African institutions guide some industries like construction, but not all industries.

There is also a need to understand how parties deal with changes in circumstances, and how they incorporate these unexpected changes into their contracts, or how they mitigate the risks through renegotiations during the contractual period.

This section explains all the parameters involved in the research methodology, including the choice of methodology, population, unit of analysis, sampling method, data gathering process, and analysis approach. These methods were used as mechanisms for understanding the overarching research propositions.

### 4.1 Choice of methodology

Thorough exploratory research has been conducted into the theory of incomplete contracts, hold-ups and transaction costing, with the application of the theories providing a foundation to focus on in areas of human behaviour during the different contractual phases.

A qualitative, explanatory research in the form of a case study enabled a good understanding of the business and contractual context taking place. The researcher is able to look for explanations for the particular occurrence of key variables and the participants' decisions in contractual preferences (Saunders & Lewis, 2012). This research was conducted on actual business transactions, which led to new business areas and transactions that the existing models were applied to, and new methods were also developed by business owners to counter the incompleteness of contracts. The case studies allowed the existing theories in contracts and incompleteness to be sharpened by pointing to gaps found in the theoretical business challenges and beginning to fill them with actual solutions used (Siggelkow, 2007).

This case study's research arose from the researcher's desire to understand complex social phenomena. Case studies allow a holistic and real-world perspective for focusing on the study of incomplete contracts theory and human behaviour of the individual and

group (Yin, 2014). Case studies revert to a central tendency that illuminates why or how a decision or decisions are taken, and what results from those decisions (Schramm, 1971).

The reason that a case study method was chosen for this research was that it is one of the best bridges from rich qualitative evidence to mainstream deductive research. The emphasis is also on developing constructs, measures and testable theoretical propositions, which makes inductive case study research consistent with the emphasis on testable theory in mainstream deductive research. The two are mirrors of each other, with deductive theory and inductive theory cycles using data to test a theory (Eisenhardt, 1989). An inductive research lets theory emerge from the data, which can be a valuable starting point (Siggelkow, 2007).

The samples used in the case studies aimed to clarify the purpose of the research and to develop the theory, not to test it. For this reason, theoretical sampling was appropriate, and it was not necessarily important to obtain a sample to test the population. The cases were selected because they illuminated and extended the relationships and logic among the constructs (Eisenhardt, 1989).

A deductive approach was used in the first round of interviews. The questions and themes were taken from the theory, and additional questions were developed for the second round of interviews. The second round of interviews used an inductive approach, exploring new themes for the theory and providing insight into the research area.

## 4.2 Population

A contract expert was interviewed first in an open conversation to understand the context of contract law and the economics of incomplete contracts and contract theory. The interview provided the background for Chapter 1's case study on how the intentions of the parties affect the content of contracts. The input from the contract expert also shaped the questionnaire for the legal advisors in the second round of interviews.

The first set of questions was drafted in a standard format in the first round of interviews with key persons in each of the two industries. The results of those interviews provided the foundation for the next round of interviews in the contractual environment.



The first round of interviews was conducted with:

**Table 1: Table of first round interview participants**

| Construction contracts  | IT contracts  |
|---|---|
| <ul style="list-style-type: none"> <li>• Quantity Surveyor (Buyer 1)</li> <li>• Quantity Surveyor (Seller 1)</li> </ul> | <ul style="list-style-type: none"> <li>• Procurement Director (Buyer 2)</li> <li>• Procurement Contract Specialist (Buyer 3)</li> <li>• Director of an IT Consulting company (Seller 3)</li> <li>• Director of an IT software development company (Seller 4)</li> </ul> |

The second round of interviewees had questions tailored to their specific roles in each of the industries. During the second round, interviews were also held with people outside of the contractual environment, but who had an influence or insight into the contractual environment.

Products and services provided in the construction and IT consulting industries are highly dependent on contracts that specify a customer's unique needs, thus both industries invest a significant amount of time and human resources in these. These companies are in a competitive environment and are non-monopolistic.

The second round of interviews were conducted with:

**Table 2: Table of second round interview participants**

| Construction contracts  | IT contracts  |
|---|---|
| <ul style="list-style-type: none"> <li>• Project Manager (Buyer 3)</li> <li>• Architect (Buyer 4)</li> <li>• Private Wealth Banker (Buyer 5)</li> <li>• Commercial Property Banker (Buyer 6)</li> <li>• Nominated or Selected Sub-contractor (Seller 2)</li> <li>• JBCC® Contract expert (Arbitrator)</li> <li>• Contract Expert</li> </ul> | <ul style="list-style-type: none"> <li>• Legal Advisor A (Buyer 6)</li> <li>• Legal Advisor B (Buyer 8)</li> <li>• Internal Finance and Business unit leader (Buyer 9)</li> </ul> |

Sixteen interviews were conducted as the sample was homogenous within their industries. The individuals were carefully selected from the contractual supply chain. For most studies, the aim is to understand the perceptions and experiences among the individuals within their respective industries, and six to twelve interviews should suffice to reach data saturation. A researcher should ensure that the individuals within the group are not heterogenous however, or the data quality will be poor and the domain of inquiry diffused or vague (Guest, Bunce, & Johnson, 2006).

### 4.3 Unit of analysis

The unit of analysis was the contracts between the various parties in the construction and IT supply chains. The contracts reviewed are tabulated below:

**Table 3: Table of contracts and documents reviewed**

| Construction contracts   | IT contracts   |
|--|--|
| <ul style="list-style-type: none"> <li>• JBCC® Principal Agreement (Edition 6.1)</li> <li>• JBCC® Principal Agreement: Contract Data (Edition 6.1)</li> <li>• JBCC® N/S Subcontract Agreement (Edition 6.1)</li> <li>• JBCC® N/S Subcontract Agreement: Contract Data (Edition 6.1)</li> <li>• JBCC® Series 2000 – Preliminaries</li> <li>• Construction Amended Principal Agreement</li> <li>• Letter of Appointment for a selected sub-contractor</li> <li>• Sub-contractor order for a direct sub-contractor</li> <li>• Duty of care and undertaking</li> </ul> | <ul style="list-style-type: none"> <li>• Master Services Agreement</li> <li>• Master Agreement</li> <li>• Statement of Work</li> </ul> |

A total of 12 contracts were reviewed during the research process.

## 4.4 Sampling method and size

Non-probability sampling was used with two layers, judgemental and snowball sampling. Judgemental sampling was applied to identify key people who were owners of businesses that provided services, i.e. sellers. The people identified were the primary negotiators who drafted the contracts, monitored their progress, and issued the progress reports and billings.

The snowball sampling method was then used to identify the opposite party in the contractual transaction. These buyers worked for companies listed on the Johannesburg Stock Exchange, and had considerable influence on the negotiations and signing of contracts.

After the initial round of interviews was done, snowball sampling was used again to identify parties who were part of contract negotiations or execution in order to complete the case studies from a supply chain and decision-making process. Where actual contracts were provided, they were used to verify the information received.

In the IT industry, technology progresses quickly and changes to contracts are needed to keep in line with the pace of technology. Two case studies were done on companies in the IT industry and combined as a single case study. The construction industry has been around for many years, and the industry contracts are guided by the JBCC®. Only one case study was conducted in the construction industry, but inputs from a contract expert and a fellow arbitrator were used to provide an overarching, independent and in-depth view on the construction industry.

A total of 16 interviews were conducted between the two case studies. In addition to the case studies conducted, the 12 contracts were reviewed and verified against the information received.

## 4.5 Measurement instrument

A case study survey is suited for asking questions to understand “how?” “what?” and “why?” in an explanatory research (Saunders & Lewis, 2012). This study was concerned with how business owners, sales executives and key account managers make their decisions as sellers, and what the responses from owners of the businesses, procurement managers and divisional heads at each phase of the contractual period are.

Six in-depth first round interviews were conducted face-to-face with individuals who are the first contacts in the negotiations and conclusions of contracts, using a semi-structured format of questioning. The length of the interviews varied depending on the terms of the contract in question, the complexity of the deliverables in the contract, and the negotiations undertaken.

Before the interviews were conducted, research was conducted into construction and IT consulting. Further information was also found in the literature and on the internet. An understanding of the process flow, documentation and regulations was important, as the construction industry requires a tender up front and the IT industry requires a request for information, request for proposals or proof of concepts as part of the preliminary communications before the contracts are drafted.

The sellers were first contacted telephonically to inform them of the nature and purpose of the study, at which point they were invited to participate. Once approval was given verbally, an email with the agreed time, date and place for the interview was sent for confirmation.

The sellers were then asked for permission to contact the buyers to invite them to participate in the research. Once permission was obtained from the sellers to engage with the buyers, a phone call was made to the individuals to state the nature and purpose of the study. Once the buyers had verbally agreed to participate in the research, e-mails were sent to confirm the agreed time, date and place for the interviews.

The interviews were conducted at a convenient place for the interviewees, either at their offices or at a mutually agreed place. Before the interviews, a consent form was given to each of the individuals for their signature. One interview was conducted telephonically, thus the contents of the consent letter were read out and agreed to verbally by the interviewee. As the interviews were recorded digitally, additional consent was obtained for this from all the interviewees beforehand.

Special care and sensitivity were exercised during the case study, as there is a need for a researcher to protect his/her human subjects (Yin, 2014). Due to the sensitive nature of contracts, all the names of the individuals interviewed and their organisations will not be disclosed in this report. Rather, they are referred to by their job titles and as either a buyer or a seller. Contracts that are of a sensitive nature are not included in this research report; only certain sections are referred to and quoted.

## 4.6 Data gathering process

The interview questions were pilot tested on other individuals in similar industries to ensure that the research questions were being adequately addressed. The testing also ensured that the questions would be understood, were non-leading and would collect the necessary information and data (Saunders & Lewis, 2012).

Mock recordings were conducted to ensure that the digital voice recorder was functioning correctly, and the researcher checked that there was sufficient memory space and battery life. The conversion of the recorded files was tested against the audio software to ensure compatibility (Saunders & Lewis, 2012).

Saunders and Lewis (2012) stated that the quality of structured interviews depends on the interviewer's ability, i.e. the interviewer's tone and clarity of voice is critical, and questions should be clearly stated. The interviewer also needs to be appropriately dressed when conducting face-to-face interviews, show that they are listening, and at the same time, take notes and make recordings.

The questions were semi-structured and open-ended to allow for a list of topics to be covered. The questions varied as the responses were received from the participants, for example some questions were relevant for the sellers but not the buyers, and vice versa. Due to the nature of this explanatory research, information was obtained from initial interviews with key buyers and sellers in each case study; the questions were then adapted again in the following interviews with other individuals in the case study (Saunders & Lewis, 2012).

## 4.7 Analysis approach

The recordings of the interviews were transcribed and coded with ATLAS.ti

The analytic process for this research began with an analytical strategy, as the researcher "played" with the data as patterns and concepts were being searched (Yin, 2014). Various codes were used to describe under which category the data would fit the best.

Four general strategies are available when analysing data:

**Table 4: General strategies in analysing the data**

|  |   |
|--|---|
| Relying on theoretical propositions    | Reflection on the research questions and objectives of the case study.  |
| Working the data from the “ground up”  | This step follows directly from the previous step. Patterns or concepts may be noticed from “playing” with the data and from the previous step.   |
| Developing a case description          | Organising the case study according to a descriptive framework. The descriptions cover a range of relevant topics.  |
| Examining plausible rival explanations | The initial theoretical proposition may include a rival hypothesis.<br><br>Working from the “ground up” may produce rival inductive frameworks.<br><br>The case description may involve alternative descriptions of the case. |

**Source: Yin (2014)**

All of the strategies used above incorporated four analytical techniques, which were used to develop internal and external validity.

**Table 5: Four analytic techniques to develop internal and external validity**

|                      |  |
|----------------------|--|
| Pattern matching     | Comparisons are made between empirically based patterns to the findings in the case study. In an explanatory research, patterns may also be related to dependent or independent variables. |
| Explanation building | Building links the “how” and “why” something happened. Eventual explanations will result in a series of iterations.  |
| Time-series analysis | Direct analogies to the time-series analysis conducted in experiments and quasi-experiments. A major strength of case studies is to be able to trace the changes over time.                |
| Logic models         | This model stipulates and operationalises a complex chain of events over an extended period or staged in repeated cause and effect patterns.   |

**Source: Yin (2014)**

## 4.8 Validity and reliability

Validation of the results were cross-referenced with documents and contracts. The interviews were conducted in an open-ended and unstructured manner, which could have been subject to biases from the interviewer and interviewees, however the interview question guidelines assisted in reducing these.

Four tests are commonly used to establish the quality of a study:

**Table 6: Four tests to establish the quality of research**

| TESTS              | Case study tactic   |
|--------------------|---|
| Construct validity | <ul style="list-style-type: none"><li>- Use multiple sources of evidence</li><li>- Establish chain of evidence</li><li>- Have the supervisor review draft case study report</li></ul> |
| Internal validity  | <ul style="list-style-type: none"><li>- Do pattern matching</li><li>- Do explanation building</li><li>- Address rival explanations</li><li>- Use logic models</li></ul>               |
| External validity  | <ul style="list-style-type: none"><li>- Use replication logic in multiple-case studies</li></ul>  |
| Reliability        | <ul style="list-style-type: none"><li>- Use case study protocol</li></ul>   |

**Source: Yin (2014)**

The case studies conducted were embedded in this research project, as there was more than one unit or object of analysis, which allowed for a multiplicity of methods to be applied to the sub-units (Scholz & Tietje, 2002). The sub-units of analysis were the contracts between the parties.

## 4.9 Limitations

Due to the limited time allocated for this study, the sample selected may not have represented both industries; convenience and snowball sampling were used to select the participants. In addition, the case studies are generalisable to the theoretical proportions of the industry, and not to populations of universes (Yin, 2014). The data collected may, however, be sufficient to study special organisations, and extrapolate a particular insight that allows one to draw inferences about normal firms. Special firms allow one to gain insights that other organisations cannot (Siggelkow, 2007).

The sample was selected from within Gauteng and the construction and IT services industries, which may have limited the scope of the study and created a bias towards these industries (Zikmund, Babin, Carr, & Griffin, 2009).

A design limitation of the questionnaire was that the questions from the first round of interviews were derived from literature, i.e. there may be other pertinent questions that relate to the theory of incomplete contracts and the study of human behaviour that were not asked. In analysing the interviews, the codes used may be biased as the second-round interviews were conducted with a questionnaire to specifically identify areas of incompleteness and challenges faced by the persons interviewed.

Psychological theories, principal agency theory and moral hazards were not explored in this research. The open questions asked may have alluded to these theories, but no further study was made in this thesis.

Due to the sensitivity of contracts and confidentiality, the actual contracts signed between the parties were not requested; only drafts and templates were used to validate the interviews. This confidentiality extended to the actual negotiations between the parties, as well as a quantitative analysis of the surplus and risks between the parties. No calculations were made to quantify possible shading, surplus and risks.



## Chapter 5: Results

The methodology chosen for this research was the case study method, as this provided a source for rich data collection. Two industries were selected for the research, the construction and the IT industries. Interviews with the main actors in each case study were initially conducted using an explanatory qualitative method in the form of a semi-structured questionnaire.

The context of the contractual relationship and data from the first round of interviews were analysed further for the second round of interviews with other actors in the case studies. The questions were exploratory and open-ended to extract new data and insights.

