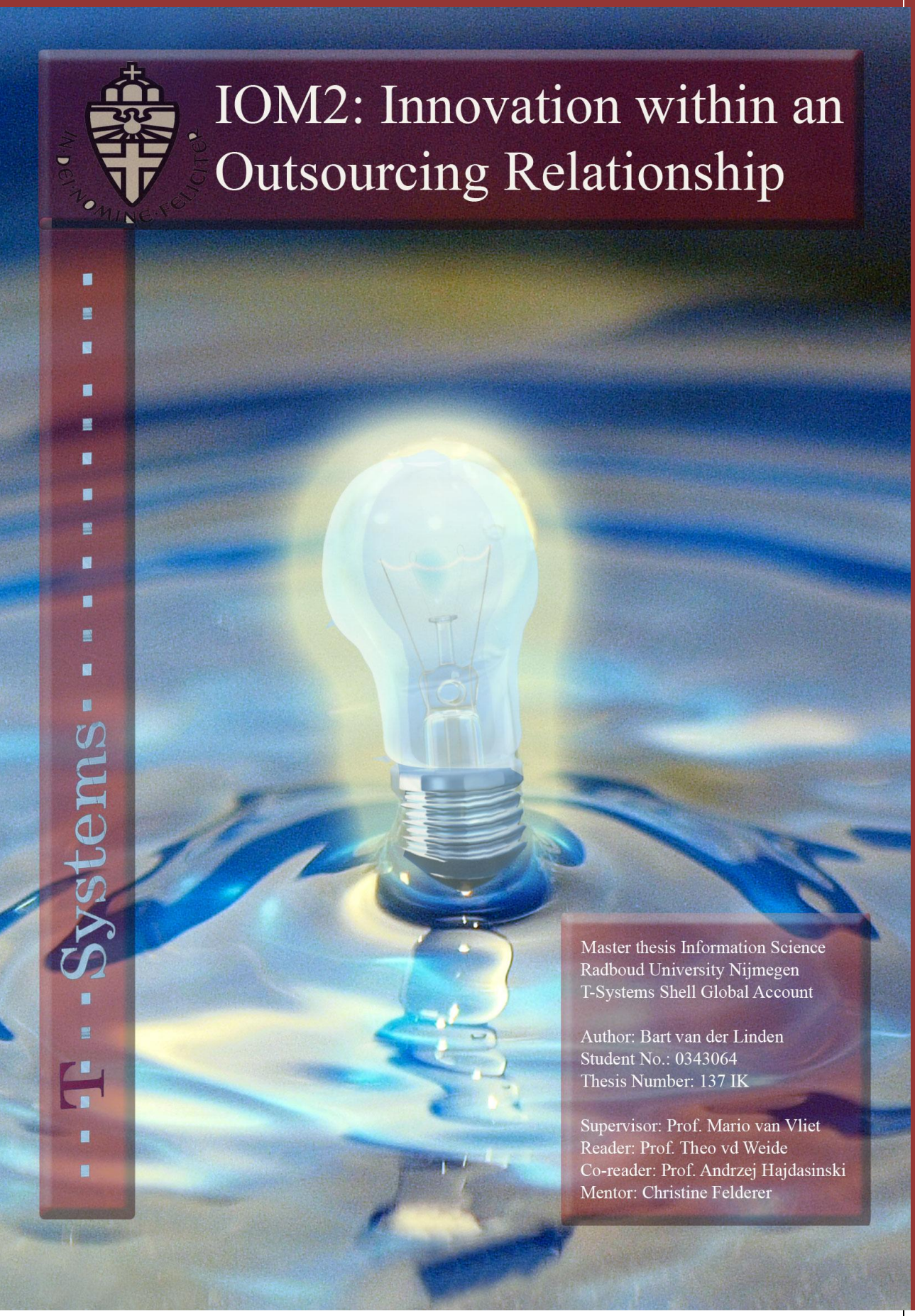
IOM2: Innovation within an Outsourcing Relationship



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Executive summary

This research is performed at T-Systems Shell Global Account for the masters of Information Science, Radboud University Nijmegen. A three step method is developed for driving and managing innovation within an outsourcing relationship. furthermore, the scope of the thesis concerns the transformation phase of the outsourcing relationship from both the supplier's perspective and client's perspective. The first step involved defining the term outsourcing in detail using de re and de dicto necessity. This approach resulted in a number of outsourcing characteristics as well as a new definition of outsourcing. The second step concerns defining the term innovation and again a number characteristics were identified to describe the term in detail. The scope for innovation can be set in detail and linked to the outsourcing characteristics. The third step includes the adoption of the maturity model for innovation within an outsourcing relationship. This model consists of best practices both from the innovation and the outsourcing literature and is built during this research. Moreover, best practices are derived from observations and interviews during the internship at T-Systems Shell Global Account. The model build is called Innovation within an Outsourcing relationship Maturity Model (IOM2).

The maturity model is checked by validation and verification. Verification is done by using e-Sourcing Capability Model as a reference, by showing IOM2 to and discussion IOM2 with numerous domain experts, both in the area of outsourcing and innovation. Validation was done by two using cases. The first case is a relationship between a big oil company and a global hosting and storage company. The second case concerns the outsourcing relationship between a global food and body care company and global software development and consultancy company.

Main findings of this research are that management of innovation within outsourcing relationship is still very poor and immature. Furthermore, relationships do need time to mature in order to start innovation. If a large ITO contract is involved, standard services need to be delivered properly before innovation can take place and innovation can be implemented only after the transition phase, in the transformation phase. Last but not least, trust is a critical success factor for leveraging innovation within the outsourcing relationship.

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1 Introduction

Since the beginning of the eighties of the last century, IT-outsourcing has become widely adopted. The first wave of long term outsourcing contracts have been passed, whereby the second wave of outsourcing contracts more focussed on shorter terms. Furthermore, the first outsourcing contracts were merely focussed on cost reduction. Outsourcing looked somewhat similar to procurement and the relationships were roughly based on a master slave relationship. Nowadays, this relationship characteristic has changed. Partnerships are preferred over contract profitability, because partnerships create more innovation opportunities. Raison d'être of innovation is competitive advantage and that is why innovation nowadays is a serious quest within outsourcing relationships. Therefore, best practices will help regarding this quest and if these practices are modelled into a maturity model, a strategy can be created.

Therefore, the main research question of this thesis is:

How to create a maturity model regarding innovation within IT outsourcing relationships, such that relevant stakeholders should benefit?

This thesis addresses innovation within an outsourcing relationship. More specific, the scope of the thesis concerns the transformation phase of the outsourcing relationship from the supplier's perspective and the client's perspective. The research for this thesis was conducted at T-Systems Shell Global Account and it resulted in a three step approach finding an optimised configuration to manage and boost innovation within outsourcing relationships. The first step is to set the scope of outsourcing. Therefore eleven characteristics are extracted from the outsourcing literature. All the characteristics have different values, and these have been mapped even so. For instance, the characteristic 'type of outsourcing' has three values and these are IT Outsourcing (ITO), Business Process Outsourcing (BPO) and Knowledge Process Outsourcing (KPO).
The second step is about defining the scope of innovation within an outsourcing relationship. Therefore, a proper definition of innovation has to be given. To describe the term innovation, sixteen characteristics are identified. Additional, in appendix E the questionnaires are added that have been used to define the scope of outsourcing as well as the scope of innovation within an outsourcing relationship. Step three is the usage of the maturity model including best practices. This model is called the Innovation within an Outsourcing relationship Maturity Model (IOM2). Twenty-four practices are described using five maturity levels and seven capability areas. Each maturity level has a set of criteria which need to be met in order to obtain a particular maturity level. By clarifying which maturity level needs to be met, a business strategy as well as a roadmap can be derived from steps one to three. The (best) practices are taken from the literature of the field of innovation- and outsourcing studies and from interviewing several managers in the T-Systems Shell relationship.

This chapter is build up as follows. First, an overview is given of the organisation and its outsourcing relationship where this research was conducted. Second, the relevance is given. Last the theoretical framework is described.

1.1 Practical background

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1.2 Relevance

The term innovation is quite a buzzword these days. And because of that, many definitions are used resulting in different opinions. Hence, innovation as a concept is hard to grasp and that is why a clear research on the topic is needed in order to use the word without ambiguity. Several theories and practices have to be addressed to secure clearness about innovation. This is done by defining characteristics of innovation. By having a set of characteristics of innovation the term can be described in detail. Also, characteristics for outsourcing can also be derived from scientific literature. Consequently, the scope of an outsourcing relationship can be defined in detail. Combining the characteristics of innovation and outsourcing, the scope can be set for innovation within an outsourcing relationship. Concerning innovation within an outsourcing relationship, only a few scientific papers have been published on that topic (Naghavi & Ottaviano, 2010: Peukert, 2010; Weeks & Feeny, 2008; Windrum et al, 2008; Maskell et al, 2006). However, none of these papers describe methods or techniques to manage innovation within an outsourcing relationship or boost innovation within an outsourcing relationship. For this reason the subject innovation within an outsourcing relationship was chosen for this master thesis.

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2 Research Method

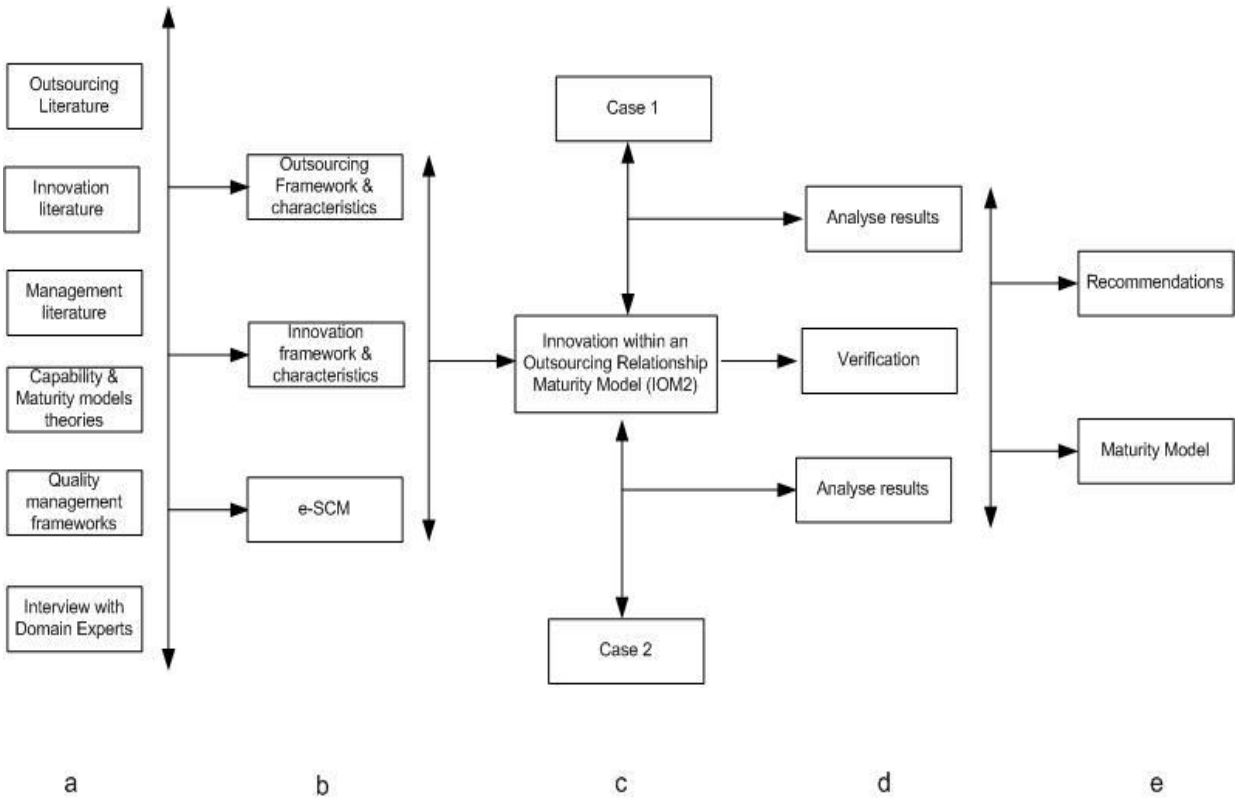
As described in chapter one, this research is divided in three steps. The first step is to define the scope for the term outsourcing (chapter three). The second step is to find the scope of innovation within an outsourcing relationship, by finding characteristics of innovation (chapter four). The third step is to build the innovation within an outsourcing relationship maturity model (IOM2), verify and validate IOM2. The purpose of IOM2 is to manage innovations within an outsourcing relationship as well as set an innovation strategy and an innovation roadmap.

To describe the research model in detail, the book of Doorewaard and Verschuren is used, titled "Het Ontwerpen van een Onderzoek" (Verschuren & Doorewaard, 2000). Six building blocks for a research model are described by the authors. The first one is to give the purpose or goal of the research. The second building block is to give a description of the research objective. The third building block is to describe the kind of research approach. The fourth building block is to find the ingredients of the research, such as scientific literature and interviews with domain experts. The fifth building block is to visualise the research model. The sixth and last building block is to define a textual representation of the visualisation.

The goal of this research is to provide a client and supplier within outsourcing relationship (best) practices as well as a roadmap for managing innovation within an outsourcing relationship. In this thesis, the objective is to improve innovation within an outsourcing relationship. This particular research is the qualitative research in order create a usable model. The variables are listed below and described in detail in the next paragraph:

Variable	**Theoretical framework**
Innovation within an outsourcing relationship	Theories about innovation
Outsourcing characteristics during innovations	Theories about outsourcing
Leadership	Theories about leadership and organisational management
Managing knowledge within an outsourcing relationship	Theory about knowledge management
Agreements made by the supplier and the client	Theories about Contract management
Managing relationships	Theories about relationship management
Level of trust within an outsourcing relationship	Theories about trust management and outsourcing management
Culture management within and between organisations	Theories about culture management

The visualisation of the research model is portrayed below:



The research model is described as follows:

a) A study based on scientific outsourcing management literature, organisational innovation literature, knowledge management literature, trust management literature, Leadership literature, Relationship Management literature and Contract Management literature, capability and maturity models as well as interviews with domain experts **b)** resulting in an outsourcing framework, an innovation framework and the usage of the eSourcing Capability Model, **c)** whereby two practical case studies will validate the Innovation within an Outsourcing Maturity Model (IOM2). **d)** Verification of the model is done by conducting interviews with domain experts as well as a comparison of the evaluations results in **e)** a maturity model to measure the maturity of an outsourcing relationship and recommendations for the organisations involved in the case studies.

This research model creates several research sub questions. These questions are:

a.1) What are the most suitable innovation characteristics within an outsourcing relationship? (describing)
a.2) What are the most suitable outsourcing characteristics concerning innovations? (describing)
a.3) What are the capability areas concerning innovation within an outsourcing? (describing)

b.1) What are the characteristics and best practices for outsourcing? (describing)
b.2) What are the characteristics and best practices for innovation? (describing)
b.3) Which maturity and/or capability models can be used as the foundation for IOM2? (describing)

c.1) What are the criteria for the cases? (describing)
c.2) What is the current mode of operations of the supplier of the cases?
c.3) What is the current mode of operations of the client concerning innovation within an outsourcing relationship (describing)
c.4) What is the desired future mode of operation of the client concerning innovation within an outsourcing relationship? (describing)
c.5) Who are the stakeholders considering the cases? (describing)

d.1) What are the main differences between the two cases? (describing)
d.2) What are the main similarities between the two cases? (describing)
d.3) What are the methods for verifying the maturity model? (describing)
d.4) What are the main recommendations considering the cases? (describing)

e.2) In what way does the maturity model IOM2 is a workable maturity model? (evaluative)
e.3) What are the main recommendations for the stakeholders of the cases? (evaluative)

2.1 Variables

Within this thesis, four types of variables can be distinguished, the independent-, the mediating-, the moderator- and the dependent variables. The practices are the *independent variables*. The practices are derived from scientific literature as well as preliminary interviews with domain experts. However, some specific areas are very important concerning innovation within an outsourcing relationship. These areas are defined within this thesis as capability areas. The capability areas are the *mediating variables*. The *dependent variables* are the maturity levels. In order to measure the maturity levels, measurement tools are needed. These measurement tools relate to the Total Quality Management theory. Hence, the measurement tools are the *moderator variables* of the thesis.

The mediating variables are listed below:

Mediating Variable: Capability Areas	**Theoretical framework**
Level of trust	Theories about trust and theories about trust with focus on outsourcing
Knowledge Management	Theories about knowledge management with focus on innovation & outsourcing
Innovation Management	Theories about Innovation Management with focus on (out)sourcing
Leadership	Theories about leadership with focus on

	innovation and (out)sourcing
Relationship management	Theories about relationship management with focus on innovation and outsourcing
Contract management	Theories about contract management with focus on innovation and outsourcing
Culture management	Theories about culture management with focus on innovation and outsourcing

The moderator variables are listed below:

Moderator Variable: Maturity level measurement tools	**Components**	**Theoretical framework**
Maturity level 2	Are the protocols, tools etc. in place = {yes, no}	Theories about capability areas, TQM and Six Sigma
Maturity level 3	Are the protocols, tools etc. being measured = {yes, no}	Theories about TQM and Six Sigma
Maturity level 4	Are the protocols, tools etc. being evaluated = {yes, no}	Theories about TQM and Six Sigma

The dependent variables are listed below:

Dependent variables: Maturity Levels	**Theoretical framework**
Level 1: Initial	e-SCM & CMMi
Level 2: Repeatable	e-SCM & CMMi
Level 3: Defined	e-SCM & CMMi
Level 4: Managed	e-SCM & CMMi
Level 5: Optimising	e-SCM & CMMi

2.2 Boundaries thesis

As described earlier, seven capability areas were selected to be most important concerning innovation within an outsourcing relationship. The criteria of practices two, three and four are described in general. The maturity levels have a standardised way of working. Concerning maturity level two, the development of a protocol, guidelines or other practices in general are described. Concerning level three, a system of measuring the performance is only described in general. Also, only two practical cases were used to validate the model. There was no in-depth quantitative research done using statistics.

2.3 Structure thesis

This thesis is structured as follows: in chapter two, a definition of outsourcing is given using de *re* and *de dicto* necessity (chapter three for explanation). This implies that a core definition is given as well as a set of characteristics to define the term outsourcing in detail. Defining the term of outsourcing is step one of a method for boosting and managing innovation within an outsourcing relationship. In chapter three, the term innovation is described in detail using de re and de ditto necessity. Again, several characteristics are given to define the term and scope of innovation. This chapter is step two of the method. chapter four describes the meta model of the Innovation within an Outsourcing relationship Maturity Model (IOM2). Within this chapter, the choices for building the model are described in detail. Chapter five describes the actual model, IOM2. In this chapter, all the practices are described in every capability area. Furthermore, the criteria are given for maturity level two, three and four. Chapter six is all about the verification of IOM2. chapter seven describes the validation of the model. The last chapter concerns the conclusions as well as future research.

3 Defining Outsourcing

The term outsourcing is defined by numerous scholars. A couple of definitions are "contracting out" (Kakabadse & Kakabadse, 2002), "the transfer of activities and processes previously conducted internally to an external party" (Ellram & Billington, 2001; Hätönen & Eriksson, 2009) and "the use of external resources to execute operational tasks" (Grover et al., 1994). A more specific form of outsourcing is Information Technology Outsourcing (ITO). ITO is the subcontracting of a part or all of the IT functions of a company to an external outsourcing vendor (Altinkemer et al, 1994). Another particular way of outsourcing is Business Process Outsourcing (BPO). BPO consists of the outsourcing of supply (moving, storing, making and buying of goods and services) and demand (customer selection, acquisition, retention and extension) management, and certain enterprise services (human resources, finance and regulatory, IT and facilities management) more specific form of outsourcing BPO (Scholl, 2003).

Combining the broad concept of outsourcing with the different definitions makes the term hard to grasp. A solution to the problem of not having a single definition, can be found in the philosophy. The de re and de dicto necessity is a way of explaining a concept and its roots and can be found in the ancient Greek philosophy. Two ways of explaining a term are used. De re necessity is a way of characterising a term unavoidable connected to that term. De dicto necessity concerns a set of characteristics which describe the object. For instance, if we wonder what the essence is of water[1], we need to create awareness of its characteristics. The term water relates to an odourless, tasteless liquid. However, more liquids are tasteless as well as odourless. If we want to know exactly what water is, the molecular structure of water has to be taken into account. In that case, water is H2O.

