Change behaviour and e-procurement effectiveness

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<th>Input</th>
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<th>Date</th>
<th>Author</th>
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<tbody>
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<td>Doede van Haperen</td>
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<td>Review Jos van Haperen</td>
<td>Draft</td>
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<td>Doede van Haperen</td>
</tr>
<tr>
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<td>Review Reinout van Haperen</td>
<td>Draft</td>
<td>18 December 2015</td>
<td>Doede van Haperen</td>
</tr>
<tr>
<td>V0.9</td>
<td>Review Dr. Peter Zomer</td>
<td>Draft</td>
<td>16 January 2016</td>
<td>Doede van Haperen</td>
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<td>Doede van Haperen</td>
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<td>Review Dr. Chantal Savelsbergh</td>
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<td>Doede van Haperen</td>
</tr>
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<td>V2.9</td>
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<td>Draft</td>
<td>17 September 2016</td>
<td>Doede van Haperen</td>
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<tr>
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<td>Draft</td>
<td>05 October 2016</td>
<td>Doede van Haperen</td>
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<td>Doede van Haperen</td>
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I. Preface
Writing the preface of my own thesis, a rather different experience now then it was when graduating my bachelor’s degree. On the one hand because, of course, the research path differed tremendously, on the other hand because I look back at quite a different life-experience.

Was the previous study path a clean four years from my late teens into my twenties, with weekly bar visits and getting used to living together with a girlfriend as the biggest challenges in life, than this was indeed a different experience.

I can clearly remember my decision to start a master’s education, discussing the funding with my senior management. Studying that first year on Sunday mornings with only a cat in my lap to worry about. But since than things happened. That girlfriend became my wife, the one cat on the couch in our apartment got accompanied by two dogs in a house with patio. Later we got into business for our own while starting our first company and we got blessed with two kids while eventually moving to the house that really became our home. Family got sick, and... to put it short, “life is what happens while you are making other plans” and my planned four years on a master’s degree became about thirteen.

All the more reason that I am proud now at this thesis which is lying before you. Something that would never have been accomplished without Cynthia (that girlfriend, wife, mother of my children and business partner) triggering me every once in a while without pushing me past the point of being able to breath.

I am also proud, when reading the actual document myself. Proud about the things a person can pick up in a certain period, especially the last year of actual research. Much of the data is actually felt by me as new knowledge on my specific field of expertise, not only learned by me but also created by myself. A great fun thing to realise, also in the light of a remark doctor (MD) Leyten made to me long ago: try and push forward in your education, let’s guide you towards the point of a promotion once. This was even before starting my Bachelor’s study and then it felt as a positive push but without actual reality. Now I sometimes ponder the thought, maybe...once? Just as an illustration of the positive experience it was to get this thesis produced. Of course not every day and moment working on it, but the rough days are easily forgotten now.

So thanks to Cynthia for pushing me. Thanks to my children Yun and Shuai for sometimes leaving me work through an entire Sunday behind my laptop in the kitchen. Thanks Peter for the discussions we had on my research, I know it is what you are there for, but still they prepared me exactly the way it was necessary. Thanks to all my business contacts who heard me enjoy this topic for years already without actually getting the research going. Thanks to my parents for the obvious reasons, my brothers who heard me out and certainly, last but not least, thanks doctor Leyten for your help 21 years ago and also in the past year.

Enjoy reading

Doede van Haperen

Heelweg, 20 January 2016
II. Summary
The purpose of this thesis is to explore knowledge around change effectiveness at e-procurement implementations. In my years as an implementation professional in this niche area I wondered about the diversity of projects failing or succeeding. It seemed that software products or project approaches solely could not explain this. So eventually the question arose: Might management behaviour in this interorganizational field be a reason?

The research can be seen as an explorative study, what comes from combining two existing fields of expertise in one for a first time. Based on the assumption that e-procurement (the implementation of Internet technology as a facilitating technique in procurement processes) can be seen as an applied form of ‘Interorganizational Alliance Building’ (IOA-building) as well as an applied form of ‘Interorganizational Systems Implementation’ (IOS-implementation), the following questions are set:

**To what extent can (1) a relationship be discovered between eight specific management behaviours, (which are in the literature proven to be of positive effect in IOA-building and IOS-implementation) and the implementation success of e-procurement, and (2) to what extent can that same relationship be discovered for four specific interorganizational key players?**

Chapter 1 shows that finding a gap in available literature produced eight management behaviours from both IOA-building and IOS-implementations that are proven to be of positive effect on the success rate of projects. These eight were further investigated in my research. Also the regular key players from e-procurement implementations are defined here; my research focussed on the behaviour of these four key-players.

**Behavioural aspects to be researched:**
- Behaviour aimed at ... facilitating
- ... sponsoring
- ... expressing trust
- ... expressing control
- ... expressed openness to users
- ... expressed support from top-management
- ... expressed attention to the business case
- ... expressed flexibility to stakeholders

**Key players to be surveyed as subjects:**
- Lead business agent on buyers side
- Lead business agent on sellers side
- Lead IT agent on buyers side
- Lead IT agent on sellers side

The eight behaviours are detailed out in actual perceivable/measurable behaviours via literature study in chapter 2. This study unveiled a complete list of thirty-two measurable aspects of behaviour that lead agents should show to stimulate the adoption of IOA-building and the adoption of IOS-implementation. To investigate the behaviours against a clear background, the literature study also frames the concepts of implementation and successful adoption. All data is available now to start designing a survey in which to find answers to my research question aimed at e-procurement.

To execute the research, a set of eight hypotheses is created per identified key user. Each hypothesis stands for the expectance of a positive correlation between the specific key player perceived to be showing measurable behaviours within one specific behavioural aspect and the success rate of the project. Based on the literature review in chapter 2, combined with statistical checks after data collection, a new questionnaire was designed and used in four surveys aimed at the four various key players. These surveys are set up to ask project members from within random e-procurement implementation projects about their perception of the use of the behaviours by those key-players. Also a rating of the success of the project is asked to measure the type of influence from the specific behaviour. This research design, as well as making it statistically sound, is described in chapter 3.
In chapter 4, all 32 hypotheses are tested and an answer is found about the correlation between the perception of behaviour and the success rate of the implementation project. This checking leads to 7 hypotheses being accepted, 22 hypotheses being rejected and 3 hypotheses being unproven because of statistically unreliable scales in the questionnaire.

The overall conclusions are drawn in chapter 5 where it appears to be difficult to actually establish an overall relationship between the perceived behaviours and the project success for implementing e-procurement. On specific behaviours per key player the results are a little more clear. There seems to be some first proof of a positive correlation between the behaviours and project success for the Lead Business Agents. Overall it must be concluded that the data within my research is too small and inconclusive to apply my results generally, so any trend found in my research asks for corroboration of my findings in more elaborate research in the future.
III. Contents

I. Preface ......................................................................................................................... 3
II. Summary ....................................................................................................................... 4
III. Contents ....................................................................................................................... 4
IV. Research overview .................................................................................................... 6
   1. Introducing the research ............................................................................................ 10
      1.1 Motivating the background of the research ......................................................... 10
         1.1.1 My perspective on change effectiveness in e-procurement ......................... 10
         1.1.2 What is e-procurement and what change is triggered by that? .................. 10
      1.2 Defining the survey’s academic relevance ............................................................. 11
         1.2.1 Finding relevant management behaviours to study ......................................... 11
         1.2.2 Finding relevant key stakeholders to study ..................................................... 12
         1.2.3 Concluding the relevance to this research ...................................................... 12
      1.3 Setting the research question ................................................................................. 12
      1.4 Explaining the research steps and setup of this thesis .......................................... 13
   2. Researching the theory ............................................................................................... 15
      2.1 Determining behaviour of sponsoring/championing/support ............................... 15
      2.2 Determining behaviour of facilitating .................................................................... 16
      2.3 Determining behaviour of expressed support from top-management .................. 16
      2.4 Determining behaviour of expressed trust ............................................................. 17
      2.5 Determining behaviour of expressed control ......................................................... 18
      2.6 Determining behaviour of expressed openness to users ......................................... 19
      2.7 Determining behaviour of expressed flexibility to stakeholders ............................ 19
      2.8 Determining behaviour of expressed attention to the business case ...................... 20
      2.9 Finding a definition for information system implementation .................................. 21
      2.10 Finding a definition of implementation effectiveness (successful level of adoption) 22
      2.11 Summarizing the theoretical framework .............................................................. 22
      2.12 Concluding the literature research ....................................................................... 24
   3. Designing the survey, describing the methodology ................................................... 25
      3.1 Setting hypotheses ................................................................................................. 25
      3.3 Designing a questionnaire ..................................................................................... 27
         3.3.1 List of questions .............................................................................................. 27
         3.4.2 Making it statistically reliable .......................................................................... 30
      3.5 Targeting the right population .............................................................................. 32
4. Laying out the results ........................................................................................................ 34
  4.1 Approaching the survey results .................................................................................. 34
  4.2 Evaluating hypotheses around lead business agent on buy side ......................... 35
  4.3 Evaluating hypotheses around lead business agent on sell side ......................... 36
  4.4 Evaluating hypotheses around lead IT agent on buy side .................................. 36
  4.5 Evaluating hypotheses around lead IT agent on buy side .................................. 37
  4.6 Combined overview of hypotheses testing ......................................................... 38
5. Concluding and discussing the results .......................................................................... 39
  5.1 Reviewing the research question ............................................................................. 39
      5.1.1 Can a relationship be discovered between behaviours and implementation success of e-procurement? ................................................................. 39
      5.1.2 Can differences between key players be established? ..................................... 39
  5.2 Drawing a conclusion ............................................................................................... 40
  5.3 General discussion on results .................................................................................. 40
  5.4 Advise for further research ...................................................................................... 41
6. Listing the literature ........................................................................................................ 42
   Books: .......................................................................................................................... 42
   Dissertations: ................................................................................................................ 42
   Articles: ......................................................................................................................... 42
Appendices .......................................................................................................................... 47
   Appendix A: Business leads questionnaire .................................................................. 48
      Section A: identification ............................................................................................ 48
      Section B: adoption and success of the project ....................................................... 49
      Section C: keyplayer behaviours ............................................................................. 49
   Appendix B: Business leads survey from survey monkey ......................................... 54
   Appendix C: IT leads questionnaire ............................................................................. 54
      Section A: identification ............................................................................................ 82
      Section B: adoption and success of the project ....................................................... 83
      Section C: keyplayer behaviours ............................................................................. 83
   Appendix D: IT leads survey from survey monkey .................................................... 88
   Appendix E: Respondents data on Business Leads survey ......................................... 116
   Appendix F: Respondents data on IT Leads survey .................................................... 117
   Appendix G: Optimizing survey data based on Cronbachs Alpha ............................ 118
      Generating reliable Business lead survey results: ................................................ 118
      Generating reliable IT lead survey results: ............................................................ 120
   Appendix H: Correlation matrix on Business Lead from Buy Side ............................ 122
Appendix I: Correlation matrix on Business Lead from Sell Side ................................................. 123
Appendix J: Correlation matrix on IT Lead from Buy Side ............................................................... 124
Appendix K: Correlation matrix on IT Lead from Sell Side ........................................................... 125
Appendix L: Extended table for linking hypotheses to checking variables .................................. 126
Appendix M: full data set per scale per key player’s survey ......................................................... 129
Appendix N: Nederlandse vertaling voorwoord ............................................................................. 131
IV. Research overview

The research as described in this thesis follows a complex combination of factors. To enhance readability of the document and comprehension of the research flow, below graphic helps to inform about the steps taken. Keep it in mind while reading the document to orientate.

Figure 0.1: Applied research logic
1. Introducing the research

1.1 Motivating the background of the research
Every student that wants to graduate and receive its Master of Science degree has to prove certain capabilities. This prove is delivered by designing and executing a research and report over this process by filing a thesis. The moment that I started my Master’s studies I was already sure on the general topic of my research: change effectiveness in e-procurement implementations.

1.1.1 My perspective on change effectiveness in e-procurement
The general topic comes from my past 15 years of experience in implementing e-procurement solutions. The specific desire to study change effectiveness therein comes from continuous unpredictability in the levels of success for many of those projects. Often the software gets blamed for not delivering benefits as promised, but that appears subjective while one and the same software solution succeeds in one implementation and fails in the other. It appears to me that these differences in success lie in various sources like organisational culture, management behaviour, available knowledge in the project and also in technology.

Following my master’s variant “Implementation and Change management” I am very interested in the “human factor” within that implementation success, and thus my focus for this research has been on human behaviour (management behaviour) and its effect on e-procurement implementation success. Ultimately I am curious to the fact if there is knowledge available, or if this knowledge can be constructed, which can be used to manage stakeholders in e-procurement implementations towards more successful implementations. But the first step in getting to ‘managing’ is finding patterns by measuring and exploring. This research should therefore offer a first step.

1.1.2 What is e-procurement and what change is triggered by implementing that?
Setting up this research starts with a clear scope on the topic. For this, a clearly stated definition of e-procurement is therefore important. Following the definition of Harink (2003), e-procurement stands for implementing internet technology to support the processes within procurement. Usually a lot of changes are issued to any organisation implementing this. According to Reunis (2007), two of the changes are commonly recognised and illustrate the issues in widespread adoption of the solution:

1. **Centralisation of responsibilities**: responsibilities and governance shift from decentralised agents and owners to centralised procurement and sales functions, eliminating a degree of distributed power in the process within the buying organisation as well as within the selling organisation.

2. **Cross company intelligence**: due to a higher degree of automation in the procurement value chain, information is stored in a comparable way in more process instances over more digital locations. This regularly leads to more stakeholders in the value chain getting access to business intelligence data. This results in a higher level of (commercial) insights within your own company as well as within the related supplier firm.

These two recognised changes make clear that an implementation of e-procurement does not only trigger change within the specific buying organisation. The new technology and its related changes are also affecting the selling organisations doing business with that client. Because of this change on both sides of the trading relationship, I want to explore the human behaviour on management level on both sides, influencing the acceptance of those changes.
1.2 Defining the survey’s academic relevance

The implementation effect of e-procurement, as described in the previous paragraph, is felt on both the buying and the selling side of the business relationship. This survey aims at exploring academically viable knowledge regarding the effect of “interorganizational management behaviour” on the adoption of change inflicted by e-procurement implementation and thus on the success of that implementation. The relevance of this study can be found in extrapolating the available knowledge on interorganizational stakeholders and management behaviour from comparable fields of knowledge into the field of knowledge for e-procurement.

1.2.1 Finding relevant management behaviours to study

Several authors on e-procurement (Van Weele, 1999; Harink, 2003; Reunis, 2007) identify the area as a specific type of business driven change as well as IT-driven change while Reunis (2007) also explicitly placed it in an interorganizational context. The business driven change can be considered a form of interorganizational alliance building (Draulans, deMan and Volberda, 2003) the IT-driven change as a form of interorganizational systems implementation (Reunis, 2007).

This means that e-procurement is considered a specific form of two available fields of knowledge:

1. E-procurement being an applied form of Interorganizational Alliance Building (IOA-building)
2. E-procurement being an applied form of Interorganizational Systems Implementation (IOS-implementation)

On both these theoretical fields, there is a lot of academic information and studies available.

Managing alliance building and process integration with suppliers is studied by Stuart (1997), Monge, Fulk, Kalman, Flanagan, Parnassa and Rumsey (1998), Draulans, deMan and Volberda (2003), Williams and Hardy (2005), Reunis (2007) and Rai, Brown and Tang (2009). These studies all mentioned certain behaviours in management to be of driving force in the adoption rate of Interorganizational Alliance Building. From those studies, I listed all unique behaviours below.

- Behaviour aimed at facilitating
- Behaviour aimed at expressing trust
- Behaviour aimed at expressing control
- Behaviour aimed at expressing openness to users
- Behaviour aimed at expressed support from top-management
- Behaviour aimed at expressed flexibility to stakeholders

Interorganizational Systems implementations is a field of expertise that has already been studied for over 25 years (since Barrett, 1987). Specifically on change management, stakeholders and leadership, many authors studied the area of IOS-implementation during those years. Based on studies found from Boddy and Macbeth (1999), Easton and Araujo (2003), Gallivan and Depledge (2003), Jasperson, Carter and Zmud (2005), and Huang, Janz and Frolick (2007) I was able to identify below listing of unique behaviours in management, known to drive adoption in IOS-implementation.

- Behaviour aimed at sponsoring (1)
- Behaviour aimed at expressing trust

Note 1: Jasperson, Carter and Zmud (2005) mentioned Sponsoring, Championing and Facilitating as synonyms to one and the same behaviour. For clarity within my report I chose to use only “behaviour aimed at sponsoring” as recurring terminology.
• Behaviour aimed at expressing control
• Behaviour aimed at expressing attention to the business case (2)
• Behaviour aimed at expressing support from top-management
• Behaviour aimed at expressing flexibility to stakeholders

1.2.2 Finding relevant key stakeholders to study

Besides knowing which behaviours to search for, this research can only be designed properly when there is a clear academically viable set of key stakeholders to use as subjects in which to find those behaviours.

Stating a stakeholder as “key” is difficult according to Montenegro and Bulgacov (2014). Every action comes from an actor-network filled with actors that interact with each other. There is always a great source of uncertainty who triggered an eventual action and thus who should be named as the key actor. Borum and Christiansen (2006) broke with this potential blocking statement by arguing a logical approach. They defined that those stakeholders which recur to be valuable in every implementation can be clearly named “key”. When checking against this logic, the available literature like Van Weele (1999), Edum-Fotwe and McCaffer (2001), Harink (2003), Reunis (2007) and Rietveld (2009), state that the following key players are always identified in e-procurement implementations:

• Chief Business (Procurement) Officer at purchasing trading partner
• Chief IT Officer at purchasing trading partner
• Chief Business (Sales) Officer at selling trading partner
• Chief IT Officer at selling trading partner

These key players are not per se the agents holding the specific functions such as Chief Procurement Officer (CPO), Chief Information Officer (CIO) and Chief Marketing Officer (CMO), but are the agents most in charge (which can be the informal lead position) from the specific business functions for that specific implementation.

1.2.3 Concluding the relevance to this research

Above paragraphs give a gap in available theory to explore. On the one hand there is literature about specific behaviours in management. These behaviours are known to drive the adoption of and success rate in implementing interorganizational alliance building and interorganizational systems, but are not yet proven to have that same effect in e-procurement while this is considered a specific variant of both fields. On the other hand a set of key stakeholders can be identified which are available on management level in every implementation of e-procurement. These pieces of theory give a clear area for exploring new academic knowledge. This research should focus on extrapolating the knowledge from both the areas of IOA-building and IOS-implementation and test if the identified lists of behaviours from those fields, when shown by the relevant interorganizational set of key players in e-procurement, are also applicable to drive the success rate of e-procurement implementations as being an applied form of both those fields of knowledge.

1.3 Setting the research question

As mentioned in the previous paragraphs, this research is meant as an exploration into management behaviour and the level in which that behaviour is interorganizationally affecting the success of e-

Note 2: Huang, Janz and Frolick (2007) used mixed terminology like “expressing attention to”, “detailed preparation of”, and “support of” the business case as variants to one and the same behaviour. For clarity within my report I chose to use only “behaviour aimed at expressing attention to” as recurring terminology.
procurement implementations. This means that this research has to find academically supported relationships between e-procurement, relevant stakeholders and perceived management behaviours as well as relationships between those management behaviours and implementation success.

This exploration leads to forming the following research question for this Thesis:

To what extent can (1) a relationship be discovered between eight specific management behaviours, (which are in the literature proven to be of positive effect in IOA-building and IOS-implementation) and the implementation success of e-procurement, and (2) to what extent can that same relationship be discovered for four specific interorganizational key players?