A total of 16 interviews were conducted, of which six were in the first round and ten were in the second. Contract templates and documents were also obtained to verify the information gathered during the interview. The results presented below are a combination of both rounds of interviews. Only pertinent quotes relating to the research proposal and related themes are presented.

Information regarding the interviewees is found in Table 7 below. The number of first round interviews are indicated in the brackets behind the total number of people interviewed in each segment. No specialists were interviewed for the IT industry, as the contract expert interviewed provided overarching information regarding contracts in general. IT procurement is also specialised according to the various types of technology that can be procured.

**Table 7: Total numbers of interviews conducted**

| Industry     | Buyers | Sellers | Specialists |
|--------------|--------|---------|-------------|
| Construction | 5 (1)  | 2 (1)   | 2           |
| IT           | 5 (2)  | 2 (2)   |             |

The participants were grouped into five categories: construction buyers, construction sellers, construction specialists, IT buyers and IT sellers.

An analysis of the codes and themes are presented to obtain an overview of the data collected. The chapter is then split between the two industries, namely construction and IT. A diagram is presented to show the supply chain, persons interviewed, and

documents reviewed. The propositions are restated, and the pertinent quotes and a brief commentary are added.

## 5.1 Analysis of the codes and themes

All 16 interviews were transcribed and analysed using ATLAS.ti. A total of 139 codes were generated from the transcripts, which were then grouped into 10 categories. A group of similar categories formed a theme, with three themes being found from the 10 categories.

The 'New Themes' are codes that did not fall within the main two themes of contractual and human behaviour. The codes linked to the 'New Themes' are 'Others' that were found during the interviews. As they were not directly relevant for this research study they were not analysed further, however they may have a bearing on future studies of incomplete contracts.

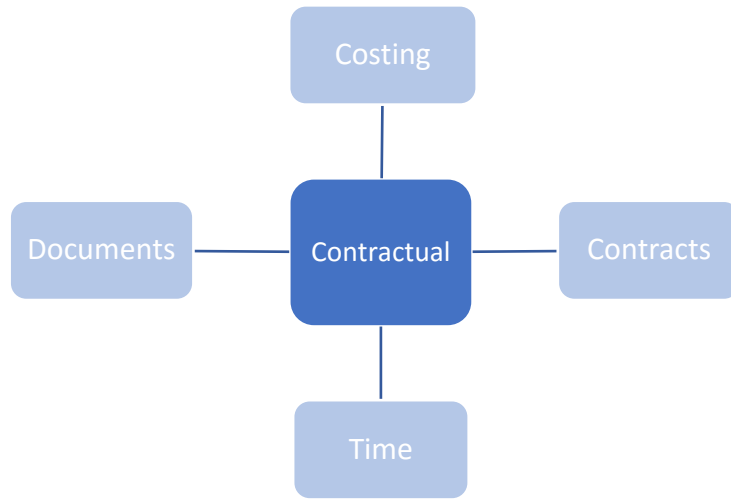
Three categories of the top five were common amongst all five groups of participants, i.e. Risks, Contract, and Human Behaviour. Communications were mentioned in all the five groups except for construction buyers, while Time was mentioned in three of the groups. The rest of the categories featured in insignificant occurrences in each group.

An interesting finding was that Costing and Disputes featured the least during the interviews with the participants. One would have expected a higher code count for these two factors bearing in mind the expectation that incomplete contracts will result in a higher rate of dissatisfaction and number of disputes.

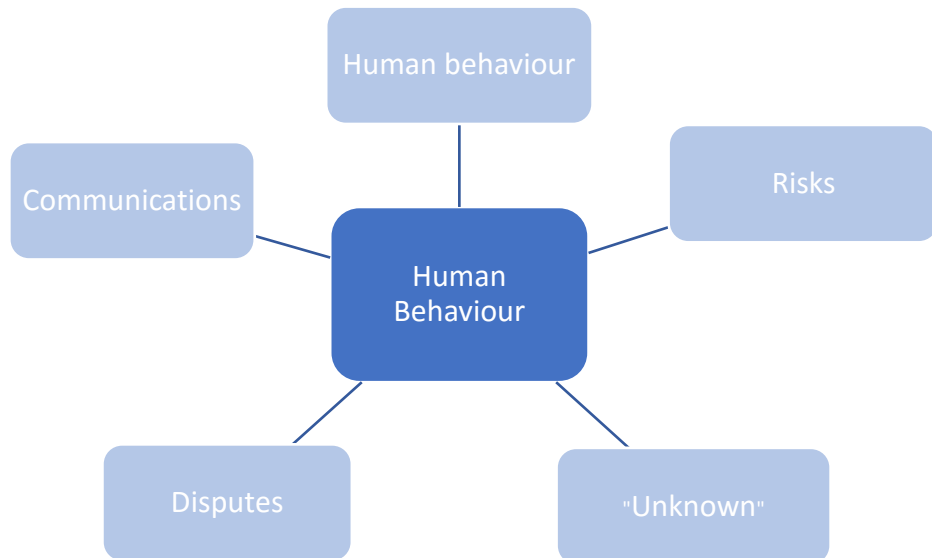
The research was not conducted as a quantitative study, and Tables 8 to 12 have been presented as an overview of the results collected from the interviews.

### 5.1.1 Themes and categories generated from the codes

**Figure 4: Contractual themes and categories**



**Figure 5: Human behaviour theme and categories**



**Figure 6: New theme and categories**



### 5.1.2 Analysis of codes per industry and participant

Table 8 to 12 below lists the 10 categories according to the number of times they were mentioned by each participant. The five most mentioned categories are coloured in blue, and the bottom five are coloured in orange.

**Table 8: Construction buyers' categories ranked**

| Construction Buyers |                |
|---------------------|----------------|
| Interviewed         | 5 participants |
| Risks               | 78             |
| Contract            | 44             |
| Human Behaviour     | 32             |
| Other themes        | 29             |
| Time                | 27             |
| "Unknown"           | 25             |
| Communication       | 22             |
| Documents           | 22             |
| Costing             | 20             |
| Disputes            | 11             |

**Table 9: Construction sellers' categories ranked**

| Construction Sellers |                |
|----------------------|----------------|
| Interviewed          | 2 participants |
| Contract             | 40             |
| Risks                | 21             |
| Documents            | 18             |
| Communication        | 15             |
| Human Behaviour      | 14             |
| Time                 | 11             |
| "Unknown"            | 9              |
| Costing              | 6              |
| Disputes             | 5              |
| Other themes         | 4              |

**Table 10: Construction specialists' categories ranked**

| Construction Specialists |                |
|--------------------------|----------------|
| Interviewed              | 2 participants |
| Human Behaviour          | 18             |
| Time                     | 18             |
| Risks                    | 7              |
| Communication            | 7              |
| Costing                  | 7              |
| "Unknown"                | 6              |
| Documents                | 4              |
| Other themes             | 3              |
| Contract                 | 1              |
| Disputes                 | 1              |

**Table 11: IT buyers' categories ranked**

| IT Buyers       |                |
|-----------------|----------------|
| Interviewed     | 5 participants |
| Contract        | 76             |
| Risks           | 47             |
| Human Behaviour | 29             |
| Communication   | 27             |
| "Unknown"       | 24             |
| Other themes    | 21             |
| Documents       | 12             |
| Time            | 9              |
| Costing         | 6              |
| Disputes        | 6              |

**Table 12: IT sellers' categories ranked**

| IT Sellers      |                |
|-----------------|----------------|
| Interviewed     | 2 participants |
| Risks           | 38             |
| Human Behaviour | 20             |
| Time            | 17             |
| Documents       | 15             |
| Communication   | 12             |
| Other themes    | 11             |
| Contract        | 9              |
| "Unknown"       | 5              |
| Disputes        | 5              |
| Costing         | 2              |

The above tables provide a view of the five most important categories that concerned each group.

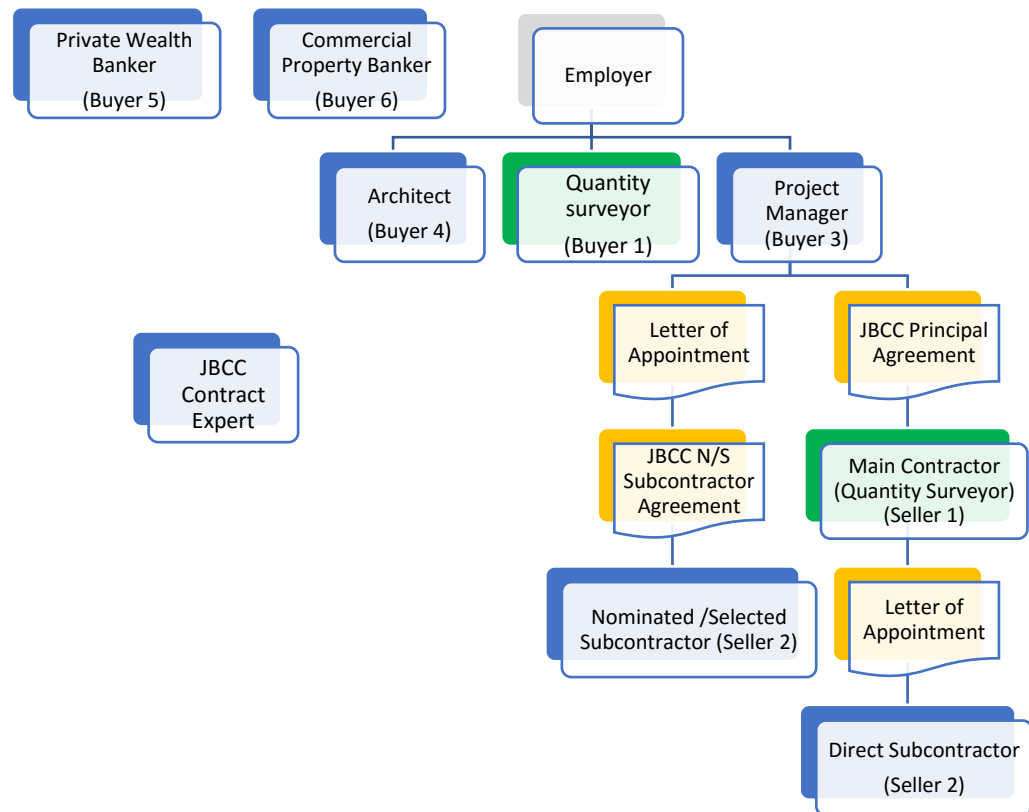
The following subsections are split between the construction and IT industries. Each subsection is then split further according to each proposition. The categories that were most ranked are discussed further under each proposition.

## 5.2 Construction industry

### 5.2.1 Organogram of the construction supply chain and related contracts

In the diagram below, the green blocks highlight the first round of interviews and the blue highlight the second round of interviews. The orange blocks signify documents that were obtained and reviewed for the study.

**Figure 7: Organogram of the construction supply chain**



### 5.2.2 Overview of the data collected and additional key findings

A major theme that came through in the various interviews was that the construction industry is undergoing a change. Big construction companies no longer own the resources to carry out the construction process, so they use multiple sub-contractors to provide the labour, materials or equipment.

The construction companies' biggest assets are now their project managers. An issue raised by the sub-contractors and project manager are co-ordination problems with the main contractor. With resources becoming decentralised and outsourced, the main contractor cannot efficiently coordinate all the different sub-contractors; a delay from one sub-contractor has a knock-on effect on the other contractors and the project timeline.

Construction timelines are also being shortened due to either bank loans needing to be paid or cashflow being needed from the investment, putting pressure on the professional team and contractors. Bank loans are only up to a certain amount and for a period of 24

months at most; the rest of the financing comes from the employer's own equity. Documents and feasibility studies are done on either a risk basis or with shortened timelines. Projects generally start with just a contract, a bill of quantities and a simple diagram; most of the information has still not been fully prepared by the architect when the work goes out to tender. The incompleteness of information is passed from the professional team to the contractors, and ultimately to the sub-contractors.

In situations where there is incomplete information, nominated sub-contractors agree on a tender without the main contractor being appointed yet; nominated sub-contractors are appointed by the employer and professional team. The sub-contractor thus does not fully price in his/her costs for equipment, as they do not know if the main contractor will be able to supply the necessary equipment or not. If they price in for the equipment upfront, they may outprice themselves against other bidders for the contract.

5.2.3 Research Proposition 1: Frequent and regular communication at ex-ante will allow for the optimal establishment of a tailored mutual contract.

The construction industry uses JBCC® contracts as guidelines for contract structuring. Most of the construction projects go out to tender with copies of the contract, bill of quantities and diagrams attached, and construction companies tender a bid based on the information available.

*“Every time we bid, so what we do is we have a person that actually reads the contract they put together, what we call a risk review. It is a nice document that deals with all the changes and all the risk items that we can identify as risk items on the contract. Then once we have passed that stage we sort of decide whether we tender for it, or put it down what we are going to qualify and what we don't accept.”* – Quantity Surveyor (Seller 1)

Communication starts with tendering and bidding; there is back and forth communication between the professional team and the contractor to clarify certain issues on the contract. The professional team is a collective noun for the three professionals - the architect, quantity surveyor and project manager. The process is generally not referred to as a negotiation as it is considered a very strong word, however the Quantity Surveyor (Seller) interviewed considers this process to be a negotiation, and prefers to negotiate all the work that they do, although most end up being based on a JBCC® contract.

*“Saying that it is a negotiation is bit strong, it is more 60 to 70% clarification as opposed to negotiation.” – Project manager (Buyer 3)*

*“We hardly ever sign a contract that is just put on the table. We would prefer to negotiate most of our work, which will still lead to a JBCC® contract eventually.” – Quantity Surveyor (Seller 1)*

Communication between the professional team and contractors is ongoing, as the main contractor has to put together a programme of works for the project. Issues start to arise when the information that they need for the project is not forthcoming, which can result in time delays and penalties.

*“We must put together what we call the programme of works, so we will say this will take two months to do. This is the breakdown of how we will start with whatever. That is the majority of where the problems are coming with delays in terms of information.” – Quantity Surveyor (Seller 1)*

Communications between the buyer and seller are important, as while the contract they are using as a base is the JBCC®, there is a tailoring of the contract by the buyers’ professional team. A standard JBCC® contract is 40 pages long but mostly ends up being 70 pages by the time the changes and additions of various clauses have been done. Changes in one clause can also have a knock-on effect on clauses elsewhere in the contract, which becomes an issue if they contradict each other.

*“There are a whole lot of clauses that refer to each other so that they dovetail to a large extent. A lot of the time when guys start changing the contracts issued to us they don’t think about the implication that will change one clause...What they don’t look at is what impact on the rest of the contracts is as a whole...so, you could change one thing; you could have an implication on three, four or five things.” – Quantity Surveyor (Seller 1)*

The planning of a project can take up to two years, in part because of the communication needed between employers, bankers and other members of the professional team. Obtaining finance from the banks is a lengthy process, but crucial if the project is to get the go ahead.

*“So that process can take up to two years. Depending, because it is backwards and forwards with design and over above that, obviously the funding and financial aspect of it is crucial.” – Quantity Surveyor (Buyer 1)*



An issue found by the Quantity Surveyor (buyer) is that the contractors “do not read” the contracts; they tender for a project only knowing that they must sign it to get paid. When the contract is drafted and sent out, there is little understanding from the contractors of what the clauses mean. The contractors may also have a bounded rationality in understanding the complexity of a contract, however there is an assumption amongst the buyers that the person tendering for the contract understands it and its clauses.