Hence, H2O is a de re necessity and enough to define water. The consequence of the de re necessity is that only if awareness of the object can create de re necessity. That is, H2O is an a posterio definition of water. De dicto necessity and hence a priori characteristics of water can be used to relate to water. In this case, the odourless and tasteless liquids represent the de dicto necessity.

[1] Example is taken from the site kantacademy.nl

Within this thesis, de re necessity and de dicto necessity are used to describe both outsourcing and innovation terms in detail. Reason is that the terms innovation and outsourcing are rather vague and need to be described in detail using characteristics in order to create awareness of the terms. Furthermore, step one and two of the model towards boosting and managing innovation within an outsourcing relationship are actually defining or scoping outsourcing and innovation. Concerning outsourcing, the de dicto necessity characteristics will create a scope of outsourcing which can be used as a foundation what type of outsourcing relationship is present. Within this thesis, de re necessity of outsourcing = contracting out + (a certain level of) governance.

Concerning de dicto necessity, eleven characteristics are defined within this chapter. These characteristics are: type of outsourcing, duration of outsourcing, strategy of outsourcing, complexity of outsourcing, history of outsourcing, reason for outsourcing, location of outsourcing, impact of outsourcing, relationship of outsourcing, essence of outsourcing and phase of outsourcing.

3.1 Type of outsourcing

Different types of outsourcing can be distinguished. These levels all have different features. These features are for instance the amount of knowledge present, or the impact on business processes, but also the duration of the contract, the intention of the contract or the level of trust[2]. The first type is IT outsourcing (ITO). This type of outsourcing relates to Information Technology (IT) which has been outsourced. The second level of outsourcing is Business Process Outsourcing (BPO). Concerning BPO, complete business processes are outsourced to another company. Examples of BPO are the outsourcing of payrolls or call-centres. The third level of outsourcing is Knowledge Process Outsourcing (KPO). Considering this level of outsourcing, parts of processes are outsourced which involves knowledge creation. Examples of KPO are business process improvement and the testing of new drugs in the pharmaceutical sector.

3.2 Duration of outsourcing

Duration of outsourcing concerns the duration of a contract signed by a vendor and supplier. Different durations of outsourcing contracts have different impacts on a company's performance (Jiang & Qureshi, 2005). More specific, a long term contract involves various risks assigned with short term contracts compared to long term contracts. Also, the impact of a long period of supplier's learning will significantly help the outsourcing relationship in a positive way (Li et al, 2008).

[2] Derived from the article: Outsourcing 3.0: KPO, Outsource Magazine 3-2009

Compared to long term contracts, two different types of short term contracts can be distinguished. The first one involves outsourcing contracts which are closely related to procurement activities. Commodity is purchased with limited or no outsourcing governance. The second one involves the short term contracts which are set up after a long term contract, or set up when a company is involved in a long-term relationship. These contracts focus more and more on the client's key activities and the type of outsourcing within these contracts is KPO.

3.3 Strategy of outsourcing

Insinga and Werle categorise the strategy of outsourcing into four categories (Insigna & Werle, 2000). The first one is the outsourcing of *commodity activities*. These activities are rather easy to outsource, because they are standardised and hence not able to become a source of competitive advantage. The second one described are outsourcing *basic activities*. These activities are part of the basic activities in its value chain, but are not particular sources of competitive advantage. The third one is outsourcing emerging activities. these activities have potential to become sources of competitive advantage. The fourth one and last one is outsourcing key activities. These activities are part of a companies core business and hence are a source of competitive advantage (Insigna & Werle, 2000).

When a new outsourcing deal is made, only commodity or basic activities are outsourced. However, when time passes and the outsourcing relationship matures, client's might start outsourcing emerging activities and even key activities to their supplier. This change in outsourcing strategy will also have an impact on the complexity of outsourcing. That is, outsourcing commodity is normally easier than outsourcing key activities.

3.4 Complexity of outsourcing

The level of complexity of the outsourced work will influence the level of uncertainty within an outsourcing relationship (Aubert et al, 2006). The higher the level of complexity, the higher the uncertainty and hence the higher the level of trust is needed within the relationship. Furthermore, complex activities will be difficult to describe accurately in an outsourcing contract (Williamson, 1985 (Aubert)). Therefore, innovation will be difficult to describe in a contract.

Several types of complexity are distinguished. *Low level complexity outsourcing* involves activities which are highly standardised. *Normal complexity outsourcing* involves work which is standardised, but changes over time and is dependent on changes in the market. *High complexity outsourcing involves* for instance innovation activities.

3.5 History of outsourcing

The history of outsourcing is about the development of the concept of outsourcing over time. When outsourcing is considered as contracting out, this activity is historically seen as a well known practice. For instance, the Romans already contracted out tax collection (Kakabadse & Kakabadse, 2002). However, until the late eighties of the last century outsourcing as a term was not yet established.

Three different phases within the history of outsourcing can be distinguished (Hätönen & Eriksson, 2009). The first one is *traditional outsourcing*. This phase had a time period of the beginning of the eighties of the last century until the beginning of the nineties. The main reason of traditional outsourcing was cost reduction. Furthermore, traditional outsourcing was primarily done domestically. The second one is *strategic outsourcing* and started in the end of the eighties. The main reason was still cost reduction. However, getting skilled people abroad was another important reason. India was emerging as a potential candidate for outsourcing IT work. Hence, the focus of outsourcing became more internationally oriented. Other reasons for strategic outsourcing were the wish to improve agility and quality. The third phase within the history of outsourcing is *transformational outsourcing*. This development started around the beginning of this century onwards. Prime motives of transformational outsourcing are organisational transformation, including knowledge creation and improve quality and team virtualisation (Hätönen & Eriksson, 2009). The driver for the shift from transactional to transformational outsourcing is simply to survive within the industry.

3.6 Reason for outsourcing

As described earlier, traditional outsourcing was cost focused (Hätönen & Eriksson, 2009). Nowadays, companies outsource activities for more than only cost reduction. A number of reasons to outsource work are described by several authors (Hätönen & Eriksson, 2009; Gonzalez et al., 2009; Kakabadse & Kakabadse, 2002). In random order, the first one is *cost reduction*. Many companies do believe that outsourcing will save money in the long run. However, hidden cost and unclear cost-benefit relationships are risks causing an outsourcing activity to turn out more expensive than keeping the processes in-house.

The second reason for outsourcing is to *focus more on strategic issues.* Outsourcing is seen as a serious alternative to focus on the basic activities (Gonzalez et al., 2009; Grover et al., 1999; Smith et al., 1998; Lacity et al., 1994).

The third one is *increasing flexibility.* Having more than one IT supplier, a client is able to select the services and products from the best supplier amongst all these suppliers. Nowadays, the action of outsourcing ecosystems is taking place when larger outsourcing deals are concerned. Suppliers within these outsourcing ecosystems try to start new and innovative projects together with others. These initiatives tend to increase agility for the client. However, having a large number of suppliers working together increase the complexity of managing this ecosystem.

The fourth reason for outsourcing is to *improve the quality.* Usually, the core business of the supplier is the outsourced work. Hence, the quality ought to improve of handing over work to a third party which is more qualified of doing the work.

The fifth reason is to *get rid of routine tasks*. Routine tasks take a lot of time and hence are expensive. By outsource routine tasks towards for instance low wage countries, a reduction of costs can be seen.

The sixth reason for outsourcing is *facilitating the access to technology*. By outsourcing, a client is able to get state-of-the-art technology.

The seventh reason is *reducing the risk of obsolescence*. By outsourcing IT, the risk is more or less also outsourced to the third party. Contractual elements are then interesting to have the flexibility to get rid of services or products which are no longer wanted.

The eight reason for outsourcing is to *reduce staff costs*. Concerning large outsourcing deals, employees are also moved from the client to the supplier. In this way, jobs are needed only for specialised IT activities. also, outsourcing parts of an department reduces amounts of work and hence employees. The ninth reason to save *technology cost*. Looking at large outsourcing deals, not only employees are outsourced, but also other assets like data-centres, desktops etcetera. Looking at technology in general, hardware and software are expensive assets and outsourcing can cut these costs dramatically.

Two reasons for outsourcing that frequently appear in the literature are being severely critisized by Loh and Venkatraman. The first one is *follow the fashion*. This reason looks brainless, but is done more than once (Loh & Venkatraman, 1992). Companies try to copy the outsource success of competitors in order to gain more profit. The second and last reason of outsourcing which is not particularly a good reason is to outsource *work which is seen as difficult to manage*. Outsourcing IT when a company has difficulties managing IT is a risky business (Aubert et al, 1998).

3.7 Location of outsourcing

In general, outsourcing is often seen as moving work to foreign countries and in particular to India. When the Netherlands is concerned as the country outsourcing the workload, the practice of outsourcing to India is actually *offshore* outsourcing. Three different types of locations of outsourcing can be distinguished. The first one is *offshore outsourcing*. Offshore outsourcing is the relocation of activities to third parties to (low wage) countries to other continents of the world (Erber & Sayed-Ahmed, 2005). The second one is *nearshore outsourcing*. Nearshore outsourcing relates to relocation of activities to other countries, but within the same continent. For instance, a company situated in the Netherlands which outsource activities to Poland, concerns nearshore outsourcing. The third one is *onshore outsourcing* and this form of outsourcing concerns outsourcing towards third parties within the same country. Actually, the first outsource activities were onshore outsource activities.

3.8 Impact of outsourcing

Organisations in general are influenced by their environment (Harris et al, 1998). By outsourcing, organisations are affected in three management levels, namely strategic, tactical and operational level. related to the influence the environment has on the organisation is the flexibility of the organisation. Krijnen defines three levels of flexibility of a company. The first one is *strategic flexibility* and is long term oriented. Strategic flexibility is the ability of the organisation to change its economic and social goals (Krijnen, 1985 (Harris et al)). The second one is the *tactical flexibility* and is medium term oriented. Tactical level flexibility refers to the ease of changing the structure and decision making process of the organisation. The third one is operational flexibility and has to do with the ease of changing day to day operations. The flexibility of these different levels will have influence of the flexibility of an outsourcing contract (Harris et al, 1998).

3.9 Relationship of outsourcing

The relationship of outsourcing concerns with the number of clients and suppliers involved in the relationship. Gallivan and Oh defined four different types of outsourcing relationships (Gallivan & Oh, 1999). The first one is the *simple outsourcing relationship*. This type of relationship involves only one client and one supplier. The client relies only on one supplier or vendor for all its outsourcing activities. traditional outsourcing was almost always done using a simple outsourcing relationship. Reason for this is that there were only a few outsourcing firms dominating the market.

The second type of outsourcing relationship is the *multi-vendor relationship*. This relationship indicates that a single client uses more than one supplier in order to fulfil its outsourcing needs. The first big companies that signed contracts like these were BP and Kodak in 1989 (Gallivan & Oh, 1999; Cross & Earl, 1997).

The third type of outsourcing relationship is the *co-sourcing relationship*. This relationship involves many clients and just one vendor. The idea is that several clients combine their strengths in order to find one singe supplier to fulfil their` needs. These alliances have the advantages of risk sharing and reduction, increased bargaining power and buyer economies of scale (Gallivan & Oh, 1999).

The fourth type of outsourcing relationship is the *complex relationship*. This type of relationship refers to a pool or ecosystem of many clients and many suppliers. Complex relationships are naturally difficult to manage.

3.10 Essence of outsourcing

Porter and Miller differentiate between two types of essence of outsourcing (Porter & Miller, 1985). Firstly there are essential activities. These activities involve the creation of new products and services. Second there are the Non-essential activities and these provide the necessary inputs and infrastructure for performing essential functions (Javalgi et al, 2009).

3.11 Phase of outsourcing

Several authors described the different phases of an outsourcing deal (Voigt et al., 2007; Cullen et al., 2006; Delen, 2005). Voigt et al. describe five different phases of outsourcing. The first one is the *evaluation phase*. The evaluation activities involve strategic positioning, goal setting, analysis of the current situation, invitation and consideration. Based on the results the decision can be made whether to outsource the activities or to keep the activities in-house. The second phase is the *negotiation phase*. Within this phase, a contract is set up between the supplier and client. A negotiation strategy is prepared, negotiation items are prioritised and effective negotiations are conducted (Cullen et al., 2006). The third phase is the *transition phase*. Within this phase, all assets are transferred from the client to the suppliers. Assets are for instance hardware, software and employees. The fourth phase is the *transformation phase*. Within this phase, all assets are transferred and new services or products can be developed for the client. Within this phase, innovation is possible to boost the outsourcing relationship. The last phase is *exit phase or renegotiation phase*. Within this phase, next generation options are assessed as well as the contract outcomes and the lessons learned.

3.12 Using the outsourcing characteristics

By using variables of a set of characteristics which are important to the outsourcing relationship, awareness can be created of the particular scope of outsourcing. For instance, an outsourcing deal can consist of ITO, having a long term contract with complex phases like transition and transformation phase. The reason of this particular deal might be merely cost reduction and increasing agility, having an offshore destination, with a complex partnership and high complexity of outsourcing activities. This deal is very unlikely to endorse innovation in the near future. Reason is that cost reduction and innovation not merge. Furthermore, offshoring ITO is probably very complex, because the cultural difference are often bigger than nearshore ITO activities. Hence, having a clear scope of the outsourcing relationship will help positioning innovation in its context.

3.13 Linking outsourcing with innovation

Question can be raised why defining a scope of outsourcing is necessary for innovation within outsourcing relationships. For instance, awareness of the client's main reason for outsourcing helps to understand if innovation is part of the client's outsourcing strategy. More specific, if the main driver is cost reduction and more agility, innovation might be not very interesting to the client. Also, the type of relationship indicates the complexity of the outsourcing relationship and hence the complexity of innovation within the outsourcing relationship. If the relationship is a multi-vendor relationship a.k.a. an outsourcing ecosystem, driving innovation is really difficult. Another example of an outsourcing characteristic which influences innovation is the location of outsourcing. Knowing where the supplier's company is situated in the world, knowledge is created regarding the innovativeness of that company. For instance, a German company is in general more reactive concerning new developments in the market. An American company is normally more proactive concerning new product or service development. So, creating the scope of an outsourcing relationship is similar to creating awareness of the possibilities of innovation within that particular outsourcing relationship.

4 Defining innovation

Similar to the term outsourcing, innovation is a term hard to grasp. Numerous scholars have been written about innovation and numerous definitions are given. For instance, Daft refers to *organisational innovation* as the adoption of an idea or behaviour that is new to the organization adopting it (Daft, 1978). Adjacent to the definition of Daft (Daft, 1978), numbers of other papers give similar but different definition of the term, depending on the scope of the research performed. Another definition was given by Kenneth E. Knight. He defined *innovation* back in 1967 as the adoption of a change which is new to the organisation and to the relevant environment (Knight, 1967). In 1969, Donald G. Marquis emphasises that one should distinct between innovation and invention. According to the cited economist Jacob Schmookler, every invention is a new combination of pre-existing knowledge which satisfies some want. However, innovation is to the economist the action of an innovator. "When a company produces a good or service or uses a method or input that is new to it, it makes a technical change. The first enterprise to make a given technical change is an innovator". An implication to the definition of an innovator could be that innovation is a technical change, completely new in the market.

Again, de re necessity and de dicto necessity are used to describe the term innovation in detail. Concerning innovation, the de dicto necessity characteristics will create a scope of innovation which can be used as a foundation how to be innovative within an outsourcing relationship. Within this thesis, de re necessity of innovation is the definition given by Edward Roberts. That is, innovation = invention + implementation (Roberts, 1980).

The term innovation can be divided in a de re necessity characteristics and de dicto necessity characteristics. The de re necessity characteristics can be found in the introduction of this chapter. Both Daft (Daft 1978) and Roberts (Roberts, 1980) give a broad definition of innovation, using de re necessity characteristics. These characteristics represent the function of innovation. Innovation represent a new idea or behaviour, thus an invention and implementation of that invention. The de dicto necessity characteristics are these characteristics which are important for describing the term innovation, but not necessarily mean that these characteristics can be used only for innovation. For instance, an innovation could have a radical impact as well as an open approach. However, the terms radical and open can be used to describe other terms.

Innovation has several de dicto necessity characteristics. Within this thesis seventeen characteristics are defined. All of them have a particular number of variables.

4.1 Dimension of innovation

In their book "Innovation Management: Strategy and Implementation Using the Pentathlon Framework", Goffin and Mitchell define four *dimensions of innovation* (Goffin & Mitchell, 2005). The fifth dimension of innovation is derived from Gary Hamel and is called management innovation (Hamel, 2008). These dimensions relate to the question of what is changed. Furthermore, Goffin and Mitchell argue that this characteristic can be applied to the service sector as well as manufacturing sector. The first dimension is *product innovation*. Lots of articles are written about product innovation in firms (e.g. Dougherty, 1992), the product innovation process (e.g. Kok & Biemans, 2009) and new product development (e.g. Kahn et al, 2006). All these papers tend to describe or prescribe ways of successful approaches to product innovation. Within this thesis, detailed research of product innovation as well as other variables of de dicto necessity characteristics of innovation are beyond the scope.
The second dimension is *service innovation*. Within this thesis, service innovation is part of manufacturing as well as the service sector itself. Goffin and Mitchell differentiate manufacturing from the service sector. According to them, creating the second dimension will help to differentiate the new products. Within this thesis, service innovation can relate to product innovation, but is not a must. For a long period, the main focus was primarily on new products (Evangelista, 2000; Miles, 2000; Drejer, 2004; Howells, 2006). Little research is done considering the development of new services (Droege et al, 2009).
The third dimension of innovation is *process innovation*. Process innovation concerns with improvements which can be made concerning the manufacturing or the delivery process. Many authors describe both product innovation and the related process innovation (e.g. Becker & Egger, 2007; Adner & Levinthal, 2001). Hence, product or service development and process development are closely related to each other. For instance, an important success factor of new product development (NPD) is optimising the process of it as well.
The fourth dimension concerns *business process innovation*. For instance, a company can optimise business processes in such a way that customers can do more straightforward business with the company. The difference with process innovation is that business process innovation focus on any other process then the manufacturing or delivery process.
The fifth dimension of innovation is given by Hamel and it is called *management innovation* (Hamel, 2008). According to Hamel, innovation in management principles and processes can create long term competitive advantage. If awareness of this dimension is created within the outsourcing relationship, management innovation can be aligned in order to have a successful relationship.

4.2 Degree of innovation

The degree of innovation concerns with the level of change of a service or product. Three different types of degrees can be distinguished. Like other characteristics, authors use different names to describe the same degree of innovation. The first one is *incremental innovation*. This type of innovation is sometimes not considered as innovation at all. Incremental innovation is then categorised as evergreening.
The second degree of innovation is *radical innovation*. This type of innovation can result in life changing breakthroughs. The difference from radical and incremental innovation is the degree of change the firm has to undergo regarding to the innovation in question (Cooper, 1998). Furthermore, radical innovation has a higher chance of failure than incremental innovation, because radical innovation has less linkages with existing markets or processes.
The third degree of innovation is called by Estrin as *orthogonal innovation* (Estrin, 2008). According to the author of "Closing the innovation gap", orthogonal innovation is a significant type of innovation that comes from applying existing technologies in new ways. Within this thesis, orthogonal innovation also applies to services.

4.3 Mode of innovation

Two modes of innovation can be distinguished, closed and open innovation. Concerning *closed innovation*, a company is only focused on internal R&D. historically seen, this was the way of producing new products or services. For instance, Philips had a successful internal R&D department, called NatLab. Around the seventies, a small number of engineers and other members of the development team, worked together on new innovative product. Some scholars argue that purely closed innovation is not an option anymore, because the maturity of the market is so high, that collaboration is needed with other firms and customers to produce new and more complex innovation (Estrin, 2008; von Stamm, 2004).
Therefore, open innovation is the rather new and also second mode of innovation. *Open innovation* is a model, whereby a company commercialises both its own ideas and ideas from other firms. The boundaries of the company is more or less porous with the environment of the organisation (Chesbrough, 2003). Hence, open innovation is a mixture of accessing internal and external resources.