To be able to operationalise this research, several aspects and concepts need to be detailed out. For instance, the eight behaviours are too high-level and not specific that they cannot be researched in perceived expression at this point. But also the concept of successful implementations is too generic to measure in research. For execution of the research the following supporting questions need to be answered in literature first:

1. Which perceivable behavioural aspects can be theorised from management behaviour aimed at sponsoring?
2. Which perceivable behavioural aspects can be theorised from management behaviour aimed at facilitating?
3. Which perceivable behavioural aspects can be theorised from management behaviour aimed at expressed support from top-management?
4. Which perceivable behavioural aspects can be theorised from management behaviour aimed at expressed trust?
5. Which perceivable behavioural aspects can be theorised from management behaviour aimed at expressed control?
6. Which perceivable behavioural aspects can be theorised from management behaviour aimed at expressed openness to users?
7. Which perceivable behavioural aspects can be theorised from management behaviour aimed at expressed flexibility to stakeholders?
8. Which perceivable behavioural aspects can be theorised from management behaviour aimed at expressed attention to the business case?
9. How could the concept of implementation be defined?
10. How could the concept of interorganizational level of success in an implementation be defined?

1.4 Explaining the research steps and setup of this thesis
This research does not follow a traditional setup for an explorative study. One would probably expect, in line with what is common, that in research of an explorative nature qualitative procedures are chosen in order to look for patterns in the empirical world. Such patterns can then be formulated as hypotheses to be tested in future research.

In the present study however, I have chosen to carry out the explorative research differently. First, I am looking for patterns in the empirical world on which I develop the assumption of a different application. Such patterns are detailed out by thorough literature research (see chapter 2), and then the application is tried by a provisional testing of these assumptions with a small number of respondents.

These assumptions are formulated in hypotheses, and the testing is done quantitatively. The ensuing results point at (provisional) patterns in the empirical world that should be further corroborated in
future research, where the amount of respondents is considerably higher and the research design can be more pointed. With this in mind, the thesis follows below approach.

This first chapter of the thesis described the logic on how the research question was derived from both common sense and available literature. Finding an answer to the research question is done in various research steps and described in several chapters of this thesis:

First of all, an extensive desk research to available literature is executed to find answers to the mentioned supporting questions. This theoretical basis to the research is explained in chapter 2.

Based on the above designed frame and the explicit outcomes of the literature study in chapter 2, hypotheses are designed around key players showing certain behaviour being of positive effect on the implementation success. These hypotheses are to be investigated in a quantitative research. During this quantitative research, respondents that were involved in projects implementing e-procurement are asked to qualify behaviour as they perceived it as being shown by the four interorganizational key players as being subjects in this research. The design and execution of the survey are explained in chapter 3.

The responses to the survey are evaluated with statistical means in order to draw conclusions in relation to the hypotheses. The steps in the statistical process as well as the acceptance and rejection of hypotheses are described in chapter 4.

Eventually, in my discussion on the outcomes of the survey in chapter 5, the results are evaluated against my stated question.
2. Researching the theory

In the previous chapter, the topic of this research was positioned in existing literature. But so far only behaviours are mentioned which are too high-level to include in an actual questionnaire for quantitative analysis. Therefore, I designed several supporting questions in paragraph 1.3 to the research question. All these supporting questions seek definitions in the literature that can help in setting up a survey that is based on measurable behaviours and concepts for rating. Within this chapter, all the supporting questions will be answered, so that the framework can be formed that I need for setting up my hypotheses and questionnaire for a quantitative survey.

Every following paragraph will contain a summary of found literature which is relevant to one supporting question. At the end of the chapter, in paragraph 2.11, an overview of the data is given and paragraph 2.12 translates that data overview in a conclusion towards research.

2.1 Determining behaviour of sponsoring/championing/support

The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

1. *Which perceivable behavioural aspects can be theorised from behaviour aimed at sponsoring?*

In order to understand this question we need to gather a better view on what “sponsoring” actually is. Friday, Friday and Green (2004) break with the general conception that “Sponsoring” is part of “Mentoring”. They define both terms as separate roles in the guidance of protégé’s and/or projects. Primarily, sponsoring means the publicly taking of responsibility for specific persons/projects/organisations by which the seniority of the sponsor helps the sponsored in its climb along career and/or social ladder.

From this understanding of “sponsoring” as an aspect, the question is if specific behavioural aspects can be recognized that show “sponsoring” in an implementation. Howell and Higgins (1990) have researched the specific behaviour of champions and found out that they differ from non-champions on three aspects in recognized behaviour: higher level of leadership, higher level of inspiration, higher level of risk-taking. Risk taking is a behavioural aspect that keeps on coming back in literature (Gupta e.a., 2005, Bassellier e.a., 2003), where Caldwell (2003) sharpens this vision with some pinpointed behaviours that are significantly seen with Sponsors (Change Managers) and Champions (Change Leaders).

Eventually Howell and Shea (2006) take all earlier stated aspects and build from that into more explicit definitions. They break with the traditional depicting of champions as the lone rangers that singlehandedly break with organisations’ inertia and fierce deposition and clearly define the position of sponsors via explicit behaviours:

- Teambuilding
- Learning from team members
- Developing inspiring vision
- Adapting to new insights

As a conclusion to this paragraph, these 4 behavioural aspects are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘sponsoring’.
2.2 Determining behaviour of facilitating
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

2. **Which perceivable behavioural aspects can be theorised from behaviour aimed at facilitating?**

In order to understand this question we need to gather a better view on what “facilitating” actually is. According to Joffe and Glynn (2001), following Kotter (1996, in Joffe and Glynn, 2001), the way to facilitating change is to empower a team to broad-based action.

From this understanding of “facilitating” as an aspect, the question is if specific aspects of behaviour can be recognized that show “facilitating” in an implementation. Joffe and Glynn (2001) explicitly state that empowering others into risk-taking and developing non-traditional ideas, activities and actions is key to creating change. In the view of Van Maurik (1994), the challenge to all facilitators is to develop and express a range of management styles, therefore enabling themselves to develop other people more effectively. These styles are; Intellectual command, Creative group catalyst, Incentives approach and Supportive coach.

In the findings of Scott (2007), Facilitating organisational change comes from: 1. managing variety: make sure there is ampel variety in entities that mix in the discussion. Make sure that there is never one scapegoat that can be blamed but make decisions and awareness a broad agent thing. 2. organising positive synergy: knowledge and understanding of details trigger all kinds of personal awareness. Triggering that within a diverse group will trigger various visions which will lead to synergetic output.

To conclude this paragraph, the perceivable behaviours ‘empowering others’, ‘managing variety’, ‘organizing positive energy’ and ‘showing a range of styles’ are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘facilitating’.

2.3 Determining behaviour of expressed support from top-management
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

3. **Which perceivable behavioural aspects can be theorised from behaviour aimed at expressed support from top-management?**

In order to understand this question we need to gather a better view on what “expressed support from top-management” actually is. Holt e.a. (2003) say that change only follows when clear strategies are used and even more, when these strategies and its related choices are explicitly communicated. According to Lee e.a. (2014) making sure these top-management strategies are linked to the implemented change and are clearly communicated, stands for expressing top-management support. This way the local management culture, and with it all project choices, are driven by top-management decisions and knowledge.

From this understanding of “expressed support from top-management”, the question is if specific behavioural aspects can be recognized that show “expressed support from top-management” in an implementation. For this the start lies with Morris (1989), who created a theory on communicating management decisions. It was found that management decisions are best communicated in their full information. This means:
1. Explaining the characteristics of a change
2. Explaining the underlying reasons and rationale of the change
3. Explaining the choices that were taken and (maybe even more)
4. Explaining the choices that were explicitly not taken

When this theory is used to elaborate on the earlier definition from Holt e.a. (2003) and Lee e.a. (2014), communicating top-management decisions in those four ways can best be defined as behaviour that expresses support from top-management. As a conclusion to this paragraph, this leads to these 4 behavioural aspects being used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘support from top-management’.

2.4 Determining behaviour of expressed trust
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

4. Which perceivable behavioural aspects can be theorised from behaviour aimed at expressed trust?

In order to understand this question we need to gather a better view on what “expressed trust” actually is. Definition on the concept of “Trust” according to Mayer e.a. (Robert, Dennis and Hung, 2009; Pennanen, 2010) is “The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.” Expressed trust in the line of this definition is then defined as the openly showing of that trust.

From this understanding of “expressed trust”, the question is if specific aspects of behaviour can be recognized that show “expressed trust” in an implementation. According to Robert, Dennis and Hung (2009), and supported by Zhu e.a. (2013), trust comes in two forms, being cognitive trust (intrinsically based on experience) and swift trust (developed during a specific/unique engagement). Developing from that, Pennanen (2010) finds that trust is maintained from actively experiencing the other to be full of competence, integrity and benevolence. Burke, Sims, Lazzara and Salas (2007) state that in practice, swift trust is often build by applying control provisions. The more positive feedback from those control provisions is experienced, the more positive expectations exist that interests will be protected when control is not possible.

From here on, Pennanen (2010) sets behaviour that indicates trust in a business transaction environment. Considering the fact that trust in interorganizational business transactions is often swift trust, and thus needs active forming, behaviours showing expressed trust (the will to trust) are mainly aimed at assessing the trustworthiness of the business partner:

- Test the service of the partner: for instance play around in their webshop...
- Explore the warranties given by the business partner: basically, is there control in place that supports trust(!).
- Stimulate extended decision making: search for experiences on the internet, ask for advice, etcetera

According to Zhu e.a. (2013), trust is also shown by trustors in institutional environments by taking on more tasks then formally required, a higher level of work ethics and stronger efforts to finish their work and control(!) the environment to success as much as possible.
Concluding this paragraph, the perceivable behaviours ‘testing the service of the partner’, ‘exploring the warranties given by the partner’, ‘stimulate extended decision making’ and ‘showing higher work ethics’ are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘expressing trust’.

2.5 Determining behaviour of expressed control

The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

5. Which perceivable behavioural aspects can be theorised from behaviour aimed at expressed control?

In order to understand this question we need to gather a better view on what “expressed control” actually is. Because “trust” and “control” seem such opposite concepts in general, it is good to state explicitly the link between both behaviours that drive successful implementations:

- Expressed trust, as stated in paragraph 2.4, is defined as the showing of willingness to be vulnerable to the actions of others. Of course this leads to the risk that this trust is broken.
- Expressed control, According to Giglioni and Bedeian (1974), is defined as showing activities related to the evaluation of a desired outcome of an action and the preparation of corrections when necessary.

When combining these definitions the relationship becomes more clear. Trust is aimed at building the relationship and the wanting of being open towards each other, while control is aimed at monitoring that effect and making sure that when the trust goes wrong, nothing really bad happens.

From this understanding of “expressed control”, the question is if specific behavioural aspects can be recognized that show “expressed control” in an implementation. Here it starts with Giglioni and Bedeian (1974) who state that a manager that wants to perform control application has to have certain sets of knowledge (control concepts, processes to apply control, control systems, problems that can occur in their field, control models). Besides that, their daily behaviour should be aimed at implementing a control framework and set of techniques. Usually these techniques show by applying reporting lines and directing feedback. This daily behaviour aimed at “Control” according to Piercy, Cravens and Lane (2012), is: “Performing all kinds of activities around monitoring, directing, evaluating and rewarding the group which they need/want to control.”

According to Turnipseed and Rassuli (2005; Piercy, Cravens and Lane, 2012), the following is always true: “Individuals in organisations include ‘minimalists’ who contribute the least possible level of effort to maintain their membership, but also others who go ‘the extra mile’, engaging in discretionary extra-role behaviors that are advantageous to the organization”. This knowledge leads to the need of clan-control in projects within those organisations.

According to Eisenhardt e.a. (1989; Chua, Lim, Soh and Sia, 2012) clan control aims at directing, influencing and regulating a group of individuals towards achieving project-goals. Chua e.a.(2012) claim that enacting clan control primarily shows behaviour of forming the clan. Leveraging the clan is done by stimulating groups based on their shared beliefs, values and norms, these should automatically form towards project goals. Piercy, Cravens and Lane (2012) conclude this theory by summarizing behaviour of clan control to be an optimized combination of behaviour aimed at evaluating the group to control and behaviour aimed at rewarding the group to control.
Concluding this paragraph, the perceivable behaviours ‘applying reporting lines’, ‘directing feedback’, ‘evaluating the group to control’ and ‘rewarding the group to control’ are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘expressing control’.

2.6 Determining behaviour of expressed openness to users
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

6. Which perceivable behavioural aspects can be theorised from behaviour aimed at expressed openness to users?

In order to understand this question we need to gather a better view on what “expressed openness to users” actually is. Barz and Hortwick (1989) prove the concept (which has been claimed by various authors before) that user participation and user involvement are two different concepts.

‘User participation’ should be used when talking about the behaviours of the user or its representatives trying to execute their influence. ‘User involvement’ has a better fit in this topic, because it should be used when it is about the managerial perspective of getting users involved, how to arrange that process and even how to create a culture that is explicitly open to that process.

From this understanding of “expressed openness to users”, the question is if specific aspects of behaviour can be recognized that show “expressed openness to users” in an implementation. Hienert, Keinz and Lettl (2011) state that user involvement should be a continuous process, driven by management behaviour.

Barz and Hortwick (1994) define user involvement as that situation where users are:

- clearly empowered by management to take decision making power.
- positioned by management to take leadership roles in the project.

Robey and Farrow (1982) go into the conflict side of user involvement. To reach proper output from users, you need to make sure they get to the point of freely speaking their minds. This asks for certain openness to conflict behaviour in various stages of the system development. Lettl (2007) evolves on this and describes a perspective on defining various characteristics on the users’ side to be fitting for certain stages in a project. It is clear from Jespersen (2010) that it is best to look at a proper mix on types of users versus stages of the project.

Jespersen (2010) goes into decision maker openness, the way a decision maker looks at user involvement and how he/she handles and evaluates the input. The openness itself is shown primarily as being able to actually accept input from others. Also conflicting ideas should be accepted.

Concluding this paragraph, the perceivable behaviours ‘mixing user types’, ‘accepting conflicting ideas from within the group’, ‘giving decision making power to users’ and ‘positioning users on leadership roles in the project’ are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘expressing openness to users’.

2.7 Determining behaviour of expressed flexibility to stakeholders
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:
7. Which perceivable behavioural aspects can be theorised from behaviour aimed at expressed flexibility to stakeholders?

In order to understand this question we need to gather a better view on what “expressed flexibility to stakeholders” actually is. Definition of stakeholders is a diverse thing, according to Eskerod and Huemann (2013) over 100 definitions of “Stakeholders” can be found in literature nowadays. This means that since Freeman (1984, in Eskerod e.a. 2013) put the subject on the map of general management for the first time, no common ground has been found yet and therefore the academic subject of Stakeholder Theory is still considered to be a young area of expertise (Legris and Collerette, 2009).

In an attempt to start working toward clearer definition making, Freeman et al (2010) posted a recognized distinction between two types of definitions within Stakeholder Theory, being the approach of “management-of-stakeholders” and the approach of “management-for-stakeholders”. This distinction in definitions, according to Eskerod e.a. (2013) makes clear that stakeholder theory handles around the question if stakeholders are actively involved in the activities of the change or should be involved outside-in and how this input should actively be searched for and processed into the change at various levels of management.

From this understanding of “expressed flexibility to stakeholders”, the question is if specific behavioural aspects can be recognized that show “expressed flexibility to stakeholders” in an implementation. Following the framework posed by Freeman e.a. (2010), this research topic handles in the area of management-for-stakeholders and is about ‘behaviour of’ and ‘influence experienced from’ those (groups of) individuals to the project outcome. Therefore following the works of Beringer e.a. (2012, 2013) the definition of stakeholders taken for this research is any group, individual or management layer in a relationship with a project, such that the group or individual can affect or is affected by the achievement of the project’s objectives.

Freeman (1984, in Beringer e.a., 2012, 2013) differentiates various levels of stakeholders which is important to take into account when drawing any conclusions on behaviour and impact:

1. Senior management
2. Mid-level line management
3. Project portfolio managers
4. Project managers

Following Eskerod e.a. (2013), the main thing in involving these levels of management as stakeholders in a project is making sure that their input is sought after. Seeking this input can best be identified as behaviour that shows this aspect.

Concluding this paragraph, the perceivable behaviours ‘searching for input from senior management’, ‘searching for input from mid-level line management’, ‘searching for input from project portfolio management’ and ‘searching for input from project management’ are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘expressing flexibility to stakeholders’.

2.8 Determining behaviour of expressed attention to the business case
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:
8. Which perceivable behavioural aspects can be theorised from behaviour aimed at expressed attention to the business case?

In order to understand this question we need to gather a better view on what “attention to the business case” actually is. According to Ross and Beath (2002), the proper way of preparing justification of IT investments is by not only looking at the financial "small" picture but should also involve all relevant details from the bigger pictures like technology and commercial leverage that might come from that.

From this understanding of “attention to the business case”, the question is if specific behavioural aspects can be recognized that shows “attention to the business case” in an implementation. Behavioural aspects are found in the actual support of the wider business case. The higher management that is in details interested in, but more even open to supporting the Business Case, should not be the affected CxO only to look at the money saved from process transformation but should also be a wider range of CxO’s that are open to the arguments about a platform renewal that helps the company as a wider whole. So digital savyness of the business and business savyness of the IT executive make a difference.

Sharma, Yetton and Zmud (2008) focused in detail on the “preparation and detail of business cases”. The most clear behavioural elements Sharma e.a. (2008) mentioned were the ability to incorporate the organizational configuration and the actual impacted parts of that organization in the estimated budget for the change. Being open about the fact that costs do not only come from technical implementation but also from the change.

Important is also the managerial perspective that Sharma e.a. (2008) mention. Management should allocate ample resources from managerial levels to managing the change, and asking questions to the organisational entities that are not that clear (for instance when starting a roll-out the investigation must be thoroughly aimed at impacted managerial processes, then the rest should follow), when the answers to those questions are translated into honest costs, behaviour is positively aimed at fair business case management (correct details as well as support).

Concluding this paragraph, the perceivable behaviours ‘being open to opposite gains’ (business leader being open to technology and the technology lead being open to business), ‘being open to both financial and qualitative gains’, ‘assessing the organizational setup’ and ‘involving local costs as well’ are used in chapter 3 to create questionnaire items about perceiving management behaviour on ‘expressing attention to the business case’.

2.9 Finding a definition for information system implementation
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

9. How could the concept of an implementation be defined?

Several views exist on the definition of what is “implementation” in the meaning of this research. These views range from an extensive internal embedding of an information system (IS) at various management levels, as stated by Lapointe and Rivard (2007) to Schultz and Slevin (1983), but also Klein and Sorra (1996), that hold smaller definitions and focus just on reaching understanding by its core users. Akroush, Dahiyat, Gharibeh and Abu-Lail (2011) elaborate on those rather internally focused views and add that implementing a system means taking the system in use and reaching the goals as planned for usage.
Zmud and Apple (1989; in Cooper and Zmud, 1990) hold a very detailed view on what is “implementing an Information System”. They see it as an organizational effort directed at diffusing technology within a certain user community. Within their work, they recognize various stages as being part of an implementation but also various forms of implementation, one being interorganizational systems implementation. Akroush e.a. (2011) support the positioning of Zmud and Apple that interorganizational systems implementation is just a form of systems implementation and thus the concept does not require a more complicated definition. Volkoff, Chan and Newson (2012), though also in accordance with Zmud and Apple, elaborate on both Zmud and Apple as on Akroush e.a. They set up a separate definition for the concept of interorganizational systems implementation. According to Volkoff e.a. (2012) interorganizational systems implementation differentiates itself from regular systems implementation by the fact that the organizational effort is carried by at least two organisations that aim at collaborating toward reaching a joint goal.

This last definition from Volkoff e.a. (2012) will be used in chapter 3 to address the correct respondents for the survey and to form questionnaire items for rating of success.