*“You have to read the contracts; the contractors have to read when they are tendering. A lot of guys don’t... People come with different levels of education, different levels of understanding, different age groups... Getting a sub-contractor to come and do lines, for example, all he knows he needs to sign that so he can be paid.*

*“The previous project we did as an example, took six weeks... but it’s not like you’re doing this for the first time. A lot of things are second nature. So, you don’t actually spend time, and you know we are not all very articulate. We try not to be too smart about these things. What happens now is that we have given our input into the contract on what it should say, it goes out to tender and the guy tenders. He gives me a covering letter, which we call his qualifications or qualifications letter. And that identifies all the clauses in the contract that he is unhappy with, or he is not going to accept.” – Quantity Surveyor (Buyer 1)*

There is little communication between the nominated/selected sub-contractors and main contractors. Their appointments are mostly confirmed with a four-page letter that briefly refers to the work to be done, includes some amendments to the clauses, and refers back to the JBCC® contract. Upon reviewing some of these letters of appointments, they are vague and open-ended. The documents assessed by the researcher looked like they were copied and pasted as some of the details seem to be incorrectly referenced, and issues start to arise due to the lack of communication.

*“Then the main contractor will send you a contract, but that contract, if I can say, is a summarised version of your JBCC®. You have to refer back to the JBCC®, they have got terms and conditions, they have got sometimes in the payment terms. They will say they have amended this clause in the JBCC® to suit the state of this project.*

*“...it is a four-pager from the main contractor. Which is a contract that we signed, where they clearly state the terms and conditions of the contract, they refer to the JBCC® on payments, on securities and guarantees. ...the main contractor is too lazy to run the costs of buying a contract.*

*“Sometimes the clients say, we are paying you in 60 days and not 30 days. Sometimes the client has their own requirements where the JBCC® falls into the void.”* – Nominated/Selected Sub-contractor (Seller 2)

A lack of communication and coordination from the main contractor was highlighted as an issue:

*“The main contractors nowadays do not coordinate between their sub-contractors. Coordination is the problem.”* – Nominated/Selected Sub-contractor (Seller 2)

A JBCC® contract expert and arbitrator was interviewed for his thoughts on the communication and design of the contracts, and mentioned that sub-contractors receive letters of appointments instead of the full JBCC® contract. The other issue he had was the changing of the clauses in the standard JBCC® contract. The JBCC® committee is aware of this issue, and the practice is discouraged.

*“Sometimes these quantity surveyors make these changes, and we are saying. Please don't make these changes; it is not necessary to change, rather understand the process. The correct way is that the main contractor, should enter into a contract, and issue a contract document for the nominated/selected sub-contractors to that sub-contractor. Not to just issue a letter and say you are appointed in terms of, with the following amendments. That is what is happening in the industry.*

*“We find that the JBCC®, if you just look at the number of documents and building agreements that are sold far exceed the number of nominated/selected sub-contractor's contracts. It should be the other way around. On every major project, you have at least 10 or 15 sub-contractors. So, the ratio of sales of the principal agreement and the sub-contractor's agreements should be much higher on the sub-contractor's agreements side, but it's not.”* – JBCC® Contract expert (Arbitrator)

The JBCC® contract expert gave a short example of a matter he was an arbitrator in, which showed that the contract was left incomplete and that there was a lack of communication between the parties. The sub-contractor was responsible for the landscaping and was unaware that the main contractor was going to do remedial work and cause damage to the completed landscape.

*“You find that if you read what these guys have written in their letter of appointment to the sub-contractor. They said you are responsible for the garden for 12 months for instance. The guys signed it and agreed to it, and then he ends up doing all this*

*remedial work. Taking out plants that have been damaged and putting in new plants, which is most unfair on the sub-contractors.” – JBCC® Contract expert (Arbitrator)*

As part of the communication process, the tendering process is a formal exchange of information between the parties. The tendering process should provide the bidders with a full set of documents consisting of the contract, bill of quantities and drawings. Drawings contain all the details required by the bidders to accurately calculate their bids and costings. Due to the shortening of the time and working on a risk basis, drawings are substituted with diagrams, which are a lesser form of a drawing as they lack details. Due to this incomplete information, the contracts can never be complete or tailored for the project as there are many unknowns and contingent factors to be taken into account on site. This issue was raised by most of the interviewees.

*“I wasn’t around then, but what you would get as the QS are a full set of construction drawings. It is the whole toot. The electrical, the plumbing and everything. Everything has been designed, and you have got three months to put together a full bill of quantities for tender.” – Quantity Surveyor (Buyer 1)*

*“...hardly do they ever have the drawings. So, he doesn't see the drawings. So, in terms of conceptualising, the bill of quantities will say there is so many metres of cable, et cetera” – Architect (Buyer 4)*

*“It is very seldom that you have the opportunity to as an architect to do a full set of documents before you hand over the site to the contractor. Here is the whole set of documents given to the contractor and the contractor has to give you his schedule. Very seldom does that happen.” – JBCC® Contract expert (Arbitrator)*

5.2.4 Research Proposition 2: Contracts are drafted in a hybrid format to extract the benefits of both fixed and flexible contracts. Reference points contribute to the structure of the contract.

The JBCC® contract does not allow for fixed costs and guides the construction process through a cost per square metre. The amounts are then multiplied by the quantities used.

*“JBCC® doesn't allow for a fixed cost. It recognises variations in the prices. If it is a closed price, sometimes you will use JBCC®. But you will indicate that it is a*

*closed price, final price. I doubt any big project contractor will go in with a fixed price unless he knows what he's doing.” – Architect (Buyer 4)*

Construction companies' revenues have changed in line with their new approach as project managers. All of the raw materials and labour are contracted out to sub-contractors on which they earn a mark-up. They also earn a fee for every amount spent by the nominated/selected sub-contractor.

*“Your specialist trade then is something that we get a fee for managing these guys.”  
– Quantity Surveyor (Seller 1)*

*“The third strategy that they have is to increase the price of their provisional some of their sub-contractors. My profit is X percent on every item that I manage. So now I am increasing my profit. There is nothing you can do contractually, there. You have to approve it.” – Architect (Buyer 4)*

*“It was profit on top of the tender to supervise, to make we are sure we finish on time on his programme. So, he still has a profit on top of our sub-contract value amount.” – Nominated/Selected Sub-contractor (Seller 2)*

The contracts are drafted by the buyers, so they determine whether the contract will be a fixed or flexible price. As mentioned by the architect, very few contractors will go on a fixed price project unless they know very well what they are doing. Contractors, however, need to manage their costs in order to generate a profit at the end of the project.

*“We get revenue in, but obviously cost gets deducted and what is left over is our profit. So, there is a huge emphasis on managing costs.” – Quantity Surveyor (Seller 1)*

5.2.5 Research Proposition 3: The introduction of relational contracts can reduce hold-ups and optimise the allocation of risks and surplus between the parties.

The current market environment is very competitive, and the contractors are focused on being on the preferred vendor lists for tendering. They ensure that they have a relationship with the clients, and they try to minimise their reputational risk as much as possible. The industry players are very careful in managing their reputational risk as they may end up working again on other projects. Before loans are issued, bankers are very meticulous in scrutinising the professional team and contractors.

*“With the market environment, your relationships are moving towards making sure you are on the tender list.” – Quantity Surveyor (Seller 1)*

*“We want to see the whole CV on the project team, what they have done. Your quantity surveyors, your project managers, all of those guys. We need detailed CVs. Ideas of what they have constructed, you do a whole due diligence on what they have produced in the market. There is a lot of emphasis on the jockey.” – Private Wealth Banker (Buyer 5)*

*“Remember they are independent, they are employed by the borrower, but they have their reputation on the line.” – Commercial Property Banker (Buyer 6)*

*“The main contractor can then say, I have worked with this guy before, be careful of him not finishing on time. So, he can take one or two guys off the list, because we have had a bad relationship. Or, yes, your list is fine we can work with all of those guys.” – Nominated/Selected Sub-contractor (Seller 2)*

One of the reasons why the code count for Disputes was so low is that all the parties try to resolve any disputes or issues as carefully as possible. Only one of the participants had been to an arbitration process with her previous employer; the rest had had threats of it, but none were currently involved in an arbitration process. The parties tend to manage their disputes and differences through meetings and relationship exchanges.

*“What we will do is generally the first step is to try and resolve it by a meeting. The second step is to call for a meeting between the MDs to resolve it or CEOs. If you are overly aggressive with your negotiations, there is definitely a reputational damage and who apply this contract aggressively.*

*“There is a fine balance between trying to manage the contract effectively, and you can manage yourself out of the client with perfectly applying the contract one hundred percent because it says to you, but still manage yourself out of the client relationship because of it, so I'm saying it's a very sensitive matter. I'm telling you that relationships are important.” – Quantity Surveyor (Seller 1)*

In most of the projects, there is a mutual understanding between the parties that they just want to get the work done. Using the contract to manage the relationship seems to be received negatively in the construction industry, even though a party is within their right to apply the contract.

*“But for the most part, there is an understanding to get the job done and hopefully within budgets, but a lot of it we try for the relationship. You're going to spend time*

*with each other, so you try as much as possible not to pull out the contract. If there is a misunderstanding or miscommunication, which is present. If you get to that point.*

*“You know some consultants may favour some sub-contractors. They then change clauses so by the end, you are not quite sure who benefits” – Quantity Surveyor (Buyer 1)*

In instances where there should be penalties levied against either the professional team or the contractor, they can be shared through a trade-off and balancing of claims with each other. At the end of the project, the claims against each other should be equal or nett to zero.

*“And we can try and work it out. You know the guy had the best of intentions of finishing something, you can't have penalised him at every corner. It is also the consultant's responsibility, if you penalised the contract, it's the same to him.” - Quantity Surveyor (Buyer 1)*

*“The amount of the penalties you can change. There is also in between negotiation that happens. If the contract is delayed, for your own reasons from the client or architects or whoever. You start bargaining on the mistakes; I give you one you give me one. You trade things so, as long as you agreed to keep it in the amount of time or the amount of money. I will give you 10 more days, no P&Gs, no penalties that type of thing.*

*“It's verbal. It's because you don't want to apply the contracts because everybody loses if you apply the contract. No one wants a fight; no one wants a litigation. The process of litigation is very costly, and we don't know what's going to happen. “There are so many delays by the clients, and so many penalties by the contractor and the amounts, in the end, should be zero. So, you need to balance the two parties, so nobody loses” – Architect (Buyer 4)*

*“The relationship between us and the main contractor, we can sort our things in-house instead of referring to the JBCC® clauses. So, we intend on helping each other. At the end of the day, he needs to finish on time as well. What we try is a gentlemen's agreement, I am not going to notify you now that there is a problem. Once you give them a notice they need to notify, it escalates. The understanding is that I have not notified you, but I have advised that is a problem. I have said that I'm not going to claim, so I just want you to know that we are experiencing this problem.” – Nominated/Selected Sub-contractor (Seller 2)*

The boundaries of the firm are considered for the main contractor as they currently outsource all of their work. A decision can be made on whether to provide the materials and labour in-house, or outsource it. Contractors are in a difficult space, as they have to manage the relationship with the professional team as they approve of the payments and sign-off on the quality certificates.

*“They have a contractual relationship with the service provider. They don't own the service provider. So, every time and something needs to happen; it costs them money. There is a kickback; there is resistance they are fighting through a process all the time. The value chain has become more contractual, than a value chain that has been owned and managed in-house.*

*“You must remember the contractors are in a horrible space, especially the consultant who signs off his work. So, he doesn't want to make enemies.”* – Project Manager (Buyer 3)

Working with a known contractor and maintaining a good relationship helps with the drafting of a contract in a subsequent project.

*“You try not to be counter-productive, you know what they are unhappy with, and it was accepted in the first phase. So why change it now? We know that there are some things that may have caught us on the previous ones, so there are more details afterwards in the second-time around. The whole process. I have to say was a lot faster... There is a lot more experience and input that you have in the second-time round.”* – Quantity Surveyor (Buyer 1)

5.2.6 Research Proposition 4: Termination clauses are used to reduce risks when the buyers are risk averse. Negotiations are also based on reference points to limit risk exposure.

Termination clauses do not often feature in the contracts, as penalties and clauses are inserted to keep the project on the path to completion. If a contractor is terminated, a subsequent contractor must be found to carry on with the project. This very seldom happens, and the banks only provide a small amount of leeway for this change. The reputation and risks to complete the projects are evaluated upfront by the banks.

*“The JBCC® and the feasibility study will speak to each other... you have market-related information, on a rate per square metre for a specific finish and that type of*

*stuff. You then go to the markets and say this contract is either overpriced or underpriced. I don't think you can complete it for this amount; I suggest you go back and renegotiate, or we think it's way over market. So, there is a lot of emphasis of what goes into the JBCC®, and I will start analysing the contract to see, once again, the delivery risk.” – Private Wealth Banker (Buyer 5)*

*“The professional team would then sign a duty of care letter that they will inform the bank if there are any issues onsite with construction. It is an obligation to inform us.” Commercial Property Banker (Buyer 6)*

Contractors evaluate the risks before a contract is entered into. Where the risks exceed the benefits, they walk away from the contract.

*“Every time we bid, so what we do is we have a person that actually reads the contract they put together, what we call a risk review. It is a nice document that deals with all the changes and all the risk items that we can identify as risk items on the contract” – Quantity Surveyor (Seller 1)*

Contracts become complex in order to manage difficult contractors. There is a stigma in the construction industry if contractors are labelled “claim conscious”. This implies that the contractor works strictly according to the contract and immediately submits claims for any delays caused by the professional team. This term “claim conscious” was mentioned many times during the interviews, and the industry is very wary of this label.

*“As soon as we could have guys on the list for tendering, we have some that are claim conscious. Come day one, they will issue you with a notice. There are guys in the industry that have a terrible reputation, so that's why our documents end up being pages and pages longer.” – Quantity Surveyor (Buyer 1)*

Contracts are usually drafted by the quantity surveyors in the projects, as they have the financial knowledge and background to compile the tender documents. Most of the content that goes into the contract comes from past experiences, i.e. the reference points they have from previous mistakes and successes.

A quantity surveyor would mitigate many of the risks upfront through the contract, because as mentioned above, the bankers focus a lot on delivery risk; they cannot sell a building that is half complete or a hole in the ground. The focus of the contract is to ensure that there will be no hold-ups from the contractors, and timelines are shortened from the standard JBCC® contract. A clause is even inserted to accelerate the build process when requested by the professional team.



An interesting point was raised during an interview regarding the provision of equipment and materials by an employer who was in the industry of building supplies and leasing equipment, but the quantity surveyor advised the client to avoid supplying the material or equipment.

*“We once had a client who wanted to supply all the equipment and wanted us to put this all together. And we would ask why? As soon as you do things like that, you open the door for delays. If the contractors say you did not give me this, and now that you haven’t given it to me, I can’t do my job.”* – Quantity Surveyor (Buyer 1)

In reviewing the template of a contract provided by the Quantity Surveyor (buyer), the risks within the contract were modified from the standard JBCC® contract to shift from the professional team to the contractors.