4.4 Market segment of innovation

Some sectors are more innovative than other sectors (Hii, 2004). Therefore, it is important to know in what sector a company wants to be innovative. So, within an outsourcing relationship awareness is needed of the innovation capacity of the sector. Several sectors can be distinguished and in they can be categorised using the *Standard Industry Classification* (SIC) system. The SIC system uses letters and digits for describing the hierarchy and relation among the different categories of economic activity. The letters A to K represent the broadest categories in the system. The categories are called divisions and within these divisions, two digits and four digit classifications are made to narrow the scope[3]. The divisions are categorised as follows:

1. Agriculture, forestry, and fishing
2. Mining
3. Construction
4. Manufacturing
5. Transportation, communications, and utilities
6. Wholesale trade
7. Retail trade
8. Finance, insurance, and real estate
9. Services
10. Public administration (government)
11. Non-classifiable establishments

An example of the two digit, three digit and four digit classification is given below:

48 Communications (major group)
481 Telephone communications (industry group)
4812 Radiotelephone communications (industry)

SIC is used in general, but might be interesting for differentiate concerning the rate of innovation between sectors or industries.

4.5 Dynamics of innovation

Closely related to the characteristic market segment of innovation, is the characteristic *dynamics of innovation*. Weil and Utterback tried to capture and analyse the dynamics of innovative industries by developing a system dynamics model (Weil & Utterback, 2005). The authors defined several dynamics which are the building blocks of innovations and its impact to firms, markets industries. These are a) entry and exit of firms, b) experimentation and innovation, c) technology evolution, d) improvements in costs and performance, e) emergence of standards and dominant designs, f) adoption of new technology, g) network effects, h) development of a mass market, i) market growth, j) market saturation k) intensity of competition and l) commoditisation.

[3] Taken from the site referenceforbusiness.com

Several conceptual models were produced by Weil and Utterback in order to focus on several dynamics. For instance, the figure which focuses on the dynamics of number of firms in the market.

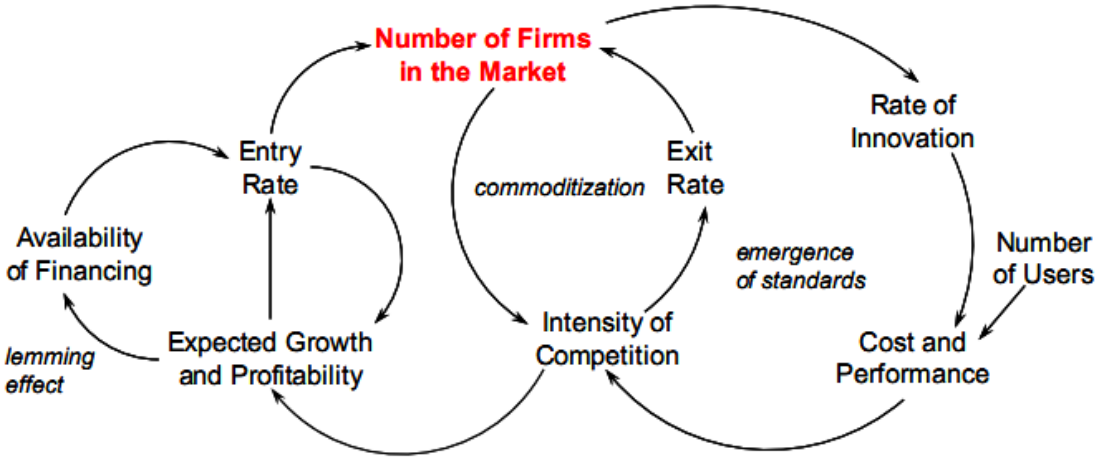


Figure one: Number of firms in the market (adapted from Weil & Utterback, 2005)

4.6 Phase of innovation

Many companies introduced models to drive an idea to successful implementation. Several systems and models are developed with a different number of phases. Goffin and Mitchell developed the pentathlon framework, which includes three phases (Goffin & Mitchell, 2005). Buggie identified four phases (Buggie, 2001). The best known system is for driving new products to the market is the *stage gate model*. This model also consists of four phases, called stages (Cooper, 2008). Within this thesis, the stage gate model is used as a standard. Next to the stages, this model also consists of five gates. The process starts with the discovery, followed by the first stage which is called *scoping*. Within this stage, the main goal is to evaluate the product and its relating potential market. The second stage is *building a business plan* as well as a business case. The third stage is the *development of the product* (or service). The fourth stage is *testing and validation*. The last stage is the *launch* of the product (or service).

4.7 Impact of innovation

The impact of innovation is similar and also strongly related to the degree of innovation. However, this characteristic of innovation is related to the impact of the innovation to the market or process. The degree of innovation is focussed on the product or service itself. That is, the degree of innovation deals with the level of change of the service or product.

The concept of the impact of innovation was already described in detail in the beginning of the eighties. Abernathy and Clark defined a framework, based on the concept of transilience. Transilience is the capacity of innovation to influence the established systems of production and marketing (Abernathy & Clark, 1984). The authors distinguish four types of, what in this thesis is called, impacts of innovation. The first one is *architectural innovation*. This type of innovation departs from established systems and open up new linkages to markets and users. The second one is *niche creation innovation*. Within this impact of innovation, new markets are opened to the use of existing technology. The third one is *regular innovation*. This type of innovation is not really visible or not visible at all. However, irregular innovation can have a huge influence on the product cost and performance. The fourth impact of innovation is *revolutionary innovation* and it renders established technical and production competence. However, the market is the same as well as the customers.

4.8 Hierarchy of innovation

Innovation has to come from anywhere throughout the organisation. However, when the hierarchy of a company is considered, strategy concerning innovation comes from the top. A *top down approach* of innovation is concerned with the strategy, the incentive as well as innovation itself. The *bottom up approach* is considered with the responsibility for sharing new ideas, improvements to existing products, services, processes or business process. Between these two types of the hierarchy of innovation, synergy is needed in order create a fruitful atmosphere for innovation.

4.9 Architecture of innovation

Geoffrey Moore defines in his book "Dealing with Darwin" two different architectures of innovation. The first one is *complex systems*. According to Moore, complex systems architecture specialises in dealing with complex problems and creating individualised solution to that problem (Moore, 2008). This architecture implicates a handful of transactions per customer a year. Examples of companies working this way are IBM, Cisco and SAP. The second type of architecture is the *volume-operations architecture*. This type of architecture deals with serving volume markets with standardised products and services. This architecture leads to a strategy whereby a lot of transactions per customer implicating for instance mass production. Companies working this way are Nike, Kodak, Google and Amazon. These two different approaches of architecture of innovation leads to different best practices. Within this thesis however, no specific differentiation is made.

4.10 Client of innovation

An interesting characteristic of innovation is the client of innovation. Reason for this is that the different clients of innovation do have different characteristics, which make them unique. For instance, *business to business* (B2B) markets have fewer partners, closer buyer-seller relationships and better information exchange than *business to consumer* (B2C) markets (Hutt & Speh, 1998). These characteristics differentiates B2B from B2C.

Concerning outsourcing, a third client of innovation is important. This third client is called business to business to consumer innovation (B2B2C). Within this respect, innovation is used to gain more competitive advantage for the customer. That is, a supplier tries to facilitate its customer with innovation in order to gain a better market position for the customer.

4.11 Level of innovation

Innovation can occur at three different levels. The different levels also implicates more impact to the area where that particular innovation takes place. Note that the level of innovation is not the same as the impact of innovation. Niche creation for instance, can occur at all three levels of innovation. The level of innovation relates to the scope of an innovative project being done.

The first level of innovation is the *project level*. At this particular level, the number of changes to the processes (processes as well as business processes) related to the innovation within this scope are relatively low. The second level of innovation is the *process level*. At this particular level, the number of changes to the processes (processes as well as business processes) related to the innovation within this scope are relatively medium. The third level of innovation is the *micro level*. At this particular level, the number of changes to the processes (processes as well as business processes) related to the innovation within this scope are relatively high.

4.12 Perspective of innovation

The perspective of innovation relates to starting point that drives innovation. Two different types of perspectives are distinguished (Daft, 1978). The first one is the *technical perspective*. The idea of this perspective is that product, services or processes drive innovation. For instance, an existing product creates new ideas for other products. The second perspective is the *human perspective*. Reasoning from this perspective, the needs for potential customers are taken into account. Concerning technology, technology push relates to the technical perspective and technology pull to the human perspective.

4.13 Period of innovation

Many authors argue the short term profit over the long term benefits (e.g. Estrin, 2008; Moore, 2008; Hultink & Robben, 1995). According to some authors, the focus on periods of innovation needs to have three classifications (e.g. Moore, 2008). For each of the periods, different critical success factors can be defined. For instance, development costs and time to market are more important for short term innovation. Return On Investment on the hand is more important for long term innovation. Next to the long term and short innovation, a distinguished can be made concerning middle term innovation.

Moore describes these three periods of innovation, using another focus of the period of innovation (Moore, 2008). Concerning portfolio management, three periods or as McKinsey called them horizons can be distinguished. *Horizon one* corresponds with managing the current fiscal-reporting period, hence short term concerns and not really on innovation. *Horizon two* concerns with the innovation which are in the pipeline. That is, the next generation innovation. *Horizon three* concerns with new business that are on the radar and have a potential to be included on the portfolio in the far future.

4.14 Location of innovation

A distinction can be made between two locations of innovation. The first one is *centralised innovation*. Centralised innovation is a companies strategy of having their R&D or innovation department based at headquarters. New services and products are mostly developed and *decentralised innovation*.
Not only is a different approach of management needed concerning managing centralised or decentralised innovation. Centralised innovation implicates also so called national systems of innovation. That is, the location of the headquarters of an organisation is regularly also the country where innovations take place (Pavitt, 1999). The quality of the employees, governmental policies and price of labour influences the ability or method to innovate. Thus, a countries national system influences centralised innovation. Concerning decentralised innovation, more countries, people and ideas get involved and therefore more capabilities are created to drive innovation. Furthermore, more complex ideas can be challenged to boost innovation.

4.15 Organisational area of innovation

A distinction can be made between six different organisational areas of innovation (Goffin & Mitchell, 2005). The first one is *research and development*. According to several scholars, R&D is the source of innovation. However, bright ideas that lead to innovation can come from all over the organisation. Hence, it is important to have all embrace all innovation throughout the company. For this reason five more organisational areas are described where innovation might take place. The second area is *marketing* and according to Goffin and Mitchell it has a key role in generating ideas for innovation. They argue that marketing can make a difference between a good idea and a successful product. Without it, a new product or service lacks communication to potential buyers. The third area is *operations*, sometimes called production or manufacturing. According to Goffin and Mitchell, long term competitive advantage can be found here. Reason for this is that product innovation is easier to copy than process innovation. They also argue that service sector companies often underestimate the potential of operations contributing to innovation. The fourth organisational area is *finance and accounting*. However, they can contribute to innovation by calculating the return on investment for innovation projects (Goffin, 2001). The fifth area is *human resource management* (HRM). People are key to innovation. Thus, hiring, developing and motivating people is essential in order to create an atmosphere whereby employees proactively share new ideas. The sixth and last area are outside resources. *Universities* as well as *suppliers* can contribute to the development of new products, new services or even to process innovation. Hence, outsourcing could positively influence the success of innovation of an organisation.

4.16 Economic organisation of innovation

Whitley identified six different, major forms of economic organisations of innovation (Whitley, 2000). These are:

1. Fragmented
2. Coordinated Industrial district
3. Compartmentalised
4. Collaborative
5. Highly coordinated
6. State organised

These different types of economic organisations have all different characteristics of business systems, different institutional features and different characteristics of the firm (Whitley 2000). See picture below, taken from Whitley:

	Business System Type					
	Fragmented	Coordinated Industrial District	Compart-mentalized	Collaborative	Highly Coordinated	State Organized
Characteristics of Business Systems						
Owner control type	direct	direct	market	alliance	alliance	direct
Ownership coordination	low	low	high	considerable	considerable	high
Alliance coordination	low	medium	low	considerable	high	low
Institutional Features						
State Coordination	low	considerable locally	low	considerable	high	high
Strength of inter-mediaries	low	considerable	limited	high	high	low
Financial system	unpredict-able	locally credit based	capital market	credit	credit	state controlled credit
Strength of collaborative public training system	low	considerable	low	high	low	low
Union strength	low	considerable	limited	high	considerable in enterprises	low
Trust in formal institutions	low	medium	high	high	considerable	limited
Characteristics of Firms						
Authority sharing with:						
(a) Business partners	low	medium	low	considerable	high	low
(b) Skilled workers	low	medium	low	considerable	medium	low
Contribution of skilled workers to organizational capabilities	low	considerable	low	considerable	considerable	limited
Dominant firm type	opportun-istic	artisanal	isolated hierarchy	cooperative hierarchy	allied	state-dependent

4.17 Strategy of innovation

Craighead et al describe an interesting relation between the innovation level of firm, related to the cost level (Craighead et al, 2009). When firms choose an innovation strategy, the cost consideration is an important driver to that strategy. The knowledge based view, tied with the strategic-choice theory results in four different types of innovation-cost based strategies. Figure one is taken from Craighead et al. the four types are: cost-efficient imitators (i.e., low on both cost and innovation), costly innovators (i.e., high on both cost and innovation), cost-efficient innovators (low/high), and costly imitators (high/low).

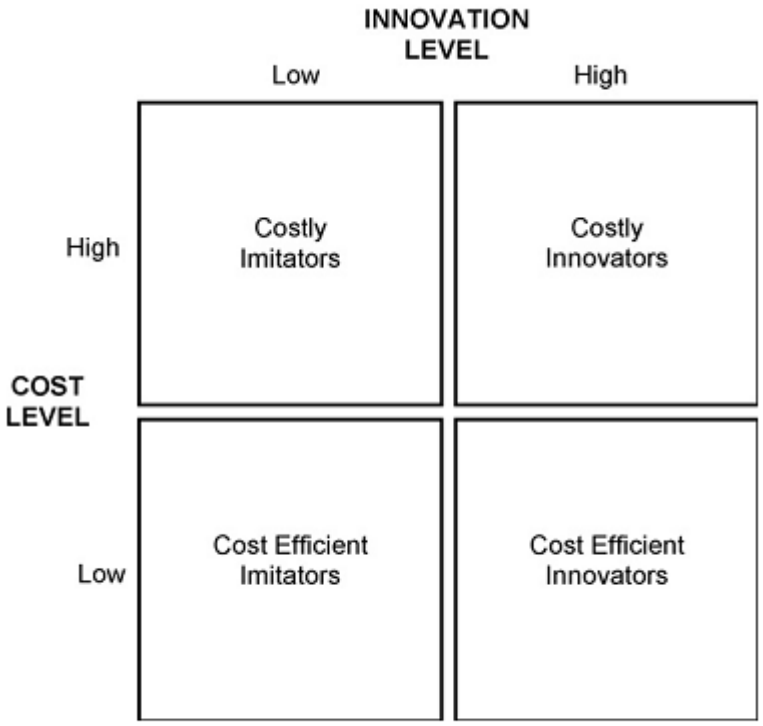


Fig. 1. Types of supply chain strategy based on cost and innovation.

4.18 Using the innovation characteristics

Using the innovation characteristics will help creating awareness of the scope of innovation within the outsourcing relationships. Furthermore, mistakes of understanding between the supplier and client can be eliminated. For instance, if a client is a cost efficient imitator, radical innovation projects from the supplier's side will not be appreciated by the client. Also, awareness of B2B or B2B2C innovation for the client will help to come up with the right innovation projects. From the client's side, if a supplier's ability to innovate is centralised, it is more difficult to expect innovation within the outsourcing relationship. Also, the market segment of innovation will help creating awareness of the innovativeness of a company. Last but not least, service innovation is not the same as product innovation and therefore needs another strategy. Having a clear picture of all the characteristics will help making the right decisions concerning innovation management within outsourcing relationships.

4.19 Linking innovation with outsourcing

The innovation characteristics as described above can be related to outsourcing. By combining these characteristics with outsourcing characteristics as described in chapter two results in the scope for innovation within outsourcing relationships. For instance, awareness of the client of innovation is useful to know what kind of innovation is expected from the customer. One example is the different ideas companies had regarding innovation. One supplier assumed that the customer was interested in B2B innovation and started several B2B innovations for their customer. However, the customer was not interested in B2B innovation and opted for B2B2C innovation. Another important part of the scope is to know what the customer's definition of innovation is. Question can be raised if all the degrees of innovation are part of the customer's definition. Incremental innovation might not be part of the definition, maybe only radical and orthogonal. For all the characteristics questions can be raised on what level consensus is present within the outsourcing relationship.

5 IOM2: Meta model

This chapter describes the meta model of the maturity model in detail. A meta model is a model of a model which describes its frames, internal relations and theories applicable. Describing the meta model in detail helps to create awareness of the choices made towards building IOM2. to prevent inventing the wheel again, other models are used in order to build a sustainable maturity model. Two models are used in particular and this is described in the next paragraph. The second paragraph describes the choices made concerning the capability areas. That is, the capability areas represent the most important management areas concerning innovation, outsourcing and innovation in an outsourcing relationship. The fourth and last paragraph deals with the choices made regarding the separation of the five maturity levels. The practices and reason for selecting these practices is described in chapter five.

5.1 Used maturity and capability models

IOM2 is build using two models, Capability Maturity Model (CMM) and e-Sourcing Capability Model (eSCM). CMM is a widely adopted maturity model for software development. More precisely, this model is a structured process for software development which was developed by the software institute at Carnegie Mellon University. CMM is composed of five maturity levels. Each maturity level provides a layer in the foundation for continuous process improvement. By achieving each level of the maturity model, it institutionalizes a different component in the software process. This results in an overall increase in the process capability of the organization. The Innovation within an Outsourcing Relationship Maturity Model uses the maturity levels of CMM, because an outsourcing relationship needs to mature before innovation can take place. Hence, only for the maturity part of IOM2 CMM is used.

The second model used is the eSourcing Capability Model for Service Providers. This model is a best practices capability model which incorporates three purposes. The first one is to give service providers guidance to help them improve the sourcing lifecycle. The second one is to provide the service providers help to evaluate the sourcing capabilities. The third one is providing a standard to differentiate from competitors (Hyder et al, 2006). The version of eSCM used is v2.01 and it is composed of 84 practices. these best practices are categorised into ten capability areas. IOM2 also uses capability areas, seven in total. The names of the areas are not derived from eSCM. Similar to eSCM, IOM2 uses practices. However, IOM2 incorporates less practices than eSCM, twenty four in total.

5.2 The capability areas

IOM2 exists of Seven capability areas. The first one is Trust Management. Trust management is inevitable the most difficult area of the seven capability areas. Many scholars tried to grasp the term trust (Mayer et al, 1995; Sabherwal, 1999; Schoorman et al, 2007). Within an outsourcing relationship, the level of trust is important and for innovation a high level of trust is essential (Solli-Saether & Gottschalk, 2010). Furthermore, the level trust is a critical success factor for having and maintaining a successful outsourcing relationships (Lee et al, 2008). More specific, innovation within an outsourcing relationship is only successful is a certain level of trust is present within the relationship. The second capability area is Knowledge Management (KM). KM is the way how explicit and tacit knowledge is used, created, retained and transferred through all levels within the company. Explicit Knowledge is knowledge which can be extracted from a persons mind into documents, sheets etcetera. *Tacit knowledge* is the knowledge embodied and embrained. It is not (yet) made explicit into some sort of documents. Within organisations, KM is a growing part because knowledge itself is seen as one of the critical success factors for competitive advantage (Marsch & Stock, 2006). Furthermore, both in outsourcing as well as innovation literature KM is seen as an important driver for success (Mikkola, 2001; Lee, 2001). That is why KM is an important capability area of IOM2. The third capability area is innovation management (IM) and is closely related to KM. That is, IM and KM are linked by the suggestion that innovation management involves the application of knowledge to the work of knowledge workers within a clear and defined context (Hildago & Albers, 2008; Dankbaar, 2003). IM is an important capability area, because innovation within an outsourcing relationship needs to be managed. The fourth capability area of IOM2 is leadership. Leadership is part of both innovation governance and IT outsourcing governance (de Jong, 2010; Lam, 2004; Teece, 1998) and therefore is part of IOM2. the fifth capability area is relationship management. Within an outsourcing relationship, the maturity of that relationship is very important. Furthermore, Open innovation changed the paradigm of innovation theories over the last decade. *Open innovation* is the approach of building a network of companies, consumers and universities to boost innovation and gain competitive advantage. Therefore, relationship management is the sixth capability area of IOM2. The seventh capability area is culture management. Culture management deals with several aspects of organisational cultures. Also, organisation's operating in different countries ought to be aware of the national culture. Within the outsourcing literature, numerous authors try to identify best practices dealing with different cultures regarding nearhore or offshore outsource relationships (van der Linden & Hengeveld, 2009; Winkler et al, 2008; Dossani, 2005; Hendry, 1995). Concerning innovation, culture management is also important. For instance, Hurley and Hult describe the void of market orientation research and the relation with innovation. They portray that a firm's culture that focuses on learning, development and participative decision making will have a greater capacity for adaptation and innovation (Hurley & Hult, 1998). That is the reason that culture management is part of IOM2.