2.10 Finding a definition of implementation effectiveness (successful level of adoption)
The supporting question from paragraph 1.3 which is relevant for this paragraph is the following:

10. How could the concept of interorganizational level of success in an implementation be defined?

Erumban and De Jong (2006) state that successful adoption is simply an elaboration to the definition of implementation, where “reaching the goals of the implementation” is added to the sole target of technology diffusion.

Akkroush, Dahiyat, Gharaipei and Abu-Lail (2011) elaborate on Erumban and De Jong (2006) by defining commonly stated goals for systems implementations:

- Numbers of users reached
- Numbers of business transactions supported
- Strategic effect reached
- Financial effect reached

Volkoff, Chan and Newson (2012) generalize the common examples from Akkroush e.a. (2011) by putting them in an interorganizational business case perspective. They state that the success of an implementation is measured against the joint business goals as stated together between the organizations implementing the interorganizational system. According to Akkroush e.a. (2011) all measurements can simply be categorized in three levels of adoption success: below stated goals, on stated goals and above stated goals.

This categorization is used in the questionnaire, as designed in chapter 3, to score items in the scale of “project rating”.

2.11 Summarizing the theoretical framework
As described in chapter 1 of this thesis, I am researching to what extent management behaviour is positively related with e-procurement implementation success, and to what extent specific key players contribute to that success. Chapter 2 was meant as a desk research into specific measurable
aspects of behaviour that correspond to the generic behaviours as stated in paragraph 1.2, and as an answer to the supporting questions listed in paragraph 1.3. In below table, the answers to supporting questions 1 through 8 and thus the content of paragraphs 2.1 through 2.8 is summarized.

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Definition</th>
<th>Perceivable behavioural aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>sponsoring/ championing/ support</td>
<td>Publicly taking leadership of a project</td>
<td>Teambuilding (Howell and Shea, 2006), Learning from teammembers (Howell and Shea, 2006), Developing inspiring vision (Howell and Shea, 2006), Adapting to new insights (Howell and Shea, 2006)</td>
</tr>
<tr>
<td>Facilitating</td>
<td>Empowering a team to broad-based action</td>
<td>Empowering others (Joffe and Glynn, 2001), Managing variety (Scott, 2007), Organizing positive energy (Scott, 2007), Showing a range of styles (Being: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach) (van Maurik, 1994)</td>
</tr>
<tr>
<td>expressed support from top-</td>
<td>Influencing management culture to encourage change directly based on top-management team decisions</td>
<td>Channeling (via lead agents) explanation to the characteristics of a change (Morris, 1981), Channeling explanation to the rationale of a change (Morris, 1981), Channeling explanation to the choices that were taken (Morris, 1981), Channeling explanation to the choices that were explicitly not taken (Morris, 1981)</td>
</tr>
<tr>
<td>management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>expressed trust</td>
<td>Showing willingness to be vulnerable to the actions of another party</td>
<td>Testing the service of the partner (Pennanen, 2010), Exploring the warranties given by the partner (Pennanen, 2010), Stimulate extended decision making (Pennanen, 2010), Trustors showing higher work ethics (Like: working late, taking on more tasks than required) (Zhu e.a., 2013)</td>
</tr>
<tr>
<td>expressed control</td>
<td>Setting up provisions to avoid vulnerability to the actions of another party</td>
<td>Applying reporting lines (Giglioni and Bedeian, 1974), Directing feedback (Giglioni and Bedeian, 1974), Evaluating the ‘group to control’ (Piercy, Cravens and Lane, 2012), Rewarding the ‘group to control’ (Piercy, Cravens and Lane, 2012)</td>
</tr>
<tr>
<td>expressed openness to users</td>
<td>Creating a culture where users can actively participate in project decisions</td>
<td>Mixing user types (in various stages of the project) (Jespersen, 2010), Accepting conflicting ideas from within the user group (Jespersen, 2010), Giving decision making power to users (Barki and Hortwick, 1994), Positioning users on leadership roles in the project (barki and Hortwick, 1994)</td>
</tr>
<tr>
<td>expressed flexibility to stakeholders</td>
<td>Actively searching for input from various levels of management and manage the project for them</td>
<td>Searching for input from senior management, Searching for input from mid-level line management, Searching for input from project-portfolio management, Searching for input from project management (Freeman 1984, in Beringer e.a., 2012, 2013)</td>
</tr>
<tr>
<td>detailed preparation and support of the business case</td>
<td>Involving all impacted aspects from a business change in one business case to manage</td>
<td>Business lead agents: being open to technology gains/Technology lead agents: being open to business gains (Ross and Beath, 2002), Being open to both financial and qualitave gains (Ross and Beath, 2002), Assessing the organizational setup (Sharma, Yetton and Zmud, 2008), Involving the local cost of change as well for all impacted entities in the case (Sharma, Yetton and Zmud, 2008)</td>
</tr>
</tbody>
</table>
To further facilitate the research being set up, the concepts that define successful implementation need attention.

In below table the concepts defining successful implementation as defined in paragraphs 2.9 and 2.10 (and thus the answer to supporting questions 9 and 10) are summarized.

Table 2.2: Overview of defining concepts to successful implementation

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-organisational implementation</td>
<td>Organizational effort to reach diffusion of an information system within a certain user group that exists inter-organisationally, and with that diffusion reach certain stated goals. (Following Cooper and Zmud, 1990).</td>
<td>A project can be mentioned as an implementation for this research when it brings diffusion of a newly introduced technology set (system/ processes/ procedures) to a user group within at least two organisations (seller and buyer) simultaneously.</td>
</tr>
</tbody>
</table>
| Effectiveness (success in implementation) | The resulting effect coming from an interorganizational implementation, being whether or not the stated business case goals are met. (Following Volkoff, Chan and Newson, 2012). | For implementations within this research, effectiveness is measured in three categories (following Akkroush e.a., 2011):  
  • Below stated goals  
  • On stated goals  
  • Above stated goals |

2.12 Concluding the literature research

Paragraph 2.11 shows a clear overview of perceivable behavioural aspects within the management behaviours that are known to drive adoption success in IOA-building and IOS-implementations. On top of that, also the concepts for “implementation” and “effectiveness” to those implementations are more clearly defined than they were when setting up the research question. This means that above literature review gave me the details which I needed to design a survey to support my research.

First, I will set up a list of hypotheses, expecting a positive correlation between the key-players (as identified in paragraph 1.2) being perceived to show certain behaviours during an implementation and the rate of success from that implementation.

Secondly, I will execute a survey, asking project members from within finalized e-procurement implementations two types of questions:

1. whether or not they perceived those key players to show the specific behavioural aspects from table 2.1; and  
2. how they valued the implementation success of that project.

From this survey I can calculate the statistical correlations between the perceiving of various behaviours and the level of implementation success.
3. Designing the survey, describing the methodology

In chapter one, an introduction to the subject of e-procurement was given as well as a review on required research into management behaviour and change effectiveness. I based this review on common key players and theories from IOA-building and IOS-implementation. After that, in chapter 2, I reviewed literature to find a theoretical framework for designing a survey. Within this third chapter the methodology for executing the survey is described as hinted in paragraph 2.12. As a first step the hypotheses will be designed, after which a questionnaire is created based on the literature overview as listed in tables 2.1 and 2.2. Finally, the actual list of variables is finalized by using statistical methods in order to come up with reliable data to evaluate the hypotheses in the next chapter.

3.1 Setting hypotheses

As described in chapter 1, this research is of an explorative nature but designed a little differently from what regularly can be expected. I want to explore the field of change effectiveness in e-procurement while trying theory that has already been proven for the related fields of knowledge IOA-building and IOS-implementation. This is done based on hypotheses testing in quantitative data analysis.

While looking at my introductory chapter, the logic of this research is as follows:

i. It is proven in IOA-building as well as in IOS-implementations that a certain set of behaviours in management drive the level of success of an implementation.

ii. Considering the theory that e-procurement is a specific variant of both IOA-building and IOS-implementation,

iii. I expect that those same behaviours, shown by the four most commonly available key players in e-procurement implementations, will also drive the success rate of e-procurement implementations.

Based on this line of thought, I drafted hypotheses to prove or reject my logic. This leads to 4 sets of hypotheses (following my four interorganizational key players) with each set counting 8 hypotheses for the specific key player showing signs of a specific behavioural aspect which correlates with the success of the project. In better academic detail, all hypotheses are set in below table 3.1.

*N.B. a more elaborate table, linking the validating of the hypotheses to the variables in the survey, is available as appendix L.*

<table>
<thead>
<tr>
<th>Key player showing management behaviour</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead business agent on buyers side</td>
<td>H1.1: There is a positive correlation between project members’ perception of ‘facilitating’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td></td>
<td>H1.2: There is a positive correlation between project members’ perception of ‘sponsoring’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td></td>
<td>H1.3: There is a positive correlation between project members’ perception of ‘expressing trust’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
</tbody>
</table>
## Change behaviour and e-procurement effectiveness

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1.4</td>
<td>There is a positive correlation between project members’ perception of ‘expressing control’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H1.5</td>
<td>There is a positive correlation between project members’ perception of ‘expressing openness to users’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H1.6</td>
<td>There is a positive correlation between project members’ perception of ‘expressing attention to the business case’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H1.7</td>
<td>There is a positive correlation between project members’ perception of ‘expressing support from top management’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H1.8</td>
<td>There is a positive correlation between project members’ perception of ‘expressing flexibility to stakeholders’ by the lead business agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H2.1</td>
<td>There is a positive correlation between project members’ perception of ‘facilitating’ by the lead business agent at sellers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H2.2</td>
<td>There is a positive correlation between project members’ perception of ‘sponsoring’ by the lead business agent at sellers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H2.3</td>
<td>There is a positive correlation between project members’ perception of ‘expressing trust’ by the lead business agent at sellers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H2.4</td>
<td>There is a positive correlation between project members’ perception of ‘expressing control’ by the lead business agent at sellers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H2.5</td>
<td>There is a positive correlation between project members’ perception of ‘expressing openness to users’ by the lead business agent at sellers side on the one hand, and the implementation success of that project on the other.</td>
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</tr>
<tr>
<td>H2.8</td>
<td>There is a positive correlation between project members’ perception of ‘expressing flexibility to stakeholders’ by the lead business agent at sellers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H3.1</td>
<td>There is a positive correlation between project members’ perception of ‘facilitating’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H3.2</td>
<td>There is a positive correlation between project members’ perception of ‘sponsoring’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H3.3</td>
<td>There is a positive correlation between project members’ perception of ‘expressing trust’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H3.4</td>
<td>There is a positive correlation between project members’ perception of ‘expressing control’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H3.5</td>
<td>There is a positive correlation between project members’ perception of ‘expressing openness to users’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
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</tr>
<tr>
<td>H3.7</td>
<td>There is a positive correlation between project members’ perception of ‘expressing support from top management’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
<tr>
<td>H3.8</td>
<td>There is a positive correlation between project members’ perception of ‘expressing flexibility to stakeholders’ by the lead IT agent at buyers side on the one hand, and the implementation success of that project on the other.</td>
</tr>
</tbody>
</table>
3.3 Designing a questionnaire

A set of hypotheses must be evaluated by analysing data that comes from a survey. This survey asks for a questionnaire to be filled in by respondents on four different subjects (being the four interorganizational key players in e-procurement implementations). In academic research, there is always the option to use a questionnaire that is already available and proven to be of valid quality, or a questionnaire can be constructed based on available valid academic information and be proven by doing statistical checks. For this research I chose to create my own questionnaire and statistically prove and correct its validity after use. The main content for this questionnaire comes from my literature review as described in chapter 2.

3.3.1 List of questions

First of all, based on the perceivable behaviours, as found in literature study, I drafted questions to identify the use of behaviour reflecting the 8 behavioural aspects as described in chapter 1. These items are combined in one scale per behavioural aspect which forms an actual variable in the survey data.

Per item an answer can be given:
- 1 = Never showed this
- 2 = Sometimes showed this
- 3 = Regularly showed this
- 4 = Often showed this
- 5 = Continuously showed this

A score within a scale is calculated by adding the four answers in a scale to one number ranging between 4 and 20.

Within the survey, the actual items were mixed in a random order of questions.

<table>
<thead>
<tr>
<th>Scale (= Aspect)</th>
<th>Behaviour</th>
<th>Question in questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitating</td>
<td>Empowering others</td>
<td>did &lt;KEY PLAYER&gt; openly empower others to take action and/or responsibility?</td>
</tr>
<tr>
<td>Facilitating</td>
<td>Organizing positive energy</td>
<td>did &lt;KEY PLAYER&gt; take action to stimulate positive energy running through the project team?</td>
</tr>
<tr>
<td>Facilitating</td>
<td>Managing variety</td>
<td>did &lt;KEY PLAYER&gt; work on getting variety in the project team’s capabilities and personalities?</td>
</tr>
<tr>
<td>Facilitating</td>
<td>Showing a range of styles</td>
<td>did &lt;KEY PLAYER&gt; display the use of various management styles to run the project team?</td>
</tr>
<tr>
<td>Sponsoring/championing/support</td>
<td>Developing inspiring vision</td>
<td>did &lt;KEY PLAYER&gt; show the ability to develop (and deliver) an inspiring vision to the project matter?</td>
</tr>
<tr>
<td>Sponsoring/championing/support</td>
<td>Teambuilding</td>
<td>did &lt;KEY PLAYER&gt; clearly set the stage for active teambuilding?</td>
</tr>
<tr>
<td>Sponsoring/championing/support</td>
<td>Learning from teammembers</td>
<td>did &lt;KEY PLAYER&gt; show an open ear to feedback and criticism, trying to learn from team members and enable project success?</td>
</tr>
<tr>
<td>Sponsoring/championing/support</td>
<td>Adapting to new insights</td>
<td>did &lt;KEY PLAYER&gt; show him-/herself adapting based on unexpected inputs?</td>
</tr>
<tr>
<td>Expressed trust</td>
<td>Exploring the warranties given by the partner</td>
<td>did &lt;KEY PLAYER&gt; show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?</td>
</tr>
<tr>
<td>Expressed trust</td>
<td>Trustors showing higher work ethics</td>
<td>did project members directly reporting to &lt;KEY PLAYER&gt; show higher work ethics then regularly could be expected? (like: working late, taking more tasks up then required, set shorter deadlines for actions than usual, etcetera)</td>
</tr>
<tr>
<td>Expressed trust</td>
<td>Testing the service of the partner</td>
<td>did &lt;KEY PLAYER&gt; show efforts of actively testing the service that partners in the project delivered?</td>
</tr>
<tr>
<td>Expressed trust</td>
<td>Extended decision making</td>
<td>did &lt;KEY PLAYER&gt; actively search for extended decision making in the project team?</td>
</tr>
<tr>
<td>Expressed control</td>
<td>Rewarding the ’group to control’</td>
<td>did &lt;KEY PLAYER&gt; openly reward the project team when there was reason to?</td>
</tr>
<tr>
<td>Expressed control</td>
<td>Applying reporting lines</td>
<td>did &lt;KEY PLAYER&gt; initiate formal lines for reporting?</td>
</tr>
<tr>
<td>Expressed control</td>
<td>Directing feedback</td>
<td>did &lt;KEY PLAYER&gt; initiate formal lines for directing feedback toward the project?</td>
</tr>
<tr>
<td>Expressed control</td>
<td>Evaluating the ’group to control’</td>
<td>did &lt;KEY PLAYER&gt; periodically and openly evaluate the project team?</td>
</tr>
<tr>
<td>Expressed openness to users</td>
<td>Giving decision making power to users</td>
<td>did &lt;KEY PLAYER&gt; involve user(s)-groups in the decision-making process? (For instance asking advice on project management decisions or delegating by voting in meetings, or …)</td>
</tr>
<tr>
<td>Expressed openness to users</td>
<td>Accepting conflicting ideas from within the user group</td>
<td>did &lt;KEY PLAYER&gt; react well to conflicting ideas to hers/his from within the user group? (Where these ideas weighed and debated openly, played around in reference group? Etcetera)</td>
</tr>
<tr>
<td>Expressed openness to users</td>
<td>Mixing user types</td>
<td>did &lt;KEY PLAYER&gt; actively mix types of mandated users either in the projects core team or in the reference group?</td>
</tr>
<tr>
<td>Expressed openness to users</td>
<td>Positioning users on leadership roles in the project</td>
<td>did &lt;KEY PLAYER&gt; actively pursue the positioning of key users in the project in decision making positions?</td>
</tr>
<tr>
<td>Detailed preparation and support of the business case</td>
<td>Involving the local cost of change as well for all impacted entities in the case</td>
<td>did &lt;KEY PLAYER&gt; show awareness for cost of change for all impacted entities in weighing business case decisions?</td>
</tr>
<tr>
<td>Detailed preparation and support of the business case</td>
<td>Assessing the organizational setup</td>
<td>did &lt;KEY PLAYER&gt; show any interest in assessing the &quot;setup of the organisation&quot; in weighing decisions?</td>
</tr>
<tr>
<td>Detailed preparation and support of the business case</td>
<td>Being open to both financial and qualitative gains</td>
<td>did &lt;KEY PLAYER&gt; show clear interest in both the financial as well as the qualitative gains from the projects business case?</td>
</tr>
<tr>
<td>Detailed preparation and support of the business case</td>
<td>Business lead agents: being open to technology gains/Technology lead agents:</td>
<td>did &lt;KEY PLAYER&gt; show any interest in Technology gains for IT from the projects business case?</td>
</tr>
</tbody>
</table>
Next to asking for perceived behaviours, also a certain grading of the success rate of the e-procurement implementation is required. This means designing questions that relate to the literature about identifying successful adoption of e-procurement, which is done in table 3.3.

The first item in below table 3.3 is scored as free rating between 1 and 100, asking for a rough overall impression on the implementations success through the perspective of the respondent.

On the rest of the items a multiple choice answer is given:

- 1 = Not at all
- 2 = Somewhat
- 3 = As planned
- 4 = A little better than planned
- 5 = Far better than planned

| Table 3.3: Survey questions on the concept of adoption success |
|-----------------|-----------------|----------------|
| **Concept** | **Definition** | **Question in questionnaire** |
| Effectiveness (successful level of adoption) | The resulting effect coming from an interorganizational implementation, being whether or not the stated goals are met. | can you estimate the general level of success that the implementation established? |
| Inter-organisational implementation | Organizational effort to reach diffusion of an information system within a certain user group that exists inter-organisationally, and with that diffusion reach certain stated goals. | was the targeted user group within the buying organisation reached? |
| Inter-organisational implementation | Organizational effort to reach diffusion of an information system within a certain user group that exists inter-organisationally, and with that diffusion reach certain stated goals. | was the targeted user group within the selling organisation reached? |
| Inter-organisational implementation | Organizational effort to reach diffusion of an information system within a certain user group that exists inter-organisationally, and with that diffusion reach certain stated goals. | has diffusion within the targeted user group within the buying organisation reached targeted levels? |
| Inter-organisational implementation | Organizational effort to reach diffusion of an information system within a certain user group that exists inter-organisationally, and with that diffusion reach certain stated goals. | has diffusion within the targeted user group within the selling organisation reached targeted levels? |
Effectiveness (successful level of adoption) | The resulting effect coming from an interorganizational implementation, being whether or not the stated goals are met. | were the financial targets project met?
---|---|---
Effectiveness (successful level of adoption) | The resulting effect coming from an interorganizational implementation, being whether or not the stated goals are met. | were the transactional targets of the project met?

It is important to realize that all questions in table 3.3 combined form the questionnaire scale “Project rating”. This scale leads to a data variable by adding all scores from the separate questions into one total score. The list of answers together score between 7 and 130.

As a final component to the questionnaire I added some questions to be able to generate some framing on the respondent for use of discussion on the survey's outcomes.