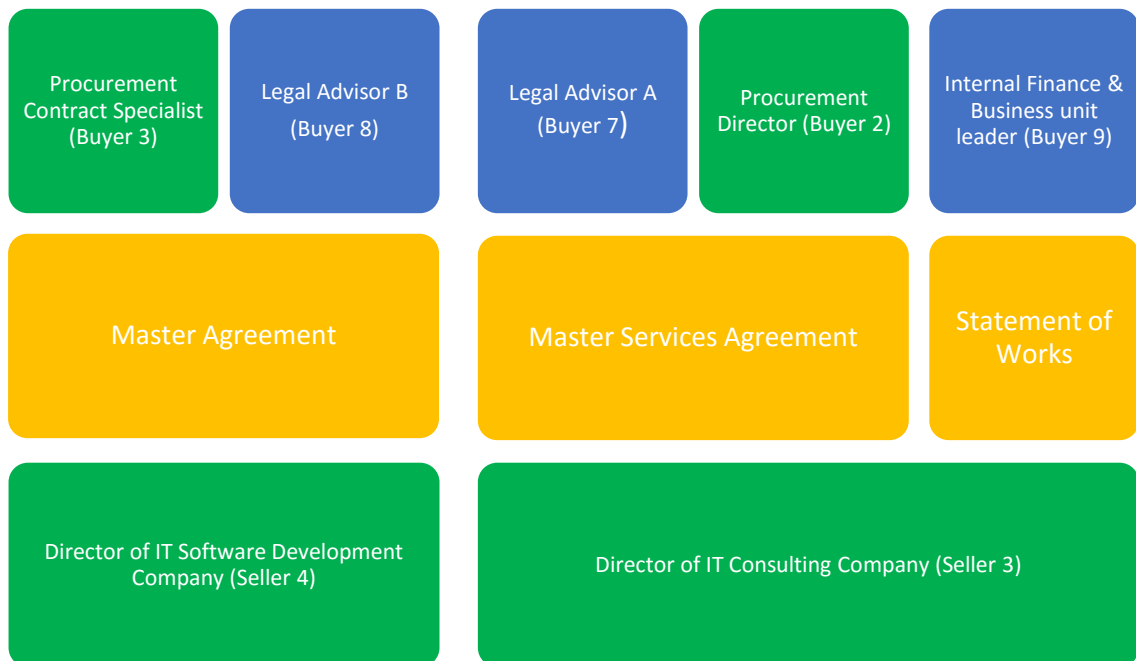
The amount of time the contractors were given to submit their notifications and claims were shorted significantly; some were just 50% of the original time allowed by the standard JBCC® contract. The revised contract cut down on potential time delays and placed the responsibility and risks onto the contractors, making them liable for any delays caused by themselves or by the professional team.

## 5.3 IT Industry

### 5.3.1 Organogram of the IT supply chain and related contracts

In the organogram of the IT supply chain and related contracts below, the green blocks were the first round of interviews and the blue the second round of interviews. The documents highlighted in orange were obtained and reviewed.

**Figure 8: Organogram of the IT supply chain**



Two case studies were combined as a single case study in the IT industry. Both sellers are private companies providing a service and/or a product to a listed company. The blocks on the left represent a case study with one seller and two buyers, and on the other side, one seller and three buyers. The case studies were combined as they were homogenous.

Where documents were provided by the person being interviewed, they were reviewed and compared to information that was received during the interview. In the IT industry, both providers use a Master Services Agreement or Master Agreement.

The Master Services Agreement or Master Agreement forms the foundation of the agreement between the buyers and sellers. It contains all the legal clauses, and the document is hardly changed. The agreement will run to infinity unless one of the companies ceases to trade.

The Master Services Agreement and Master Agreement between the two sellers interviewed were compared. The Master Agreement was drafted with the help of an outsourced legal advisor, and was twice the size of the Master Services Agreement from the other seller. They both covered essentially the same clauses, but the larger document was wordier and filled with legal jargon.

The smaller of the two agreements was drafted by the Director of the IT Consulting Firm himself, who commented that:

*“I vet it in the house, because attorneys are too costly, and they don’t specialise enough with my industry. So, you generally find, I do a better job than the attorneys.”* – Director of an IT Consulting Company (Seller 3)

The smaller agreement was easier to read and follow as it was written in simple English.

The next document to be discussed is the Statement of Works and/or a Service Level Agreement. These documents have a finite lifespan and are used only for a certain period or are renewed annually or bi-annually. These documents specify the details of the work, fees and timelines.

Another document used by one of the providers is a Heads of Agreement letter, which allows the company to start providing a service to the client while the documents are still being drafted and signed off. The Heads of Agreement is a very thin document of around two to three pages at most, which outlines the work to be done.

### 5.3.2 Overview of the data collected

The technology industry is still relatively new compared to the construction industry, however changes and developments happen rapidly, thus long-term contracts are not feasible. One of the participants interviewed keeps to a three-year contract life cycle, claiming that this is best practice in order to keep the contract up-to-date with any changes in the market.

Technology is introduced rapidly, but a three-year life cycle gives the buyer a chance to write-off the capital expenditure for tax purposes and allows some time for the new technology to prove itself in the market.

The products provided by the sellers in the case study are bespoke software development and maintenance. There are other areas of technology procurement that have not been explored in this case study, such as hardware, licensing and the latest innovation of cloud technology.

Costing and Disputes were mentioned the least by both the buyers and the sellers. The two sellers interviewed provide a niche product and are two of just a few vendors in the market. The main costs for both companies are human resources, and more emphasis is placed on billable time for the sellers.

A theme that featured during the interviews was the service level agreements or contracts between related parties. This theme was not researched further in this thesis, but does provide an interesting topic for future research. Contracts are generally not signed between related parties as there is no consequence for not signing the agreement. There is also a difficulty in clearly defining the clauses in the contract, hence there is an incomplete contract between the related parties.

Another theme that was not explored further was the experience and knowledge of the legal advisors in the IT business. Both the advisors interviewed had industry-specific knowledge that only a few external law firms can provide. Their experience and knowledge of specific areas such as cloud technology and IT-related software was learned through their practical experience in their organisations. External law firms are not present when the contracts do not go according to plan, but internal advisors see first-hand what the consequences of poorly drafted contracts are.

Having a party with experience draft a contract allows for the mitigation of risks upfront, as common pitfalls and problematic areas are either addressed or diversified through controls.

**5.3.3 Research Proposition 1: Frequent and regular communication at ex-ante will allow for the optimal establishment of a tailored mutual contract.**

Formal communication for the procurement of services or products are conducted through a request for information (RFI), a request for proposals (RFP), or proof of concepts (POC). The process can take varying amounts of time.

*“Those processes again can also take from one to six months, so they would normally send you a document which outlines what information they want from you, and that is the request for information. And then the request for proposal is when they actually ask you to answer very specific questions, so they try to outline exactly what they want and how they want it, and they leave you these documents to fill in, so they can better judge which of those suppliers actually meet their requirements. They can tell from how you answer it. If you have no clue what you're talking about so they will thin you down, and that process of you see they have to give you some time. The minimum is a month. Generally, it's more like four to six months.”* – Director of IT Consulting Company (Seller 3)

*“So, they come in different shapes and sizes. The biggest one I've seen is around 200 pages; it detailed all the aspects of the products, and their needs. There was a lot of detail in this document. Others are a lot less at around 50 pages or less.”* – Director of IT Software and Development Company (Seller 4)

*“We normally use an RFP; it depends on the business area, it could be anywhere between a week and a month to put an RFP together. And that is mainly around specifications on what the business wants; a template on what should be in the RFP is generally standard. You have to meet the business need, so the better you articulate the business need, the more chance you have of being successful and avoiding any miscommunications or misunderstanding.”* – Procurement Director (Buyer 2)

Once the RFI or RFP is completed, the next stage is to draft the contract and discuss the clauses and terms of the contract. This process could take between one and six months, but for some companies, this is insufficient time.

*“All communications are normally via email. The majority of it, and then obviously you do have a few telephone calls, where things can't be explained properly by emails. So, firstly, the most communications happen via email back and forth, and then you will have the telephone call every now and again, for things that are bit more complex. And, then, more importantly, you generally have tracks on changes on your documents, whereby all are put in comments and questions to each other. So that emails going back forth, either in the body of the email can have specific and talk about it or commonly more importantly that documents have questions, comments and things in the documents, where you each should then put comments are and the other party replies to those comments.”* – Director of IT Consulting Company (Seller 3)

*“Probably not enough. Let me give you some numbers. For example, a large insurance company, we would probably spend 30 hours around the table, talking about the contracts, that is over a period of a couple of weeks. So not a lot, and another insurance company, we have been in a couple of fights with them, about 15 to 20 hours.”* – Director of IT Software and Development Company (Seller 4)

One of the buyers works closely with subject experts to obtain a clear understanding of the product or service to be procured. They conduct extensive research before the communications begin with the seller, and once the negotiations start, they set the expectations upfront.

*“We work closely with legal, subject matter experts and again to get to a starting position because that's not going to morph once you start negotiations. So, we might change a small few things that are normal that are specific to your circumstances. You might have consultants, in marketing, we have subject matter experts to show us how to draft the proposal... they would sit outside the actual contract that we are working towards. So, we might even have an independent supplier as subject experts.*

*“...we would rather set the right expectations up front with business and make it a contract that will work and deliver on what was intended for in the first place. Rather than to squeeze a supplier to the extent that you don't get any outputs.”* – Procurement Contract Specialist (Buyer 3)

Legal advisors in the organisations are also driven to make sure that communication with the suppliers is clear and that the goals are clearly defined to avoid any misunderstandings.

*“We also want to make sure that all the suppliers in the negotiations are clearly set out and clearly defined; there would be no room for them to come back and say actually this wasn't clearly defined. Now we are going to charge more because you did not bed down and set it out clearly.”* – Legal Advisor B (Buyer 8)

*“That will be upfront communication on what I want from you, and what you can deliver. Sometimes there is a misunderstanding of what the client wants and what the provider is supplying.”* – Internal Finance and Business Unit Leader (Buyer 9)

There are also situations where the seller does not fully disclose their abilities up front.

*“If you are serving something to me, and I want X, Y, and Z. And you're not disclosing it that I can't really do X, Y, and Z, but I can do X and Y. We will sort out Z. I don't disclose it or fully communicate that.”* – Internal Finance and Business Unit Leader (Buyer 9)

Communication is not only with the procurement team and the sellers, as the business units and board members are also involved in the communications. In an instance where software development was needed by a business unit, the ownership of the project rested with the business unit to ensure that the correct product was delivered. In this case, a POC was used before the contracts were drafted and signed, which allowed some time for the milestones and performance levels to be determined.

*“So, what they do comes to business, they requested a POC. If there is a cost, the IT board has to approve it. If they get approval on it, then business measures the deliverables agreement with the supplier. So, there will be an accepted performance; there is also an unacceptable area agreed between both the owner of the system and the other outsourced supplier.”* – Internal Finance and Business Unit Leader (Buyer 9)

An important aspect of communications between sellers and buyers is ownership identification; communication will yield no results if you are not communicating with the right people.

*“Ownership. Your contract champion, if the ownership is not clear, then it leads to fundamental problems. It almost assures you, you will have disputes on the contracts. Clear ownership of the output of the contract, the relationship itself, the process, everything. We insist on an accountable exec, and if we can't identify that person, we don't negotiate a contract. Ownership is key.”* – Procurement Contract Specialist (Buyer 3)

5.3.4 Research Proposition 2: Contracts are drafted in a hybrid format to extract the benefits of both fixed and flexible contracts. Reference points contribute to the structure of the contract.

The IT industry is not guided on how their contracts should be drafted, so the sellers either draft the contracts from experience or with the assistance of an outsourced attorney. Some contracts are circulating the industry and are becoming a standard, however.

*“We try to have clauses in the contract that deal with changes in the scope, so without going into too much detail, in all contracts, when you enter into it, you can already foresee the major changes. So, when we do the agreements from experience, I will base it on a minimum, and I will also insert that if you go above the minimum. I'm going to bill you pro rata for the extra. So, to cover me, it is extremely important. So, I would know upfront from experience, I will try and build in these discrepancies in the contract, and I will try and build into the contracts something that would help me and the client understand, that if there is a change, instead of making change requests, we have actually covered it in the contract. The client will feel more comfortable that they know upfront how any changes in scope would be handled.*

*“It's a combination of either. I draw up the contract, or the client draws it up. And it goes through their client's legal department, so sometimes the client will come to me with the templates that they want to use. Other clients don't have templates so require a template to work from.*

*“We use all of them; it depends on the client. Some clients ask for fixed, some will ask for the variable. And being a consulting company, the main thing we have to do is to fit in with the client. So, our business isn't a normal business where we have standard contracts or standard ways of doing things. Everything must be tailored to what the client wants, and that includes contracts.*

*“The problem is every time I make a new contract, because we have to be so flexible, we are always encountering something new. So yes, there is always something new.” – Director of IT Consulting Company (Seller 3)*

*“I think over the years (the contract structure) became a standard, even though it's not worded as a standard or agreed as a standard. It's just when I see similar contracts from competing lenders, they will cover more or less the same. But there certainly is not a standard.” – Director of IT Software and Development Company (Seller 4)*

*“We normally agree a rate per hour or a rate per delivery, the type of delivery and then it's just a numbers game multiplication of that. If it is a building or a systems implementation, it also depends on how much insight you have into the supplier; you might have a fixed built or a fixed price contract. I do believe that in doing a systems implementation, because they always tend to overshoot, you need to understand exactly what is contained; as soon as you go fixed you need to be very clear what was in the contract and what wasn't.” – Procurement Director (Buyer 2)*



Smaller contracts (Heads of Agreement) and verbal agreements actually provide the best results, as they allow for a better efficiency in delivering a service to a buyer. There is a caveat though, as this can only be done with a client with the right culture and relationship.

*“So, it is a lot smaller contract. It is a lot more nimble, a lot quicker. It allows you to actually do work for the client before the actual other agreements are signed.” - Director of IT Consulting Company (Seller 3)*

*“It is very tempting to do that; I have had that in the past. It is not a good idea. Sometimes you will find that in the agilest projects, the ones that perform the best. The agile projects, where you can go doing something and quickly solve the problem very quickly with some verbal agreement with the client. You mention costs; you have to buy this package to get this done. So, there is a risk; there is also it is done with the right client and the right culture and the right relationship. It can be hugely advantageous to development. To get the stuff done.” - Director of IT Software and Development Company (Seller 4)*

5.3.5 Research Proposition 3: The introduction of relational contracts can reduce hold-ups and optimise the allocation of risks and surplus between the parties.

Projects can start without contracts being in place. As per one of the seller interviewees, the Heads of Agreement allows the seller to start providing a service to a buyer while the Master Agreement and Statement of Works are still being signed off and approved by the Board and procurement departments.

*“I do start the work even when the contract is not signed because there is a lot of good faith as much as you want as to say you have a contract in place. You very often have to start the work before the contracts, so it's a very big risk for me, but I do need to offer and show good faith and start with the work.*

*“Always, as I said, sometimes we will do work without the contract in place, which is very important. Because the client is obviously very worried that they are not going to get their deadlines because they are part of big corporates, legal has to vet. So, they themselves will break their own timelines, that their legal advisors say they need six months. But there are projects to be done in six months, so they are a problem, that they had to ask you to do work, sometimes without contracts being*

*in place. So, sometimes I will work is finished before the contracts are made. Even with the contract, because the contract can't cover everything, you generally have a lot of verbal things throughout the contract where you agree on different aspects.”*

- Director of IT Consulting Company (Seller 3)

As far as Disputes are concerned, it appears from the interviews that the parties work together to resolve any disputes and misunderstandings before they escalate. Discussions are also held between the parties instead of resorting to renegotiations and going through the legal route.