5.3 The maturity levels

IOM2 consists of five maturity levels. The foundation of the five levels can be found in CMM. That is, the labels of the five maturity levels of IOM2 are the same as CMM. These levels are 1) Initial, 2) repeatable, 3) defined, 4) managed and 5) optimising. However, the method for selecting the right maturity level is similar to eSCM. Maturity level one is the level which is the level selected when nothing relevant is done in a particular practice. Level two, three and four do have criteria which need to be met, in order to reach that particular maturity level. Maturity level five is realised when levels two, three and four are repeated for some time.

The three levels which includes criteria can be distinguished using a theory from Total Quality Management. Total Quality Management (TQM) can be traced back to 1949 and was developed by Japanese scientist and Engineers. The new approach of management was developed to boost the Japanese productivity in manufacturing. When TQM was more widely implemented and sophisticated, the philosophy was also applied to non-manufacturing functions. Several authors describe the TQM philosophy as a way to improve customer satisfaction, improve understanding of customer needs, improved internal communication, greater commitment and motivation, better problem solving and improved communication (Juran, 1988; Spechler, 1991; Schmidt and **F**innigan 1992; Powell 1995). One specific theory is derived from TQM and is called the Juran Trilogy. Juran described three steps to improve the quality of product (Juran, 1992). The first step is quality planning. This step involves setting goals and identify customers and their needs. The second step is quality control. This step includes evaluation of the performance as well as compare goals and adapt. The third step is quality improvement. This last step includes establish the infrastructure, identify projects and teams and establish controls. These three steps can be seen as the foundation of distinguishing the three maturity levels and their criteria.

5.4 The meta model

By combining elements from the e-SCM, theories for the capability areas and the theories for the maturity levels, the innovation within an outsourcing relationship model can be build. See graph below:

		Maturity level 2	**Maturity level 3**	**Maturity level 4**
		Planning	Control	Improvement
Trust management …	Practice 1	Criteria practice 1, level 2	Criteria practice 1, level 2	Criteria practice 1, level 3
	Practice 2	…	…	…
	…	…	…	…
Knowledge management	Practice 1			
…	…	…	…	…

To summarise, for all the seven capability area (best) practices are defined. Every maturity level has certain criteria which need to be met. Maturity level two concerns planning, maturity level three concerns control of the practice and maturity level four deals with improvement of the implementation of the practice. Note that maturity level one is the level which serves as a starting point. More specific, when applying a practice one always starts in maturity level one. Maturity level five is the level which will be reached if levels three and four are repeated.

6 IOM2: The Model

An important part of the Innovation within an Outsourcing relationship Maturity Model (IOM2) are the practices. within this chapter, twenty-two practices are described in seven capability areas. All these practices are described in detail. The practices defined within IOM2 are derived from outsourcing literature and innovation literature. The theories extracted from the innovation literature are modelled into an innovation framework. the same goes for the outsourcing literature. Both frameworks are the fundaments for IOM2. The practices might be taken from the outsourcing framework, the innovation framework or both.

To describe some of the maturity levels, the Juran Trilogy of Total Quality Management (TQM) has been used. The Juran Trilogy deals with planning, control and improvement and these three elements are related to maturity levels two, three and four of IOM2. The criteria of the three maturity levels of the practices are described using a table. Appendix E consists of a questionnaire which describes some practices and its maturity levels in more detail. To reach maturity level five, maturity levels two, three and four need to be repeated for a period of time or maturity level four needs to be met for some time. Having to meet all the three maturity or just maturity level four depends on the criteria described in the tables.

Furthermore, several practices relate to other practices or form the basis for another practice. For instance, the practice "defining roles" is also important concerning other practices like "innovation network". To set up and maintain an innovation network, roles need to be defined as well.

6.1 Capability area: Trust management

Trust management is inevitable the most difficult area of the seven capability areas, because trust is a rather dodgy term. Many scholars tried to grasp the term trust (Mayer et al, 1995; Sabherwal, 1999; Schoorman et al, 2007). Within an outsourcing relationship, the level of trust is important and for innovation a high level of trust is essential (Gottschalk & Solli-Saether, 2010). Furthermore, the level of trust is a critical success factor for having and maintaining a successful outsourcing relationship (Lee et al, 2008). More specific, innovation within an outsourcing relationship is only successful if a certain level of trust is present within the relationship. Hence, the level of trust is one of the seven capability areas of IOM2. The capability area level of trust of IOM2 consists of practices level of control, risks, norms and collaboration.

6.1.1 Practice 1: Risk

Innovation is ad hoc and not continuous. Also, radical innovation is riskier than incremental innovation. Developing an appropriate strategy in order to be successful with innovation is therefore very difficult. Risk is also an important element when it comes to outsourcing, in particular when outsourcing totally to one single supplier. This risk can be reduced by selecting more suppliers or by signing short-term contracts (Willcocks et al, 2002; Willcocks & Fritzegerald, 1994). Hence, the combination of innovation and outsourcing is a highly complex and risky business.

As described earlier, radical innovation is riskier than incremental innovation. However, radical innovation is critical for long term competitive advantage (McDermott & O'Connor, 2002). Radical innovation tends to move a company in a new direction. McDermott and O'Connor call this movement competency stretching. Competency *stretching* is the form of moving to a new direction for the firm. Furthermore, a so called magic quadrant is developed by the authors using information from different papers. The difference between incremental and radical innovation is portrayed using this quadrant. For every innovative project within an outsourcing relationship, awareness of these uncertainties is needed in order to be successful (McDermott et al, 2002).

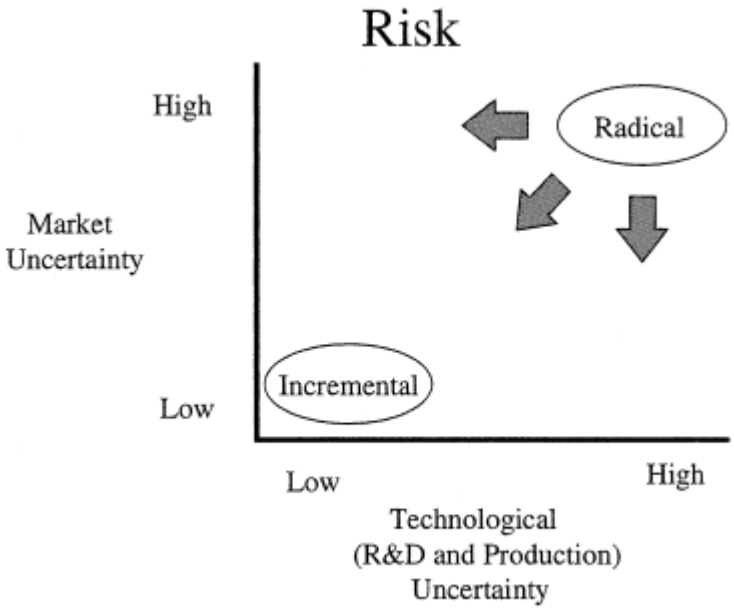


Fig. 1. Uncertainty reduction in radical innovation.

For every innovation project started within the outsourcing relationship, a certain level of risk can be shared between the supplier and the client. That is, the expenditure done for doing research and for building a proof of concept can be shared. If an innovation project is shared Hoecht & Trott describe the challenge of information leakage. The authors describe the problem using an example with consultants. They work with many clients and therefore it is certain that they are influenced through those clients. However, these consultants get the appropriate amount of trust, although the risk is in place (Hoecht & Trott, 2006).

Numerous scholars did research on risk in outsourcing relationships (Gonzalez et al, 2009; Hoecht & Trott, 2006; Willcocks et al, 2002; Earl 1996). Several types of risk emerge when outsourcing of work is involved. For instance, a risk factor in outsourcing IT work which is not being properly managed in-house. This reason of outsourcing is increasing the risk of failure tremendously. Another risk factor is having an incomplete contract (Willcocks et al, 2002). Information leakage is a third risk factor (Hoecht & Trott, 2006). Another way of reducing risk in outsourcing activities is to outsource only commodity activities. These activities are highly standardised. However, when an outsourcing relationship matures, other activities such as emerging activities and even key activities are outsourced. These key activities closely relate to innovation for the outsourcer. Hence, when a high level of trust is portrayed by the customer, risk sharing when implementing new innovative products or services is the norm.

Maturity level	Criteria
Maturity level 2: repeatable	- Awareness of the different innovation risks as well as outsourcing risks. The outsourcing risks as described by Gonzalez et al, 2009; Hoecht & Trott, 2006; Willcocks et al, 2002; Earl 1996 ought to be checked. - Also, the innovation risks as described by McDermott and O'Connor should be identified.
Maturity level 3: defined	- The several innovation risks and outsourcing risks should be monitored.
Maturity level 4: managed	- Evaluate the risks systematically. If new risks emerge, these are identified. Also, the risks which are identified are reviewed.

6.1.2 Practice 2: Collaboration

Several authors emphasize that the level of collaboration is a real tool for measuring the level of trust within an outsourcing relationship (Gottschalk & Solli-Saether, 2010; 2006; Holcomb & Hitt, 2007). Some authors even build a framework to identify the maturity level of the (outsourcing) relationship (Gottschalk & Solli-Saether, 2010). The ultimate relationship between a supplier and a customer is having a partnership and is therefore key for innovation within an outsource relationship (Murray, 2000; Gottschalk, Solli-Saether, 2010;2006). Concerning innovation, a partnership is also an important critical success factor (Kirschten, 2005).

One paper stresses that the last stage of innovation maturity for new product development is collaborative development (Bellika & Davidsson, 2004). According to the authors, this maturity level enable effective partner management and efficient interactions. Another concept which pinpoints the importance of collaboration is the concept of open innovation. Open innovation is a particular way of collaboration in today's struggle for competitive advantage.

Intensive collaboration is necessary in order to drive innovation for the customer, especially when B2B2C innovation is involved. Therefore, a protocol is needed to know how and when collaboration is needed.

Maturity level	Criteria
Maturity level 2: repeatable	The level of collaboration is identified by collective investment, adverse situation and implement protocol for collaboration maturation.
Maturity level 3: defined	The level of collaboration is monitored and appropriate steps are taken to reach the partnership stage.
Maturity level 4: managed	The level of collaboration is improved by checking the way of monitoring and verification and validation of maturation.

6.1.3 Practice 3: Control

The practice control is about the control of one organisation over another within the outsourcing relationship. in most circumstances the control implies the level of control of the client over the customer. Two types of control can be distinguished, namely formal and informal control. Formal control is written in a contract or similar whereby informal control is the control based on trust between two entities. The higher the level of trust the less formal control is needed. An outsourcing relationship which can be stipulated as a partnership does not need much formal control. Hence, the practice control relates directly to the choice of governance (Dekker, 2004).

Management control mechanisms are used to get hold of situations. Within outsourcing relationships, a partnership suggests for less formal control than other types of outsourcing relationships (Gottschalk & Solli-Saether, 2010). Concerning a formal control mechanism, Li et al. define several items to measure their hypothesis regarding formal control mechanisms. First is a detailed contract which is the most important way to guarantee cooperation success. Second, the contract is useful to regulate the behaviour of the partner. Third, detailed rules have been written in the contract and last, both partners know the cooperative procedure (Li et al., 2008). Li et. al also describe social control as a control mechanism. This mechanism includes trusting the partner, encorporating shared visions and values, have confidence in the capability of the partner, and fulfilling obligations without monitoring and communications (Li et al, 2008).

Looking at innovation and control, Li et al. hypothesize that there is a negative relationship between radical innovation and the formal control mechanism. Therefore, the formal control mechanism ought to be minimised as much as possible for driving innovation. Furthermore, steps need to be taken to keep amount of the formal control negligible.

Maturity level	Criteria
Maturity level 2: repeatable	- Awareness is created of the different types of control. - The level of formal control and social control are identified or confirmed.
Maturity level 3: defined	- The levels of control are monitored over some time and appropriate actions are taken. - Social control is preferred over formal control.
Maturity level 4: managed	- The level of control is systematically being lowered - The procedure of lowering the level of control is improved. - Actions are taken to retain the social control factors. - Formal control is cannibalised as much as possible.

6.2 Knowledge management

Knowledge Management (KM) is the way how explicit and tacit knowledge is used, created, retained and transferred through all levels within the company. *Explicit Knowledge* is knowledge which can be extracted from a persons mind into documents, sheets etcetera. *Tacit knowledge* is the knowledge embodied and embrained. It is not (yet) made explicit into some sort of document.

This thesis is all about outsourcing relationships and organisational innovation. Therefore, knowledge transfers are important. The reason for this is twofold. first, these knowledge transfers between supplier and client are key to the success of the relationship. Second, innovation needs constant knowledge transfers in order to gain and maintain competitive advantage (Hagel & Brown, 2008). Knowledge transfer is one of the four knowledge processes as described by Hislop (Hislop, 2005). These processes are knowledge retention, knowledge creation, knowledge transfer and knowledge change/application. Also, knowledge ought to flow through all the levels of an organisation. These levels are strategic, tactical and operational levels (de Jong et al, 2010). At all levels knowledge transfers are required as well as between all the hierarchical levels. Horizontal and vertical?

The capability area knowledge management (KM) consists of four practices. These practices represent the four main knowledge processes as described above (Hislop, 2005; du Plessis, 2005; Bresnen et al 2003; Albers et al, 2003). The practices within the capability area knowledge management are related to the four processes, namely repository, training & learning, innovation network and adaptation organisation.

6.2.1 Practice 1: Repository

As described earlier, a distinction can me made between four types of knowledge processes. the first one is knowledge retention. Concerning management within organisations, knowledge retention is particular a challenge. For instance, when an employee leaves the organisation, the question rises how tacit as well as explicit knowledge can be retained. Hence, knowledge retention within an outsourcing relationship with focus on innovation is even harder. Therefore, awareness of this challenge is needed.

According to Lee, sharing of explicit knowledge has a positive effect on the outsourcing relationship (Lee, 2000). Regarding outsourcing, a distinction can be made between two dimensions for transfer processes for explicit knowledge. The first one is the sender-receiver dimension and the second dimension is the content dimension (Blumenberg et al, 2009). Because explicit knowledge can be codified and repeated, a repository is an important item for sharing explicit knowledge. Several types of explicit knowledge can be shared and do positively influence the outsourcing relationship. These are 1) business proposals and reports, 2) business manuals and models, 3) success and failure stories and 4) newspapers, magazines and journals (Lee, 2000). In order to share knowledge successfully, two critical success factors are described by Lee (Lee, 2001). The first one is that a clear common vision and goals for the partnership is needed between the supplier and client. The second critical success factor is the organisational ability to learn or acquire knowledge from the other organisation.

Within outsourcing as well as within innovation, domain expertise is key. Hence, having appropriate knowledge is a critical success factor. Therefore, a knowledge based system can help providing new knowledge. A Knowledge Based System (KBS) can be best defined when focusing on knowledge modelling and the activities of building a KBS. Hence, these activities are a formal model that allows a description of knowledge at a conceptual level, or knowledge level, which aims at uncovering the basic schema linking the central concepts in a given domain (Hendriks & Vriens, 1999). A KBS might be very useful for stakeholders within the outsourcing relationship to learn from its learning.

Dasgupta and Gupta describe the importance of transforming tacit knowledge to explicit knowledge and the positive relationship with innovation performance (Dasgupta & Gupta, 2009). By codifying knowledge, information can be transferred within the organisation or an outsourcing relationship to leverage the knowledge of knowledge workers. However, awareness is needed if codification is concerned. This might suppress any freedom that innovation needs.

To summarise, a repository is needed to transfer explicit knowledge between the supplier and the client. This repository needs to be open for stakeholders from both sides and it also needs to be updated regularly.

Maturity level	Criteria
Maturity level 2: repeatable	- A repository is implemented whereby stakeholders from both the supplier and client can access the repository. - The repository is set up using RACI or similar. - if an ecosystem is present within the outsourcing relationship, a repository is set using RACI or similar.
Maturity level 3: defined	- The usage of the repository is monitored, using # of accesses per month and # of documents uploaded or changed per month. - if an ecosystem is in place, the repository is monitored as well and the # of participants are updated regularly. - The repository is maintained using RACI or similar.
Maturity level 4: managed	- The components of the repository are reviewed: - Do all the roles have enough access rights? - In what way is the relationship changed so that the repository is outdated? - Does the repository still meets the demand from the roles? - Is the way of monitoring the right way? - Are the ones responsible for monitoring the repository using the right information?

6.2.2 Practice 2: Training & learning

The second knowledge process is knowledge creation and this is closely related to training. Training on innovation and new innovation techniques is needed for those involved in the innovation process. Notice that this practice is similar to the practice "innovation competence needed" of the capability area innovation management. The big difference is that the practice training is focussed on training concerning creating knowledge of how to manage innovation in general, how to communicate within the company about innovation, and what innovation is. "Innovation competence needed" concerns creating awareness of the domain expertise needed of the supplier, in order to be innovative.

Innovation increasingly depends on complex tacit knowledge which is embedded in a persons actions (Lundvall et al, 2002; Polanyi, 1997). That is why training and learning is important using face to face meetings as well as via information & communication technology. Face to face meetings are preferred, because face-to-face contacts allow several means of communication to be utilized for the transfer, interpretation, and codevelopment of especially complex tacit knowledge (Asheim et al, 2007).

Training sessions should involve the future portfolio, about innovation in general and innovation management. A clear distinction is made between learning and training about the future portfolio and creating domain expertise with respect to the customer's domain. The practice "innovation competence" which is part of capability area innovation management describes that particular area. (Newell et al, 2006).

Maturity level	Criteria
Maturity level 2: repeatable	- Appropriate training is selected and followed by the stakeholders. - Awareness of what innovation is for the company is available. - at all three hierarchical organisational levels training is the order of the day.
Maturity level 3: defined	- The quality of the training program by # of training sessions, # of certifications and satisfied users.
Maturity level 4: managed	- Improve the training program by evaluating the method and evaluate the way of monitoring.

6.2.3 Practice 3: Innovation network

The process of knowledge creation is not only key concerning innovation within an outsourcing relationship. Knowledge transfer is as important as that. Several authors describe the need for knowledge networks to transfer knowledge through the organisation or within the outsourcing relationship (Hansen, 2002; Tsai, 2001; Lee, 2001).

David and Foray described the knowledge distribution power of an innovation system. This innovation system involves the interaction between various actors in the innovation systems, like producers, users, suppliers etcetera (David & Foray, 1995). These innovation systems are vital for knowledge sharing and relates also to the practice training and learning. This system also relates to the practice innovation competence.

An internal innovation network should be in place. This network ought to be available for everyone at all the levels of the organisation, i.e. the strategic, tactical and operational level of the organisation. Regular online meetings take place, whereby ideas are shared, comments are made regarding the Current Mode of Operation and discussions can take place.

Maturity level	Criteria
Maturity level 2: repeatable	- An internal inter-organisational network to share knowledge is implemented (e-SCM) - the network is implemented using RACI or similar
Maturity level 3: defined	- The usage of the network by # of scheduled meetings per month and stakeholders satisfaction is monitored and adapted/improved.
Maturity level 4: managed	- The network is improved by using new tools, adding new stakeholders using RACI or similar.

6.2.4 Practice 4: Adaptation of the organisation

Outsourcing of labour has influence on the organisation, both the supplier's side and customer's side. The intensity of outsourcing will have a different level of impact on the organisation. For instance, complete outsourcing involves often also the transfer of employees and assets. Complete outsourcing will have more impact on the organisation than for instance task outsourcing. Outsourcing also influences the organisation when it is part of the ongoing processes. this practice concerns the impact of outsourcing within the transformation phase. More specific, the impact of innovation within the transformation phase. That is, adaptation of the organisation is also a given fact concerning innovation. Radical innovation will change the organisation more than incremental innovation. Hence, for all innovation projects done within the relationship, awareness is needed of the possible impact to the supplier's organisation and the customer's organisation. Awareness of these changes can help react faster to changes in the market by revisiting the organisation's processes or even strategy. For instance, suppliers can benefit from a large amount of outsourcing deals. By sharing needs from customers, the strategy for a future portfolio can be created or changed.