### Table 3.4: Survey questions on general respondent’s framing

<table>
<thead>
<tr>
<th>Question in questionnaire</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you male or female?</td>
<td>Male / Female</td>
</tr>
<tr>
<td>What is your year of birth?</td>
<td>Open value</td>
</tr>
<tr>
<td>For how many years have you been involved with Procurement?</td>
<td>Open value</td>
</tr>
<tr>
<td>For how many years have you been involved with Finance?</td>
<td>Open value</td>
</tr>
<tr>
<td>For how many years have you been involved with Sales?</td>
<td>Open value</td>
</tr>
<tr>
<td>For how many years have you been involved with IT?</td>
<td>Open value</td>
</tr>
<tr>
<td>How large is the buying company in the project you refer to when filling in this survey?</td>
<td>Small: revenue &lt; 50 mln Medium: revenue &lt; 1 bln Large: revenue &gt; 1 bln</td>
</tr>
<tr>
<td>In what sector is the buying company active that you refer to when filling in this survey?</td>
<td>Open value</td>
</tr>
<tr>
<td>Can you select a role closest to your role in the project that you refer to when filling in this survey?</td>
<td>User group / Procurement / sales / finance / IT / implementation partner / other</td>
</tr>
</tbody>
</table>

In total this design leads to a questionnaire that holds 49 questions, divided in 3 categories of questions:

- Questions on the respondent
- Questions on the success of the project
- Questions on behaviour as perceived to be shown by the specific subject

Per category of questions, the actual questions are mixed to avoid respondents tendencies. See Appendices A, B, C and D for the complete questionnaire and surveys.

### 3.4.2 Making it statistically reliable

When designing your own questionnaire, this requires statistical checks on the validity of the responses. These checks lead to crossing items from the questionnaire that appear to give invalid data. To correct the questionnaire I calculated Cronbach’s Alpha for all scales per survey that I want to draw conclusions from.
Above table 3.5 shows all the initial Cronbach’s Alpha’s after gathering the results from the survey. Taking the generally applicable rule that an Alpha should be above 0.7 to call a scales results reliable, clearly shows, as will be illustrated below, that some scales need correction in the results before analysing and concluding on the data.

Two rounds of corrections were required on my survey results to reach a maximum set of reliable scales (see appendix G for a description of that process). Eventually the questionnaires design was corrected into following characteristics.

Note 3: One possibility was to consider the questionnaire to be one set of 10 scales that was just used 4 times and thus only those 10 scales would need correction. In my consideration though there was speak of one survey which consisted of 40 scales. This line of thought followed the fact that the questions where all explicitly linked with the specific subject they were asked about (and thus actually all were different) and where mixed in various following orders. It was concluded that 4 different questionnaires were created to form one survey together and thus 40 separate scales required correction via Cronbach’s Alpha.
3.5 Targeting the right population

The final step in designing a proper survey is knowing how to target the correct population. Respondents should be selected that are fit to provide valid data for testing my hypotheses. In this case I was looking for respondents that were active as a project member in an implementation project for an e-procurement implementation. These respondents could either be on the buying side of the project or on the selling side. My personal network is put to work here.

For 15 years I have been active in the area of e-procurement implementations, this means that I have built up a rather large network with persons active in the type of projects which I wanted to base my
research on. The only important thing I had to be very careful with, was the fact that my network has a commercial ring to it and that the responses should clearly not be influenced by that.

To avoid personal favouritism, I used my network the following way to gather the results I have gathered:

- The surveys were anonymous to fill out.
- The surveys were digitized via Survey Monkey to distribute it fairly easy ‘at a distance’.
- The surveys were publicly promoted via LinkedIn, Twitter and mailing lists to target my wider network and ask for respondents that would fill it out from an experienced project perspective.

This way the surveys were distributed widely (without bias towards a specific buying or selling organisation) within a large network filled with professionals who are active in projects around e-procurement implementations (without commercial bias to who fills out what) in an anonymous way (without bias to who grants me a commercial favour).

Eventually, following this route to gathering respondents, the sample group developed with demographics as can be read in overview in table 3.7.

<table>
<thead>
<tr>
<th>Table 3.7: Overview of characteristics that form the sample group of respondents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey on behaviour by lead business agent on buyers side</td>
</tr>
<tr>
<td>Number respondents</td>
</tr>
<tr>
<td>Primary perspective = buyside</td>
</tr>
<tr>
<td>Primary perspective = sellside</td>
</tr>
<tr>
<td>Average years procurement experience</td>
</tr>
<tr>
<td>Average years finance experience</td>
</tr>
<tr>
<td>Average years sales experience</td>
</tr>
<tr>
<td>Average years IT experience</td>
</tr>
<tr>
<td>Small business background</td>
</tr>
<tr>
<td>Medium sized background</td>
</tr>
<tr>
<td>Large enterprise background</td>
</tr>
<tr>
<td>Project role = from procurement</td>
</tr>
<tr>
<td>Project role = from IT</td>
</tr>
<tr>
<td>Project role = from finance</td>
</tr>
<tr>
<td>Project role = from implementation partner</td>
</tr>
<tr>
<td>Project role = from sales department</td>
</tr>
<tr>
<td>Otherwise related to project</td>
</tr>
</tbody>
</table>
4. Laying out the results

Now that a statistically reliable survey has been established, it is time to start focussing on the actual results from the survey. Within this chapter, the quantitative results on every hypothesis will be evaluated, divided over separate paragraphs per key player. As a first step the general approach will be explained in paragraph 4.1.

4.1 Approaching the survey results

As described in chapter 3, I created a new questionnaire and put that into 4 surveys regarding the 4 key players as identified in literature in paragraph 1.2. The survey asked respondents, being project members in e-procurement implementations, about their perception on the behaviour shown by that specific key player as well as on their perception of the results from the project. Besides some questions to frame the population for discussion (which is handled in chapter 5), this survey resulted in the set of usable variables as described in table 4.1.

<table>
<thead>
<tr>
<th>Scale/Behaviour Aiming at</th>
<th>Lead Business Agent on Buyers Side</th>
<th>Lead Business Agent on Suppliers Side</th>
<th>Lead IT Agent on Buyers Side</th>
<th>Lead IT Agent on Suppliers Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project rating</td>
<td>LBAB-rating</td>
<td>LBAS-rating</td>
<td>LIAB-rating</td>
<td>LIAS-rating</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at facilitating”</td>
<td>LBAB-facilitating</td>
<td>Not reliable</td>
<td>LIAB-facilitating</td>
<td>Not reliable</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at Sponsoring/Championing/Support”</td>
<td>LBAB-sponsoring</td>
<td>LBAS-sponsoring</td>
<td>LIAB-sponsoring</td>
<td>LIAS-sponsoring</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at expressing trust”</td>
<td>LBAB-trust</td>
<td>Not reliable</td>
<td>LIAB-trust</td>
<td>LIAS-trust</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at expressing control”</td>
<td>LBAB-control</td>
<td>LBAS-control</td>
<td>LIAB-control</td>
<td>LIAS-control</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at expressed openness to users”</td>
<td>LBAB-openness</td>
<td>LBAS-openness</td>
<td>LIAB-openness</td>
<td>LIAS-openness</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at detailed preparation and support of the business case”</td>
<td>LBAB-buca</td>
<td>LBAS-buca</td>
<td>LIAB-buca</td>
<td>LIAS-buca</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at expressed support from top management”</td>
<td>LBAB-top-management</td>
<td>LBAS-top-management</td>
<td>LIAB-top-management</td>
<td>LIAS-top-management</td>
</tr>
<tr>
<td>Scale “Behaviour aimed at expressed flexibility to stakeholders”</td>
<td>LBAB-stakeholders</td>
<td>LBAS-stakeholders</td>
<td>LIAB-stakeholders</td>
<td>LIAS-stakeholders</td>
</tr>
</tbody>
</table>

Table 4.1: Usable data variables as derived from my survey.

LBAB stands for Lead business agent on buyers side. LBAS stands for Lead business agent on suppliers side. LIAB stands for Lead IT agent on buyers side. LIAS stands for Lead IT agent on suppliers side.

Per set of variables linked to one key player, a correlation matrix is generated based on the quantitative results, linking the various scales of behaviour to the project’s success. These correlations are calculated using Pearson’s product-moment correlations coefficient. The full sets of data per scale are available as appendix M.

From the correlation matrix, the data is analysed below per hypothesis. This analysis is based on evaluating the correlation between the two variables that are connected to the hypothesis, as described in chapter 3 and detailed out in appendix L. In the basic evaluation in this chapter, all hypotheses are evaluated based on the guidelines that Cohen (1988) has defined. This means that the following evaluation of the effect of the correlation is applied:

- \( r = 0.10 \) is a small effect, it constitutes for 1% of the total variance
- \( r = 0.30 \) is an average effect, it constitutes for 9% of the total variance
- \( r = 0.50 \) is a high effect, it constitutes for 25% of the total variance
On top of the correlation coefficient, also the significance of the correlation is tested. This leads to a score within one of two categories:

- \( p < 0.05 \) : A high significance (\( p < 0.01 \) is very high), indicating a (very) low chance of the correlation being dependent on coincidence.
- \( p > 0.05 \) : No significance, indicating a moderate to high chance of the correlation being dependent on coincidence.

All hypotheses are eventually concluded in either accepted or rejected, based on the \( r \) and \( p \) values.

- **Accepted**: when \( r \) = above 0.30 and significance is high (\( p < 0.05 \)) or very high (\( p < 0.01 \)),
- **Rejected**: when \( r \) = below 0.30 or there is no significance (\( p > 0.05 \))

In chapter 5, a general conclusion to the research question is drawn as well as discussed based on these hypotheses which are tested in my collected data.

### 4.2 Evaluating hypotheses around lead business agent on buy side

Within table 3.1, eight hypotheses were defined around the lead business agent on buyers side. Every hypothesis handles around one high level behaviour. On every hypothesis it is expected that when the lead business agent on buyers side is perceived to be showing that specific behaviour, the implementation success is higher.

In below table 4.2, all hypotheses on the lead business agent on buyers side are evaluated.

#### Table 4.2: Hypotheses checks for Lead Business Agent on Buyers side (LBAB)

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>How hypothesis is checked</th>
<th>Correlation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1.1</td>
<td>Evaluating the correlation between variable LBAB-facilitating and LBAB-rating.</td>
<td>( r = 0.627317 ) (n = 23) ( p = 0.0013555 )</td>
<td>A high effect with a very high significance (( p &lt; 0.01 )) – <strong>Accepted</strong></td>
</tr>
<tr>
<td>H1.2</td>
<td>Evaluating the correlation between variable LBAB-sponsoring and LBAB-rating.</td>
<td>( r = 0.649868 ) (n = 23) ( p = 0.0007897 )</td>
<td>A high effect with a very high significance (( p &lt; 0.01 )) – <strong>Accepted</strong></td>
</tr>
<tr>
<td>H1.3</td>
<td>Evaluating the correlation between variable LBAB-trust and LBAB-rating.</td>
<td>( r = 0.211526 ) (n = 23) ( p = 0.3325976 )</td>
<td>A low to average effect with no significance (( p &gt; 0.1 )) – <strong>Rejected</strong></td>
</tr>
<tr>
<td>H1.4</td>
<td>Evaluating the correlation between variable LBAB-control and LBAB-rating.</td>
<td>( r = 0.621518 ) (n = 23) ( p = 0.0015473 )</td>
<td>A high effect with a very high significance (( p &lt; 0.01 )) – <strong>Accepted</strong></td>
</tr>
<tr>
<td>H1.5</td>
<td>Evaluating the correlation between variable LBAB-openness and LBAB-rating.</td>
<td>( r = 0.495201 ) (n = 23) ( p = 0.0162803 )</td>
<td>An almost high effect with a close to very high significance (( 0.01 &lt; p &lt; 0.05 )) – <strong>Accepted</strong></td>
</tr>
<tr>
<td>H1.6</td>
<td>Evaluating the correlation between variable LBAB-buca and LBAB-rating.</td>
<td>( r = 0.328105 ) (n = 23) ( p = 0.1263993 )</td>
<td>An above average effect with no significance (( p &gt; 0.1 )) – <strong>Rejected</strong></td>
</tr>
<tr>
<td>H1.7</td>
<td>Evaluating the correlation between variable LBAB-top-management and LBAB-rating.</td>
<td>( r = 0.663884 ) (n = 23) ( p = 0.0005521 )</td>
<td>A high effect with a very high significance (( p &lt; 0.01 )) – <strong>Accepted</strong></td>
</tr>
<tr>
<td>H1.8</td>
<td>Evaluating the correlation between variable LBAB-flexibility and LBAB-rating.</td>
<td>( r = 0.590286 ) (n = 23) ( p = 0.0030255 )</td>
<td>A high effect with a very high significance (( p &lt; 0.01 )) – <strong>Accepted</strong></td>
</tr>
</tbody>
</table>
Above table 4.2 shows that 6 out of 8 hypotheses around the Lead Business Agent on Buyers side are accepted and two are rejected. The accepted hypotheses show a rather strong positive correlation between perceived showing of behaviour from this key player and the success rate of the project going up.

4.3 Evaluating hypotheses around lead business agent on sell side

Within table 3.1, eight hypotheses were defined around the lead business agent on sellers side. Every hypothesis handles around one high level behaviour. On every hypothesis it is expected that when the lead business agent on sellers side is perceived to be showing that specific behaviour, the implementation success is higher.

In below table 4.3, all hypotheses on the lead business agent on sellers side are evaluated.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>How hypothesis is checked</th>
<th>Correlation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2.1</td>
<td>Evaluating the correlation between variable LBAS-facilitating and LBAS-rating.</td>
<td>( r = 0.418121 ) (n = 23) ( p = 0.0470949 )</td>
<td>Not checkable due to unreliable questionnaire scale.</td>
</tr>
<tr>
<td>H2.2</td>
<td>Evaluating the correlation between variable LBAS-sponsoring and LBAS-rating.</td>
<td>( r = -0.457503 ) (n = 23) ( p = 0.0281623 )</td>
<td>An almost high negative correlation with a high significance ( (p &lt; 0.05) ) ( \rightarrow ) Rejected</td>
</tr>
<tr>
<td>H2.3</td>
<td>Evaluating the correlation between variable LBAS-trust and LBAS-rating.</td>
<td>( r = 0.329808 ) (n = 23) ( p = 0.1243259 )</td>
<td>Not checkable due to unreliable questionnaire scale.</td>
</tr>
<tr>
<td>H2.4</td>
<td>Evaluating the correlation between variable LBAS-control and LBAS-rating.</td>
<td>( r = 0.312209 ) (n = 23) ( p = 0.1469614 )</td>
<td>An average effect but no significance ( (p &gt; 0.1) ) ( \rightarrow ) Rejected</td>
</tr>
<tr>
<td>H2.5</td>
<td>Evaluating the correlation between variable LBAS-openness and LBAS-rating.</td>
<td>( r = 0.416492 ) (n = 23) ( p = 0.0480508 )</td>
<td>An average to high effect with a high significance ( (p &lt; 0.05) ) ( \rightarrow ) Accepted</td>
</tr>
<tr>
<td>H2.6</td>
<td>Evaluating the correlation between variable LBAS-buca and LBAS-rating.</td>
<td>( r = 0.261611 ) (n = 23) ( p = 0.2278889 )</td>
<td>A below average effect but no significance ( (p &gt; 0.1) ) ( \rightarrow ) Rejected</td>
</tr>
<tr>
<td>H2.7</td>
<td>Evaluating the correlation between variable LBAS-top-management and LBAS-rating.</td>
<td>( r = 0.181557 ) (n = 23) ( p = 0.4070578 )</td>
<td>A below average effect but no significance ( (p &gt; 0.1) ) ( \rightarrow ) Rejected</td>
</tr>
<tr>
<td>H2.8</td>
<td>Evaluating the correlation between variable LBAS-flexibility and LBAS-rating.</td>
<td>( r = 0.250214 ) (n = 23) ( p = 0.2495268 )</td>
<td>A below average effect but no significance ( (p &gt; 0.1) ) ( \rightarrow ) Rejected</td>
</tr>
</tbody>
</table>

In above table 4.3, it is clear that the hypotheses around the lead business agent on sellers side are not widely accepted. Most hypotheses are rejected from low correlation or poor significance. Therefore no general trend on the contribution of this key player to the effect of the projects success can be concluded.

4.4 Evaluating hypotheses around lead IT agent on buy side

Within table 3.1, eight hypotheses were defined around the lead IT agent on buyers side. Every hypothesis handles around one high level behaviour. On every hypothesis it is expected that when
the lead IT agent on buyers side is perceived to be showing that specific behaviour, the implementation success is higher.

In below table 4.4, all hypotheses on the lead IT agent on buyers side are evaluated.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>How hypothesis is checked</th>
<th>Correlation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3.1</td>
<td>Evaluating the correlation between variable LIAB-facilitating and LIAB-rating.</td>
<td>$r = 0.352493$ (n = 20) $p = 0.1274326$</td>
<td>A little more than average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.2</td>
<td>Evaluating the correlation between variable LIAB-sponsoring and LIAB-rating.</td>
<td>$r = 0.301978$ (n = 20) $p = 0.1933142$</td>
<td>An average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.3</td>
<td>Evaluating the correlation between variable LIAB-trust and LIAB-rating.</td>
<td>$r = 0.351491$ (n = 20) $p = 0.1261260$</td>
<td>A little more than average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.4</td>
<td>Evaluating the correlation between variable LIAB-control and LIAB-rating.</td>
<td>$r = 0.269786$ (n = 20) $p = 0.2478337$</td>
<td>A low to average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.5</td>
<td>Evaluating the correlation between variable LIAB-openness and LIAB-rating.</td>
<td>$r = 0.183785$ (n = 20) $p = 0.4365057$</td>
<td>A low to average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.6</td>
<td>Evaluating the correlation between variable LIAB-buca and LIAB-rating.</td>
<td>$r = 0.186534$ (n = 20) $p = 0.4295392$</td>
<td>A low to average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.7</td>
<td>Evaluating the correlation between variable LIAB-top-management and LIAB-rating.</td>
<td>$r = 0.255694$ (n = 20) $p = 0.2744794$</td>
<td>A below average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
<tr>
<td>H3.8</td>
<td>Evaluating the correlation between variable LIAB-flexibility and LIAB-rating.</td>
<td>$r = 0.169591$ (n = 20) $p = 0.4734019$</td>
<td>A low to average effect with no significance ($p &gt; 0.1$) ⇒ Rejected</td>
</tr>
</tbody>
</table>

Above table 4.4 shows that all hypotheses around the Lead IT Agent on Buyers side are rejected. This means that no conclusions can be drawn on the effect that this key player has on the implementation effect by showing specific behaviours.

4.5 Evaluating hypotheses around lead IT agent on sell side
Within table 3.1, eight hypotheses were defined around the lead IT agent on sellers side. Every hypothesis handles around one high level behaviour. On every hypothesis it is expected that when the lead IT agent on sellers side is perceived to be showing that specific behaviour, the implementation success is higher.