*“You find that in meetings people shout and things generally get out of hand. So, you need to do face-to-face talk, but you try and put it all into writing. Discuss it; we generally find that you manage things upfront well enough, (disputes) never happen, and again, unfortunately, back to what you were talking about earlier, there are a lot of things that are negotiated outside of the contracts. And it's about your relationship with the clients, and what you have done so, often those are very important because it means if you have the right relationship, you are able to go to the person and say, look we've made a mistake here, we should have billed you more, or we have billed you too much and you can handle it very well.”* - Director of IT Consulting Company (Seller 3)

*“If the software doesn't perform as per contract, and you don't have control over those variables, that is one aspect of the contracts that we have problems with; finding common ground between ourselves and the clients.”* - Director of IT Software and Development Company (Seller 4)

*“It's simply just a phone call or a discussion with the counterparty, and they will generally try to assist as it's in their interest. Sometimes they will say it's okay, it's fine - we will take care of it at the existing rates or they will insist on being paid an additional amount for it, but we would agree to it if we understand it is not something that could have been reasonably anticipated at the time when we signed. If you again need something more, then you need to discuss and see they are willing to include it at that price through negotiation and if not, they levy the additional price.*

*“We have been mature enough to say these are the issues and then we debate the issue, and then we come to a compromise, even if you fit or pay the cost of an extra 200 K we agree to go half-half because we agree that both parties are accountable, and then we'll settle it as such.”* – Procurement Director (Buyer 2)

*“Sometimes there is stuff that we did not think about, and it comes out. That we didn't draft for and then it is a question of how do we manage the supplier relationship in such a way, that it is either not an issue or where we know it's a difficult supplier and would put that in writing and amend the agreement.” – Legal Advisor B (Buyer 8)*

There are challenges in keeping a contractual relationship when there is a change in the client's management structure. A new negotiation has to start, or the new person in charge has to be briefed on the progress of the work and the verbal agreements that were made.

*“Then in a year's time, when it is time to put the product into production, then you are working with a different CIO, different IT manager; on that basis, the framework that we negotiated needs to be revisited. It is the trust relationship that is difficult to build with the insight into the original negotiation. That is where we might have most of the disagreements.*

*“It certainly happened in a case before, where we had lots of difficulties with a project manager. Then it became a process where we defined “we want this” and “they will deliver that”. Then you will write a functional spec and technical spec, you have to get it signed off by these people. Then we will do mock-ups. It is a very heavy formal upfront waterfall process. Very sequential, but sometimes that is the only way you can get something to work. A working relationship.” - Director of IT Software and Development Company (Seller 4)*

Unfortunately, even though there may be challenges in the relationship, there is still a reputational risk to the seller, hence they are very mindful of having a bad reputation in the industry.

*“This is a small industry in South Africa. The ones that can afford bespoke development software are quite a few. So it is a small, intimate market, so your track record sets whether you lose or win contracts” - Director of IT Software and Development Company (Seller 4)*

Good relationships between parties allow for a quicker turnaround time in renegotiations of current or future contracts. Efficiency is improved and understandings are reached between the parties to allow for quicker discussions and agreements.

*“The more you are talking to a particular supplier throughout the year, you will find that when it comes to renewal everyone has a clear understanding of what's the level of service and if there are any issues. If they were addressed. So, it makes a*

*discussion a lot easier and a lot faster. And they have got context and an understanding of exactly where both sides are coming from. And you can arrive at a middle ground a lot sooner.” – Procurement Director (Buyer 2)*

5.3.6 Research Proposition 4: Termination clauses are used to reduce risks when the buyers are risk-averse. Negotiations are also based on reference points to limit risk exposure.

One of the challenges for procurement departments and the delivery of any service or product is that one cannot measure the quality upfront. RFPs, RFIs and POCs may mitigate some of the risks and allow for formal communications to take place, but no measurement can be made.

The procurement department conducts a lot of background checks and research in mitigating some of the risks, however the best way for buyers to mitigate the risk is through termination clauses.

*“One thing that always remains difficult to measure is the quality of service, because the only time you would know the quality of service is once it has been delivered.*

*“You can’t measure that, on paper, you can go to RFP or what we call reference sites for some of the shortlists. And then we would try and get a sense from their existing clients, as to how they are experiencing their service and whether they are comfortable or not. And we also look at things like how long they’ve been a client of theirs. This normally indicates that they are comfortable with the quality of the service. Ultimately, it remains very difficult until the service meets your needs.*

*“We sometimes we have the option to terminate the contract. If there is concern about the service, we normally address that during the contract, but if the service is so far apart from what our expectation is, at that point normally there is a termination clause in the contract which we invoke and then on the back of that we would re-contract somebody or a different supplier for the same service.” – Procurement Director (Buyer 2)*

*“The other thing about your outsourcing agreements is your exit strategies. You can mention your exit strategies in your contracts, but it is never something that you can always complete before you have actually written the contract. You need*

*that settling down period of 6 to 12 months in an outsourcing agreement with very tight supplier management, service management, mechanisms to make sure what that exit strategy should look like.*

*“We have also got benchmark provisions in some of our technology contracts, especially where we think technology will advance to the extent that our prices, compared to the market prices, may come down. Then instead of renegotiating a whole new contract, we put a mechanism in there to benchmark and adjust prices according to the benchmark. So, we have got a lot of those in place.” – Procurement Contract Specialist (Buyer 3)*

In some termination clauses there is an exit provision for the seller to be bought out, which is mostly used when the seller has made some investment into the project. The termination clause gives the buyer the flexibility to change suppliers should the conditions warrant it.

*“An exit clause is inserted in the statement of work. If we are not happy or we want to any time terminate for no reason whatsoever, we actually build it into the provision. It is because projects change all the time. Decisions change, one day, we are doing this project, the next they want to withdraw the project. So, we make sure in terms of the agreements we cover ourselves. It also depends on what investment the third party has made. With some investments, you can't just terminate for convenience.*

*“Let's say for example, you are locked into a five-year contract, or you decide there is a better service out there, my business requirements have changed. There is another provider that is offering something better and at a better rate. Then you start negotiating with the existing provider, to see first what the existing supplier can offer you over and above. That it is competitive enough. They will come to a situation, or it might come to a situation where the current provider cannot beat something on the table, in that circumstances we do a settlement. We will try and negotiate a settlement, prior to an early exit. I have not experienced any issues in the past where it was very difficult to negotiate with a service provider in terms of an exit. With the new providers as well, we do negotiate it with them, would you like to buy out this contract. So, if you want to come in, buy out this contract.” – Legal Advisor A (Buyer 7)*

*"So, it is an amount that we would pay them if we terminate the contract early. They (sellers) suggested a formula that should be used in the event that we exercise that right. So, as much we look at the legalese of the contract, we also look at the commerciality."* – Legal Advisor B (Buyer 8)

There a balance of the risks between the parties and a jockeying to find the middle ground.

*"The biggest debate between suppliers and companies where we receive the services, especially in the IT environment, is usually risk. So the IT companies would want their risk to be as limited as possible, and we want it to be as high as possible."* – Legal Advisor B (Buyer 8)

## 5.4 Chapter summary

**Research Proposition 1: Frequent and regular communication at ex-ante will allow for the optimal establishment of a tailored mutual contract.**

Communication in the IT industry is not bounded to only a discussion, but also includes formal documents such as requests for proposals, requests for information and proof of concepts. These documents help clarify what the needs of the buyers are and what services and products can be offered by the seller. They help reduce miscommunication and aid in the drafting of the contracts. The construction industry utilises the tendering process where a copy of the contract, bill of quantities and diagrams are issued.

**Research Proposition 2: Contracts are drafted in a hybrid format to extract the benefits of both fixed and flexible contracts. Reference points contribute to the structure of the contract.**

The JBCC does not allow for fixed contracts; a rate is calculated, and the quantity becomes a variable. A fixed price can be used for a construction project, but the seller must know what they are doing. The revenue structure for construction has changed to a management fee basis. In the IT consulting industry, one of the directors would anticipate the changes that will be made by the client, and would insert that as a minimum amount in the contract. A pro-rata rate is then used for any time spent on the project over and above the minimum amount.

**Research Proposition 3: The introduction of relational contracts can reduce hold-ups and optimise the allocation of risks and surplus between the parties.**

Construction and IT companies are both very careful about how they manage their reputations, as the number of companies in each industry is small and the parties may end up working together again on other projects. The category for Disputes was mentioned the least in both industries and in both groups of buyers and sellers. This indicates that when there is a dispute or miscommunication, it is in both their interests to resolve the issue. Relationship contracting also has the benefit of allowing for work to be done quickly, even when the contract is not signed yet. This was mentioned by the directors interviewed in the IT industry.

**Research Proposition 4: Termination clauses are used to reduce the risks when buyers are risk-averse. Negotiations are also based on reference points to limit risk exposure.**

In the construction industry, penalty clauses are used instead of termination clauses to encourage the project to move forward. The IT industry uses formal documents upfront during the communication phase to screen the sellers and mitigate potential problems. After the contract is signed, termination clauses allow the buyers to terminate contracts with sellers who do not perform to the level expected. A model was found to be used in the IT industry to encounter the unknown and changing circumstances.

# Chapter 6: Discussion of Results

## 6.1 Introduction

In this chapter the findings from the interviews, documents and data collected are discussed. Each theme that arose from the data is related to the research propositions and overarching research study. The discussion below is divided into the four research propositions, with both industries combined as a collective discussion. The related literature is tied into the discussion of the summaries.

It must be noted again that the code count for Disputes and Costing were the lowest amongst both industries and groups. None of the participants in their current roles have been in arbitration or litigation, and mentions of threats were resolved in all cases. The data from the interviews suggest that there is a common goal to have issues resolved amicably, as it is in all parties' interests to maintain a good working relationship.

Literature and empirical testing have not taken into account the business practices of communicating through a request for proposals, a request for information or proof of concepts. There is a difference between a simple theoretical business environment and the actual business environment, where additional factors need to be taken into account when evaluating the data against literature.

In the last ten years, more empirical contributions have tested the theories and related them back to actual data from business transactions. The value in using actual data is that they are more practical when trying to understand human behaviour.

## 6.2 Research proposition 1: Frequent and regular communication at ex-ante will allow for the optimal establishment of a tailored mutual contract.

Communication between the buyers and sellers in both industries start with a set of formal documents, which outline the scope of the work and the needs of the buyer. In the case of the construction industry, these are the tender documents that comprise the contract, the bill of quantities and diagrams.



In the IT industry, a request for proposal, request for information or proof of concept is sent by the buyer to the seller. These documents are a way to screen out sellers who do not qualify for the work required. In the case studies conducted, a request for proposal, request for information or proof of concept can take anything from a month to six months to prepare, and the documents could be from 50 up to 200 pages long. Only committed sellers will be willing to commit the necessary time and energy to complete these documents.

Depending on how the seller answers the questions, the buyer will get an understanding of the seller's knowledge of the requirements. This also mitigates the risks of selecting the incorrect vendor for the work required. Upfront communication is needed to make sure the seller can deliver what the buyer wants, as sometimes the business unit (buyer) misunderstands what is being delivered versus what was expected to be delivered.

Buyers prefer to use the request for information, request for proposals or proof of concepts to communicate, as they allow the business unit that is requesting the service to sit with the procurement team and chart out exactly what requirements are needed. The use of field experts ensures that when the negotiations start, the buyer is fully aware of what is available in the market and what can or cannot be done, and they also help the procurement and legal departments to draft a proposal; once the negotiations start, very few changes are made.

Communicating with the right people upfront is necessary. The Procurement Contract Specialist identified that ownership plays a significant role in procurement; it is key to identify the right person to take ownership of a project, who has the authority to move the process forward. In large organisations, ownership tends to be diluted through the various departments' procurement channels. From the vendor's point of view, this ensures that the person they are communicating with has the mandate to negotiate, agree and sign the contracts.

Setting the right expectations upfront with the business unit and seller is important to make the contract work and to deliver what was intended. It is also pointless for the buyer to squeeze the seller until no further outputs can be delivered. Managing expectations upfront will guide the performance. Buyers ensure that in a negotiation, everything is clearly set out and there is no room for the seller to say that something was not clearly defined. Brandts et al. (2016) working paper showed that with communication, the costs of disagreements and conflicting perceptions can be removed.

There are personnel from different levels in the organisation who are involved in the approval of capital expenditure, from the board to legal and procurement departments. The persons who are the most involved in the decisions to be made are in the business units; they are the ones who need the service and will ultimately play a role in approving proposals and issuing requests for information.

After the proposals or information are received, the communication moves to the content of the contract. This process can also take anything from one to six months, i.e. the total communication before the work starts lasts two to twelve months.

Buyers request contracts from the sellers and mark-up any changes they wish to make. Emails are sent backward and forward, with a telephone call if it becomes more complicated. Communications via email allow one to track the changes made on a contract and to follow people's comments. This forms a non-binding communication that allows for terms and clauses to be determined (Fehr et al., 2014).

The Director of the IT Software Development Company found that the amount of time spent on communication was not enough. They spend a total of 30 hours discussing a contract around a table, and when it is a difficult client where they have had disagreements, around 15 to 20 hours are spent on communications on the contract.

It was not specifically tested, but the Director of the IT Software Development Company's contract was approximately twice the size of the other company's, and it was very technical and written with legal jargon. The document may thus have complicated the negotiations, as a middle ground could not be efficiently found.

Communications in the IT industry are very different from those in the construction industry, which is guided by a common contract called the JBCC® that is approved by the banks. The construction and IT industry also have different methods to communicate ex-ante. In the construction industry, contracts are drafted by the buyers, and the sellers do the mark-up.

Construction companies receive information through a tender, which includes the contract, bill of quantities and diagrams. Very little communication happens before this process as the construction industry is old and the jobs and processes are very similar from project to project; the only differences lie in the scope of work.

According to the Project Manager on the buyer's side, he refers to the communication during the tender period as a clarification instead of a negotiation. The Quantity Surveyor on the seller's side, however, uses the word negotiation to define this period. Negotiation is a much stronger word, which could imply that the Quantity Surveyor sees it as more

of a hard process than a discussion. He also said that they negotiate all their work, i.e. no contract is accepted as is.

The seller has a person that looks into a contract for any areas of risk. The standard JBCC® contract is around 30 pages long, but after the buyers have adjusted it, the document can go up to 70 pages. The communication between the parties is very important at this stage, as the clauses changed in the document have a knock-on effect on other clauses in the document. If the contractor is not careful they could sign a document that is technically flawed and subject to interpretation, which could mean that the contract is still incomplete.

Communication becomes even more important when the contract is finalised, as a programme of works needs to be compiled to request the necessary information from the professional team before construction begins. There is where most of the disputes happen.

The preparation for the project could take up to two years, and includes communication with the employer, bankers and other members of the professional team, but not the contractor. The financing is mainly approved based on the feasibility study and preliminary bill of quantities, after which the communication time between the professional team and the contractors is shorter than the initial preparation stage. Contractors thus tender on preliminary contracts, bills of quantities and diagrams, and the final contract is only awarded after the finance has been approved. Detailed drawings and the accurate bill of quantities are then prepared. The detailed drawings are usually the last documents to be completed.

According to the Quantity Surveyor on the buyer's side, an issue found from his experience is that contractors often fail to read the contract. Clauses that relate to time bars (specified times within which the contractor may submit his claims) are important, as the contractor must inform the professional team of any impending delays. Failure to read the contracts could mean that the contractors have a bounded rationality in understanding what the contract clauses mean, or they are ignorant of the contents of the contract. Either way, communication beforehand will not assist in establishing a tailored mutual contract if the sellers do not read and understand the contents of the contract they are about to sign.