Maturity level	Criteria
Maturity level 2: repeatable	Implement policies to adapt organisation to changes in the market, changes within the outsourcing relationship and the impact of innovation.
Maturity level 3: defined	- Monitor the policies.
Maturity level 4: managed	- Improve the policies.

6.3 Innovation management

Within an outsourcing relationship, management of innovation itself is obviously crucial if ideas need to be implemented successfully. Innovation management is a challenge in itself. Many papers are written on the adoption and implementation of innovative ideas (E.g. Buggle, 2001; Klein & Sorra, 1996). Furthermore, managing outsourcing deals is also complex as well as challenging (Gottschalk & Solli-Saether, 2005; Kakabadse & Kakabadse, 2002; Earl, 1996). Consequently, innovation within an outsourcing relationship is even more complex. That is why innovation management as part of the outsourcing process is one of the capability areas. The capability area innovation management consists of the following practices: Innovation stage gate model, innovation competence needed, innovation audit and portfolio management. The practices innovation stage gate model and portfolio management are part of the recommendations.

6.3.1 Practice 1: Stage gate model

Many authors have written about the management process of selecting the right idea to the successful implementation of the idea (van de Ven, 2007; Goffin & Mitchell, 2005; Buggle, 2001; Johne & Snelson, 1988; Roberts, 1980). Stage gates or innovation models for successfully managing innovation is hence a practice of innovation management. The best known system is for driving new products to the market is the *stage gate model*. This model also consists of four phases, called stages (Cooper, 2008). Next to the stages, this model also consists of five gates. The process starts with the discovery, followed by the first stage which is called *scoping*. Within this stage, the main goal is to evaluate the product and its relating potential market. The second stage is *building a business plan* as well as a business case. The third stage is the *development of the product* (or service). The fourth stage is *testing and validation*. The last stage is the *launch* of the product (or service).

Within an outsourcing relationship, most likely two stage gate models or similar are used. One model is used by the supplier and one model is used by the customer. If innovation within the outsourcing relationship is concerned, questions can be asked like: Is one of the models being used? If so, which model is used? If not, is a new model implemented? Is the model being used within the relationship aligned with the models used by the customer and supplier? Is it possible to align the model with the other two models? Is it needed to align the model? Or is it better to align the processes and outcomes of the used model in the relationship with the other relationship? To successfully implement new ideas within an outsourcing relationship, one stage gate model should be used.

Maturity level	Criteria
Maturity level 2: repeatable	- a usable stage gate mode or a similar innovation model is implemented. - The model is implemented and applied using RACI or similar.
Maturity level 3: defined	- the usage of the model is monitored by # of innovation projects which went (partly) through the model per year and stakeholders satisfaction of usage of the model.
Maturity level 4: managed	- The model is improved if necessary - The model is aligned as much as possible with the existing model from both the supplier's side and client's side.

6.3.2 Practice 2: Innovation competence needed

The practice innovation competence needed focuses on the domain expertise the supplier needs from its customer's business in order to drive innovation. The amount of domain expertise changes when a different scope of innovation is desired within the outsourcing relationship. For instance, business to business innovation will need less domain expertise than business to business to consumer innovation. Also, radical innovation will also prefer more domain expertise than incremental innovation. However, some knowledge about the client's business is needed in order to successfully start innovation projects or sell innovative products or services.

Maturity level	Criteria
Maturity level 2: repeatable	- an intra-organisational (social) network in place is in place using RACI. - Regular meetings are organised in any form whereby the stakeholders get client's' domain specific information. - The level of innovation competence needed is identified - Training methods are implemented.
Maturity level 3: defined	- The training methods with focus on # of training sessions, # of certifications and satisfied users are monitored. - The network is monitored with focus on # of meetings set up and stakeholder's satisfaction.
Maturity level 4: managed	- The level of competence is improved and updated - The training methods are improved

6.3.3 Practice 3: Innovation audit

Innovation audits are described by numerous scholars (Brands & Kleinman, 2010; Hemphreys et al., 2005; Goffin & Mitchell, 2005; Majaro, 1992). The first one was described in the eighties and this audit focussed mainly on creativity by asking audit question to R&D, production, marketing etcetera (Majaro, 1988). Nowadays, innovation audits include an output measure, process measure and input measure. The output and input measure consists of questions regarding the actual performance data. The process measure consists of questions how this performance was achieved. Innovation audits are seen as important (Feige & Cooker, 1998). Moreover, the European Union has given financial support for companies which conducted an innovation audit by a consultant (Goffin & Mitchell, 2005). Several types of innovation audits are developed, ranging from a short audit to an in-depth audit. Brands describes a simple yes/no questionnaire which can be found in Appendix G (Brands & Kleinman, 2010).

In general, innovation audits collect a selection of quantitative and qualitative data through survey techniques. These audits are normally conducted by consultant who have a neutral position. These consultants will interview a sample of employees, managers and customers. Concerning outsourcing, these innovation audits can be conducted as well. For instance, the customer might ask for an innovation audit from the client. This audit will help both customer and supplier to gain insight in the innovation performance of the supplier. Regarding innovation within an outsourcing relationship, these audits can be conducted after accomplishing a couple of innovation projects within the outsourcing relationship.

Maturity level	Criteria
Maturity level 2: repeatable	- An innovation audit is developed using RACI or similar. - The innovation audit is performed.
Maturity level 3: defined	- Outcomes of the innovation audit are used at the clients side and/or suppliers side. - The audits are monitored with focus on # of audits per year, audit outcomes and stakeholder's satisfaction.
Maturity level 4: managed	- The innovation audit is improved or altered. - The innovation audit is aligned as much as possible with the supplier's side and customer's side.

6.3.4 Practice 4: Portfolio management

This particular practice is only suitable for the supplier. Linking technological capabilities with customers is very important (Mikkola, 2001; Cordero, 1991). Moreover, scholars pinpoint that one critical success factor for a company is to satisfy the customer better than its competition (Pavitt, 1990; von Hippel, 1986). In order to beat this competition, new products or services need to be introduced very quickly. Within this respect, innovation plays an important role. According to Mikkola, the innovation capability of a firm is strongly based on R&D projects done (Mikkola, 2001). These R&D projects are the foundation for future's portfolio.

Similar to "normal" customers, outsourcing does influence the portfolio. However, the bigger the customer within an outsourcing relationship, the more influence this customer has on the future portfolio. This influence can be seen as a problem. However, if the needs from the customer are heard and checked with the needs from other outsourcing relationships, these needs can be transformed into standard portfolio.

Maturity level	Criteria
Maturity level 2: repeatable	- A protocol for 1-1 offering to portfolio is implemented with respect for cannibalisation. - The protocol is used.
Maturity level 3: defined	- The protocol by # of 1-1 offerings being implemented in the portfolio offering and the level of satisfied customers are monitored. - The # of 1-1 offerings to portfolio offering are increased as much as possible. - The level of satisfaction of the customer are increased as much as possible.
Maturity level 4: managed	- The protocol is being evaluated and improved as much as possible.

6.4 Leadership

Leadership is part of both innovation governance and IT outsourcing governance (de Jong, 2010; Lam, 2004; Teece, 1998). According to the IT Governance Institute, IT governance consists of IT-related structures or architectures (and associated authority patterns), implemented to successfully accomplish (IT-imperative) activities. As managers perceive the leadership roles for governing innovation or outsourcing, six different roles can be distinguished. Mintzberg described these six leadership roles and these are defined are personnel leader, resource allocator, spokesman, entrepreneur, liaison and monitor (Mintzberg 1994; 1990). The role of personal leader involves hiring, supervising, motivating, training and organising personnel to achieve the goals set for the organisation. The role of spokesman, the manager extends the contacts to areas beyond his or hers jurisdiction. The role of resource allocator concerns with deciding how to allocate human, financial and information resources to the different tasks of the project. The role of entrepreneur concerns the identification of the users' needs and actions of changing the business situations. The role of the liaison, the manager communicates with the external environment. In the role of monitor, the manager searches in the external environment for new leads.

According to Gottschalk and Karlsen, several roles in particular are important concerning outsourcing. These roles are the liaison role, the entrepreneur role and the monitor role (Gottschalk & Karlsen, 2005). The roles of personal leader and entrepreneur are two practices of the capability area leadership. These practices are called Individualised consideration & intellectual stimulation and Inspirational motivation & idealised influence. The liaison role is part of the capability area relationship management and the practice is called communication. The monitor role is not part of this thesis. According to Howell and Avolio, two types of leadership can be distinguished (Howell & Avolio, 1993). The first one is derived from the classical system theories. This classical form of leadership is called transactional leadership. Transactional leadership is based on conditional rewarding of employees who have a certain level of performance. Transformational leadership is based on inspirational and charismatic personality of a leader. The practices Individualised consideration & intellectual stimulation and Inspirational motivation & idealised influence are elements of the transformational leadership and the practice reward system is part of the transactional leadership.

6.4.1 Practice 1: Individualised consideration & intellectual stimulation

Individualised consideration & intellectual stimulation are two characteristics of transformational leadership as defined by Avolio et al (Avolio et al, 1991). These two characteristics are also elements of Mintzberg's roles of a manager. Looking at the roles defined by Mintzberg, the role of entrepreneur and personal leader is part of individualised consideration.

Innovation is not only related to those directly involved in the innovation process. Innovation is a matter of the whole organisation as well as within the outsourcing relationship itself. Thus, employees within all levels and parts of the organisation need to have the ability to conduct to the innovation process. For this reason employees within the organisation with activities of a leader cq manager need to enable coaching and mentoring activities for other employees while focussing on innovation. In this way, employees create awareness of the importance of innovation. These activities will positively influence innovation in outsourcing.

Maturity level	Criteria
Maturity level 2: repeatable	- Methods for coaching and mentoring regarding to innovation steps are developed/adopted and implemented using RACI or similar.
Maturity level 3: defined	- The methods of coaching and mentoring are monitored by # of meetings per month and level of satisfaction of the employees being coached and mentored. - Actions are taken to improve the satisfaction of the employees being coached and mentored.
Maturity level 4: managed	- The method itself is being reviewed and improved where necessary.

6.4.2 Practice 2: Inspirational motivation & idealised influence

Inspirational motivation and idealised influence are the two other characteristics of transformational leadership. Top management ought to support innovation as much as possible, because of its long term benefit. A particular type of leadership is needed in order to do that, namely transformational leadership (Howell & Avolio, 1993). Isaksen & Scott call this inclusive leadership (Isaksen & Tidd, 2006). The authors also mention that support for the birth of every innovation, thus supporting creativity is vital. Two factors go beyond transformational leadership, articulating a vision and inspirational communication (Rafferty and Griffin,). Hence, top-down support is needed to be innovative.

Maturity level	Criteria
Maturity level 2: repeatable	- An appealing and evocative vision concerning innovation is articulated. - The stakeholders within the outsourcing relationship in general are aware of the vision as portrayed by the leaders/managers.
Maturity level 3: defined	- The vision is monitored by asking # of stakeholders of their awareness of the vision. - The vision is monitored by looking for the correlation between the vision and the actual behaviour regarding that vision.
Maturity level 4: managed	- The vision or behaviour is changed, where necessary.

6.4.3 Practice 3: Reward system

Setting up a reward system is part of the classical form, transactional leadership. However, this approach is very important regarding innovation. If employees are aware of the fact that sharing innovative ideas is rewarded, more people will share their knowledge. Within the human resource literature, a strong regognition of reward systems and reward management are portrayed (Redman & Wilkinson, 2001). Also, reward systems are often seen as chaotic and not clear to employees (Livy, 1988). Hence, the first step in having a reward system for innovation in outsourcing is to look at the reward systems of both the supplier and customer. Several types of reward are described in the literature. Not only bonus payments are useful for rewarding innovative ideas. Furthermore, stock options, extra holidays, paid training and promotions are seen as possible rewards (Goffin & Mitchell, 2005). The second step is to look for all the stakeholder who can share ideas. For instance, employees from the suppliers side can share ideas. Former employees from the customer, now part of the supplier's organisation, might share ideas. Furthermore, employees form the customers site sharing ideas that would have potential for the supplier. So, appropriate rewards are needed in order to trigger stakeholders to share ideas creating leads for innovation within the outsourcing relationship.

Maturity level	Criteria
Maturity level 2: repeatable	- Awareness of the reward system regarding to innovation is created for both the supplier and the customer. - A strategy for rewarding employees is developed and implemented.
Maturity level 3: defined	- The rewarding system is monitored by # of usages, # of attempts, # of stakeholders being aware of the system and level of satisfaction by the stakeholders.
Maturity level 4: managed	- The rewarding system is reviewed for improvement or updates. - The rewarding system is improved where necessary.

6.4.4 Practice 4: Innovation strategy

Using IOM2, a strategy can be defined for innovation within an outsourcing relationship. However, the type of strategy needs to be clear. That is, a starting point should be clear how to approach innovation in general. Within this thesis, two types of approaches are distinguished. The first one is reactive innovation. This type of approach is used when action is taken only when a customer asks for a complete new service or product. The second one is proactive innovation. This type of approach is used when a new and innovative service or product is introduced for a customer. Within the literature, proactive and reactive approach is also called market pull and technology push (Ettlie & Subramanian, 2004). Market pull describes an innovation strategy that is directed to meet the expressed customer need and relates to the reactive approach. Technology push is an innovation opportunity that is found to satisfy a previously unmet market need. Both lead to a fundamental different innovation outcome (Morgan & Berthon, 2008). Gerpott described a set of attributes that differs market pull vs. technology push (Gerpott, 2005).

Description/attribute	Technology push	Market pull
Technological uncertainty	High	Low
R&D expenses	High	Low
R&D duration	Long	Short
Sales market-related uncertainty	High	Low
Time-to-market	Uncertain	Certain
R&D customer integration	Difficult	Easy
Kinds of market research	Qualitative discovering	Quantitative discovering
Need for change of customer behaviour	Extensive	minimal

Both types of strategies are often used. However, awareness of these strategies including the different characteristics might have a positive influence on innovation within the outsourcing relationship. The reason for this assumption can be found in the need for the usage of a different approach. Using the right approach increases the probability of success.

Maturity level	Criteria
Maturity level 2: repeatable	- Awareness of the market pull and technology push is created using Gerpott's attributes (Gerpott, 2005). - A strategy is developed using one of the two strategies or both strategies
Maturity level 3: defined	- The strategy is being monitored with focus on changes in Gerpot's attributes. - Actions are taken to meet the strategy.
Maturity level 4: managed	- The strategy is being evaluated and improved where necessary.

6.5 Relationship management

As described earlier, the maturity of an outsourcing relationship is very important when driving innovation is a critical success factor. Furthermore, Open innovation changed the paradigm of innovation theories over the last decade. Open innovation is the approach of building a network of companies, consumers and universities to boost innovation and gain competitive advantage. For this particular type of innovation, relationship management is also an important factor for success. Therefore, relationship management is the sixth capability area of IOM2. The capability area Relationship Management consists of three practices. These practices are roles, Open innovation & CoP and contract management.

6.5.1 Practice 1: Roles

Defining roles is very important to govern innovation within an outsourcing relationship. De Jong et al. even pinpoint that IT governance is key to success concerning IT outsourcing deals (de Jong et al, 2010). An important element of IT governance is assigning these roles and responsibilities. Gewald et al. more precisely specified this by asking several questions: "what to do", "how to do it", "who should do it" and "how it should be measured" (Gewald et al., 2006). Concerning the question who should do it and what to do, RACI can help.

RACI is a responsibility charting technique and it stands for Responsible, Accountable, Consult and Inform. Responsibility charging is a way of systematically clarifying roles and relationships. The role of the innovation manager should be defined using RACI. Not only the processes done by the innovation manager should be mapped. All the processes done by the innovation stakeholders within the outsourcing relationship should be mapped using RACI. An alternative to RACI is RASC. A RASC chart is a matrix with joint process fields described in the rows and roles described in the columns. A RASC chart is adopted from de Jong et al. (de Jong et al., 2010).

			Outsourcer							Insourcer				
	Process Fields	Role	Information manager	Purchaser	Finance manager	Business analyst	Service manager	Delivery supervisor	Innovation manager	Account manager	Contract manager	Delivery manager	Process manager	Competence manager
			a	b	c	d	e	f	g	h	i	j	k	l
Horizontal	Contract Management	1		A/R	S		S	S			R	S		
	Financial Management	2			A/R		S	S				S		
	Innovation Management	3	A			C	S	S	R			S		C
Vertical	Escalation Management	4	A				R	R		R	R	R		
	Engagement Management	5	A							R				
	Performance Management	6	A	C		C	R	R	C			R	S	S
	Risk Management	7	A/R	S	S	S	S	S	S	R	S	S	S	S

A distinction can be made between four roles. These roles are Responsibility, that is if someone is responsible (R), Accept (A) whereby someone has to approve or accept, Support (S) whereby someone has to support the person who is responsible (S) and Consultant (C) whereby someone only advises other persons. Note that defining roles is important for several other practices as well.

Maturity level	Criteria
Maturity level 2: repeatable	- All the roles within the outsourcing relationship focusing on innovation are identified and implemented using RACI, RASC or similar. - the roles are differentiated between operational, tactical and strategic level
Maturity level 3: defined	- The model is monitored by version number, stakeholder's usage and stakeholder's awareness
Maturity level 4: managed	- The model is evaluated and changed or improved where necessary.

6.5.2 Practice 2: Open innovation & CoP

In his book "Knowledge Management in Organizations", Hislop describes a specific form of a group working together. This group is called a Community of Practice (CoP) and normally a CoP starts by itself including interested employees or outsiders wanting to communicate about a particular subject setting their own rules for such a CoP. Regarding to innovation within an outsourcing relationship, a stakeholder can set up a CoP including employees from both the supplier as well as the client who are interested in the subject. All levels can participate in order to drive innovation within the outsourcing relationship. The only rule that needs to be applied is the rule of setting up a CoP using RACI or similar.

Maturity level	Criteria
Maturity level 2: repeatable	- A CoP is created and implemented including both suppliers and customers stakeholders at all hierarchical levels.
Maturity level 3: defined	- The CoP is monitored with focus on # of users, # of meetings and usage of social media.
Maturity level 4: managed	- The CoP itself is evaluated with focus on software, hardware, types of meetings and population of participants.

6.5.3 Practice 3: Communication

Gottschalk and Solli-Saether defined eleven critical success factors for governing outsourcing projects. One of the critical success factor is stakeholder management, which entails efficient and effective communication with and between stakeholders to secure their ongoing support (Gottschalk and Solli-Saether, 2006). Egbu found evidence of communication being favourable to all innovation done in the cases being studied. According to the author, flexibility in the lines of communications allowing top-down bottom up and lateral communication within the organisations (Egbu, 1994). Another scholar pointed out that a critical success factor for innovation is the establishment of proper internal and external communication (Rothwell, 1992).

Hence, within the outsourcing relationship communication of failures and achievements regarding innovation is key to success. Communication is done regularly, both from supplier and customer. Concerning the supplier, information should be shared about ongoing innovation projects, the future portfolio and possible new leads from sales. This communication can be done via newsletters, blogs, discussion groups and/or magazines. All the three hierarchy levels should be involved. These are the operational level, tactical level and strategic level.

Maturity level	Criteria
Maturity level 2: repeatable	- A method/strategy or similar for communication is created.
Maturity level 3: defined	- The method is monitored with focus on way of communication, # of communications and awareness of the communication. - Appropriate steps are taken to improve the way of communication if needed.
Maturity level 4: managed	- The method is evaluated and improved where possible.

6.6 Contract management

Langfield-Smith and Smith define outsourcing as the contracting of any service or activity to a third party (Langfield-Smith & Smith, 2003). This definition shows the importance of the contract and therefore the importance of contract management. Several cases can be found in the literature, whereby lacking of the contract and mismanagement of the contract led to huge jurisdictional cases. One of them is BSkyB versus EDS. An initial outsourcing project with an amount of 50 million pounds ended up in a project with an expenditure of 260 million pounds.

Traditionally, the focus of outsourcing was cost reduction. The third wave of outsourcing changed this perception. Since 2006, large IT outsourcing contracts have a chapter innovation included in the contract. Even if innovation appears in many outsourcing contracts, some practitioners argue that innovation should not be part of an outsourcing contract. Moreover, they even argue that outsourcing contracts which have more than 1000 pages are more often worse than small contracts. Furthermore, a difference in contracts can be found if the contract is created by an American firm or a European one. A very detailed contract including lots of SLA's, KPI's etcetera but does not directly mean the contract is a successful and workable one. However, three practices are part of the capability contract management and these are KPI, SLA and Pricing strategy & innovation budget.