In below table 4.5, all hypotheses on the lead IT agent on sellers side are evaluated.
Table 4.5: Hypotheses checks for Lead IT Agent on Sellers side (LIAS)

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>How hypothesis is checked</th>
<th>Correlation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4.1</td>
<td>Evaluating the correlation between variable LIAB-facilitating and LIAS-rating.</td>
<td>$r = -0.202093$ (n = 20) $p = 0.3928495$</td>
<td>Not checkable due to poor reliability of the scale</td>
</tr>
<tr>
<td>H4.2</td>
<td>Evaluating the correlation between variable LIAS-sponsoring and LIAS-rating.</td>
<td>$r = 0.174386$ (n = 20) $p = 0.4621413$</td>
<td>A low to average effect with no significance ($P &gt; 0.1$) → Rejected</td>
</tr>
<tr>
<td>H4.3</td>
<td>Evaluating the correlation between variable LIAS-trust and LIAS-rating.</td>
<td>$r = 0.168456$ (n = 20) $p = 0.4777349$</td>
<td>A low to average effect with no significance ($P &gt; 0.1$) → Rejected</td>
</tr>
<tr>
<td>H4.4</td>
<td>Evaluating the correlation between variable LIAS-control and LIAS-rating.</td>
<td>$r = 0.149297$ (n = 20) $p = 0.5298598$</td>
<td>A low to average effect with no significance ($P &gt; 0.1$) → Rejected</td>
</tr>
<tr>
<td>H4.5</td>
<td>Evaluating the correlation between variable LIAS-openness and LIAS-rating.</td>
<td>$r = 0.226426$ (n = 20) $p = 0.3370787$</td>
<td>A low to average effect with no significance ($P &gt; 0.1$) → Rejected</td>
</tr>
<tr>
<td>H4.6</td>
<td>Evaluating the correlation between variable LIAS-buca and LIAS-rating.</td>
<td>$r = 0.041250$ (n = 20) $p = 0.8629122$</td>
<td>No real measurable effect with no significance ($p &gt; 0.1$) → Rejected</td>
</tr>
<tr>
<td>H4.7</td>
<td>Evaluating the correlation between variable LIAS-top-management and LIAS-rating.</td>
<td>$r = -0.006328$ (n = 20) $p = 0.9788757$</td>
<td>No real measurable effect with no significance ($p &gt; 0.1$) → Rejected</td>
</tr>
<tr>
<td>H4.8</td>
<td>Evaluating the correlation between variable LIAS-flexibility and LIAS-rating.</td>
<td>$r = 0.289019$ (n = 20) $p = 0.2164986$</td>
<td>An almost average effect with no significance ($P &gt; 0.1$) → Rejected</td>
</tr>
</tbody>
</table>

Above table 4.5 shows that all hypotheses around the Lead IT Agent on Sellers side which could be checked are rejected. This means that no conclusions can be drawn on the effect that this key player has on the implementation effect by showing specific behaviours.

4.6 Combined overview of hypotheses testing

To conclude this chapter, in which my small data set is analysed against the hypotheses as created in chapter 3, below table gives an overview of the final statuses of my hypotheses checking.

Table 4.6: Overview of final statuses of all hypotheses checked within this research.

<table>
<thead>
<tr>
<th></th>
<th>H1.x</th>
<th>H2.x</th>
<th>H3.x</th>
<th>H4.x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hx.1</td>
<td>Accepted</td>
<td>Not checkable</td>
<td>Rejected</td>
<td>Not checkable</td>
</tr>
<tr>
<td>Hx.2</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hx.3</td>
<td>Rejected</td>
<td>Not checkable</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hx.4</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hx.5</td>
<td>Accepted</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hx.6</td>
<td>Rejected</td>
<td>Rejected</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hx.7</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hx.8</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Rejected</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

This overview forms the basis for conclusions and discussion in chapter 5.
5. Concluding and discussing the results

The final step in my research is drawing conclusions toward the research question based on the survey results and discussing the general applicability of those results in the light of my research topic.

5.1 Reviewing the research question

In paragraph 1.3 the research question as well as 11 supporting questions are set up. The supporting questions were meant to form the literature research and are already answered in an overview in paragraph 2.11.

The research question was defined as follows:

To what extent can (1) a relationship be discovered between eight specific management behaviours, (which are in the literature proven to be of positive effect in IOA-building and IOS-implementation) and the implementation success of e-procurement, and (2) to what extent can that same relationship be discovered for four specific interorganizational key players?

When you read this research question carefully, you can find two sub questions incorporated in the one research question. In below paragraphs both sub questions will be reviewed separately.

5.1.1 Can a relationship be discovered between behaviours and implementation success of e-procurement?

When looking at the table 4.6 that lays out all results on hypotheses in this research, the primary colour seems to be red. In total, I drafted 4x8=32 hypotheses which one by one expected a positive correlation between a certain key player in the project perceived to be showing certain behaviour and the success of that project. Of those 32 hypotheses, 7 hypotheses are accepted, 22 are rejected and 3 could not be proven because of unreliable results.

With 6 out of 7 accepted hypotheses being linked to one of the four key players, it is difficult to come to a firm conclusion on the first part of the research question. When you take a closer look at the hypotheses checking, it is clear that many hypotheses are rejected because of poor significance and not because of structurally low correlations. This means that most of the rejected hypotheses come from indecisive data, while the few approvals come from firm affirmative data (although the sample is very small!).

Looking at the total result I am inclined to conclude that it is hard to definitively establish an overall proven relationship between the perceived behaviour of each of the key players and the success of the project. There seems to be some positive relationship indeed, but it is only in a very modest amount of measurements more than average in its statistics.

5.1.2 Can differences between key players be established?

Evaluating that same hypotheses overview of table 4.6 in the light of the second half of my research question leads to a more clear picture than on the discovery of an overall positive relationship. “to what extent can that same relationship be discovered for four specific interorganizational key players?” leads to at least one very clear distinction in the effect between the four key players.

The most clear proof of a positive correlation between perceived to be shown behaviour and project success comes from the Lead Business Agent on Buyers side. Of 8 correlations between behaviour variables and the variable for project rating, for this subject, 6 are statistically firm enough to accept the hypotheses related to those behaviours. The Lead Business Agent on Sellers side is the only other
subject with one accepted hypotheses related to its role, both lead IT agents only link to rejected hypotheses. But I have to be careful to conclude on these differences because many of the hypotheses are rejected from poor significance and not because of statistically acceptable data that actually proves the hypotheses to be wrong.

5.2 Drawing a conclusion
This research was set up in order to explore the field of change effectiveness in e-procurement implementations. It drew on the expectations of extrapolating the theories already available for key player behaviour in the fields of IOA-building and IOS-implementations, into the field of e-procurement implementations as a specific example of both those fields.

Overall, based on this research, I must conclude that no proof was found that the theories from both Interorganizational Alliance Building as well as Interorganizational Systems Implementations can generally be applied to the field of e-procurement.

When trying to apply the research logic on separate key players though, the conclusion is that some first signs of evidence are found that this logic might work for business lead agents in implementing e-procurement and less so for lead IT agents implementing e-procurement.

5.3 General discussion on results
The results from this research must be approached with caution. The data sets used from the survey are very small and therefore all conclusions on hypotheses and overall could be doubted by default. This means that general applicability of this research results is not possible yet.

The most definitive answers from this research lie in the differences between the key players. With the Lead Business Agent on Buyers side, the researched management behaviours correlate rather clearly with e-procurement implementation success, for all other key players this effect is not visible.

It is hard at this point to conclude on the reason of these differences. Is it founded in an actual difference of influence from the various key players, or can other reasons be found for this? Within the respondents of my survey, in which I asked for their perspective on the project (did they work in the project from the buy side or from the sell side) I found that the balance for these perspectives was off in the business agent’s surveys. Within these 23 respondents, 86% was filling out the questionnaire while being active in the project from the buying perspective and only 14% was active in the project from the selling perspective. This could mean that they individually valued the behaviours from the lead agent on their own side differently than the behaviours from the other side. This would only explain about half of the described difference though, because in the IT lead’s survey, the split on perspectives was exactly 50/50. This influence to the validity of this research might be important but it cannot be concluded at this moment without further research.

On top of this discussion point, some general remarks need to be made on my research to keep in mind while applying its results:

- **Geographical**: the research did not ask respondents to file the country of origin where the response was based upon while English was the language of the research and the network in which the research was published was international. This means that no conclusions can be drawn about the geographical influences on the conclusions.
• **Retrospective measure on adoption success might create bias in its results:** Because there is only a retrospective measurement on implementation success, the possibility exists about bias in its results. When a respondent has a subjective frustrating or ecstatic experience related to the project, he/she might be tempted to look back and respond with a lower/higher rating than otherwise objectively given. Defining and measuring to a clear frame before, during and after implementation usually optimizes the statistical outcome.

• **General quality of the survey / questionnaires:** Based on the variety of theoretical input I created a brand new survey, consisting of various questionnaires. This newly created questionnaire has three discussion points embedded.
  1. In hind side it can be discussed that 16 of the questions (from the total of 162 questions in both questionnaires combined) might have a double question embedded in them that has a negative influence on the validity of the answers. Some of those questions are filtered out when the Cronbach’s Alpha’s were calculated and low-reliability questions were dropped, but then the argument could be made that this unnecessarily lowered the data input in the research and thus affected the validity of the conclusions again.
  2. The reliability of the scales in the questionnaire was corrected using the Cronbach’s Alpha calculation method based on which I deleted the least reliable questions from the results. In this exercise I chose to calculate all scales for the full survey separately due to the very specific use. It can be discussed if this was a too heavy test on the scales and that it could have led to better results when I would have evaluated the reliability just for ten scales instead of all forty.

5.4 Advise for further research

The research which I have executed for, and reported within, this thesis can be addressed as explorative research. It was an experiment to expand available knowledge over a newly identified field of expertise. This experimental character showed clearly in the various points of discussion on the conclusions. The statistical details were not completely covered as ideally desired because of the questionnaire that was newly created just for this survey and the low number of respondents. The conclusions are thin because of that small data set, which shows in the fact that many hypotheses end in rejection because of poor significance and not because of actual conclusive data.

Still, as far as I’m concerned, the experimental step was successful. The conclusions are small because the data on which they are founded are not extensive enough to fully rely on them, but to me they fulfilled the first goal: identifying a possible explanatory path to differences in implementation success of e-procurement systems. As a first step from here I would advise to corroborate the results from this survey in a new, more elaborate research. This should lead to answers on my main discussion as described in paragraph 5.3.
6. Listing the literature

Books:
Rietveld, G.J., “Inkoop een nieuw paradigma”, SDU Uitgevers, Den Haag 2009

Dissertations:
Harink, J.H.A., “Internet-technologie in inkoop; de kinderschoenen ontgroeid”, Universiteit Twente, Enschede 2003

Articles:


Freeman, R.E., Harrison, J.S., Wicks, A.C., Parmar, B.L., De Colle, S., “Stakeholder Theory: the state of the art”, Cambridge University Press, Cambridge, 2010


Appendices
Appendix A = Business leads questionnaire
Appendix B = Business leads survey
Appendix C = IT leads questionnaire
Appendix D = IT leads survey
Appendix E = Respondents data on Business leads survey
Appendix F = Respondents data on IT leads survey
Appendix G = Processing data to correct Cronbachs Alpha's
Appendix H = Correlation matrix on key player: Lead business agent on buy side
Appendix I = Correlation matrix on key player: Lead business agent on sell side
Appendix J = Correlation matrix on key player: Lead business IT on buy side
Appendix K = Correlation matrix on key player: Lead business IT on sell side
Appendix L = Extended table linking Hypotheses to Checking variables in the survey
Appendix M = Full data set per scale per key player’s survey
Appendix N = Nederlandse versie van het voorwoord
Appendix A: Business leads questionnaire

Section A: identification

1. Are you male or female? Male/Female
2. What is your year of birth? <yyyy>
3. For how many years have you been involved with Procurement? <nn>
4. For how many years have you been involved with Finance? <nn>
5. For how many years have you been involved with Sales? <nn>
6. For how many years have you been involved with IT? <nn>

This survey means to measure the effectiveness of interorganizational e-procurement implementations and the correlation with certain behaviours shown by key players in that implementation. A project between supplying and demanding business partners defines as an e-procurement implementation when the subject of the project is a targeted diffusion, within user groups of both the buying side as well as the selling side of the trading relation, of a certain (integrated) information system, based on internet technology, initiated by the buying side. You as a respondent is asked to take in mind one specific example of an e-procurement implementation which you experienced and fill in the survey with that specific buying and selling party in mind.

7. Was your perspective on the project you are referring to from the “selling” or “buying” side in the trading relationship? Buying Selling

8. How large is the buying company in the project you refer to when filling in this survey? MKB (< 50 mln) GeneralBusiness (50 mln > GB > 1 bln) LargeEnterprise (> 1 bln)

9. In what sector is the buying company active that you refer to when filling in this survey? Industry Professional Services Customer Services Retail Wholesale Fast Moving Consumer Goods Finance Government

10. Can you select a role closest to your role in the project that you refer to when filling in this survey? User groep member Project member procurement dept Project member sales dept Project member finance dept Project member other business dept Project member IT department Project member implement. partner Otherwise related to the project
Section B: adoption and success of the project

0. can you estimate the general level of success that the implementation established? (Likert schaal)

1. was the targeted user group within the buying organisation reached? 1-2-3-4-5
2. was the targeted user group within the selling organisation reached? 1-2-3-4-5
3. has diffusion within the targeted user group within the buying organisation reached targeted levels? 1-2-3-4-5
4. has diffusion within the targeted user group within the selling organisation reached targeted levels? 1-2-3-4-5
5. were the financial targets project met? 1-2-3-4-5
6. were the transactional targets of the project met? 1-2-3-4-5

Section C: keyplayer behaviours

Key players within an e-procurement implementation can be identified in both business and IT resources. This survey handles on the key players per trading partner that can be identified within the business. Two specific roles within the project are surveyed:

Lead business agent at buyer’s side - Highest ranking business resource from within the buyer’s organisation, usually from within the procurement or finance department, carrying leading responsibilities within the project.

Lead business agent at seller’s side - Highest ranking business resource from within the seller’s organisation, usually from within the sales or accounts receivables department, carrying leading responsibilities within the project.

Section C.1: behaviour of the Lead business agent at buyer’s side (LBAb)

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Scale</th>
<th>List#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>did LBAb openly empower others to take action and/or responsibility?</td>
<td>Facilitating</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>did LBAb show the ability to develop (and deliver) an inspiring vision to the project matter?</td>
<td>Sponsoring/ championing/ support</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>did LBAb show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?</td>
<td>Expressed trust</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>did LBAb openly reward the project team when there was reason to?</td>
<td>Expressed control</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>did LBAb clearly set the stage for active teambuilding?</td>
<td>Sponsoring/ Championing / Support</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>did LBAb involve user(s)(-groups) in the decision-making process? (For instance asking advice on project management decisions or delegating by voting in meetings, or ...)</td>
<td>Expressed openness to users</td>
<td>23</td>
</tr>
<tr>
<td>7</td>
<td>did LBAb show awareness for cost of change for all impacted entities in weighing business case decisions?</td>
<td>Detailed preparation and support of the business case</td>
<td>32</td>
</tr>
<tr>
<td>8</td>
<td>did LBAb actively voice the explanation of top-management team to the rationale of the change?</td>
<td>Expressed support from top management</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Score</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>did LBAb actively pursue the input from senior management?</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>did LBAb take action to stimulate positive energy running through the project team?</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>did LBAb initiate formal lines for reporting?</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>did LBAb show any interest in assessing the &quot;setup of the organisation&quot; in weighing decisions? (for example the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary)</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>did LBAb show an open ear to feedback and criticism, trying to learn from team members and enable project success?</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>did LBAb actively pursue the input from project-portfolio management?</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>did project members directly reporting to LBAb show higher workethics then regularly could be expected? (like: working late, taking more tasks up then required, set shorter deadlines for actions than usual, etcetera)</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>did LBAb initiate formal lines for directing feedback toward the project?</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>did LBAb actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>did LBAb react well to conflicting ideas to hers/his from within the user group? (Where these ideas weighed and debated openly, played around in reference group? Etcetera)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>did LBAb show him-/herself adapting based on unexpected inputs?</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>did LBAb actively pursue the input from project-management from other projects?</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>did LBAb work on getting variety in the project team’s capabilities and personalities?</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>did LBAb show clear interest in both the financial as well as the qualitative gains from the projects business case?</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>did LBAb display the use of various management styles to run the project team? (Being: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>did LBAb actively voice the explanation of the top-management team to the choices that were in the project?</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>did LBAb show any interest in Technology gains for IT from the projects business case?</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>did LBAb actively voice the explanation of top-management team to the characteristics of the change?</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>
Master thesis – Change behaviour and e-procurement effectiveness

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Scale</th>
<th>List#</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td>did LBAb show efforts of actively testing the service that partners in the project delivered?</td>
<td>Expressed trust</td>
<td>13</td>
</tr>
<tr>
<td>28</td>
<td>did LBAb periodically and openly evaluate the project team?</td>
<td>Expressed control</td>
<td>19</td>
</tr>
<tr>
<td>29</td>
<td>did LBAb actively pursue the input from mid-level line management?</td>
<td>Expressed flexibility to stakeholders</td>
<td>26</td>
</tr>
<tr>
<td>30</td>
<td>did LBAb actively search for extended decision making in the project team?</td>
<td>Expressed trust</td>
<td>15</td>
</tr>
<tr>
<td>31</td>
<td>did LBAb actively mix types of mandated users either in the projects core team or in the reference group?</td>
<td>Expressed openness to users</td>
<td>21</td>
</tr>
<tr>
<td>32</td>
<td>did LBAb actively pursue the positioning of key users in the project in decision making positions?</td>
<td>Expressed openness to users</td>
<td>24</td>
</tr>
</tbody>
</table>

Section C.2: behaviour of the Lead business agent at seller’s side (LBAs)

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Scale</th>
<th>List#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>did LBAs show the ability to develop (and deliver) an inspiring vision to the project matter?</td>
<td>Sponsoring/ championing/ support</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>did LBAs openly reward the project team when there was reason to?</td>
<td>Expressed control</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>did project members directly reporting to LBAs show higher workethics then regularly could be expected? (like: working late, taking more tasks up then required, set shorter deadlines for actions than usual, etcetera)</td>
<td>Expressed trust</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>did LBAs involve user(s)(-groups) in the decision-making process? (For instance asking advice on project management decisions or delegating by voting in meetings, or …)</td>
<td>Expressed openness to users</td>
<td>23</td>
</tr>
<tr>
<td>5</td>
<td>did LBAs openly empower others to take action and/or responsibility?</td>
<td>Facilitating</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>did LBAs show awareness for cost of change for all impacted entities in weighing business case decisions?</td>
<td>Detailed preparation and support of the business case</td>
<td>32</td>
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<tr>
<td>7</td>
<td>did LBAs actively voice the explanation of the top-management team to the choices that were in the project?</td>
<td>Expressed support from top-management</td>
<td>11</td>
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<tr>
<td>8</td>
<td>did LBAs take action to stimulate positive energy running through the project team?</td>
<td>Facilitating</td>
<td>7</td>
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<tr>
<td>9</td>
<td>did LBAs actively mix types of mandated users either in the projects core team or in the reference group?</td>
<td>Expressed openness to users</td>
<td>21</td>
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<tr>
<td>10</td>
<td>did LBAs initiate formal lines for reporting?</td>
<td>Expressed control</td>
<td>17</td>
</tr>
<tr>
<td>11</td>
<td>did LBAs show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?</td>
<td>Expressed trust</td>
<td>14</td>
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<tr>
<td>12</td>
<td>did LBAs show an open ear to feedback and criticism, trying to learn from team members and enable project success?</td>
<td>Sponsoring/ Championing/ Support</td>
<td>2</td>
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<tr>
<td>13</td>
<td>did LBAs actively pursue the input from project-portfolio management?</td>
<td>Expressed flexibility to stakeholders</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>did LBAs initiate formal lines for directing feedback toward the project?</td>
<td>Expressed control</td>
<td>18</td>
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<tr>
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<tr>
<td>15</td>
<td>did LBAs clearly set the stage for active teambuilding?</td>
<td>Sponsoring/ Championing / Support</td>
<td>1</td>
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<tr>
<td>16</td>
<td>did LBAs actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?</td>
<td>Expressed support from top-management</td>
<td>12</td>
</tr>
<tr>
<td>17</td>
<td>did LBAs actively voice the explanation of top-management team to the rationale of the change?</td>
<td>Expressed support from top management</td>
<td>10</td>
</tr>
<tr>
<td>18</td>
<td>did LBAs actively pursue the input from senior management?</td>
<td>Expressed flexibility to stakeholders</td>
<td>25</td>
</tr>
<tr>
<td>19</td>
<td>did LBAs show clear interest in both the financial as well as the qualitative gains from the projects business case?</td>
<td>Detailed preparation and support of the business case</td>
<td>30</td>
</tr>
<tr>
<td>20</td>
<td>did LBAs react well to conflicting ideas to hers/his from within the user group? (Where these ideas weighed and debated openly, played around in reference group? Etcetera)</td>
<td>Expressed openness to users</td>
<td>22</td>
</tr>
<tr>
<td>21</td>
<td>did LBAs show any interest in assessing the &quot;setup of the organisation&quot; in weighing decisions? (for example the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary)</td>
<td>Detailed preparation and support of the business case</td>
<td>31</td>
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<tr>
<td>22</td>
<td>did LBAs show him-/herself adapting based on unexpected inputs?</td>
<td>Sponsoring/ Championing/ Support</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>did LBAs actively pursue the input from project-management from other projects?</td>
<td>Expressed flexibility to stakeholders</td>
<td>28</td>
</tr>
<tr>
<td>24</td>
<td>did LBAs work on getting variety in the project team’s capabilities and personalities?</td>
<td>Facilitating</td>
<td>6</td>
</tr>
<tr>
<td>25</td>
<td>did LBAs display the use of various management styles to run the project team? (Being: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach)</td>
<td>Facilitating</td>
<td>8</td>
</tr>
<tr>
<td>26</td>
<td>did LBAs show any interest in Technology gains for IT from the projects business case?</td>
<td>Detailed preparation and support of the business case</td>
<td>29</td>
</tr>
<tr>
<td>27</td>
<td>did LBAs actively search for extended decision making in the project team?</td>
<td>Expressed trust</td>
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<tr>
<td>28</td>
<td>did LBAs actively voice the explanation of top-management team to the characteristics of the change?</td>
<td>Expressed support from top-management</td>
<td>9</td>
</tr>
<tr>
<td>29</td>
<td>did LBAs show efforts of actively testing the service that partners in the project delivered?</td>
<td>Expressed trust</td>
<td>13</td>
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<tr>
<td>30</td>
<td>did LBAs periodically and openly evaluate the project team?</td>
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</tr>
<tr>
<td>31</td>
<td>did LBAs actively pursue the input from mid-level line management?</td>
<td>Expressed flexibility to</td>
<td>26</td>
</tr>
</tbody>
</table>
### Table