A major issue found by the researcher is that instead of issuing a standard JBCC® contract as guided by the industry, the main contractors in a construction project most often issue a four-page letter that replaces or only refers to the JBCC® contract. A sample of this four-page document was read, and it was found to be very open-ended

and vague. It was difficult to follow the document as it seemed to have been copied and pasted from another document, and some details were incorrect.

With a short and limited document, there is little opportunity for communication between the main contractor and sub-contractor. In addition, if the business model for the main contractor has changed from supplying all the materials, equipment and labour in-house to outsourcing, they could be working with between 10 and 15 sub-contractors, and communicating between all of them seems impossible. In fact, the selected sub-contractor did state that the biggest problem they face is coordination and communication issues with the main contractor.

This issue was affirmed by the JBCC® Arbitrator. The ratio of contracts between the Principle Agreement and Nominated/Selected Sub-contractors' agreements do not bear the same sales ratio, i.e. the number of contracts sold for Nominated/Selected Sub-contractors do not reflect the ratio of 10 to 15 copies sold per Principal Agreement sold. There should ideally be 10 Nominated/Selected Sub-contractor's agreements to every Principal Agreement sold.

The Arbitrator also does not agree with the process of how the sub-contractors are appointed. He believes that issuing a simple document consisting of a few pages is insufficient compared to the recommended JBCC®, and feels that there is insufficient protection for the sub-contractors under the current practices.

An important issue addressed by all the participants is the lack of complete information and documents in the tendering process, which does not allow the professional team to draw up diagrams detailing the work needed on the project. Using the tender documents as a formal means of communication fails to provide a mutual tailored contract; contracts have to be adjusted ex-post to account for costs not foreseen given the lack of proper drawings. Most of the projects tendered for are based on incomplete information, which also means that communication could not improve the efficiency of the contract. An empirical test showed that contractual incompleteness from the bidding process results in a significant increase in hold-ups from a high percentage of overruns (Miller, 2014).

**6.3 Research proposition 2: Contracts are drafted in a hybrid format to extract the benefits of both fixed and flexible contracts. Reference points are an important contributor to the contract structure.**

The JBCC® does not allow for fixed costs but recognises variations in prices. A closed price is seldom used unless the contractor knows what he is doing. The rates are usually fixed upfront with an allowance for inflation, after which it becomes a multiplication game of multiplying the fixed price with the variable quantity.

Contracts in the construction industry are drafted by the Quantity Surveyor on the buyer's side. Contractors only tender according to the bill of quantities and are very careful to manage their costs; the profit made by the contractor is the surplus at the end of the project after costs are taken off.

The bill of quantities is measured against an independent index for a cost per square metre. This reference point is also used in the feasibility study provided to the banks for funding. The sense of entitlement is equal between the parties as the rates are compared to an independent market index, which alleviates the self-serving bias as stated in Hart and Moore (2008).

With the changes in how the construction industry operates, the main contractors receive a management fee to oversee the Nominated/Selected Sub-contractors. This is usually a percentage on top of the invoice billed by the sub-contractors, which again is a fixed rate on a variable amount.

It was noted in the interview with the Contract Expert that the construction company's role is to remain cash neutral. They pass the invoice from the sub-contractor straight to the professional team and receive a percentage on the top of that invoice; there is no cash outlay from the main contractors.

In the IT industry, there is no guidance on how contracts should be drafted. There is, however, a standard format that is being circulated in the industry that is followed by the two companies interviewed and their competitors.

The Director of the IT consulting firm uses his experience to try to anticipate any major changes in the scope of work from his experiences with clients. He calculates a minimum amount for a project and any time spent over and above that is charged at a pro-rata rate. This allows his clients to know upfront what they are in for and he does not need to adjust his contract or issue addendums.

The Director does have to remain flexible in how he drafts the contracts however, as he encounters something new every time, but 60% to 70% of the contracts remain the same. Being a consulting firm, he also adjusts his contract to suit the needs of the client, for example if they request a fixed or flexible contract, he adjusts accordingly, changing his position with the client from a competitive contractual relationship to a bilateral mutual

relationship. The reference point for the negotiations becomes the contract that he is drafting, instead of any external factors being taken into account as a reference point by the buyer at ex-ante (Fehr et al., 2009).

The Procurement Director also prefers a fixed rate and variable quantity, as he can just multiply the costs and adjust accordingly. If the seller is doing a systems implementation, however, the Director prefers having a fixed contract as they tend to always overshoot their budgets. Depending on the situation, the buyer will stipulate which type of contract is suitable. There is a slight trade-off between a rigid and flexible contract, but the buyer chooses the fixed contract to mitigate the risk of overshooting the project, and to not minimise the shading, as suggested in Fehr et al. (2011).

Previous contracts are mostly used as reference points in the drafting of new contracts. The Procurement Contracts Specialist builds a benchmarking provision into contracts to keep track of market prices, giving them flexibility without renegotiating the contract. If the indexed price is close to the market price, there will be no breakdown in trade (Halonen-Akatwijuka & Hart, 2013).

An interesting contribution from both selling Directors was that short verbal or written contracts are the most efficient in terms of delivering a service or product. The Director of the IT consulting company uses a Heads of Agreement to start work immediately with a client while the contracts are being signed off. The agreement is a thin document which is around three to four pages long and specifies the basic scope of work and rates. He finds this to be the most efficient and effective way to complete a project; the projects are sometimes so short that they are completed before the main agreement and contracts are signed.

The other Director interviewed uses verbal agreements for agile projects, which allows the technical problem to be solved quickly by recommending the product and costs. If the client agrees, then the project is underway. He did mention, however, that it is not always that easy; it can only be done with the right client and the right relationship.

**6.4 Research proposition 3: The introduction of relational contracts can reduce hold-ups and optimise the allocation of risks and surplus between the parties.**

Contracts cannot be seen in isolation, i.e. complementary considerations that influence transactional cost economics should be included such as relational contracts, firm capabilities, relational capabilities and strategic options. These considerations function beyond the contract to include safeguarding and contract functions, allowing for parties to adjust for unforeseen circumstances (Schepker et al., 2014). Relational contracts is an important theory to consider in relation to incomplete contracts.

Contractors are very careful with their reputation in the market and are very focused on being on the tender list of preferred contractors; as the industry is very small, they may end up working together again on other projects. The professional team is made of up independent companies that are not under the permanent employment of the employer, and they also move around the industry from project to project with different employers.

Banks are also found to scrutinise the professional team's credentials when evaluating a loan for an employer, requiring each individual's CV with the loan application. They do, however, place more focus on the "jockey", which is the employer who is borrowing the funds for the project. Their biggest risk is delivery, i.e. is the employer able to deliver a finished project?

Main contractors also have a say regarding who they wish to work with on the Nominated Sub-contractors list. They will eliminate anyone they consider to be a difficult person to work with.

The reason for the low code count for Disputes is that the parties try to resolve the issues as carefully as possible - not necessarily to avoid the possible financial costs, but more from a reputational perspective, as contractors have to be careful not to manage themselves out of a client.

The Quantity Surveyor (buyer) affirmed that relationships are important as there is a mutual understanding to get the work done and hopefully within budget. They also try not to pull out the contract to manage any misunderstanding or miscommunication. In Ling et al. (2014), contracting parties that adopt relational contracting were found to achieve good outcomes in construction projects, resulting in better costs, time, quality, satisfaction and increased competitiveness. This was further supported by empirical studies conducted by Ling et al. (2015) in Beijing and Hong Kong.

Some consultants favour some sub-contractors over others, which creates a problem as the contract is modified so that no one knows who benefits in the end. The contract could be written in such a way that the clauses may favour the contractor and not the employer, or vice versa.

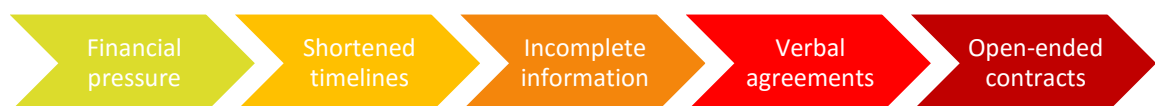
One of the challenges in the construction industry is the penalties that can be levied against either the professional consultant or the contractors. The finding here was that there tends to be a bargaining of mistakes between the professional consultant and contractor, i.e. they bargain and trade on mistakes so that at the end of the project there is a balance between the two or a nett balance of zero penalties and claims. Possible notifications are verbally exchanged instead of being formally submitted, and the verbal notices are accumulated and banked until the end of the project. If a formal notification is made, the professional team has to sign it off which may reflect badly on the main contractor, hence the sub-contractor and main contractor work mostly on verbal agreements.

Both parties protect their reputations as neither of them would like the industry to know about their mistakes, no one wants to go to litigation as it is costly, and no one knows which way the ruling will go. This also alludes to the reason why the contract between the main contractor and sub-contractor is only three to four pages long; the rest of the agreement has been compensated by verbal gentleman's agreements. Working with a contractor on numerous occasions and maintaining a good relationship with them also allows for a quicker and more efficient turnaround in the drafting of new contracts.

The diagram below shows that financial pressure being exerted by the banks on an employer leads to them shortening the construction time. The result is that there is incomplete information due to a lack of preparation time, which is substituted with verbal agreements with the main contractors. The main contractors then end up having an open-ended agreement with sub-contractors in the project.

In the figure below, contractual incompleteness increases as the colour moves from a lighter shade to a darker shade.

**Figure 9: The heat map of the incompleteness of contracts in the construction supply chain**



In the IT field, there are times when work starts before the main contracts are signed. Using the Heads of Agreement, the work begins with the client in a display of good faith. This is a huge risk for the seller, so this is mainly done for large clients.



The work is often started without the contract being in place to help the client meet their own deadlines; sometimes the approval and sign-off process takes so long that they miss their own deadlines, however.

Where disagreements surface, there is face-to-face communication to resolve the conflicts. This communication is more of a discussion, and if it is managed carefully upfront, many of the issues can be resolved before they escalate.

The procurement department prefers the seller to be available by phone, and the seller helps out as it is in their best interests. Any additional work is charged for or absorbed by the seller; the buyer and seller are mature enough to find a compromise even if it involves sharing the additional cost equally.

Legal Advisor B (buyer) encapsulated the benefit of a relational contract, saying that there are times when issues arise that were not thought about at the time of drafting the contract. Yet managing a relational contract can also be challenging. As one Director noted, on one project all the discussions and agreements were with the outgoing CIO, so when the new CIO arrived, all the agreements had to be revisited.

Sometimes the person filling a position is difficult, in which case the relationship ends up being a contractual one; communications have to be documented and the work is managed through a contract in order to get things done.

Even though relational contracts are useful for the renegotiation of contracts and driving efficiency in areas of incompleteness, sellers are still careful with their reputations. The market is also small for IT consulting and software development, thus both directors wish to maintain good reputations in the market.

Good relationships also allow for quicker turnarounds in renegotiations; efficiencies are improved and both parties are aware of the context and where each one is coming from, so a middle ground is found quicker. Prior learnings indicate a curvilinear “U” shaped learning effect on the negotiation time, and possibly indicate a diverse learning mechanism in the relationship (Ariño et al., 2014). If contracts where the benefits were greater than the costs are renewed, the reference point will shift from an external reference point to the prior contract, reducing the cost of renegotiations (Halonen-Akatwijuka & Hart, 2016).

6.5 Research proposition 4: Termination clauses are used to reduce the risks when the buyers are risk averse. Negotiations are also based on reference points to limit the risk exposure.

Penalty clauses and guarantees are inserted into construction contracts rather than termination clauses, to ensure the project is completed. If a contractor is removed off-site, which seldom happens, a replacement contractor needs to be found quickly as there is a bank loan in place. The bank does allow a small leeway for the employer to find another contractor, however.

Where the risks are higher than the benefits to be received, the contractor would rather walk away from the contract. This would mean that there is less risk than if the professional team is working with a contractor who is shading their work to compensate for the higher risks they are bearing.

Claim consciousness was mentioned many times during the interviews, as contracts become complex when they have to manage difficult contractors. The Quantity Surveyor (buyer) commented that he manages the risks based on past experience, which is why certain documents go from an average of 40 to 70 pages in total. By increasing the number of clauses in the contract, the buyer drives the ex-post efficiency gains (Herweg et al., 2017), yet the opposite could also be argued, as the buyer could be rendered inefficient by being sticky and not allowing for new changes to be made (Schmidt & Herweg, 2014).

The Quantity Surveyor (buyer) manages the risks up front, as do the bankers by reviewing the CVs of each member of the professional team and the contractors. Their concern is the delivery of the project; thus, they favour penalty clauses as they keep the contractors honest.

To avoid problems, the Quantity Surveyor (buyer) will advise the employer on the common pitfalls in the industry, such as the provision of materials or equipment. This risk mitigation can only be done based on experience, not contracts or guidelines.

When reviewing the contract template from the Quantity Surveyor, it was clear that the risks that would have been on the professional team were shifted to the contractor. The time allowed for notices was also shorter than in the JBCC® contracts.

One of the challenges with the procurement of any service or product is that one cannot measure quality up front; formal documents used for communication can be used as a

basis for communication, but they are insufficient as a tool to measure quality. To mitigate this risk, background checks and interviews with other buyers of these services and products are made. By screening the other party up front, they expect optimal behaviour from them to mitigate risks (Koszegi, 2014).

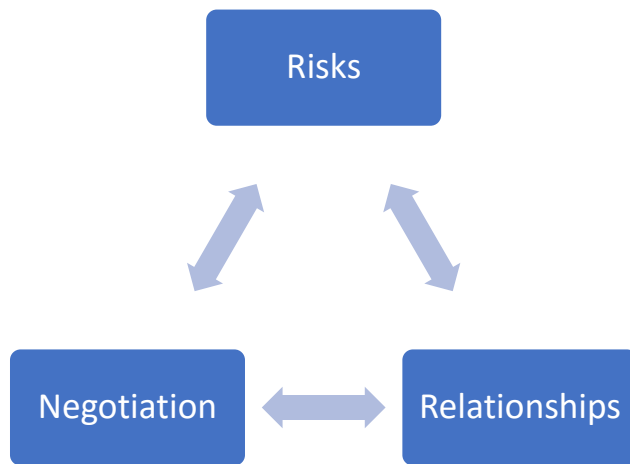
Another method to mitigate these risks is through termination clauses, which are used extensively by the procurement team to ensure that they have the option to terminate a contract should the service they receive not be as expected. If discussions with the seller cannot bring the level of service or product up to specifications, the termination clause will be used, i.e. it allows the buyer flexibility to safeguard certain situations (Weber et al., 2011).

Other procurement teams mentioned that exit strategies are important, however they can only be formed after six to twelve months of bedding down the contractual relationship. Benchmark provisions for technology contracts are also inserted, which ensure that the contract prices track the market prices. Their expectation is that technology gets cheaper as time goes by, thus the benchmark provision saves them the time of renegotiating a whole new contract.

Some termination clauses take into account any investments made by the seller, for example if the contract is for five years and there are changes in the business, the existing supplier is first given the opportunity to match what is required by the business. If they cannot match the requirement, an exit price is negotiated. The new vendor is then offered an opportunity to buy out the contract from the existing seller, and perhaps offer a discount on the services. In Legal Advisor A's (buyer) experience, every seller agrees to a buyout.