6.6.1 Practice 1: KPI

An old wise premise is that what is not measured, cannot be managed. Key performance indicators represent a set of measures that measures those aspects of the current and future organisational performance with respect to success. Therefore, key performance indicators are important for outsourcing deals, particular the collaborative KPI's (vd Vet & Hajdasinski, 2009). Other outsourcing KPI's are delivery & enablement, integration, management and operations, business transformation, and client/vendor relationships (Currie, 2003). These KPI's were derived from web enabled application outsourcing projects, but can be generalised. Concerning innovation, Bozios et al. defined a set of innovation KPI's which evaluate the importance of innovation activities to the innovation performance (Bozois et al., 2009). The figure below is extracted from the authors' paper.

No	Innovation KPI	Description
1	Revenue growth due to new products or services	The revenue growth due to new products and services is a strong indicator by which we can assume that an organizations new products and services have been approved by the organizations market and the organization has outpaced its competitors.
2	Customer satisfaction with new products or services	Customer satisfaction is a very important key indicator. Nevertheless, it should be supported by a sub-indicator, the customer reference percentage, meaning the ratio of the satisfied customers that suggested our products or services to new customers
3	Number of ideas or concepts in the pipeline	The new ideas soon to be evaluated and realized. The average time before realization or rejection should be also taken under consideration
4	R&D spending as a percentage of sales	How much strongly an organization believes that innovation is the key.
5	Percentage of sales from new products/services in given time period	Would the new products or services make the majority of the total sales? How important are the new products or services. Pretty much an ABC analysis for our innovations.
6	Number of new products or services launched	In combination with indicator number 3, this can also be negative, meaning that if from an organization only one idea occurred, the idea's realization was the organization's only choice.
7	Return on investment (ROI) in new products or services	How fast did the organization get the money back from its innovations.
8	Number of R&D projects	Can show organisations' will to innovate.
9	Number of people actively devoted to innovation	Number of creative employers devoted to innovation, working in any department of the organization
10	Profit growth due to new products or services	More focused indicator than the first one, meaning that new products and services have really gave advantage to the organization along with money for R&D.
11	Potential of entire new product/service portfolio to meet growth targets	The potentiality is always estimation. Nevertheless, when there is a possibility that the entire portfolio will meet growth target, that means that in the portfolio there are some "star" products or services that can meet growth sales for a very long period of time.
12	Changes in market share resulting from new products/services	The diffusion of organization's innovation in the market. Actually, the diffusion of an innovation within the organizations boundaries should also be a factor
13	Net present value (NPV) of entire new product/service portfolio	The NPV of the entire portfolio shows the total present value (PV) of a time series of cash flows. It is a standard method for using the time value of money to appraise long-term projects.

Table 1: Important Innovation KPI

Maturity level	Criteria
Maturity level 2: repeatable	- The relevant Innovation KPI's are identified using for instance the table adopted from Bozios et al (Bozios et al, 2009) & from Currie (Currie, 2003).
Maturity level 3: defined	- The KPI's are monitored using the table adopted from Currie (Currie, 2003).
Maturity level 4: managed	- The KPI's are evaluated and improved using the table adopted from Currie and the outcomes from monitoring.

6.6.2 Practice 2: SLA

Singleton defines a Service Level Agreement as a formal written agreement developed jointly by a customer and a provider that specifies a product or service to be provided at a certain level in order to meet business objectives (Singleton et al, 1988). SLA's can help to shed light on responsibilities, build trust and strengthen communication. Scholars argue the use of Service Level agreements in a contract (Schniederjans et al., 2007; Robinson & Kalakota, 2005). Implementing the right SLA's could improve trust and commitment within an outsourcing relationship. These SLA's include foundation characteristics, governance characteristics and change characteristics (Goo et al., 2009). Hence, a positive influence should have the SLA's with focus on innovation which are defined as described by Goo et al.

Maturity level	Criteria
Maturity level 2: repeatable	- The level of innovation SLA's are identified by a) completeness b) characteristics, c) change management and d) governance. - A statement is written of innovation expectations and capabilities by the Service Provide. - Contractual element of SLA: Innovation plan.
Maturity level 3: defined	- The SLA's are monitored. - The innovation plan is monitored using the description of Goo et al (Goo et al, 2009).
Maturity level 4: managed	- The SLA's are evaluated and improved where possible. - The innovation plan is evaluated and improved using the description of Goo et al (Goo et al, 2009).

6.6.3 Practice 3: Pricing strategy & innovation budget

Using the practice scope of innovation as a foundation, pricing of particular projects should be easier. That is, when a clear scope of innovation is set, projects done for a customer can easily be labelled as innovative or not. Furthermore, expectations regarding profiting from innovation should be very clearly defined. Which part of the innovation is paid for by the customer and which part is paid for by the supplier. Or, is a customer going to be billed a hundred percent for one to one innovation or not.

Next to having a pricing strategy, an innovation budget would come in handy within the outsourcing relationship. Since 2008, many big outsourcing contracts do have an innovation chapter including an innovation budget. These budgets usually are not used for innovation specific, but to fill the gap for other projects. More and more CIO's who are involved in outsourcing, would like to see innovation coming from these outsourcing relationships. Therefore, having a budget might seriously help serving the need for innovation within the outsourcing relationship.

Maturity level	Criteria
Maturity level 2: repeatable	- Protocols for right pricing of innovations, using a) outsourcing costs & b) innovation costs are identified and implemented. - An innovation budget or similar is in place.
Maturity level 3: defined	- The innovation budget is monitored with respect to usage of budget, way of usage and level of usage satisfaction of the stakeholders. - Actions are taken to improve the level of satisfaction.
Maturity level 4: managed	- The budget is evaluated and adapted if necessary.

6.7 Culture management

Culture management deals with several aspects of organisational cultures. Also, organisation's operating in different countries ought to be aware of the national culture. Within the outsourcing literature, numerous authors try to identify best practices dealing with different cultures regarding nearhore or offshore outsource relationships (van der Linden & Hengeveld, 2009; Winkler et al, 2008; Dossani, 2005; Hendry, 1995). Concerning innovation, culture management is also important. For instance, Hurley and Hult describe the void of market orientation research and the relation with innovation. They portray that a company's culture that focuses on learning, development and participative decision making, will have a greater capacity for adaptation and innovation (Hurley & Hult, 1998). Nakata describes five dimensions of national culture which influences new product development (Nakata and Sivakumar, 1996). Hence, culture management is an important theme concerning innovation and outsourcing and therefore is the seventh capability area. This capability area incorporates three practices; corporate culture, national culture and global footprint.

6.7.1 Practice 1: Corporate culture

Edgar Schein defines Corporate culture or organisational culture as the basic assumptions and beliefs that are shared by members of an organisation. Through culture, experiences are shared across an organisation. Routines, symbols, stories and rituals are elements of culture which are used to communicate within an organisation (Hendry, 1995). Concerning an organisational culture, McAleese and Hargie defined five elements of culture management, 1) formulate an overall strategy, 2) develop cultural leaders, 3) share the organisational culture by communicating effectively with staff, 4) measure performance and 5) communicate culture with customers (McAlees & Hargie, 2004).

Maturity level	Criteria
Maturity level 2: repeatable	- Awareness of both the suppier's and the client's culture is created. - A strategy is developed to align both culture's as good as possible.
Maturity level 3: defined	- The strategy is monitored with focus on awareness by the stakeholders and usage of the strategy.
Maturity level 4: managed	- The strategy is evaluated and improved where possible.

6.7.2 Practice 2: National culture

Different nationalities of companies will lead to a different approach to outsourcing and innovation. For instance, Kakabadse and Kakabadse describe different trends in outsourcing in Europe and USA (Kakabadse & Kakabadse, 2002). They portray that American companies pursue more value adding sourcing strategies while European are gaining more on economies of scale through outsourcing. Furthermore, adopting new products or having a national culture of intensive research & development differs per country. Five dimensions of national culture are described in literature; power distance, individualism, masculinity, uncertainty avoidance and Confucian dynamic (Hofstede, 1983; Nakataka & Sivakumar, 1996). Different perspectives on innovation and outsourcing will occur and this implicates a different approach per country regarding to innovation within an outsourcing relationship.

Maturity level	Criteria
Maturity level 2: repeatable	- Awareness of the national culture of the stakeholders of the client's side as well as the suppliers side is created. - A plan for creating awareness is build and implemented.
Maturity level 3: defined	- The plan is monitored by # of users, # of usages and stakeholder's satisfaction. - Appropriate steps are taken to improve the stakeholder's satisfaction.
Maturity level 4: managed	- The plan is evaluated and improved where necessary.

6.7.3 Practice 3: Global footprint

Organisations differ in size and internationalisation. Regarding to outsourcing, both the supplier as well as the client need to be aware of the global footprint of one another. Venohr and Meyer describe the advantages of having a global footprint when improving products or processes. Awareness of the needs in every country in the world results in competitive advantage in these areas. More specific, profit should not be the main objective regarding a company's strategy. instead, companies should create maximum benefit for the target group by solving the most urgent problems better than the competition (Venohr & Meyer, 2007). In that way, both the supplier and the customer are aware of the probability of the organisation to grow in a particular area and the knowledge of a particular area to boost innovation for that area.

Maturity level	Criteria
Maturity level 2: repeatable	- A plan is created to increase the awareness of the global footprint of both the supplier and the client.
Maturity level 3: defined	- The plan is monitored with focus on # of usages, # of users and stakeholder's satisfaction.
Maturity level 4: managed	- The plan is evaluated and improved where necessary.

7 IOM2: Verification

This chapter describes in how the "Innovation within an Outsourcing relationship Maturity Model" (IOM2) is verified and what the outcomes of the verification are. Verification of a model is the process determining that the model implementation represents the conceptual descriptions and specification set for that model (Conwell et al, 2000). If a model is verified positively, it means that the model executes its functions correctly. First, the function of the mode is described again. Second, the way of verification is explained as well as the steps taken visiting the domain experts. Third, the some background information of the domain experts is given. Last, some recommendations made by the domain experts are portrayed.

7.1 Functionality IOM2

The maturity model IOM2 provides stakeholders within outsourcing relationships an approach to manage and boost innovation. Furthermore, IOM2 helps to create a strategy as well as a strategy roadmap for innovation within an outsourcing relationship. Also, the current mode of operation regarding innovation within the outsourcing relationship can be determined using IOM2. These functionalities are the foundation of IOM2 and the three step model and hence need to be verified.

Several steps were taken to determine whether the three step approach and IOM2 are correct. To know which steps must be taken, awareness is needed of the meaning of correct regarding to IOM2. A correct maturity model deals with several issues. First of all, a correct maturity model is an orthogonal model. That is, the layers of the model need to be in place. More precise, a distinction can be made between the actual model, the meta model, the input variables and output variables. For instance, the best practice innovation agenda is not orthogonal, because IOM2 will produce a strategy roadmap and hence an innovation agenda. For that reason, the innovation agenda is not part of IOM2 itself, but part of the output of the model. Second, the seven capability areas of IOM2 and its practices need to cover the most important aspects of both outsourcing and innovation. This step is described in detail in chapter four. Third, maturity levels and the corresponding criteria of the maturity levels need to be correct in order to know in what maturity level an outsourcing relationship is.

7.2 Verification method and steps

The model was verified using the following steps. The first step included in depth Interviews with domain experts. Several questions were asked including if the model was orthogonal, if the right and all the important practices were described, if the criteria were correct and if the most important capability areas were incorporated. The complete list with questions can be found in appendix F. The second step was to check the model IOM2 with other maturity and capability models, especially e-SCM. the capability areas, practices and levels were verified using e-SCM. Third and last step was to verify the model during the validation of the model using two cases. During the two validation sessions with the companies, the model was verified again looking at the correctness of the practices, maturity levels and the criteria of the maturity levels.

7.3 Comments by domain experts

During the verification, in depth interviews were held with several domain experts from the suppliers side, research side and the consultancy side. The domain experts interviewed were Mr. van den Berg (Managing Director and VP Corporate Customers of T-Systems), Professor Beulen (holds the Accenture Global Sourcing Chair at Tilburg University), Professor Dankbaar (Business Administration at the Radboud University Nijmegen), Dr. Delen (Partner at VKA), Mr. Gianotten (Owner Giarte), Prof. van Gorp (Professor of International Business Strategy at Nyenrode Business University), Mr. van Grieken (Vice President Business Innovation at Capgemini) and Mr. IJmker (Sourcing advisory practice at Quint Wellington Redwood and co-founder Platform Outsourcing Netherlands).

Several comments were made during the session with the several domain experts. The most important comments are described in detail. The first comment was concerning the "Devils triangle". The devils triangle involves three elements that creates tension regarding the organisation's strategy. These are product leadership, operational excellence and customer intimacy. Keep in mind that money can only spend once. So, if the choice is made focussing on operational excellence, then having innovation is uncertain. Or, more money must be spend in order to drive innovation. The second comment dealt with the void of the framework. This comment was made during the first two meetings. Reason for that was that the framework lacked criteria per practices for pinpointing maturity levels. This particular comment was solved by adding the criteria for the maturity levels of all the practices. The third comment was about looking for alignment with the e-Sourcing Capability Model. This particular comment was not put in practice, but is a really interesting topic for future research. The fourth comment was about the different contracts which are set up regarding outsourcing. Some contracts are really rigid and therefore not that suitable for innovation, unless it is explicitly mentioned. Other contract are more mature in a way that only the most important KPI's and SLA's are described. The last comment was about difficulties in general regarding innovation within an outsourcing relationship. For instance, since 2006 the most big outsourcing contracts cherish innovation by including a chapter spending on innovation. However, this chapter is only in the contract to prevent cannibalisation. More precise, the contract is more flexible to further negotiations and innovation is only a strategy for flexibility of the contract. This strategy ought to be taken into account while finalising the maturity model, IOM2.

7.4 Recommendations domain experts

Several recommendations were given by the domain experts covering all the aspects as portrayed above, making the model a correct model. First of all, several domain experts commented on the model being not orthogonal. These experts were Prof. Beulen and Prof. Dankbaar. Also, the model was optimised by Mr. IJmker by commenting on the practices from both the innovation framework and the outsourcing framework. Question was whether the practice belonged to the outsourcing framework, innovation framework or both frameworks. A different choice implicates a different model. Mr. IJmker recommended that the model should adapted to the decision of whether the practice was derived from the outsourcing framework, innovation framework or both. Furthermore, Prof. van Gorp thought that not all capability areas were covered. She suggested another capability area, including cultural aspects. The practices covering these aspects were bundled in the capability area culture management. The practices corporate culture, national culture and global footprint are part of the capability Culture Management. Mr van Grieken and Mr. van den Berg also mentioned a missing part, namely communication. The practice "Communication" was added to the capability area "Capability Management".

8 Validation of IOM2

This chapter describes in detail in what way the model is validated. Validation of a model concerns the determination of the fact that theories and assumptions underlying the model are correct and that the representation of the model is reasonable according to the purpose of it (Sargent, 2005). To validate the Innovation within an Outsourcing relationship Maturity Model (IOM2), two cases of outsourcing relationships are used to test their innovation maturity levels. Furthermore, the stakeholders cooperating in this validation responded to the question by giving their opinion on the model. First, a short introduction of the two relationships is portrayed. Second, the method of validation as well as outcomes of the validation are described in this chapter. Finally, the comments given are portrayed.

8.1 Introduction two outsourcing relationships

Two cases were used to validate IOM2. One relationship is a simple outsourcing relationship which consists of a large oil company and a global hosting and storage provider. The second relationship concerns the relationship between an American Consumer Package Goods (CPG) company and a global software development and consulting corporation.

8.1.1 Oil company/hosting & storage provider

The first case concerns the outsourcing relationship between a large oil company and a hosting and storage company. During the beginning of 2006, the oil company decided to outsource a large part of their IT-departments in order to cut costs, increase flexibility and gain state-of-the-art IT. Restructuring the organisation of the oil company with focus on their core business resulted in the dramatic change for the IT-division, affecting more than 3600 employees. Several companies were selected to take over big parts of the company's IT-department, including the employees. Three companies had to take over the infrastructure and data-warehousing. A total of ten companies are active in the client's outsourcing ecosystem. One global hosting and storage company received the contract for five years with the oil company and is now providing it with global hosting, storage services and middleware.

The initial five-year agreement included that the supplier took over the infrastructure as well as IT professionals of the oil company's global data-centers in different parts of the world. The supplier had to focus on three challenges: 1) a smooth switchover of responsibility of data-centers, 2) ensuring global delivery and 3) improving technology. In more detail, one major operation resulting from the deal was the migration of the client's SAP service to the supplier standard services. Overall, the supplier now serves the client in over 100 countries and therefore set up a dedicated team for the client. This team consists of former IT-professionals from the client's side as well as supplier's professionals, who are hosted in a location of their own in the Netherlands.

The contract set up between the client and supplier not only focuses on the standard agreements. One part of this contract also concerns innovations. According to the client, cost reduction is only one aspect within the outsourcing relationship. For this particular deal, a budget was agreed on for innovative projects. This budget pinpoints the importance of innovation within this particular outsourcing deal. However, putting innovation in a contract also increases complexity.

When the characteristics of outsourcing emerging from chapter two are used, the following scope can be set answering the following questions:

- What is the type of outsourcing relationship?
- What is the duration of the contract?
- What is the strategy of outsourcing?
- What is the complexity of outsourcing?
- What are the main reasons for outsourcing?
- What is the impact of outsourcing?
- What is the location of outsourcing?

The outsourcing relationship is a 100% Information Technology Outsourcing. However, the intension is to boast Knowledge Process Outsourcing now as well in the near future. The duration of the outsourcing contract is long term, that is five years. The strategy of outsourcing is initially outsourcing commodity activities. The complexity of outsourcing regarding domain expertise is low complexity. The initial reasons for outsourcing were cost reduction, the drive to increase flexibility and to improve quality. The impact of outsourcing is at an organisational level and this particular relationship is a simple outsourcing relationship. The location of outsourcing is onshore and offshore.

8.1.2 American CPG Company/Global software development & consulting firm

In the beginning 2000, an American Consumer Package Goods (CPG) company started working together with a global software development & consulting firm. Several services were outsourced, including software building. In 2006, a partnership was started and more services were initiated, like monitoring services, software and hardware architecture services and software building services. Another service is in particular interesting, starting to work on co-innovation regarding software. The outsourcing contracts concerns short term contracts. That is, contracts with the global software development & consulting firm are signed for just one year. Furthermore, all the services provided have their own contract. The CPG company has its own outsourcing ecosystem, including five suppliers.

Using the characteristics as described in chapter two, the following questions of the outsourcing relationship can be answered:

- What is the type of outsourcing relationship?
- What is the duration of the contract?
- What is the strategy of outsourcing?
- What is the complexity of outsourcing?
- What are the main reasons for outsourcing?
- What is the impact of outsourcing?

The type of outsourcing with this particular supplier is 100% Information Technology Outsourcing (ITO). However, part of the ITO activities concern Knowledge Process Outsourcing (KPO). The reason for that is that co-innovation projects are done. The duration of the contracts has the length of a year, and hence is short term . The focuses of outsourcing are to improve the quality and knowledge creation and cost reduction. The relationship of outsourcing is a simple outsourcing relationship and the amount of outsourcing for several services is at project level.

8.2 method of validation

Awareness of the scope of outsourcing as well as innovation within the outsourcing relationship is very important. That is why chapters two and three describe outsourcing and innovation in detail. first, the scope of outsourcing must be defined. In order to do that, the characteristics described in the chapter about outsourcing are used. One or more variables of each characteristic applies to the scope of outsourcing relation. Second, the scope of innovation within the outsourcing relationship must be defined. Again, characteristics defined within this thesis are used and for some characteristics, more than one variable can be used to define the scope. To set the scope for both outsourcing and innovation, several questions are asked and can be found in Appendix E. Third, the most interesting practices of IOM2 are selected by the stakeholders within the outsourcing relationship to check the maturity of the outsourcing relationship. Apart from that, practices were selected which were not interesting for the stakeholders, because they know whether a practice is actually working or not. For every practice questions were asked and these questions can be found in Appendix E. Furthermore, maturity levels two, three and four of all the practices selected were validated in order to determine whether the levels were accurately modelled.