<table>
<thead>
<tr>
<th>32</th>
<th>did LBAs actively pursue the positioning of key users in the project in decision making positions?</th>
<th>Express openness to users</th>
<th>24</th>
</tr>
</thead>
</table>

**Master thesis – Change behaviour and e-procurement effectiveness**
Appendix B: Business leads survey from survey monkey
(screenshots from PDF download)
Section A: Introduction and Qualification

4. For how many years have you been involved with Procurement?  

5. For how many years have you been involved with Finance?  

6. For how many years have you been involved with Sales?  

7. For how many years have you been involved with IT?
Section A: Introduction and Qualification

8. How large was the buying company in the project you are referring to?
   - Small Business (Revenue < 50 mln EUR per year)
   - Medium sized business (50 mln < Revenue < 1 bln EUR per year)
   - Large enterprise (Revenue > 1 bln EUR per year)

9. In what sector is the buying company in the project you are referring to active?

10. Can you select a role closest to your role in the project that you are referring to?
    - User group member
    - Project member from procurement department
    - Project member from sales department
    - Project member from finance department
    - Project member from other business department
    - Project member from IT department
    - Project member from implementation partner
    - Otherwise related to the project
Section B: Assessment of project success

11. Can you estimate the general level of success that the eProcurement implementation established? Put in a grade between 0 and 100, where 100 means maximum successful.

12. Was the targeted user group within the buying organisation reached?
- Not at all
- Somewhat
- As planned
- A little better than planned
- Far better than planned

13. Was the targeted user group within the selling organisation reached?
- Not at all
- Somewhat
- As planned
- A little better than planned
- Far better than planned

14. Were targets of diffusion (the actual usage) within the targeted user group within the buying organisation reached?
- Not at all
- Somewhat
- As planned
- A little better than planned
- Far better than planned
Section B: Assessment of project success

15. Were targets of diffusion (the actual usage) within the targeted user group within the selling organisation reached?
   - Not at all
   - Somewhat
   - As planned
   - A little better than planned
   - Far better than planned

16. Were the financial targets of the project met?
   - Not at all
   - Somewhat
   - As planned
   - A little better than planned
   - Far better than planned

17. Were the transactional targets of the project met?
   - Not at all
   - Somewhat
   - As planned
   - A little better than planned
   - Far better than planned
Section C: Key player behaviours

Key players within an eProcurement implementation can be identified in both business and IT resources. This survey handles on the key players per trading partner that can be identified within the business. Two specific roles within the project are surveyed:

Lead business agent at buyer’s side (LBAb) -
Highest ranking business resource from within the buyer’s organisation, usually from within the procurement or finance department, carrying leading responsibilities within the project.

Lead business agent at seller’s side (LBAs) -
Highest ranking business resource from within the seller’s organisation, usually from within the sales or accounts receivables department, carrying leading responsibilities within the project.

In the following two subsections of this survey, the shown behaviour of both key-players is investigated via a questionnaire.
Section C1: Behaviour of the lead business agent at buyers side (LBAb)

* 18. Did LBAb openly empower others to take action and/or responsibility?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 19. Did LBAb show the ability to develop (and deliver) an inspiring vision to the project matter?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 20. Did LBAb show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
<table>
<thead>
<tr>
<th>Section C1: Behaviour of the lead business agent at buyers side (LBAb)</th>
</tr>
</thead>
</table>

**21. Did LBAb openly reward the project team when there was reason to?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**22. Did LBAb clearly set the stage for active teambuilding?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**23. Did LBAb involve user(s)/group(s) in the decision-making process?**
For instance asking advice on project management decisions or delegating by voting in meetings, or ...  
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
Section C1: Behaviour of the lead business agent at buyers side (LBA\textsubscript{b})

* 24. Did LBA\textsubscript{b} show awareness for cost of change for all impacted entities in weighing business case decisions?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 25. Did LBA\textsubscript{b} actively voice the explanation of top-management team to the rationale of the change?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 26. Did LBA\textsubscript{b} actively pursue the input from senior management?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C1: Behaviour of the lead business agent at buyers side (LBA颔)

* 27. Did LBA颔 take action to stimulate positive energy running through the project team?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 28. Did LBA颔 initiate formal lines for reporting?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 29. Did LBA颔 show any interest in assessing the "setup of the organisation" in weighing decisions? For example by using the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C1: Behaviour of the lead business agent at buyers side (LBAb)

30. Did LBAb show an open ear to feedback and criticism, trying to learn from team members and enable project success?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

31. Did LBAb actively pursue the input from project-portfolio management?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

32. Did project members directly reporting to LBAb show higher workethics than regularly could be expected?
   - Like: working late, taking more tasks up than required, set shorter deadlines for actions than usual, etcetera
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C1: Behaviour of the lead business agent at buyers side (LBAb)

33. Did LBAb initiate formal lines for directing feedback toward the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

34. Did LBAb actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

35. Did LBAb react well to conflicting ideas to hers/his from within the user group?
   Were these ideas weighed and debated openly, played around in reference group? Etcetera
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C1: Behaviour of the lead business agent at buyers side (LBA\textsubscript{b})

* 36. Did LBA\textsubscript{b} show him-/herself adapting based on unexpected inputs?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 37. Did LBA\textsubscript{b} actively pursue the input from project-management from other projects?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 38. Did LBA\textsubscript{b} work on getting variety in the project team’s capabilities and personalities?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C1: Behaviour of the lead business agent at buyers side (LBA\textsubscript{b})

* 39. Did LBA\textsubscript{b} show clear interest in both the financial as well as the qualitative gains from the projects business case?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 40. Did LBA\textsubscript{b} display the use of various management styles to run the project team?
   For example: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 41. Did LBA\textsubscript{b} actively voice the explanation of the top-management team to the choices that were made in the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C1: Behaviour of the lead business agent at buyers side (LBA\textsubscript{b})

* 42. Did LBA\textsubscript{b} show any interest in Technology gains for IT from the projects business case?
   - [ ] Never showed this
   - [ ] Sometimes showed this
   - [ ] Regularly showed this
   - [ ] Often showed this
   - [ ] Continuously showed this

* 43. Did LBA\textsubscript{b} actively voice the explanation of top-management team to the characteristics of the change?
   - [ ] Never showed this
   - [ ] Sometimes showed this
   - [ ] Regularly showed this
   - [ ] Often showed this
   - [ ] Continuously showed this

* 44. Did LBA\textsubscript{b} show efforts of actively testing the service that partners in the project delivered?
   - [ ] Never showed this
   - [ ] Sometimes showed this
   - [ ] Regularly showed this
   - [ ] Often showed this
   - [ ] Continuously showed this
Section C1: Behaviour of the lead business agent at buyers side (LBAb)

45. Did LBAb periodically and openly evaluate the project team?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

46. Did LBAb actively pursue the input from mid-level line management?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

47. Did LBAb actively search for extended decision making in the project team?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C1: Behaviour of the lead business agent at buyers side (LBAb)

**48. Did LBAb actively mix types of mandated users either in the projects core team or in the reference group?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**49. Did LBAb actively pursue the positioning of key users in the project in decision making positions?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**Beware:**
This was the last question about the lead business agent on buyers side, the next page will start the same list of questions on behaviour about the lead business agent on the sellers side of the trading relationship.
### Section C2: Behaviour of the lead business agent at sellers side (LBAs)

<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did LBAs show the ability to develop (and deliver) an inspiring vision to</td>
<td>Never showed this</td>
</tr>
<tr>
<td>the project matter?</td>
<td>Sometimes showed this</td>
</tr>
<tr>
<td></td>
<td>Regularly showed this</td>
</tr>
<tr>
<td></td>
<td>Often showed this</td>
</tr>
<tr>
<td></td>
<td>Continuously showed this</td>
</tr>
<tr>
<td>Did LBAs openly reward the project team when there was reason to?</td>
<td>Never showed this</td>
</tr>
<tr>
<td></td>
<td>Sometimes showed this</td>
</tr>
<tr>
<td></td>
<td>Regularly showed this</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>Continuously showed this</td>
</tr>
<tr>
<td>Did project members directly reporting to LBAs show higher workethics</td>
<td>Never showed this</td>
</tr>
<tr>
<td>than regularly could be expected? Like: working late, taking more</td>
<td>Sometimes showed this</td>
</tr>
<tr>
<td>tasks up than required, set shorter deadlines for actions than usual,</td>
<td>Regularly showed this</td>
</tr>
<tr>
<td>etcetera</td>
<td>Often showed this</td>
</tr>
<tr>
<td></td>
<td>Continuously showed this</td>
</tr>
</tbody>
</table>
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

* 53. Did LBAs involve user(s) (groups) in the decision-making process?  
For instance asking advice on project management decisions or delegating by voting in meetings, or ...  
○ Never showed this  
○ Sometimes showed this  
○ Regularly showed this  
○ Often showed this  
○ Continuously showed this

* 54. Did LBAs openly empower others to take action and/or responsibility?  
○ Never showed this  
○ Sometimes showed this  
○ Regularly showed this  
○ Often showed this  
○ Continuously showed this

* 55. Did LBAs show awareness for cost of change for all impacted entities in weighing business case decisions?  
○ Never showed this  
○ Sometimes showed this  
○ Regularly showed this  
○ Often showed this  
○ Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

56. Did LBAs actively voice the explanation of the top-management team to the choices that were made in the project?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

57. Did LBAs take action to stimulate positive energy running through the project team?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

58. Did LBAs actively mix types of mandated users either in the projects core team or in the reference group?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

* 59. Did LBAs initiate formal lines for reporting?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 60. Did LBAs show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 61. Did LBAs show an open ear to feedback and criticism, trying to learn from team members and enable project success?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
## Section C2: Behaviour of the lead business agent at sellers side (LBAs)

**62. Did LBAs actively pursue the input from project-portfolio management?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**63. Did LBAs initiate formal lines for directing feedback toward the project?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**64. Did LBAs clearly set the stage for active teambuilding?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
## Section C2: Behaviour of the lead business agent at sellers side (LBAs)

* 65. Did LBAs actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?
  - Never showed this
  - Sometimes showed this
  - Regularly showed this
  - Often showed this
  - Continuously showed this

* 66. Did LBAs actively voice the explanation of top-management team to the rationale of the change?
  - Never showed this
  - Sometimes showed this
  - Regularly showed this
  - Often showed this
  - Continuously showed this

* 67. Did LBAs actively pursue the input from senior management?
  - Never showed this
  - Sometimes showed this
  - Regularly showed this
  - Often showed this
  - Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

**68. Did LBAs show clear interest in both the financial as well as the qualitative gains from the projects business case?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**69. Did LBAs react well to conflicting ideas to hers/his from within the user group?**
- Were these ideas weighed and debated openly, played around in reference group? Etcetera
  - Never showed this
  - Sometimes showed this
  - Regularly showed this
  - Often showed this
  - Continuously showed this

**70. Did LBAs show any interest in assessing the "setup of the organisation" in weighing decisions?**
- For example the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary
  - Never showed this
  - Sometimes showed this
  - Regularly showed this
  - Often showed this
  - Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

* 71. Did LBAs show him-/herself adapting based on unexpected inputs?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 72. Did LBAs actively pursue the input from project-management from other projects?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 73. Did LBAs work on getting variety in the project team’s capabilities and personalities?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

74. Did LBAs display the use of various management styles to run the project team?
   For example: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

75. Did LBAs show any interest in Technology gains for IT from the projects business case?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

76. Did LBAs actively search for extended decision making in the project team?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

* 77. Did LBAs actively voice the explanation of top-management team to the characteristics of the change?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 78. Did LBAs show efforts of actively testing the service that partners in the project delivered?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 79. Did LBAs periodically and openly evaluate the project team?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead business agent at sellers side (LBAs)

* 80. Did LBAs actively pursue the input from mid-level line management?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 81. Did LBAs actively pursue the positioning of key users in the project in decision making positions?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

Thank you very much for filling out this extensive survey.
Appendix C: IT leads questionnaire

Section A: identification

11. Are you male or female? Male/Female
12. What is your year of birth? <yyyy>
13. For how many years have you been involved with Procurement? <nn>
14. For how many years have you been involved with Finance? <nn>
15. For how many years have you been involved with Sales? <nn>
16. For how many years have you been involved with IT? <nn>

This survey means to measure the effectiveness of interorganizational e-procurement implementations and the correlation with certain behaviours shown by key players in that implementation. A project between supplying and demanding business partners defines as an e-procurement implementation when the subject of the project is a targeted diffusion, within user groups of both the buying side as well as the selling side of the trading relation, of a certain (integrated) information system, based on internet technology, initiated by the buying side. You as a respondent is asked to take in mind one specific example of an e-procurement implementation which you experienced and fill in the survey with that specific buying and selling party in mind.

17. Was your perspective on the project you are referring to from the “selling” or “buying” side in the trading relationship? Buying Selling

18. How large is the buying company in the project you refer to when filling in this survey? MKB (< 50 mln) GeneralBusiness (50 mln > GB > 1 bln) LargeEnterprise (> 1 bln)

19. In what sector is the buying company active that you refer to when filling in this survey? Industry Professional Services Customer Services Retail Wholesale Fast Moving Consumer Goods Finance Government

20. Can you select a role closest to your role in the project that you refer to when filling in this survey? User groep member Project member procurement dept Project member sales dept Project member finance dept Project member other business dept Project member IT department Project member implement. partner Otherwise related to the project
Section B: adoption and success of the project

7. can you estimate the general level of success that the implementation established? (Likert schaal) 1-2-3-4-5
8. was the targeted user group within the buying organisation reached? 1-2-3-4-5
9. was the targeted user group within the selling organisation reached? 1-2-3-4-5
10. has diffusion within the targeted user group within the buying organisation reached targeted levels? 1-2-3-4-5
11. has diffusion within the targeted user group within the selling organisation reached targeted levels? 1-2-3-4-5
12. were the financial targets project met? 1-2-3-4-5
13. were the transactional targets of the project met? 1-2-3-4-5

Section C: keyplayer behaviours

Key players within an e-procurement implementation can be identified in both business and IT resources. This survey handles on the key players per trading partner that can be identified within the IT department. Two specific roles within the project are surveyed:

Lead IT agent at buyer’s side - Highest ranking IT resource from within the buyer’s organisation, carrying leading responsibilities within the project.

Lead IT agent at seller’s side - Highest ranking IT resource from within the seller’s organisation, carrying leading responsibilities within the project.

Section C.1: behaviour of the Lead IT agent at buyer’s side (LIAb)

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Scale</th>
<th>Old#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>did LIAb openly empower others to take action and/or responsibility?</td>
<td>Facilitating</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>did LIAb show the ability to develop (and deliver) an inspiring vision to the project matter?</td>
<td>Sponsoring/championing/support</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>did LIAb show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?</td>
<td>Expressed trust</td>
<td>14</td>
</tr>
<tr>
<td>4</td>
<td>did LIAb openly reward the project team when there was reason to?</td>
<td>Expressed control</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>did LIAb clearly set the stage for active teambuilding?</td>
<td>Sponsoring/Championing/Support</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>did LIAb involve user(s)(-groups) in the decision-making process? (For instance asking advice on project management decisions or delegating by voting in meetings, or …)</td>
<td>Expressed openness to users</td>
<td>23</td>
</tr>
<tr>
<td>7</td>
<td>did LIAb show awareness for cost of change for all impacted entities in weighing business case decisions?</td>
<td>Detailed preparation and support of the business case</td>
<td>32</td>
</tr>
<tr>
<td>8</td>
<td>did LIAb actively voice the explanation of top-management team to the rationale of the change?</td>
<td>Expressed support from top management</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>did LIAb actively pursue the input from senior management?</td>
<td>Expressed flexibility to</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Stakeholders</td>
<td>Facilitating</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>10</td>
<td>did LIAb take action to stimulate positive energy running through the project team?</td>
<td>stakeholders</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>did LIAb initiate formal lines for reporting?</td>
<td>Expressed control</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>did LIAb show any interest in assessing the &quot;setup of the organization&quot; in weighing decisions? (for example the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary)</td>
<td>Detailed preparation and support of the business case</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>did LIAb show an open ear to feedback and criticism, trying to learn from team members and enable project success?</td>
<td>Sponsoring/Championing/Support</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>did LIAb actively pursue the input from project-portfolio management?</td>
<td>Expressed flexibility to stakeholders</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>did project members directly reporting to LIAb show higher workethics then regularly could be expected? (like: working late, taking more tasks up then required, set shorter deadlines for actions than usual, etcetera)</td>
<td>Expressed trust</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>did LIAb initiate formal lines for directing feedback toward the project?</td>
<td>Expressed control</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>did LIAb actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?</td>
<td>Expressed support from top-management</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>did LIAb react well to conflicting ideas to hers/his from within the user group? (Where these ideas weighed and debated openly, played around in reference group? Etcetera)</td>
<td>Expressed openness to users</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>did LIAb show him-/herself adapting based on unexpected inputs?</td>
<td>Sponsoring/Championing/Support</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>did LIAb actively pursue the input from project-management from other projects?</td>
<td>Expressed flexibility to stakeholders</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>did LIAb work on getting variety in the project team’s capabilities and personalities?</td>
<td>Facilitating</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>did LIAb show clear interest in both the financial as well as the qualitative gains from the projects business case?</td>
<td>Detailed preparation and support of the business case</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>did LIAb display the use of various management styles to run the project team? (Being: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach)</td>
<td>Facilitating</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>did LIAb actively voice the explanation of the top-management team to the choices that were in the project?</td>
<td>Expressed support from top-management</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>did LIAb show any interest in Business gains for Procurement/Finance from the projects business case?</td>
<td>Detailed preparation and support of the business case</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>did LIAb actively voice the explanation of top-management team to the characteristics of the change?</td>
<td>Expressed support from top-management</td>
<td></td>
</tr>
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</table>
Section C.2: behaviour of the Lead IT agent at seller’s side (LIAs)