The biggest debate surrounding the risk between the parties is finding a middle ground, as the buyers wish to allocate as much risk as possible to the sellers and vice versa. There are three factors that allow the procurement team to be flexible and agile in their contracts: the first factor is risks, which are managed up front or through termination clauses. Any residual risks left are then mitigated through other means and controls. The second factor is negotiations, which allow for a discussion and communication with the seller, a middle ground is found, and the contract is either terminated or bought out by the new seller. The final factor is relationships. Through a good relationship, the parties are able to find a compromise while still being able to maintain a good future working relationship.

**Figure 10: Three-factor model for maintaining an agile contract**



## Chapter 7: Conclusion

This study began by introducing the theory of contracts and incomplete contracts, after which literature and theoretical studies were explored to find related studies on the construction, IT and related industries. Four research propositions were made, and the research methodology was established. The findings from the interviews and the data collected were analysed and discussed in the previous chapter.

### 7.1 Principle findings

The mini case study in Chapter 1 showed how a variation agreement, which is an incomplete contract with open-ended clauses, may be detrimental to a project and the financial well-being of the main contractor.

Based on the interviews conducted, two areas were highlighted. The first was experience, i.e. the Quantity Surveyor (buyer) knew to stay away from supplying materials and equipment to a construction project in order to avoid the pitfalls of being accountable for delays should the materials and equipment not be supplied on time to the contractor. The second point was also related to experience, in that delays in supplying information to the contractor will allow time delay opportunism from the sub-contractor. It is known in the industry that it is important to supply the information as soon as the contractor takes over the site.

Both areas can be avoided if the main contractor has the experience and knowledge to avoid these common pitfalls, so how can businesses cope with incomplete contracts and information?

From the results of the interviews collected and in exploring the research propositions, the first finding was that communication does not happen ideally (Brandts et al., 2016). Additional forms of communication that occur include tender documents in the construction industry, and requests for proposals, requests for information and proof of concepts in the IT industry.

Each of these documents present an exchange of information to reduce misunderstandings and articulate what services or products are needed, however the documents must be accurate. As seen in the construction industry, incomplete

information is prevalent, which impacts the quality of the contract that is entered into and drives down profits ex-post (Miller, 2014).

The theory that communication at ex-ante may improve the quality of the contract cannot be held as true yet, so how is relational contracting used to compensate for the lack of information and inefficient ex-post distribution of profits?

One can see that empirical testing of relational contracting has increased in the last 10 years. Contractual relationships provide an important link as to how parties in the construction industry drive the relationship to improve the quality, cost and time of a project. A caveat to this is that the exchange of relationships may seem to be not at arms-length, i.e. there is an impression of corruption or favouritism in awarding contracts (Ling et al., 2014; 2015). As mentioned in the case study, sometimes the contract is modified in such a way that it is unclear who is really benefiting from the contract.

Together with relational contracting, another research question was directed to the managing of risks in the contract through termination clauses. This research study found that when contracting unknown services or products, exit clauses are important, as they in effect allow the buyer to remain flexible in a fixed contract situation. If the services or products do not live up to expectations, the termination clause can be exercised.

The termination clauses and risk management may not improve the ex-post trade at ex-ante, but it allows the buyer to manage any incompleteness in the contract. Changes in the market can be brought into a long-term contract, and the termination clauses force the seller to renegotiate the contract with the buyer. Distribution of the surplus and/or risk is only improved at the renegotiation (Ariño et al., 2014).

A caveat to the risk-based decision is that loss adversity may drive inefficient long-term contracts, as the reference points used by the buyer may cause the contract and outcomes to be sticky, by not taking new information that could improve the efficiency ex-post into account (Halonen-Akatwijuka & Hart, 2016; Herweg et al., 2017).

The final research proposition focused on hybrid contracts being used in contract structuring. In both industries, the use of a fixed amount and variable quantity is present. The JBCC® does not allow for fixed contracts, and in the IT industry, the client's expectations are built based on the minimum value of the contract from experience. Both industries allow for a variation in the quantity unless the buyer specifically requests a fixed amount, which would depend on what the scope of the project is.

The incomplete contracts theory does not take into account hybrid contracts, hence business has found a way around the theoretical constructs of choosing between a

flexible and fixed contract. Empirical testing has moved away from contractual structures to behavioural norms and relational contracting.

The contract theory has moved away from incomplete contracts theory back to transaction cost economics, as per Williamson (1979; 1981). Academic and empirical studies on contracts, notably in construction, are being published on how to improve the efficiency of ex-post trade.

## 7.2 Implications for management

Almost all business transactions are conducted with contracts, which can be in the form of a written or verbal contract, and either fixed or flexible. Management are faced with many choices, including which one is better to use to cover the scope of the work. Contracts are either used for performance or for risk management (Wu, 1995).

This research paper covered termination clauses as a tool for managing incompleteness of contracts and changes to the market. Termination clauses are most useful in first generation contracts, which are contracts that are entered into for the first time, and for long-term contracts where the product may have a short lifespan such as technology.

A fundamental learning for management in this research paper is that specialised knowledge and experience is needed to draft an efficient contract; the use of external legal advisors may not be sufficient to mitigate all the possible pitfalls of a project. The learning curve from mistakes and errors made in the past is steep from first- to third-generation contracts, thus where knowledge or experience is lacking, an industry expert should be sought to assist in the drafting of a contract.

Of note is that a new area is being explored in relational contracting, thus management will have to learn how to incorporate contractual, incomplete contracts and contractual relationship theories in a holistic business environment. A contractual relationship involves more than what is written on paper, as it is able to compensate for the incompleteness of contracts.

Contracts need not be volumes of words and paper; simple contracts can be used to capture the nature and scope of the work. Clients have an expectation that if they are paying for lawyers to draft a contract, there should be a thick document instead of a few pages. Simple contracts can be drafted with minimal pages as long as the intention is

correctly captured in the document and is understood by both parties. These are the agile contracts discussed in the research study.

### 7.3 Limitations of the research

This research study was limited to companies within the construction and IT services industries. Other industries could be researched to provide a more in-depth look into the incompleteness of information and contracts.

The questions used in the second round of interviews were exploratory and only covered certain issues and pertinent points of interest from the first round. The questions may have been biased towards uncovering an area of interest for this research study, and there may also have been other related areas that were not explored further due to the resources available at the time of this research.

Actual contracts were also not used due to the confidentiality and sensitive nature of proprietary information. The only supporting documents used were contract templates from JBCC® and participants.

Models created by authors from various literature readings to explore the calculated levels of risks, the values of contract adjustments and shading were not carried out, as the study was restricted to collecting only qualitative data for analysis. More resources of data and time would have been needed to obtain these figures from the construction and IT industries. More valuable information about this research could have been obtained with actual transaction values.

The interviews were also restricted to those participants who were willing to be interviewed. Other actors in the case study beyond the core persons were not interviewed for further input into the case studies.

Finally, there may be a limitation due to the lack of specialised knowledge and experience of the researcher in the selected field of study, which could have led to bias.

### 7.4 Suggestions for future research

Incomplete contracts should not only be seen as contracts between independent parties, as contracts also exist between departments within a company and between related



companies. Grossman and Hart's (1986) property rights theory laid the foundation for firms to decide whether to source the service or product in-house versus outsourcing. Further research can be explored on how business units and related companies contract with each other. In the interviews conducted, a problem was alluded to in the form of being unable to contractually bind different business units, as they all form part of a group company. Measuring and contracting performance is also a challenge to define in these contracts. It would be interesting to understand how companies contract services internally. This question was discussed by Aghion, Bloom and Van Reenen (2013) in their paper, *Incomplete contracts and the internal organization of firms*.

The IT industry requires short-term contracts to be able to adjust to changing circumstances; in theory, shorter-term contracts and flexibility provide a higher amount of shading, but further research is needed in technology-based contracts. The assumption that shorter-term contracts and flexibility have higher amounts of shading may be repudiated. With further research, guidance could be developed on how a party should draft their contracts in this industry based on best practices. These best practices may include the use of agile contracts, which are seen to be the best and most efficient, but they are not without their issues.

As technology evolves, the boundaries of contracts are being pushed further outwards. The introduction of blockchain, which is a distributed ledger recorded in a chronological order, is stored on the internet by many computers, and cloud services pose interesting questions as to property rights and control, including how information is shared amongst various parties. The distribution of a contract to various parties may contribute to the contract being more complete, as inputs and changes are visible to all within the chain.

An area that was not explored in this research study was contracts between the employer and the professional team, which could include either performance-based remuneration or open-ended clauses.

It was found that industry specific knowledge and experience helped mitigate some of the risks in incomplete contracts ex-ante. Future studies can be conducted to explore a possible correlation between the years of specialised practical knowledge and the reduction of risks, whilst also improving the efficiency of distributing resources ex-post.

Theoretical and empirical studies are being conducted into methods to distribute the ex-post profits and risks more efficiently. Worthmann et al. (2016) and Kusterer and Schmitz (2017) suggested the use of incentives and schemes to enhance the supply chain, however the area of incentives has not been explored in contractual settings. Contracts

are mainly driven by either performance or risk management; there has been no focus on using incentives to reduce transactional costs ex-post.

Contracts are critical for business, which is why the last ten years of research has seen increasing numbers of empirical tests being conducted to understand actual business transactions, human behaviour and relationships. There is still a lot more theory to be tested, however globalisation should allow for even more data to be gathered and analysed.

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## Appendices

### Appendix 1: Literature summary table

| Year | Author                     | Title of journal article   | Code | Summary of contribution  |
|------|----------------------------|--|------|--|
| 1937 | Coase R.H.                 | The Nature of the Firm.  | TC   | Market efficiency and the role of the firm.  |
| 1971 | Williamson O.E.            | The vertical integration of production: Market failure considerations.   | TC   | Vertical integration of companies.   |
| 1971 | Masten S.E. & Saussier S   | Econometrics of contracts: An assessment of developments in empirical literature on contracting.                         | TC   | Theoretical contribution to agency theory and transaction cost economics.                        |
| 1979 | Williamson O.E.            | Transaction cost economics: The governance of contractual relations.   | TC   | Establishment of transaction cost economics (TCE).   |
| 1986 | Grossman S.J. & Hart. O    | The cost and benefits of ownership: A theory of vertical and lateral integration.  | TC   | Ownership rights.  |
| 1987 | Joskow P. L.               | Contract duration and relationship-specific investments: Empirical evidence from coal markets.                           | EC   | Empirical testing of specific relationships in the investment of energy plants and coal mines.   |
| 1992 | Spier K.E.                 | Incomplete contracts and signalling.   | TC   | Principal agent model and asymmetrical information. TCE ex-ante and ex-post                      |
| 1994 | Lyons. B.R.                | Contract and specific investments: An empirical test of transaction cost theory.   | EC   | Empirical testing of specific assets and flexible contracts.                                     |
| 1995 | Allen D.W & Lueck D.       | Risk preference and the economics of contracts.  | TC   | Difficulties in measuring risks and development of risk models. Risk preferences of individuals. |
| 1995 | Wu S.                      | The economics of contracts for non-economists.   | TC   | Contracting for either performance or risk management.   |
| 1996 | Crocker K.J. & Masten S.E. | Regulation and administrated contracts revised: Lessons from transactional-cost economics for public utility regulation. | TC   | Vertical integration and transaction costs in specialized investments.                           |
| 2000 | Triantis G.G.              | Unforeseen contingencies. Risk allocation in contracts.  | TC   | Courts may promote efficient risk allocations ex-post.   |

| Year | Author                                     | Title of journal article  | Code | Summary of contribution  |
|------|--|---|------|--|
| 2008 | Hart O. & Moore J.                         | Contracts as reference points.  | TC   | Introduction of reference points and behavioural studies.                                  |
| 2009 | Fehr E., Hart O. & Zehnder C.              | Contracts, reference points and competition – behavioural effects of fundamental transformation.  | EC   | Empirical testing within a competitive environment. Fixed vs flexible contracts.           |
| 2011 | Fehr E., Hart O. & Zehnder C.              | Contracts as reference points – experimental evidence.  | EC   | Empirical testing with reference points and rigid contracts.                               |
| 2011 | Aghion P., Holden R. & Perspectives E.     | Incomplete contracts and the theory of the firm: What have we learned of the past 25 years?   | TC   | The second generation of incomplete contracts.   |
| 2011 | Hoppe E.I. & Schmitz P.W.                  | Can contracts solve the hold-up problem? Experimental evidence.   | EC   | Empirical testing with various options on contracts.                                       |
| 2011 | Weber L., Mayer K.J & Macher J.T.          | An analysis of extendibility and early termination provisions: The importance of framing duration safeguards.                                 | TC   | Contracts can function as a protection against hazards and a relationship management tool. |
| 2013 | Dagdeviren H. & Robertson S.A.             | A critical assessment of the incomplete contracts theory for private participation in public services: The case of the water sector in Ghana. | TC   | Public versus private ownership with reference to public services.                         |
| 2013 | Halonen-Akatwijuka M. & Hart O.            | More is less: Why parties may deliberately write incomplete contracts.  | TC   | Incomplete contracts versus contingent contracts.  |
| 2013 | Jensen P.H., Palangkaraya A. & Webster E.  | Trust, incomplete contracts and the market for technology.  | EC   | Empirical testing for imperfect property rights and unobservable quality.                  |
| 2014 | Ariño A., Reuer J.J., Mayer K.J. & Jané J. | Contracts, negotiation, and learning: An examination of termination provisions.   | EC   | Empirical testing for different types of termination clauses.                              |
| 2014 | Fehr E., Hart O. & Zehnder C.              | How do informal agreements and renegotiation shape contractual reference points?  | EC   | Empirical testing with Informal agreements and ex-post renegotiation or revision.          |
| 2014 | Koszegi B.                                 | Behavioural contract theory.  | TC   | Psychology and economics.  |

| Year | Author   | Title of journal article   | Code | Summary of contribution  |
|------|--|--|------|--|
| 2014 | Ling F.Y., Ong S.Y., Ke Y., Wang S. & Zou P.                     | Drivers and barriers to adopting relational contracting practices in public projects: Comparative study of Beijing and Sydney. | EC   | Empirical testing for relational contracting in construction projects.                   |
| 2014 | Chang.C.Y.   | Principal-agent model of risk allocation in construction contracts and its critique.   | TC   | Modelling of an incentive scheme to improve ex-post efficiency.                          |
| 2014 | Miller D.P.  | Subcontracting and competitive bidding on incomplete procurement contracts.  | EC   | Empirical testing of ex-post construction cost revisions.                                |
| 2014 | Roberts M.R.   | The role of dynamic renegotiation and asymmetrical information in financial contracting.                                       | EC   | Empirical testing for complete contracts with a renegotiating mechanism.                 |
| 2014 | Schepker D.J., Oh W., Martynov A. & Poppo L.                     | The many futures of contracts.   | TC   | Contract structures are moving towards cooperative strategies.                           |
| 2014 | Schmidt K. & Herweg F.   | Loss aversion and inefficient renegotiation.   | TC   | Optimal design of long-term contracts.   |
| 2015 | Bartling B. & Schmidt K.   | Reference points, social norms and fairness in contract renegotiations.  | EC   | Empirical testing in contract renegotiations and bargaining situations.                  |
| 2015 | Halonen-Akatwijuka M. & Hart O.                                  | Short-term, long-term and continuing contracts.  | TC   | Regulating of relationships through continuing contracts.                                |
| 2015 | Iyer B.R. & Schoar A.  | Ex post (In)efficiency negotiation and breakdown of trade.   | EC   | Empirical testing of actual business transactions in bargaining and breakdown of trade.  |
| 2015 | Ling F.Y., Ke Y., Kumaraswamy M.M. & Wang S.                     | Key relational contracting practices affecting performance of public construction projects in China.                           | EC   | Empirical testing of relational contracts in China for performance and adoption rate.    |
| 2016 | Worthmann K., Proch M., Braun. P., Schlüchtermann J. & Pannek J. | Towards dynamic contract extension in supplier development.  | TC   | Proposal of a receding horizon control scheme to enhance the supply chain.               |
| 2016 | Halonen-Akatwijuka M. & Hart O.                                  | Continuing contracts   | TC   | Previous contract as a reference point and reduction of renegotiating costs.             |
| 2016 | Brandts J., Charness G. & Ellman M.                              | Let's talk: How communication affects contract design.   | TC   | Communication and its effects on prices, efficiency and rejection of proposed contracts. |

| Year | Author                          | Title of journal article  | Code | Summary of contribution   |
|------|---------------------------------|---|------|---|
| 2017 | Herz H. & Taubinsky D.          | What makes a price fair? An experimental study of transaction experience and endogenous fairness views. | EC   | Empirical testing to isolate the differential impact of pure observation versus the experience of payoff-relevant outcomes. |
| 2017 | Hart O.                         | Incomplete contracts and control  | TC   | Hart expands the theory of incomplete contracts in other possible areas for further studies.                                |
| 2017 | Herweg F., Karle H. & Muller D. | Incomplete contracting, renegotiation and expectation based loss aversion.                              | TC   | Renegotiations and expectations for long-term contracts.  |
| 2017 | Kusterer D.J. & Schmitz P.W.    | The management of innovation: Experimental evidence   | EC   | Empirical testing with ownership structures and division of surplus.  |
| 2017 | Schmidt.K.                      | Contributions of Oliver Hart and Bengt Holmström to contract theory.                                    | TC   | A summary of the contributions by the Nobel Prize winners in 2016.  |