8.3 Outcomes & comparison cases

In this section, the outcomes of the application of IOM2 are described for both outsourcing relationships. Furthermore, a comparison between the maturity levels received is drawn, as well as some conclusions.

8.3.1 Results Oil company/hosting & storage provider

The first outsourcing relationship whereby IOM2 is applied is between a global oil company (client) and a global hosting and storage provider (supplier). This session included several meetings as well as an internship. One session conducted was similar to the session done within the other relationship. This particular session involved a telephone conference of an hour, whereby a presentation was given to introduce IOM2, set the scope of outsourcing and innovation within the outsourcing relationship. The practices were applied and comments were given. The comments are described later on.

Concerning innovation, the client of innovation is business to business as well as business to business to consumer. The mode of innovation is open. Several people at different level from both the supplier's and client's are involved to drive innovation. The location of innovation from the supplier's side is decentralised. Innovation governance is done at headquarters, but all innovation can come from all the business units throughout the world. Concerning the contract, a definition of innovation can be found and a chapter is reserved to describe innovation within the outsourcing relationship. furthermore, a budget is reserved to start new innovation projects.

During the session, the following capability areas were applied, "Relationship Management", "Innovation management", "Knowledge management" and "Contract management". The following practices of the capability areas were applied, namely "Roles", "Portfolio management", "Innovation competence needed", "training", "Community of Practice", "Repository", "Pricing". The results of the assessments are described in the next section. Note that not all capability areas were applied, because of the importance to apply some practices intensively and lacking of time.

8.3.2 Results of an American Consumer Package Goods company /software development & consulting firm

The second outsourcing relationship which was tested on IOM2 was the one between the an American Consumer Package Goods company (client) and a global software development and consulting corporation (supplier). The validation consisted of two meetings. The first one was a 30 minutes long telephone conference (telco). Within this telco, IOM2 was explained briefly and the scope of outsourcing within the relationship was defined. The telco was extended to one hour. The second meeting was at the headquarters of the client and that telco took two hours. During this session, the scope of innovation within an outsourcing relationship was set, some practices were checked and comments were given.

The client's amount of outsourcing of IT related work is high. Also, the client's tries to govern these outsourcing relationship intensively. Concerning the type of relationship, the relationship with this particular supplier is a partnership. Meetings with the supplier are planned on various levels and are often held once a week. The contract set up is according the American style, which means that everything, including the SLA's, KPI's etcetera are described in detail. The phase of outsourcing is the transformational phase. The deliveries done by the supplier are services and products. The client only outsource IT commodity and basic activities. the relationship is a simple outsourcing relationship. However, the client as well as the supplier are also involved in a multi-vendor relationship. The client takes every decision within the relationship, but after consulting the supplier. The client is part of the supplier's advisory board and therefore the client has some influence in the decision making of the supplier.

Concerning innovation, only regular and architectural innovation are interesting for the client to outsource. However, innovation is not defined within the outsourcing contract. Furthermore, no innovation budget is reserved for innovation. Because the outsourcing relationship is a partnership relationship, risks concerning innovation projects are shared. Also, benefit gained from successful innovations are shared. If a particular innovation matures from 1 on 1 offering to the suppliers portfolio, then the client is informed and appropriate action is taken. If an innovative project is exclusively done for the client, the client will get the intellectual property. The client points out that this relationship is the most mature one and steps are taken to take other outsourcing relationships to the same level.

The following capability areas were used, namely "level of trust", "knowledge management" and "innovation management" and "leadership". The practices "Risk", "Collaboration", "control", "Repository", "Training", "Stage gate model", "innovation competence needed", "innovation audit", "Portfolio Management", "Individualised consideration", "Inspirational motivation", "Reward system" "scope of innovation" and "Roles" were applied. The results of the application of IOM2 are described later in this chapter.

8.4 A comparison of the cases

A comparison of the two relationships is given by a detailed description of the capability area "Innovation management". The maturity levels are determined by asking several questions. These questions does not in particular relate to the maturity levels which are described in an earlier chapter. Reason for this is that an important comment that came from both interviews cq validations was that the maturity levels of the practices were very theoretical. As a result, questions were asked to determine the maturity level for each of the outsourcing relationship. for simplification, the outsourcing relationship between the large oil company and a global hosting and storage provider is named relationship 1 and the second relationship between the American consumer package goods company and a global software development and consulting corporation is named relationship 2.

The questions for the practice "Stage gate model" are:

- Does the client and supplier both have an innovation stage gate? (why/why not)
- If so:
    - Is one of the innovation stage gate model used to start new innovation projects? (why/why not)
    - If so:
        - Is the model used aligned with both the supplier's and client's stage gate model? (why/why not)
- Is the performance of the stage gate model monitored? (why/why not)
- If so:
    - Are people aware of the performance of the model? (why/why not)
- What is the future strategy for implementing or optimising the stage gate model?

Relationship 1 had no innovation stage gate model implemented. The stakeholder from the client's side thought that this relationship lacks a model like this. He is going to investigate the possibilities of an innovation stage gate model. Hence, the maturity level of practice "Stage gate model" for relationship 1 is 1. Regarding relationship 2, an innovation stage gate model is implemented and used. However, the model is from the client's and is used ad hoc. Furthermore, the model used is not aligned with the supplier's innovation stage gate model. Therefore, the maturity level for the practice "Stage gate model" of relationship 2 is 2.

The questions for "Innovation competence needed" are:

- Is the supplier aware of the client's business and business processes? (why/why not)
    - If so, in what way is the knowledge gained?
    - Is an employee of the supplier on-site? (why/why not)
        - If so, is that person triggered to drive innovation for the client? (why/why not)

- Are the stakeholders from both sides being educated to gain domain expertise? (why/why not)
- If so:
    - In what way are the stakeholders from both sides being educated concerning the processes?
- Is the process of awareness of the business process being monitored?

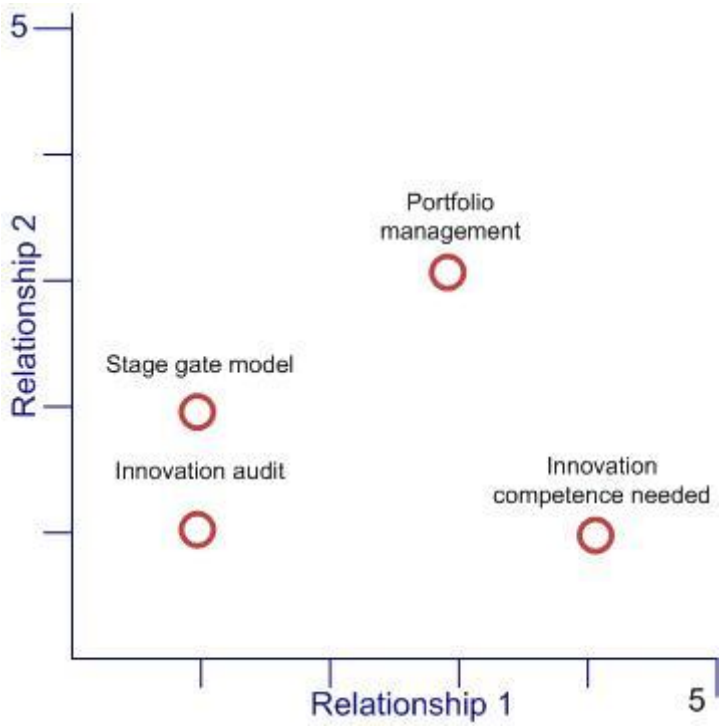
The supplier of Relationship 1 is considered to have a large amount of the client's domain expertise. Reason for this is that there are several employees of the supplier working on-site. These employees are also triggered to drive innovation by creating awareness of the possibilities. Therefore, concerning practice "innovation competence needed" relationship 1 is in maturity level 4. the supplier of relationship 2 do not have people working on-site. However, they do have a large number of former employees from the client's side having a lot a domain expertise. This domain expertise is not triggered. Therefore, relationship 2 has maturity level 1.

The questions for the practice "Portfolio management" are:

- Does the supplier offer 1 on 1 innovation projects? (why/why not)
- If so:
    - Does these projects maturing to a portfolio offering? (why/why not)
    - Is a protocol being set up for 1-1 to portfolio maturation? (why/why not)
- Is the process being monitored? (why/why not)
- Does the client has ability to change/adapt the portfolio? (why/why not)
- Does the supplier has the ability to change/adapt the portfolio? (why/why not)

Concerning relationship 1, 1 on 1 innovation projects are started. These projects are then completed and if the project is interesting enough for the supplier, it might mature to portfolio offering. If not, the client will get the intellectual property of the product or service. Furthermore, the client standardised this process to use this process for all the outsourcing relationships. Therefore, the maturity level of this practice for relationship 1 is 4. Concerning relationship 2, the supplier has no protocol in place yet. However, 1 on 1 offering is done and the client's has indirectly influence on the supplier's strategy. Therefore, the maturity level for this practice for relationship 2 is 2.

The practice "innovation audit" was not implemented by both relationship 1 and relationship 2. Both the relationships have maturity level 1 one this particular practice. The results of these practices can be plotted in a graphic. The results of relationship 1 is plotted on the X-axis and the results of relationship Y is plotted on the Y-axis. See picture below.



This picture can be helpful if stakeholders of both relationships are aware of each others scores. For instance, relationship 1 has a maturity level 4 for the practice "innovation competence needed". So, this relationship has lots of useful knowledge regarding this practice and that can be helpful for relationship 2. Having these pictures present, stakeholders can learn from each other.

8.5 Comments on IOM2

The interviews conducted with several stakeholders within the two outsourcing relationships, had a maximum duration of 2 hours. This implicates that not all practices are validated. Furthermore, not all questions were able to be answered. However, some important comments were given by the different stakeholders within the outsourcing relationships.

The most important comment that came from both cases was to use real life examples from practice to determine the maturity level of a practice. As described in chapter four, elements from Total Quality Management (TQM) were used in order to define the different maturity levels. The result of using theories from TQM was that level two is focused on planning of the practice. Level three concerns the control of the practice and level four covers the improvement of the practice.

Another comment made was the standardisation of the questions and telephone conference. A questionnaire should be standardised and send to a number of stakeholders of different outsourcing relationships. Statistic analysis will determine the different maturity levels of the practices and the model can be thoroughly validated. furthermore, more comments then are provided in order to optimise IOM2 even more.

Another comment came from an expert from the food and body case company. The practices should be described more in detail. Hence, when providing the questionnaire, the practices as described in chapter seven should be provided as well.

According to some stakeholders, the capability area Trust management is a difficult one to implement. It would help to be more specific on the practices risk, collaboration and control. However, the client as well as the supplier agreed that the level of trust is an important critical success factor to drive innovation within the outsourcing relationship.

9 Conclusion & Future research

This thesis provided a three step approach for innovation within an outsourcing relationship. The first step was setting the scope for the outsourcing relationship, using the characteristics as described in thesis. The second step was to set the scope of innovation within an outsourcing relationship, again using the characteristics as described earlier. The third step was the usage of a maturity model for innovation within an outsourcing relationship. This model, called IOM2 was developed by using 1) a capability model called eSCM, 2) the practical environment T-Systems Shell Global Account and 3) relevant literature about innovation and outsourcing. IOM2 was verified by conducting interviews with numerous domain experts and the model was validated by performing two cases concerning two outsourcing relations.

The research was conducted at T-Systems Shell Global Account and tried to answer the question of the innovation manager how to boost innovation within an outsourcing relationship as well as manage innovation within an outsourcing relationship. The result of seven months of research is the three step approach which aims at creating awareness of the maturity level of innovation within an outsourcing relationship, a helping hand to build an innovation strategy as well as an innovation roadmap. Concerning step three or IOM2, this model is already used in one company to build a roadmap and plan future for increasing the partnerships with the suppliers as well drive innovation with these suppliers.

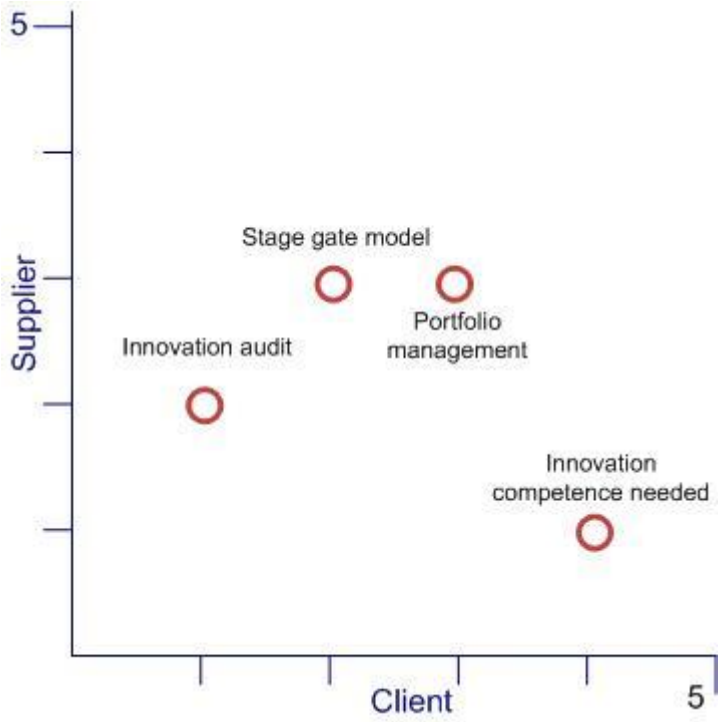
The model IOM2 is already used by a company to plan the future of innovation within some outsourcing relationships Furthermore, the research conducted at T-Systems Shell Global Account was interesting enough that a draft version of the model was presented for T-Systems Netherlands at the annual outsourcing congres 2010 in Zeist. Also, a white paper is written by T-Systems Netherlands and IOM2 is mentioned for driving innovation within an outsourcing relationship.

Main findings of this research are that management of innovation within outsourcing relationship is still very poor and immature. Furthermore, relationships do need time to mature in order to start innovation. If a large ITO contract is involved, standard services need to be delivered properly before innovation can take place and innovation can be implemented only after the transition phase, in the transformation phase. Last but not least, trust is a critical success factor for leveraging innovation within the outsourcing relationship.

Regarding future research, several research projects can be started out from this thesis. first, an in-depth research can be started to check whether the characteristics of outsourcing and innovation can be increased or aligned. Also, the set of characteristics could be made orthogonal. Second, the criteria of the practices can be optimised. Not all the criteria were tested during the validation of IOM2, because some of the practices time was lacking. Third, the model can be validated and verified using more than two cases. By doing that, quantitative research data can crystallise the usability and consistency of IOM2 even more. Furthermore, the probability is high that more criteria can be derived by testing IOM2 in practice. Fourth, an attempt could be made to align IOM2 with eSCM. Fifth, research can be done to identify which limitation IOM2 has when the client's perspective is taken. Maybe other practices can added. Also, all the criteria might be rewritten in order to make the criteria bilateral, namely outsourcing criteria and innovation criteria. In that way, the X-Y axis model as described in chapter seven can be adapted to show the maturity level of innovation against the maturity level of outsourcing. Sixth, the way of measuring satisfaction can be crystallised. Several practices' criteria deal with the level of satisfaction. The question is how to measure satisfaction. Numerous of books and papers are written about measuring satisfaction. Hence, the way of measuring some criteria of maturity level two can be researched.

The last suggestion concerns another implementation regarding the x-y axis. This concerns the modelling of the relationship between maturity levels of the outsourcing relationship and the maturity levels of the supplier. This might be helpful to get insight into the supplier's maturity of innovation and the maturity of the outsourcing relationship.

Another option is to model the relationship between maturity levels of the outsourcing relationship and the maturity levels of the supplier. This might be helpful to get insight into the supplier's maturity of innovation and the maturity of the outsourcing relationship. The maturity level of the practice within the relationship is plotted on the Y-axis and the maturity level of the practice of client's side is plotted on the X-axis. An example of the maturity levels of the supplier and the maturity levels of the client is depicted below.



Looking at the chart above, both the client and the supplier are aware of the maturity level of the practices of their partner and know whether or not they can learn from each other.

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Appendix A Outsourcing Characteristics

	Characteristic	Variables	Relate to	Source
1	Type of outsourcing	Information Technology, Business Process, Knowledge Process	Knowledge management	
2	Duration of outsourcing	Long term, Middle term, Short term,	Contract	Jiang & Qureshi, 2005; Li et al, 2008;
3	Strategy of outsourcing	Key activities, Emerging activities, Basic activities, Commodity,	Type of innovation,	Insigna & Werle, 2000
4	Complexity of outsourcing	High complexity, Normal complexity, Low complexity/ standard	Contract management	Aubert et al, 2006; Williamson, 1985
5	History of outsourcing	Traditional outsourcing, Strategic outsourcing, Transformational outsourcing	Relationship management; Contract management	Hatonen & Eriksson, 2009; Kakabadse & Kakabadse, 2002
6	Reason for outsourcing	Cost reduction, Focus on core business, Knowledge creation, Increasing flexibility, Improve quality, Get rid of routine tasks Saving staff costs, Reducing the risk of obsolescence,	Relationship management' Contract management; Knowledge management	Hatonen & Eriksson, 2009; Gonzalez et al, 2009; Kakabadse & Kakabadse, 2002; Grover et al, 1999; Smith et al, 1998; Lacity et al, 1994; Loh & Venkatraman, 1992
7	Location of outsourcing	Onshore, Nearshore, Offshore,	Knowledge management; culture management	Erber & Sayed-Ahmed, 2004;
8	Impact of outsourcing	Organisational level, Unit level, Process level,	Leadership	Harris et al, 1998; Krijnen, 1985;
9	Relationship of outsourcing	Simple outsourcing relationship, Multi-vendor	Relationship management	Gallivan & Oh, 1999; Cross & Earl, 1997

		relationship, Co-sourcing relationship, Complex relationship		
10	Essence of outsourcing	Essential activities, Non-essential activities		Porter & Miller, 1985; Javalgi et al, 2009
11	Phase of outsourcing	Evaluation phase, Negotiation phase, Transition phase, Transformation phase, Exit phase or renegotiation phase,		Voigt et al, 2007; Cullen et al, 2006; Delen, 2005
12	Amount of outsourcing	Micro, Macro, Project,		