<table>
<thead>
<tr>
<th>Q#</th>
<th>Question</th>
<th>Scale</th>
<th>Old#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>did LIAs show the ability to develop (and deliver) an inspiring vision to the project matter?</td>
<td>Sponsoring/championing/support</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>did LIAs openly reward the project team when there was reason to?</td>
<td>Expressed control</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>did project members directly reporting to LIAs show higher workethics than regularly could be expected? (like: working late, taking more tasks up then required, set shorter deadlines for actions than usual, etcetera)</td>
<td>Expressed trust</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>did LIAs involve user(s)(-groups) in the decision-making process? (For instance asking advice on project management decisions or delegating by voting in meetings, or ...)</td>
<td>Expressed openness to users</td>
<td>23</td>
</tr>
<tr>
<td>5</td>
<td>did LIAs openly empower others to take action and/or responsibility?</td>
<td>Facilitating</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>did LIAs show awareness for cost of change for all impacted entities in weighing business case decisions?</td>
<td>Detailed preparation and support of the business case</td>
<td>32</td>
</tr>
<tr>
<td>7</td>
<td>did LIAs actively voice the explanation of the top-management team to the choices that were in the project?</td>
<td>Expressed support from top-management</td>
<td>11</td>
</tr>
<tr>
<td>8</td>
<td>did LIAs take action to stimulate positive energy running through the project team?</td>
<td>Facilitating</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>did LIAs actively mix types of mandated users either in the projects core team or in the reference group?</td>
<td>Expressed openness to users</td>
<td>21</td>
</tr>
<tr>
<td>10</td>
<td>did LIAs initiate formal lines for reporting?</td>
<td>Expressed control</td>
<td>17</td>
</tr>
<tr>
<td>11</td>
<td>did LIAs show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?</td>
<td>Expressed trust</td>
<td>14</td>
</tr>
<tr>
<td>12</td>
<td>did LIAs show an open ear to feedback and criticism, trying to learn from team members and enable project success?</td>
<td>Sponsoring/championing/support</td>
<td>2</td>
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<tr>
<td>13</td>
<td>did LIAs actively pursue the input from project-portfolio</td>
<td>Expressed</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>did LIAs initiate formal lines for directing feedback toward the project?</td>
<td>18</td>
<td></td>
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<tr>
<td>15</td>
<td>did LIAs clearly set the stage for active teambuilding?</td>
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<td></td>
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<td>16</td>
<td>did LIAs actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?</td>
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<td>17</td>
<td>did LIAs actively voice the explanation of top-management team to the rationale of the change?</td>
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<td>18</td>
<td>did LIAs actively pursue the input from senior management?</td>
<td>25</td>
<td></td>
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<tr>
<td>19</td>
<td>did LIAs show clear interest in both the financial as well as the qualitative gains from the projects business case?</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>did LIAs react well to conflicting ideas to hers/his from within the user group? (Where these ideas weighed and debated openly, played around in reference group? Etcetera)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>did LIAs show any interest in assessing the &quot;setup of the organisation&quot; in weighing decisions? (for example the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary)</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>did LIAs show him-/herself adapting based on unexpected inputs?</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>did LIAs actively pursue the input from project-management from other projects?</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>did LIAs work on getting variety in the project team’s capabilities and personalities?</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>did LIAs display the use of various management styles to run the project team? (Being: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>did LIAs show any interest in Business gains for Sales/Finance from the projects business case?</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>did LIAs actively search for extended decision making in the project team?</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>did LIAs actively voice the explanation of top-management team to the characteristics of the change?</td>
<td>9</td>
<td></td>
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<tr>
<td>29</td>
<td>did LIAs show efforts of actively testing the service that partners in the project delivered?</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>did LIAs periodically and openly evaluate the project team?</td>
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<td></td>
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<td>Response</td>
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<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>31</td>
<td>did LIAs actively pursue the input from mid-level line management?</td>
<td>Expressed flexibility to stakeholders</td>
<td>26</td>
</tr>
<tr>
<td>32</td>
<td>did LIAs actively pursue the positioning of key users in the project in decision making positions?</td>
<td>Expressed openness to users</td>
<td>24</td>
</tr>
</tbody>
</table>
Appendix D: IT leads survey from survey monkey
(Screen shots from PDF document)
Section A: Introduction and Qualification

4. For how many years have you been involved with Procurement?

5. For how many years have you been involved with Finance?

6. For how many years have you been involved with Sales?

7. For how many years have you been involved with IT?
Section A: Introduction and Qualification

8. How large was the buying company in the project you are referring to?
- Small Business (Reven < 50 min EUR per year)
- Medium sized business (50 min < Revenue < 1 bln EUR per year)
- Large enterprise (Revenue > 1 bln EUR per year)

9. In what sector is the buying company in the project you are referring to active?

10. Can you select a role closest to your role in the project you are referring to?
- User group member
- Project member from procurement department
- Project member from IT department
- Project member from implementation partner
- Otherwise related to the project
Section B: Assessment of project success

* 11. Can you estimate the general level of success that the eProcurement implementation established? Put in a grade between 0 and 100, where 100 means maximum successful.

* 12. Was the targeted user group within the buying organisation reached?
   - Not at all
   - Somewhat
   - As planned
   - A little better than planned
   - Far better than planned

* 13. Was the targeted user group within the selling organisation reached?
   - Not at all
   - Somewhat
   - As planned
   - A little better than planned
   - Far better than planned

* 14. Were targets of diffusion (the actual usage) within the targeted user group within the buying organisation reached?
   - Not at all
   - Somewhat
   - As planned
   - A little better than planned
   - Far better than planned
Section B: Assessment of project success

15. Were targets of diffusion (the actual usage) within the targeted user group within the selling organisation reached?
- Not at all
- Somewhat
- As planned
- A little better than planned
- Far better than planned

16. Were the financial targets of the project met?
- Not at all
- Somewhat
- As planned
- A little better than planned
- Far better than planned

17. Were the transactional targets of the project met?
- Not at all
- Somewhat
- As planned
- A little better than planned
- Far better than planned
Section C: Key player behaviours

Key players within an eProcurement implementation can be identified in both business and IT resources. This survey handles on the key players per trading partner that can be identified within the IT departments. Two specific roles within the project are surveyed:

Lead IT agent at buyer’s side (LIAb) -
Highest ranking IT resource from within the buyer’s organisation, carrying leading responsibilities within the project.

Lead IT agent at seller’s side (LIAs) -
Highest ranking IT resource from within the seller’s organisation, carrying leading responsibilities within the project.

In the following two subsections of this survey, the shown behaviour of both key-players is investigated via a questionnaire.
Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

18. Did LIAb openly empower others to take action and/or responsibility?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

19. Did LIAb show the ability to develop (and deliver) an inspiring vision to the project matter?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

20. Did LIAb show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C1: Behaviour of the lead IT agent at buyers side (LIA\text{\textsubscript{b}})

* 21. Did LIA\text{\textsubscript{b}} openly reward the project team when there was reason to?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 22. Did LIA\text{\textsubscript{b}} clearly set the stage for active teambuilding?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 23. Did LIA\text{\textsubscript{b}} involve user(s)(-groups) in the decision-making process?
   For instance asking advice on project management decisions or delegating by voting in meetings, or ...
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

**24. Did LIAb show awareness for cost of change for all impacted entities in weighing business case decisions?**

- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**25. Did LIAb actively voice the explanation of top-management team to the rationale of the change?**

- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**26. Did LIAb actively pursue the input from senior management?**

- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
## Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

**27. Did LIAb take action to stimulate positive energy running through the project team?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**28. Did LIAb initiate formal lines for reporting?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**29. Did LIAb show any interest in assessing the “setup of the organisation” in weighing decisions?**
For example by using the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
### Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. Did LIAb show an open ear to feedback and criticism, trying to learn from team members and enable project success?</td>
<td>Never showed this, Sometimes showed this, Regularly showed this, Often showed this, Continuously showed this</td>
</tr>
<tr>
<td>31. Did LIAb actively pursue the input from project portfolio management?</td>
<td>Never showed this, Sometimes showed this, Regularly showed this, Often showed this, Continuously showed this</td>
</tr>
<tr>
<td>32. Did project members directly reporting to LIAb show higher workethics than regularly could be expected?</td>
<td>Never showed this, Sometimes showed this, Regularly showed this, Often showed this, Continuously showed this</td>
</tr>
</tbody>
</table>
Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

33. Did LIAb initiate formal lines for directing feedback toward the project?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

34. Did LIAb actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

35. Did LIAb react well to conflicting ideas to hers/his from within the user group?
   Were these ideas weighed and debated openly, played around in reference group? Etcetera
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

* 36. Did LIAb show him-/herself adapting based on unexpected inputs?
   ☐ Never showed this
   ☐ Sometimes showed this
   ☐ Regularly showed this
   ☐ Often showed this
   ☐ Continuously showed this

* 37. Did LIAb actively pursue the input from project-management from other projects?
   ☐ Never showed this
   ☐ Sometimes showed this
   ☐ Regularly showed this
   ☐ Often showed this
   ☐ Continuously showed this

* 38. Did LIAb work on getting variety in the project team’s capabilities and personalities?
   ☐ Never showed this
   ☐ Sometimes showed this
   ☐ Regularly showed this
   ☐ Often showed this
   ☐ Continuously showed this
### Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

**39. Did LIAb show clear interest in both the financial as well as the qualitative gains from the projects business case?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**40. Did LIAb display the use of various management styles to run the project team?**
For example: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**41. Did LIAb actively voice the explanation of the top-management team to the choices that were made in the project?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

* 42. Did LIAb show any interest in Business gains for Procurement/Finance from the projects business case?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 43. Did LIAb actively voice the explanation of top-management team to the characteristics of the change?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 44. Did LIAb show efforts of actively testing the service that partners in the project delivered?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C1: Behaviour of the lead IT agent at buyers side (LIAb)

**45. Did LIAb periodically and openly evaluate the project team?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**46. Did LIAb actively pursue the input from mid-level line management?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**47. Did LIAb actively search for extended decision making in the project team?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
**Section C1: Behaviour of the lead IT agent at buyers side (LIAb)**

* 48. Did LIAb actively mix types of mandated users either in the projects core team or in the reference group?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 49. Did LIAb actively pursue the positioning of key users in the project in decision making positions?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

**BEWARE:**
This was the last question about the lead business agent on buyers side, the next page will start the same list of questions on behaviour about the lead business agent on the sellers side of the trading relationship.
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 50. Did LIAs show the ability to develop (and deliver) an inspiring vision to the project matter?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 51. Did LIAs openly reward the project team when there was reason to?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 52. Did project members directly reporting to LIAs show higher workethics then regularly could be expected?
   Like: working late, taking more tasks up than required, set shorter deadlines for actions than usual, etcetera
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

**53. Did LIAs involve user(s)/(-groups) in the decision-making process?**
For instance asking advice on project management decisions or delegating by voting in meetings, or ...  
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**54. Did LIAs openly empower others to take action and/or responsibility?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

**55. Did LIAs show awareness for cost of change for all impacted entities in weighing business case decisions?**
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 56. Did LIAs actively voice the explanation of the top-management team to the choices that were made in the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 57. Did LIAs take action to stimulate positive energy running through the project team?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 58. Did LIAs actively mix types of mandated users either in the projects core team or in the reference group?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 59. Did LIAs initiate formal lines for reporting?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 60. Did LIAs show efforts of exploring the warranties given by the partners in the project to the successful execution of the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 61. Did LIAs show an open ear to feedback and criticism, trying to learn from team members and enable project success?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 62. Did LIAs actively pursue the input from project-portfolio management?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 63. Did LIAs initiate formal lines for directing feedback toward the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 64. Did LIAs clearly set the stage for active teambuilding?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 65. Did LIAs actively voice the explanation of the top-management team to the choices that were explicitly not taken in the project?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 66. Did LIAs actively voice the explanation of top-management team to the rationale of the change?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 67. Did LIAs actively pursue the input from senior management?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 68. Did LIAs show clear interest in both the financial as well as the qualitative gains from the projects business case?
- □ Never showed this
- □ Sometimes showed this
- □ Regularly showed this
- □ Often showed this
- □ Continuously showed this

* 69. Did LIAs react well to conflicting ideas to hers/his from within the user group?
  Were these ideas weighed and debated openly, played around in reference group? Etcetera
- □ Never showed this
- □ Sometimes showed this
- □ Regularly showed this
- □ Often showed this
- □ Continuously showed this

* 70. Did LIAs show any interest in assessing the “setup of the organisation” in weighing decisions?
  For example the five models of Mintzberg (1979): 1. The simple structure, 2. the machine bureaucracy, 3. The professional bureaucracy, 4. The adhocracy and, 5. the missionary
- □ Never showed this
- □ Sometimes showed this
- □ Regularly showed this
- □ Often showed this
- □ Continuously showed this
**Section C2: Behaviour of the lead IT agent at sellers side (LIAs)**

1. **71. Did LIAs show him-herself adapting based on unexpected inputs?**
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

2. **72. Did LIAs actively pursue the input from project-management from other projects?**
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

3. **73. Did LIAs work on getting variety in the project team’s capabilities and personalities?**
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this
### Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

**74. Did LIAs display the use of various management styles to run the project team?**  
For example: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach  
- Never showed this  
- Sometimes showed this  
- Regularly showed this  
- Often showed this  
- Continuously showed this

**75. Did LIAs show any interest in Business gains for Sales/Finance from the project's business case?**  
- Never showed this  
- Sometimes showed this  
- Regularly showed this  
- Often showed this  
- Continuously showed this

**76. Did LIAs actively search for extended decision making in the project team?**  
- Never showed this  
- Sometimes showed this  
- Regularly showed this  
- Often showed this  
- Continuously showed this
## Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

### 77. Did LIAs actively voice the explanation of top-management team to the characteristics of the change?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

### 78. Did LIAs show efforts of actively testing the service that partners in the project delivered?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this

### 79. Did LIAs periodically and openly evaluate the project team?
- Never showed this
- Sometimes showed this
- Regularly showed this
- Often showed this
- Continuously showed this
Section C2: Behaviour of the lead IT agent at sellers side (LIAs)

* 80. Did LIAs actively pursue the input from mid-level line management?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

* 81. Did LIAs actively pursue the positioning of key users in the project in decision making positions?
   - Never showed this
   - Sometimes showed this
   - Regularly showed this
   - Often showed this
   - Continuously showed this

Thank you very much for filling out this extensive survey!
Appendix E: Respondents data on Business Leads survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Neutral</th>
<th>Cannot say</th>
<th>Do not know</th>
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</thead>
<tbody>
<tr>
<td>Did LBAs actively pursue the input from mid-level line management?</td>
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<td>Did LBAs actively voice the explanation of the top-management team to the choices that were made in the project?</td>
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<td>Did LBAs display the use of various management styles to run the project team? For example: Intellectual command, Creative group catalyst, Incentives approach and Supportive coach</td>
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<td>Did LBAs openly reward the project team when there was reason to?</td>
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<td>Were the financial targets of the project met?</td>
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<td>Can you select a role closest to your role in the project that you are referring to?</td>
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<td>For how many years have you been involved with Sales?</td>
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<td>What is your year of birth?</td>
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<td>Are you male or female?</td>
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</table>

Note: The table contains numerical data representing the responses to the questions.
### Appendix F: Respondents data on IT Leads survey

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
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<th>Column 17</th>
<th>Column 18</th>
<th>Column 19</th>
<th>Column 20</th>
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<tr>
<td>Did LIAs actively pursue the input from mid-level line management?</td>
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</table>

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For how many years have you been involved with Procurement?
Appendix G: Optimizing survey data based on Cronbach’s Alpha
Both surveys reached an n >= 20, and therefore can be used as representative data.

The first step is filtering reliable survey results by correcting the respondents’ data via calculating and reporting Cronbach’s Alpha to all scales and summated scales.

Generating reliable Business lead survey results:
Following is an overview of raw data on all scales and summated scales within the survey for Business lead behaviour on both buyers’ and sellers’ side.

<table>
<thead>
<tr>
<th>SCALE</th>
<th>n</th>
<th>Cronbach’s Alpha</th>
<th>Scale’s Cronbach’s when item deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy-side business lead Behaviour aimed at facilitating</td>
<td>4.1</td>
<td>0.844</td>
<td>0.748</td>
</tr>
<tr>
<td>Buy-side business lead Behaviour aimed at “Sponsoring/ championing/ support”</td>
<td>4.1</td>
<td>0.809</td>
<td>0.611</td>
</tr>
<tr>
<td>Buy-side business lead Behaviour aimed at “expressing Trust”</td>
<td>4.1</td>
<td>0.680</td>
<td>0.517</td>
</tr>
<tr>
<td>Buy-side business lead Behaviour aimed at “expressed Flexibility to stakeholders”</td>
<td>4.1</td>
<td>0.633</td>
<td>0.491</td>
</tr>
</tbody>
</table>

When following the target (discussed with Peter Zomer!) of an acceptable but poor Cronbach’s Alpha being >= 0.70 and a good Alpha being >= 0.80, the survey data needs several corrections before as many conclusions as possible on the hypotheses can be drawn from it.

- **Scale “Buy-side business lead Behaviour aimed at facilitating”** has a too low Alpha and deleting questions from the scale would only lower the reliability. Conclusion: The scale can only be used as a component in the summated scales (using all questions) but cannot be used individually as a reliable basis for any conclusion.
- **Scale “Buy-side business lead Behaviour aimed at Sponsoring/ championing/ support”** is below the standard and can be brought to poor but acceptable by deleting the scales’ Q4.
- **Scale “Buy-side business lead Behaviour aimed at expressing Trust”** has a too low reliability but can be elevated slightly by deleting the scales’ Q2, perhaps in the second round, a second deletion can make it acceptable.
- **Scale “Buy-side business lead Behaviour aimed at expressing Control”** has a too low reliability but can be elevated slightly by deleting the scales’ Q4, perhaps in the second round, a second deletion can make it acceptable.
- **Scale “Buy-side business lead Behaviour aimed at expressing Flexibility to stakeholders”** has a too low reliability but can be brought to poor but acceptable by deleting the scales’ Q3.
Master thesis – Change behaviour and e-procurement effectiveness

- Scale “Sell-side business lead Behaviour aimed at facilitating” has a too low reliability but can be elevated slightly by deleting the scales’ Q1, perhaps in the second round, a second deletion can make it acceptable.
- Scale “Sell-side business lead Behaviour aimed at sponsoring/ championing/ support” has a too low reliability but can be elevated slightly by deleting the scales’ Q1, perhaps in the second round, a second deletion can make it acceptable.
- Scale “Sell-side business lead Behaviour aimed at expressing Trust” has a too low reliability but can be elevated slightly by deleting the scales’ Q4, perhaps in the second round, a second deletion can make it acceptable.
- Scale “Sell-side business lead Behaviour aimed at expressing Control” has a poor but acceptable reliability, but deleting the scales’ Q1 can bring it to good.
- Scale “Sell-side business lead Behaviour aimed at expressed Openness to users” has a too low reliability but deleting the scales’ Q4 can bring it to poor but acceptable.
- Scale “Sell-side business lead Behaviour aimed at detailed preparation and support of the business case” has a too low reliability but deleting the scales’ Q3 can bring it to poor but acceptable.