(Codes: TC – Theoretical Contribution; EC – Empirical Contribution)

## Appendix 2: Questionnaire

### Appendix 2.1 First round interview questionnaire:

#### **Incomplete contracts, references and hold-ups – behavioural aspects, social norms from contracting parties during engagements**

#### QUESTIONNAIRE

Researcher: Fei Carlo Tong  
Student number: 97019624  
Contact number: 083 357 3268  
Email: [carlo.f.tong@gmail.com](mailto:carlo.f.tong@gmail.com)

#### Introduction and checklist

- 1 Introduction and a brief explanation of the research question.
- 2 Consent forms and explanation that the interview is voluntary without penalty.
- 3 Permission obtained to use a recording device.
- 4 Address any concerns the interviewer might have before beginning the interview.

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#### A - Background into the operations and understanding of contracts

- A1 What services and/or products do you provide?
- A2 What types of contracts do you enter into for your business?
- A3 How long do these contracts run for?
- A4 Are these contracts renegotiated or are they automatically rolled over?
- A5 How often are you engaged in the negotiations and drafting of contracts?  
Which contracts would you identify in your firm, that are incomplete (as explained in the
- A6 introduction) and most commonly found in your business?
- A7 Who drafts the contracts?  
Are you/they guided in the industry on how your contracts should be
- A8 drafted?
- A9 Are your contracts referred to your attorneys for vetting?
- A10 How often do you review your contracts?

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#### B - Communications

|     |   |  |
|-----|---|--|
| B1  | How much time is spent on communications before the contract is drafted?                              |  |
| B2  | Are contracts drafted with the input from both parties?   |  |
| B3  | How often are the communications kept during the contractual period?                                  |  |
| B4  | Are communications minuted or recorded?   |  |
| B5  | During the contractual period, do you monitor the quality and progress of the contract?               |  |
| B6  | Do you use verbal agreements to cover any aspects that are missing from the contract?                 |  |
| B7  | Are any expectations placed outside of the contract in terms of delivery and services to be received? |  |
| B8  | In repeated contracts, does the communication and negotiation occur more or less frequently?          |  |
| B9  | Have you negotiated contracts with parties in different provinces or countries?                       |  |
| B10 | Have noted any differences in terms of the contracts from question B8?                                |  |

**C - Contract preferences**

|     |   |   |
|-----|---|---|
| C1  | Do you use a fixed, flexible or hybrid contract?  |   |
| C2  | Do you prefer longer or shorter-term contracts, and why?  |   |
| C3  | If your contracts are fixed, how are changes in the circumstances accounted for?                          |   |
| C4  | How do you determine the terms and contents of the contracts?   |   |
| C5  | Are there any built risks built into the margins for potential contingencies?                             |   |
| C6  | Do you allow for the renegotiation of the contract?   |   |
| C7  | Do you refer to previous contracts as a guideline in drafted new contracts?                               |   |
| C8  | Do you use any other reference points in drafted your new contracts?                                      |   |
| C9  | How do you account for the contract revenue in the annual financial statements? E.g. IFRS15               | - |
| C10 | Do you account for any potential losses due to the incompleteness of the contracts? E.g. project overruns |   |

**D - Conditions for hold-ups**

|    |  |  |
|----|--|--|
| D1 | Do you own the assets required to deliver the service or product?                                  |  |
| D2 | Are these assets dedicated to the product /service to the customer, or can they be used elsewhere? |  |
| D3 | Should a dispute arise, how do you deal with it?   |  |
| D4 | Should the resolution not be acceptable, what other options would you explore?                     |  |
| D5 | What changes would you make, should the contract be renegotiated or renewed?                       |  |

|  |  |  |
|--|--|--|
| D6                                       | If you could not make any changes, would you still enter into the contract?                        |  |
| D7                                       | As a percentage of the value of the contract, how much risks do you bear?                          |  |
| D8                                       | As a percentage of the value of the contract, how much risks do you think they bear?               |  |
| D9                                       | Are you able to insure your risks?   |  |
| D10                                      | Have you encountered any contractual problems, that needed to be resolved by court or arbitration? |  |
| <b>E - Additional factors to explore</b> |  |  |

|     |  |  |
|-----|--|--|
| E1  | What other factors concern you the most, that is not addressed above?  |  |
| E2  | What changes would you make to ensure an equitable and fair contract is entered?                                     |  |
| E3  | Is your firm or company vertically integrated with the supplier/customer?  |  |
| E4  | What proportion of your total revenue is bound by contracts?   |  |
| E5  | What impact do you think contracts have on your business?  |  |
| E6  | What is your view, on contracts as a whole in the running of the operations?   |  |
| E7  | Are there any constraints in drafting the terms of the contract?<br>(These could be competition and/or legislation.) |  |
| E8  | In delivering your service or product, is your contract contingent on another contract? E.g. supplier                |  |
| E9  | Are there any price adjustment mechanisms in your contracts?   |  |
| E10 | Have you considered any reputational risks during the contract negotiations and execution?                           |  |

## **Appendix 2.2 Second round interview questionnaire:**

### **GIBS Question Sheet**

#### **Interview with the Architect:**

1. What is the role of the architect in the construction process?
2. How does the construction process start, could you explain the process flow starting from the client's request up to the point of the tender process?
3. How is the communication flow between yourself, QS, PM and client before the contract and tender are drafted? Who determines the input into the contract the goes out with the tender?
4. Which contract types or standards do you prefer to follow?
5. If a standard contract is chosen, e.g. JBCC®, why are changes being made to the original contract?
6. Who finally chooses the contractor and sub-contractor after the tender process is closed?
7. Who negotiates with the contractors and nominated sub-contractors on behalf of the client?
8. During the construction process, is it common for changes to be made to the plans, construction and contracts? How are these changes recorded to ensure all parties are informed and are in agreement?
9. If a contract is renegotiated or a change request is made by the contractor, does it require your approval?
10. Where do you find the most challenges during the construction process?
11. If you could please tell me if possible, why do most construction projects have delays and run over budget?



## **GIBS Question Sheet**

### **Interview with the Employer Banker for developments:**

1. What is the process to grant a loan to a developer of a construction contract?
2. What documents do you require for the loan to be approved?
3. Do you deal with any of the applicants engineering team?
4. Does the bank prefer a certain building contract guideline?
5. If there are any changes to the building plans or contracts, are there any consequences to the original loan?
6. Are there any dates placed by the bank in terms of how long the build process must be completed in?
7. Is there any constant communication between the lender or the engineering team on the progress of the construction?
8. Should the project overrun the original projections, are there any extensions to the loans granted?
9. What securities are in place to ensure the construction process is completed and a viable asset is built?
10. Have you encountered any loans whereby the construction process has not gone according to plan, and would you have any details as to what happened?

## **GIBS Question Sheet**

### **Interview with the Business Unit:**

#### **The definition of “contracts” for the procurement of IT services are:**

- **Request for proposal**
- **Master agreement**
- **Statement of works**
- **Service level agreement**
- **Other documents, e.g. letter of appointment/variation agreement/change notes**
- **Progress reports/sign-off reports**

1. What is your role in the procurement of IT needs within the organization?
2. Which contract(s) above do you use to monitor the work of the supplier?
3. How often do you engage with the supplier during the execution of service/project?
4. If there any changes needed to the service/project, how is the process carried out?
5. Where do you find the most challenges during the procurement process (before, during and after?)
6. Does the final product/service meet the needs of the business unit? If not, where do you think the differences stem from?

## **GIBS Question Sheet**

### **Interview with the IT Legal advisor:**

#### **The definition of “contracts” for the procurement of IT services are:**

- **Master agreement**
  - **Statement of works**
  - **Service level agreement**
  - **Other documents, e.g. letter of appointment**
1. What is your role in the procurement of IT needs within the organization?
  2. Is there a strategy and a succession strategy in the contract?
  3. Do the contracts apply standard agreements or specialized agreements?
  4. Do you and the legal advisory team have a holistic view of IT in the business unit, company and industry?
  5. Do you or the legal advisory team utilize any business analysis or advisors? How do you and the legal advisory department maintain its knowledge of the changes in the IT industry?
  6. Do you and the legal advisory team have a holistic view of the agreement and mitigation of the risks?
  7. In the drafting of the contracts, which do you consider the most important?
    - a. Client interest
    - b. Law principles
    - c. Other (please explain)
  8. Are the contracts clearly defined or open-ended?
  9. What challenges have you found regarding IT contracts and agreements in the procurement of IT services?

## **GIBS Question Sheet**

### **Interview with the project manager:**

1. What is your primary objective as the project manager?
2. Could you briefly explain the process of how the contract is put together before it goes out on the tender?
3. Who do the negotiations in terms of the contract with the main and nominated contractors? Do you utilize any contract strategies?
4. Which building guidelines do you prefer to follow?
5. If there are changes made to the guidelines, why are they done so?
6. If there are any changes to the building plans or contracts, how are they recorded?
7. Could you identify where most project delays come from?
8. Do you feel that the primary construction attorneys or negotiators are better prepared during contract negotiations?
9. Do you consult with your attorneys to verify the agreement and/or to implement any counter strategies?
10. Which part of the construction process do you find the most challenging?

## **GIBS Question Sheet**

### **Interview with the sub-contractor and nominated sub-contractor:**

1. Have you ever been contracted as a sub-contractor or nominated sub-contractor, or both?
2. Is there any difference between the two types of relationships when working with the main contractor?
3. Which type of contract agreement have you signed with the main contractor? And do you sign another contract with the main client?
4. How often do you communicate with main contractor and client (if nominated) during the building process?
5. If there any changes made during the construction process, how are those changes recorded or made to the contracts?
6. Do you own all the assets required to conduct the construction process and are these specialized to the particular customer or can they be used elsewhere?
7. Are your contracts fixed or flexible and are you able to renegotiate your contract during a construction process?
8. Do you have any concerns from a sub-contractor level on the contracts you are bound to?
9. Where do you find the most challenges during the construction process?
10. If you could please tell me if possible, why do most construction projects run over budget?

## Appendix 3: Ethical clearance approval

### Appendix 3.1: Ethical clearance for the first round of interviews.



06 July 2017

Carlo Tong

Dear Carlo,

*Please be advised that your application for Ethical Clearance has been approved.*

*You are therefore allowed to continue collecting your data.*

*We wish you everything of the best for the rest of the project.*

*Kind Regards*

GIBS MBA Research Ethical Clearance Committee

Appendix 3.2: Ethical clearance for the second round of interviews.

**Gordon  
Institute  
of Business  
Science**  
University  
of Pretoria

17 August 2017

Carlo Tong

Dear Carlo,

*Please be advised that your application for Ethical Clearance has been approved.*

*You are therefore allowed to continue collecting your data.*

*We wish you everything of the best for the rest of the project.*

*Kind Regards*

GIBS MBA Research Ethical Clearance Committee

## Appendix 4: Consent form - Company

21<sup>st</sup> June 2017

Dear Sir/Madam,

I am conducting research on behavioural aspects and social norms from contracting parties during an engagement. For us to understand how contracting parties respond to incomplete contracts and transactions costs, I kindly request your permission to interview a sales executive and/or a key account manager.

To explain further about our research, contracts in general are never complete, there may be clauses and/or events that occur subsequently in which parties would have to renegotiate the contract terms. Should the contract not be renegotiated, what alternatives are there for the parties to resolve the changes.

The other area we are researching into are transactions costs, which could be in the form of an opportunity and/or withholding costs. In theory, there are other contract costs which we would like to explore with empirical evidence from actual transactions.

Should any contracts be voluntarily disclosed, no copies of such shall be made. They may only be asked for verification and understanding of the research questions during the interview.

**Their participation is voluntary, and they can withdraw at any time without penalty.** Of course, all data will be reported anonymously. If you have any concerns, please contact my supervisor or me.

Our details are provided below:

Researcher name: Fei Carlo Tong  
Email: [carlo.f.tong@gmail.com](mailto:carlo.f.tong@gmail.com)  
Phone: 083 357 3268

Research supervisor: Mike Holland  
Email: [mholland@pricemetrics.co.za](mailto:mholland@pricemetrics.co.za)  
Phone: 082 495 1283

Signature of participant: \_\_\_\_\_

Date: \_\_\_\_\_

Signature of researcher: \_\_\_\_\_

Date: \_\_\_\_\_



## Appendix 5: Consent form – Individual

21<sup>st</sup> June 2017

Dear Sir/Madam,

I am conducting research on behavioural aspects and social norms from contracting parties during an engagement. Our interview is expected to last about an hour, and will help us understand how contracting parties respond to incomplete contracts and transactions costs.

To explain further about our research, contracts in general are never complete, there may be clauses and/or events that occur subsequently in which parties would have to renegotiate the contract terms. Should the contract not be renegotiated, what alternatives are there for the parties to resolve the changes.

The other area we are researching into are transactions costs, which could be in the form of an opportunity and/or withholding costs. In theory, there are other contract costs which we would like to explore with empirical evidence from actual transactions.

Should any contracts be voluntarily disclosed, no copies of such shall be made. They may only be asked for verification and understanding of the research questions during the interview.

**Your participation is voluntary, and you can withdraw at any time without penalty.** Of course, all data will be reported anonymously. If you have any concerns, please contact my supervisor or me.

Our details are provided below:

Researcher name: Fei Carlo Tong  
Email: [carlo.f.tong@gmail.com](mailto:carlo.f.tong@gmail.com)  
Phone: 083 357 3268

Research supervisor: Mike Holland  
Email: [mholland@pricemetrics.co.za](mailto:mholland@pricemetrics.co.za)  
Phone: 082 495 1283

Signature of participant: \_\_\_\_\_

Date: \_\_\_\_\_

Signature of researcher: \_\_\_\_\_

Date: \_\_\_\_\_