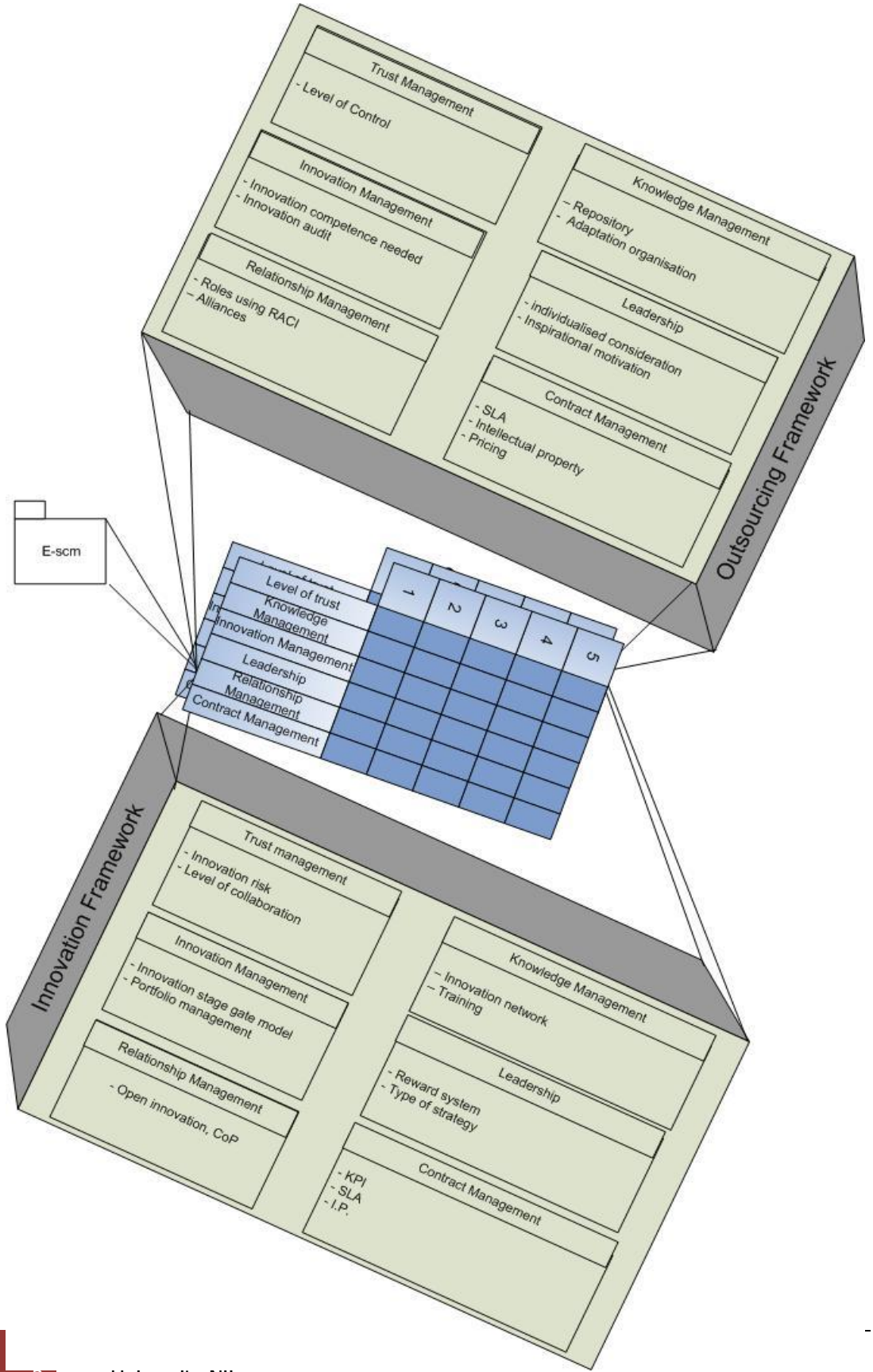
Appendix B Innovation characteristics

	Characteristic	Variables	Relate to	Source
1	Dimension of innovation	Product innovation Service innovation Process innovation Business process innovation Management innovation	Innovation management	Goffin & Mitchell, 2005; Hamel, 2008; Dougherty, 1992; Kok & Biemans, 2008; Kahn et al, 2006; Evangelista, 2000; Miles, 2000; Drejer, 2004; Howells, 2006; Droege et al, 2009; Becker & Egger, 2007; Adner & Levinthal, 2001;
2	Degree of innovation	Incremental innovation Orthogonal innovation Radical innovation	Innovation management; knowledge management	Cooper, 1998; Estrin, 2008
3	Mode of innovation	Closed innovation Open innovation	Relationship management; knowledge management	Estrin, 2008; von Stamm, 2004; Chesbrough, 2003
4	Market segment of innovation	Standard Industry Classification (SIC) system	Relationship management	Hii, 2004
5	Dynamics of innovation	a) entry and exit of firms, b) experimentation and innovation, c) technology evolution, d) improvements in costs and performance, e) emergence of standards and dominant designs, f) adoption of new technology, g) network effects, h) development of a	All	Weil & Utterback, 2005

		mass market, i) market growth, j) market saturation k) intensity of competition and l) commoditisation		
6	Phase of innovation	Scoping Building a business plan and case Development of the product (or service) Testing and validation Launch	Relationship management; knowledge management	Goffin & Mitchell, 2005; Buggie, 2001; Cooper, 2008
7	Impact of innovation	Architectural innovation Niche creation innovation Regular innovation Revolutionary innovation	Knowledge management; innovation management	Abernathy & Clark, 1984
8	Hierarchy of innovation	Top down approach Bottom up approach	Leadership	
9	Architecture of innovation	Complex systems volume-operations architecture	Relationship management	Moore, 2008
10	Client of innovation	B2B B2C B2B2C	Relationship management; contract management	Hutt & Speh, 1998
11	Level of innovation	Project level Process level Micro level	Relationship management	
12	Perspective of innovation	technical perspective human perspective	Leadership	Daft, 1978
13	Period of innovation	Horizon 1; horizon 2; horizon 3	Relationship management	Estrin, 2008; Moore, 2007; Hultink & Robben, 1995;
14	Organisational area of innovation	research and development marketing operations finance and accounting human resource management Universities as well	Relationship management; knowledge management; leadership	Goffin & Mitchell, 2005; Goffin, 2001;

		as suppliers		
15	Economic organisation of innovation	Fragmented Coordinated Industrial district Compartmentalised Collaborative Highly coordinated State organised	Relationship management	Whitley, 2000
16	Strategy of innovation	cost-efficient imitators, costly innovators, cost-efficient innovators, and costly imitators	Innovation management	Craighead et al, 2009
17	Location of innovation	Centralised innovation Decentralised innovation	Relationship management	Pavitt, 1999

Appendix C The Frameworks



Appendix D Questionnaire

In order to set the scope of outsourcing within each relationship, characteristics were used. These outsourcing characteristics are defined in chapter two.

- What is the type of outsourcing contract? long term, short term
- What are the main drivers for outsourcing? For instance cost reduction, more flexibility and focus on core business.
- What is the location of outsourcing? Onshore, offshore.
- What is the level of outsourcing? Complete, process and tasks,
- What is the impact of outsourcing? For instance on organisational level. What is the relationship of outsourcing? For instance simple outsourcing and multi-vendor relationship.
- What is the strategy of outsourcing? For instance basic activities and emerging activities.
- The amount of outsourcing? For instance complete outsourcing of IT.

Some general questions regarding outsourcing:

- Do you think that this relationship can be labelled as an outsourcing relationship? And what is the level of maturity?
- Is the level of outsourcing governance high/medium/low?
- Is the level of influence to decisions made, both ways high/medium/low?
- Do you see the relationship as demand-supply relationship/vendor-client relationship/partnership.
- What is the frequency of meetings that are planned within this relationship? N times per week/month/year?

In order to set the scope of innovation within an outsourcing relationship, the innovation characteristics are used and the related questions are depicted below:

- What is your companies' definition of innovation (within an outsourcing relationship)
- What is the location of innovation? (from the supplier's perspective) for instance centralised innovation
- Impact of innovation? (supplier) for instance regular or niche creation
- What is the Influence of the customer regarding your innovation strategy? (supplier)
- Is innovation part of the contract?
- In what way does the customer pay for innovation?
    - Is that part of the contract?
    - How well is that defined in the contract?
    - Is there an innovation budget?
    - In what way is the budget used?
- What is the innovation strategy? For instance proactive innovation strategy

- Is innovation B2B only? Or B2B2C only?

Some questions regarding the practices of IOM2:

- Which practices are most interesting regarding this outsourcing relationship?
- Is this practice usable within this relationship? (why/why not)
- Is the practice implemented within the outsourcing relationship (why/why not)
- Is the practice being monitored? (why/why not)
- What can be done to make the practice more usable?

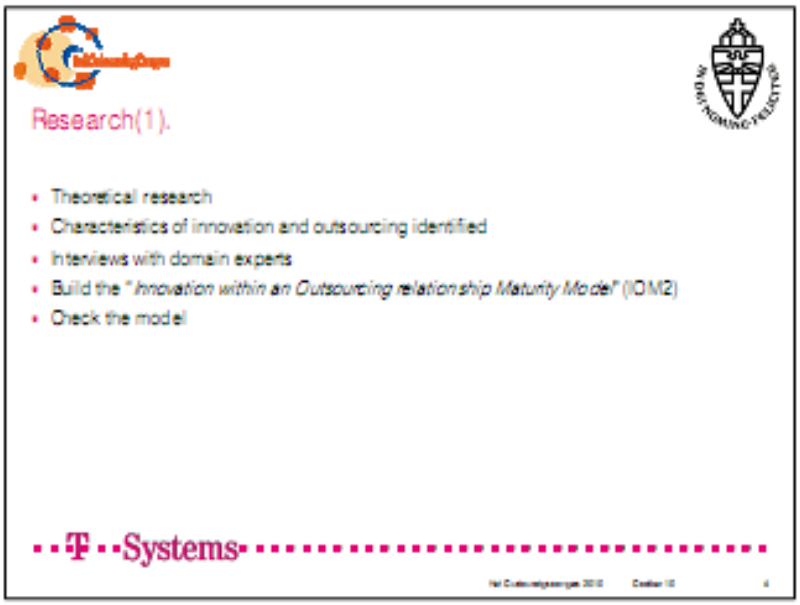
Furthermore, a couple of questions were asked, specific to a practice

- Are the roles defined within the Community of Practice? (why/why not)
- Are the levels strategic, tactical and operational defined within the practice defining roles? (why/why not)
- Has the supplier the ability to access resources from the customer. E.g., repositories. (why/why not)
- Is innovation part of the contract? (why/why not)

Appendix E Presentation Outsourcing Congres 2010

During the internship, a presentation was given concerning the research conducted at T-Systems Shell Global Account. Below the presentation.


Bart van der Linden.
• Education
• Information Science, Radboud University Nijmegen
• Outsourcing
• India: Hyderabad & Bangalore
• Uganda: Kampala
• Writing
• Outsource Magazine
• PON
• T-Systems
• Internship: Innovation Outsourcing Maturity Model (IOM2)
• Junior Innovation Manager Shell Global Account
T Systems

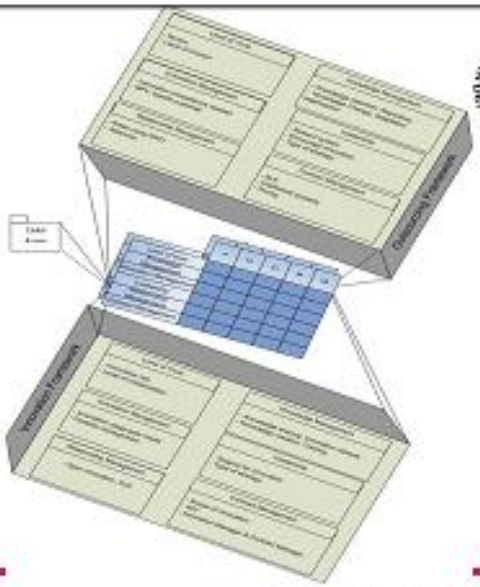

Research(1).
• Theoretical research
• Characteristics of innovation and outsourcing identified
• Interviews with domain experts
• Build the "Innovation within an Outsourcing relationship Maturity Model" (IOM2)
• Check the model
T Systems

Research(2).

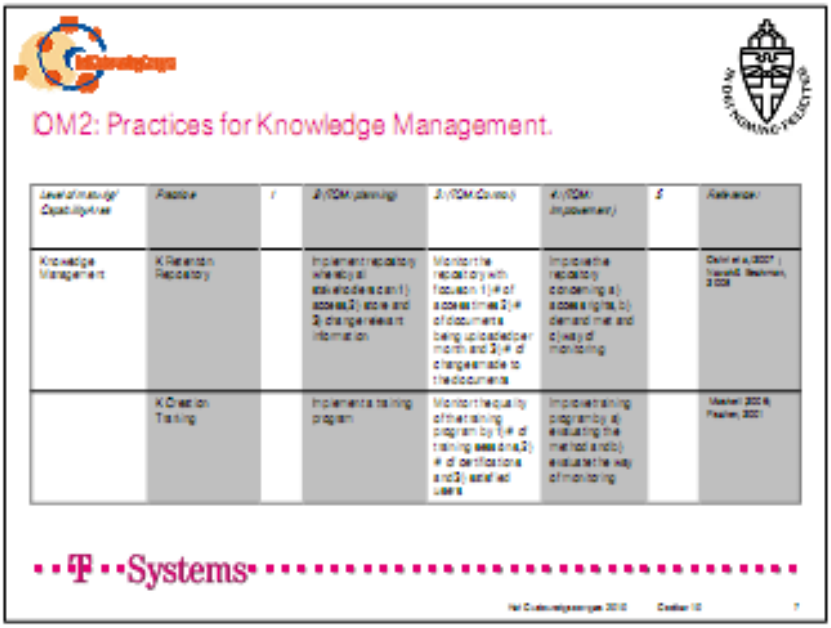
- Capability Areas
  - Level of trust
  - Knowledge Management
  - Innovation Management
  - Leadership
  - Relationship Management
  - Contract Management
  - Culture Management
- Maturity Levels
  - Initial
  - Repeatable
  - Defined
  - Managed
  - Optimising
- Practices
  - +/- 4 per capability area
  - 28 practices

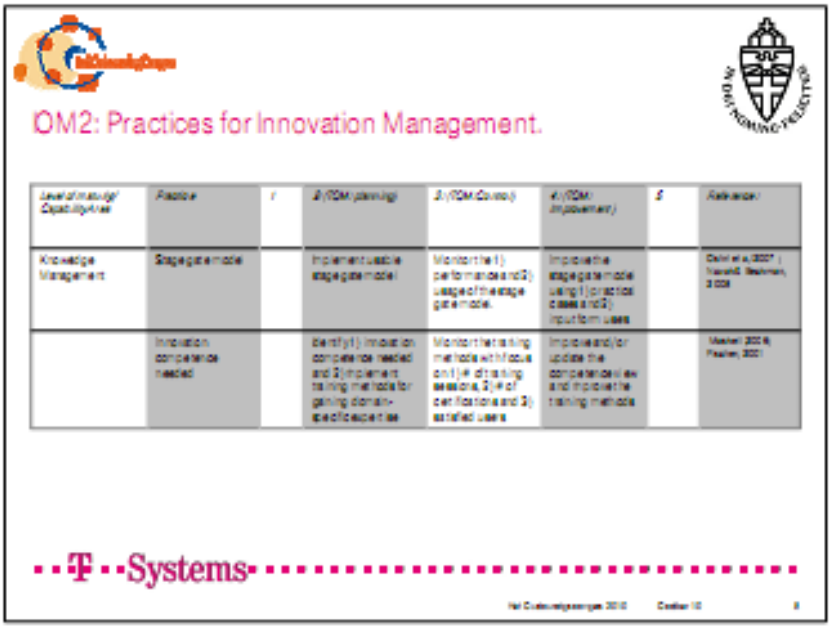
T-Systems

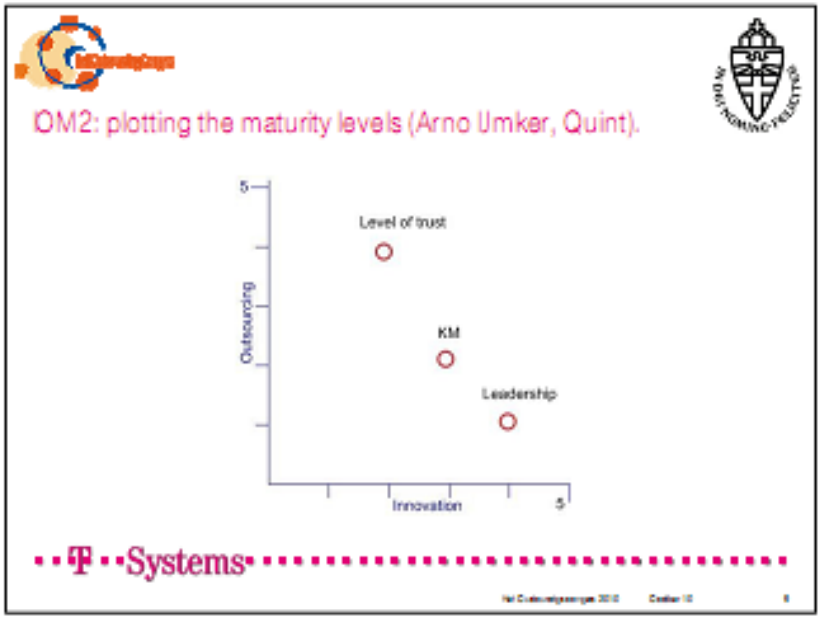
Research Model

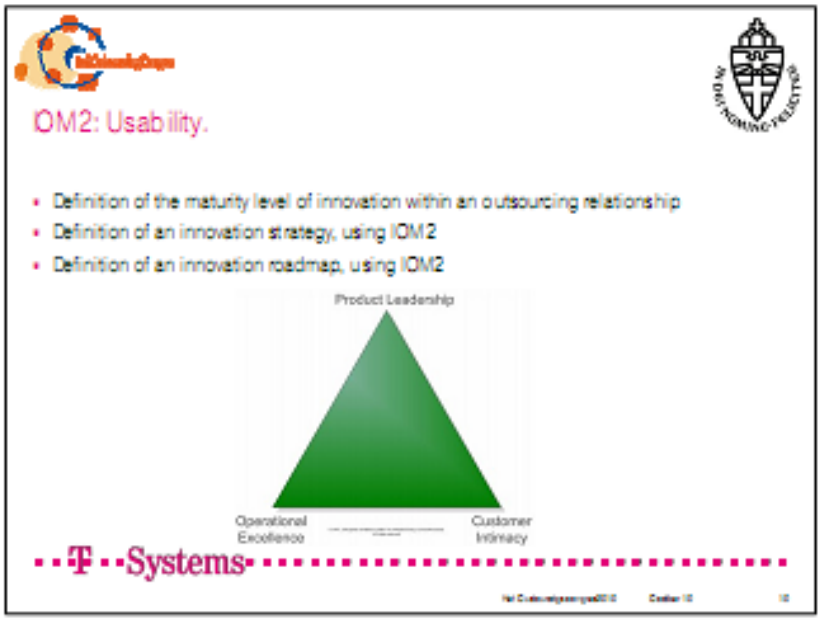


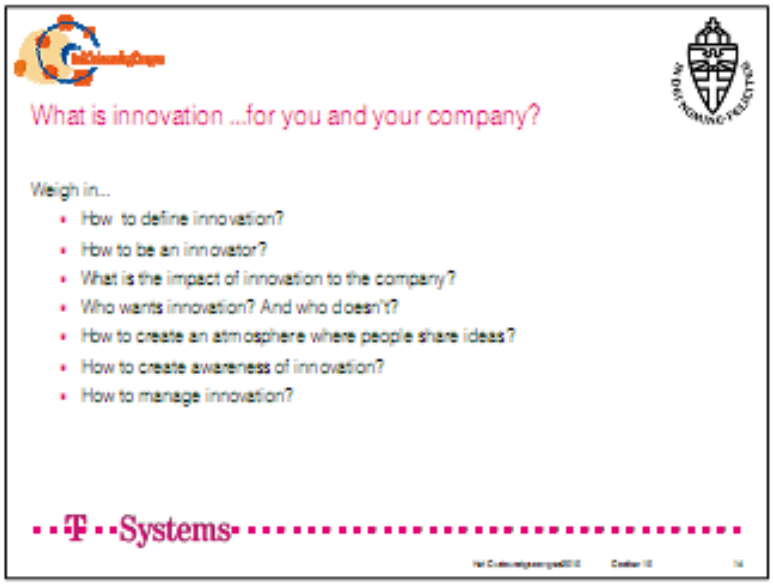
T-Systems


OM2: Practices for Knowledge Management.
Level of maturity/ Capability level
Practice
i
2) (TQM: planning)
3) (TQM: Do step)
4) (TQM: Improvement)
5
Reference
Knowledge Management
K Retention Repository
Implement repository where by all stakeholders can 1) access,2) store and 3) change relevant information
Monitor the repository with focus on 1) # of access times 2) # of documents being uploaded per month and 3) # of changes made to the documents
Improve the repository concerning a) access rights, b) demand met and c) way of monitoring
K Creation Training
Implement a training program
Monitor the quality of the training program by 1) # of training sessions,2) # of certifications and3) satisfied users
Improve training programs by a) evaluating the method and b) evaluate the way of monitoring
T Systems


OM2: Practices for Innovation Management.
Level of maturity/ Capability level
Practice
i
2) (TQM: planning)
3) (TQM: Do step)
4) (TQM: Improvement)
5
Reference
Knowledge Management
Stage gate mode
Implement usable stage gate model
Monitor the 1) performance and 2) usage of the stage gate model.
Improve the stage gate mode using 1) practice cases and 2) input form users
Innovation competence needed
Identify 1) innovation competence needed and 2) implement training methods for gaining domain-specific expertise
Monitor the training methods with focus on 1) # of training sessions, 2) # of certifications and 3) satisfied users
Improve and/or update the competences as and improve the training methods
T Systems


IOM2: plotting the maturity levels (Arno Umker, Quint).
5
Level of trust
KM
Leadership
Outsourcing
Innovation
5
T Systems


IOM2: Usability.
Definition of the maturity level of innovation within an outsourcing relationship
Definition of an innovation strategy, using IOM2
Definition of an innovation roadmap, using IOM2
Product Leadership
Operational Excellence
Customer Intimacy
T Systems



For the complete presentation, see:
http://www.hetoutsourcingcongres.nl/Uploads/Files/Linden_2c_20B._20van_20der_1.pdf