These changes lead to the following overview table on the survey data for Business leads on Buyers’ as well as Sellers’ side:

<table>
<thead>
<tr>
<th>SCALE</th>
<th>Item deleted</th>
<th>Alpha</th>
<th>Cronbach’s a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy-side business lead Behaviour aimed at expressing trust</td>
<td>Q4</td>
<td>0.88</td>
<td>0.90</td>
</tr>
<tr>
<td>Buy-side business lead Behaviour aimed at expressed openness to users</td>
<td>Q3</td>
<td>0.79</td>
<td>0.80</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at facilitating</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at sponsoring/championing/support</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at expressing Trust</td>
<td>Q4</td>
<td>0.88</td>
<td>0.90</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at expressing Support</td>
<td>Q3</td>
<td>0.79</td>
<td>0.80</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at detailed preparation and support of the business case</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at expressed Support from top management</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at expressing Flexibility to stakeholders</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at expressed Flexibility to stakeholders</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at detailed preparation and support of the business case</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
<tr>
<td>Sell-side business lead Behaviour aimed at expressing Flexibility to stakeholders</td>
<td>Q3</td>
<td>0.65</td>
<td>0.70</td>
</tr>
</tbody>
</table>

After the first round of deleting questions within scales, the following additional conclusions can be drawn:

- Scale “Buy-side business lead Behaviour aimed at expressing trust” is below the standard and can be brought to good by deleting the scales’ Q4.
- Scale “Buy-side business lead behaviour aimed at expressed openness to users” has a too low Alpha and deleting further questions from the scale would not bring it into acceptable reliability anymore (considering that a scale cannot have reliability when k = 1). Conclusion: The scale can only be used as a component in the summed scale (using all questions) but cannot be used individually as a reliable basis for any conclusion.
- Scale “Sell-side business lead behaviour aimed at facilitating” has a too low Alpha and deleting further questions from the scale would not bring it into acceptable reliability anymore (considering that a scale cannot have reliability when k = 1). Conclusion: The scale can only be used as a component in the summed scale (using all questions) but cannot be used individually as a reliable basis for any conclusion.
- Scale “Sell-side business lead Behaviour aimed at sponsoring/championing/support” is below the standard and can be brought to poor but acceptable by deleting the scales’ Q3.
Master thesis – Change behaviour and e-procurement effectiveness

- Scale “Sell-side business lead behaviour aimed at expressing trust” has a too low Alpha and deleting further questions from the scale would not bring it into acceptable reliability anymore (considering that a scale cannot have reliability when k = 1). Conclusion: The scale can only be used as a component in the summated scale (using all questions) but cannot be used individually as a reliable basis for any conclusion.

Which leaves the following final list on scales and its setup:

### Generating reliable IT lead survey results:

Following is an overview of raw data on all scales and summated scales within the survey for IT lead behaviour on both buyers’ and sellers’ side.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s α</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy-side IT lead behaviour aimed at facilitating</td>
<td>4.98</td>
<td>2.09</td>
<td>2.57</td>
<td>3.06</td>
<td>3.09</td>
<td>3.12</td>
<td>3.16</td>
<td>3.20</td>
<td>3.24</td>
<td>3.28</td>
<td>3.32</td>
<td>3.36</td>
<td>3.40</td>
<td>3.44</td>
<td>3.48</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at sponsoring/championing/support</td>
<td>4.89</td>
<td>2.95</td>
<td>3.40</td>
<td>3.86</td>
<td>4.03</td>
<td>4.10</td>
<td>4.17</td>
<td>4.23</td>
<td>4.29</td>
<td>4.35</td>
<td>4.40</td>
<td>4.46</td>
<td>4.52</td>
<td>4.58</td>
<td>4.64</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at expressing Trust</td>
<td>4.78</td>
<td>2.87</td>
<td>3.33</td>
<td>3.79</td>
<td>4.06</td>
<td>4.13</td>
<td>4.20</td>
<td>4.27</td>
<td>4.33</td>
<td>4.39</td>
<td>4.45</td>
<td>4.51</td>
<td>4.57</td>
<td>4.63</td>
<td>4.69</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at expressing Openness to users</td>
<td>4.69</td>
<td>2.77</td>
<td>3.23</td>
<td>3.69</td>
<td>3.96</td>
<td>4.03</td>
<td>4.10</td>
<td>4.17</td>
<td>4.23</td>
<td>4.29</td>
<td>4.35</td>
<td>4.40</td>
<td>4.46</td>
<td>4.52</td>
<td>4.58</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Detailed preparation and support of the business case</td>
<td>4.60</td>
<td>2.68</td>
<td>3.14</td>
<td>3.60</td>
<td>3.87</td>
<td>3.94</td>
<td>4.01</td>
<td>4.08</td>
<td>4.14</td>
<td>4.20</td>
<td>4.26</td>
<td>4.32</td>
<td>4.38</td>
<td>4.44</td>
<td>4.50</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed support for top-management”</td>
<td>4.59</td>
<td>2.67</td>
<td>3.13</td>
<td>3.60</td>
<td>3.87</td>
<td>3.94</td>
<td>4.01</td>
<td>4.08</td>
<td>4.14</td>
<td>4.20</td>
<td>4.26</td>
<td>4.32</td>
<td>4.38</td>
<td>4.44</td>
<td>4.50</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed relucancy to stakeholders”</td>
<td>4.58</td>
<td>2.66</td>
<td>3.12</td>
<td>3.59</td>
<td>3.86</td>
<td>3.93</td>
<td>4.00</td>
<td>4.07</td>
<td>4.13</td>
<td>4.19</td>
<td>4.25</td>
<td>4.31</td>
<td>4.37</td>
<td>4.43</td>
<td>4.49</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Expressing Control</td>
<td>4.57</td>
<td>2.65</td>
<td>3.11</td>
<td>3.58</td>
<td>3.85</td>
<td>3.92</td>
<td>4.00</td>
<td>4.07</td>
<td>4.13</td>
<td>4.19</td>
<td>4.25</td>
<td>4.31</td>
<td>4.37</td>
<td>4.43</td>
<td>4.49</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Facilitating</td>
<td>4.56</td>
<td>2.64</td>
<td>3.10</td>
<td>3.57</td>
<td>3.84</td>
<td>3.91</td>
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<td>4.19</td>
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<td>4.31</td>
<td>4.37</td>
<td>4.43</td>
<td>4.49</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Expressing Trust</td>
<td>4.55</td>
<td>2.63</td>
<td>3.09</td>
<td>3.56</td>
<td>3.83</td>
<td>3.90</td>
<td>3.98</td>
<td>4.05</td>
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<td>4.18</td>
<td>4.24</td>
<td>4.30</td>
<td>4.36</td>
<td>4.42</td>
<td>4.48</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Expressing Openness to users</td>
<td>4.54</td>
<td>2.62</td>
<td>3.08</td>
<td>3.55</td>
<td>3.82</td>
<td>3.89</td>
<td>3.97</td>
<td>4.04</td>
<td>4.11</td>
<td>4.17</td>
<td>4.23</td>
<td>4.29</td>
<td>4.35</td>
<td>4.41</td>
<td>4.47</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Detailed preparation and support of the business case</td>
<td>4.53</td>
<td>2.61</td>
<td>3.07</td>
<td>3.54</td>
<td>3.81</td>
<td>3.88</td>
<td>3.96</td>
<td>4.03</td>
<td>4.10</td>
<td>4.16</td>
<td>4.22</td>
<td>4.28</td>
<td>4.34</td>
<td>4.40</td>
<td>4.46</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed support for top-management”</td>
<td>4.52</td>
<td>2.60</td>
<td>3.06</td>
<td>3.53</td>
<td>3.80</td>
<td>3.87</td>
<td>3.95</td>
<td>4.02</td>
<td>4.09</td>
<td>4.15</td>
<td>4.21</td>
<td>4.27</td>
<td>4.33</td>
<td>4.39</td>
<td>4.45</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed relucancy to stakeholders”</td>
<td>4.51</td>
<td>2.59</td>
<td>3.05</td>
<td>3.52</td>
<td>3.79</td>
<td>3.86</td>
<td>3.94</td>
<td>4.01</td>
<td>4.08</td>
<td>4.14</td>
<td>4.20</td>
<td>4.26</td>
<td>4.32</td>
<td>4.38</td>
<td>4.44</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at Expressing Control</td>
<td>4.50</td>
<td>2.58</td>
<td>3.04</td>
<td>3.51</td>
<td>3.78</td>
<td>3.85</td>
<td>3.93</td>
<td>4.00</td>
<td>4.07</td>
<td>4.13</td>
<td>4.19</td>
<td>4.25</td>
<td>4.31</td>
<td>4.37</td>
<td>4.43</td>
</tr>
</tbody>
</table>

When following the target (discussed with Peter Zomer!) of an acceptable but poor Cronbach’s Alpha being >= 0.70 and a good Alpha being >= 0.80, the survey data needs several corrections before as many conclusions as possible on the hypotheses can be drawn from it.

- Scale “buy-side IT lead behaviour aimed at expressing trust” has a too low reliability. A poor but acceptable level can be reached by deleting the scales’ Q3.
- Scale “Sell-side IT lead behaviour aimed at facilitating” has a too low reliability but can be elevated slightly by deleting the scales’ Q4, perhaps in the second round, a second deletion can make it acceptable.
- Scale “Sell-side IT lead behaviour aimed at sponsoring/championing/support” has a too low reliability but can be elevated slightly by deleting the scales’ Q3, perhaps in the second round, a second deletion can make it acceptable.
- Scale “Sell-side IT lead behaviour aimed at expressing trust” has a too low reliability but can be elevated firmly by deleting the scales’ Q1, perhaps in the second round, a second deletion can make it acceptable.
Scale “Sell-side IT lead behaviour aimed at expressing control” has a too low reliability. A poor but acceptable level can be reached by deleting the scales’ Q1.

Scale “Sell-side IT lead behaviour aimed at expressed support from top-management” has a too low reliability but can be elevated slightly by deleting the scales’ Q3, perhaps in the second round, a second deletion can make it acceptable.

These changes lead to the following overview table on the survey data for IT leads on Buyers’ as well as Sellers’ side:

<table>
<thead>
<tr>
<th>Scale</th>
<th>k</th>
<th>∑k²</th>
<th>∑dk²</th>
<th>∑dk²/k²</th>
<th>Scale’s Cronbach’s α when item deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy-side IT lead behaviour aimed at facilitating</td>
<td>4</td>
<td>593</td>
<td>3695</td>
<td>1.060</td>
<td>0.829466 0.369566 0.442297 0.876723</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Sponsoring/championing support”</td>
<td>4</td>
<td>788</td>
<td>3.913</td>
<td>0.462297</td>
<td>0.6989 0.626043 0.525946 0.333</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressing Trust”</td>
<td>3</td>
<td>704</td>
<td>3.416</td>
<td>0.772759</td>
<td>0.829466 0.369566 0.442297 0.876723</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressing Control”</td>
<td>4</td>
<td>54079</td>
<td>2.992</td>
<td>0.296729</td>
<td>0.829466 0.369566 0.442297 0.876723</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed Overture to users”</td>
<td>4</td>
<td>7175</td>
<td>2.391</td>
<td>0.735054</td>
<td>0.753652 0.372641 0.729691 0.459616</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Facilitated preparation and support of the business case”</td>
<td>4</td>
<td>7135</td>
<td>2.571</td>
<td>0.790137</td>
<td>0.790137 0.373011 0.729691 0.459616</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed support from top-management”</td>
<td>4</td>
<td>161</td>
<td>4.352</td>
<td>0.757159</td>
<td>0.866476 0.396643 0.936237 0.296616</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed readiness to stakeholders”</td>
<td>4</td>
<td>104</td>
<td>4.14</td>
<td>0.344151</td>
<td>0.8567 0.374739 0.620093 0.205279</td>
</tr>
</tbody>
</table>

These changes lead to the following overview table on the survey data for IT leads on Buyers’ as well as Sellers’ side:

<table>
<thead>
<tr>
<th>Scale</th>
<th>k</th>
<th>∑k²</th>
<th>∑dk²</th>
<th>∑dk²/k²</th>
<th>Scale’s Cronbach’s α when item deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy-side IT lead behaviour aimed at facilitating</td>
<td>4</td>
<td>593</td>
<td>3695</td>
<td>1.060</td>
<td>0.829466 0.369566 0.442297 0.876723</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Sponsoring/championing support”</td>
<td>4</td>
<td>788</td>
<td>3.913</td>
<td>0.462297</td>
<td>0.6989 0.626043 0.525946 0.333</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressing Trust”</td>
<td>3</td>
<td>704</td>
<td>3.416</td>
<td>0.772759</td>
<td>0.829466 0.369566 0.442297 0.876723</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressing Control”</td>
<td>4</td>
<td>54079</td>
<td>2.992</td>
<td>0.296729</td>
<td>0.829466 0.369566 0.442297 0.876723</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed Overture to users”</td>
<td>4</td>
<td>7175</td>
<td>2.391</td>
<td>0.735054</td>
<td>0.753652 0.372641 0.729691 0.459616</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Facilitated preparation and support of the business case”</td>
<td>4</td>
<td>7135</td>
<td>2.571</td>
<td>0.790137</td>
<td>0.790137 0.373011 0.729691 0.459616</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed support from top-management”</td>
<td>4</td>
<td>161</td>
<td>4.352</td>
<td>0.757159</td>
<td>0.866476 0.396643 0.936237 0.296616</td>
</tr>
<tr>
<td>Buy-side IT lead behaviour aimed at “Expressed readiness to stakeholders”</td>
<td>4</td>
<td>104</td>
<td>4.14</td>
<td>0.344151</td>
<td>0.8567 0.374739 0.620093 0.205279</td>
</tr>
</tbody>
</table>

After the first round of deleting questions within scales, the following additional conclusions can be drawn:

- Scale “Sell-side IT lead behaviour aimed at expressing control” has a too low Alpha and deleting further questions from the scale would not bring it into acceptable reliability anymore (considering that a scale cannot have reliability when k = 1). Conclusion: The scale can only be used as a component in the summated scale (using all questions) but cannot be used individually as a reliable basis for any conclusion.

- Scale “Sell-side IT lead behaviour aimed at sponsoring/championing/support” has a too low reliability but this can be lifted to good by deleting the scales’ Q1.

- Scale “Sell-side IT lead behaviour aimed at expressing trust” has a too low reliability but can be lifted to poor but acceptable by deleting the scales’ Q3.

- Scale “Sell-side IT lead behaviour aimed at expressed support from top-management” has a too low Alpha and deleting further questions from the scale would not bring it into acceptable reliability anymore (considering that a scale cannot have reliability when k = 1). Conclusion: The scale can only be used as a component in the summated scale (using all questions) but cannot be used individually as a reliable basis for any conclusion.

Which leaves the following final list on scales and its setup:
<table>
<thead>
<tr>
<th>LBAB-rating</th>
<th>LBAB-facilitating</th>
<th>LBAB-sponsoring</th>
<th>LBAB-trust</th>
<th>LBAB-control</th>
<th>LBAB-openness</th>
<th>LBAB-buca</th>
<th>LBAB-top-management</th>
<th>LBAB-flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000000</td>
<td>0.627317</td>
<td>0.311536</td>
<td>0.611536</td>
<td>0.495201</td>
<td>0.926105</td>
<td>0.618884</td>
<td>0.590286</td>
<td>0.396931</td>
</tr>
<tr>
<td>(n = 23)</td>
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<td>(n = 23)</td>
<td>(n = 23)</td>
<td>(n = 23)</td>
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<tr>
<td>P</td>
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<td>0.004398</td>
<td>0.004398</td>
<td>0.004398</td>
<td>0.004398</td>
</tr>
<tr>
<td>LBAB-facilitating</td>
<td>0.618884</td>
<td>1.000000</td>
<td>0.311536</td>
<td>0.495201</td>
<td>0.926105</td>
<td>0.618884</td>
<td>0.590286</td>
<td>0.396931</td>
</tr>
<tr>
<td>(n = 23)</td>
<td>(n = 23)</td>
<td>(n = 23)</td>
<td>(n = 23)</td>
<td>(n = 23)</td>
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Appendix I: Correlation matrix on Business Lead from Sell Side

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P-values are included for significant correlations (P < 0.05).
### Appendix: Correlation matrix on IT Lead from Buy Side

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Note: P values are significant if P < 0.05.
### Appendix L: Extended table for linking hypotheses to checking variables

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<th>Key player showing management behaviour</th>
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<th>Variables to be statistically compared in the survey data to check hypothesis</th>
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<td>Lead business agent on buyers side</td>
<td>H1.1: There is a positive correlation between project members in e-procurement implementations perceiving management behaviour, shown by the business lead agent at buyers side, aimed at facilitating and the implementations success of that project.</td>
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## Appendix M: full data set per scale per key player’s survey

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Appendix N: Nederlandse vertaling voorwoord

Het schrijven van een voorwoord voor mijn eigen scriptie bleek nu een heel nieuwe ervaring dan vorige keer toen ik afstudeerde. Enerzijds omdat het onderzoekstraject zelf natuurlijk totaal anders is, anderzijds ook omdat ik kan terugkijken op een totaal andere levenservaring.

Waar het vorige studeertraject een strak geplande vierjarige reis was vanuit mijn late tienerjaren richting ‘twintiger zijn’, en mijn belangrijkste uitdagingen in het leven bestonden uit wekelijkse krogentochten en het leren samenwonen met een vriendin, bestond dit studieproces uit hele andere ervaringen.

Het staat me nog goed voor ogen, het besluit om mijn masters opleiding te gaan volgen en de discussie met mijn management over de kosten. Het studeren op zondagmorgen met enkel een kat op schoot was de start. Maar toen begonnen veranderingen af te tekenen. Die vriendin werd mijn vrouw, die ene kat op de bank in ons appartementje werd uiteindelijk vergezeld door twee honden in een huis met een tuin. Nog later besloten wij ondernemers te worden en richtten wij ons eerste bedrijf op en wij kregen twee schatten van kinderen. Wij trokken uiteindelijk in het huis dat ons thuis werd. Familie werd ziek, en … om het samen te vatten “het leven is wat je gebeurd terwijl je andere plannen maakt”, en mijn plannen veranderden van een vierjarig studieplan naar Master of Science in een avontuur van 13 jaar.

Alle reden dus dat ik trots ben op de scriptie die nu voor je ligt om te lezen. Iets wat nooit mogelijk was gebleken zonder Cynthia (die vriendin, echtgenote, moeder van mijn kinderen en ook nog zakenpartner), die om de zoveel tijd even kietelde op wat er moest gebeuren maar nooit zoveel druk gaf dat het moeilijk werd.

Los van de prestatie ben ik ook trots op de inhoud als ik zelf het document lees. Trots op de dingen die je als mens kunt oppikken in een bepaalde periode, en dan vooral het afgelopen onderzoekjaar. Veel van de gegevens voel ik zelf als nieuwe kennis binnen mijn eigen vakgebied, en dan niet eens enkel nieuw door mij geleerd, maar zelfs door mij geproduceerd. Erg leuk om te beseffen, zeker ook in het licht van een opmerking van Dokter Leyten van lang geleden: we proberen nu wat harder te pushen op je opleiding en uiteindelijk ga ik je nog zien promoveren ook. Een opmerking die toen ter tijd vooral motiverend was bedoeld maar niet als per se realiteit werd gezien. Nu mijmer ik wel eens over die gedachten, misschien…ooit nog? Als niets anders dan in ieder geval als illustratie van de mooie ervaring die het doen van onderzoek en produceren van de scriptie voor mij was. Natuurlijk was niet iedere dag even rooskleurig, de moeilijke dagen zijn nu achteraf ineens vergeten.

Dus in ieder geval bedankt Cynthia voor de benodigde stimulans. Dank aan mijn kinderen, Yun en Shuai, voor het feit dat jullie mij zelfs af en toe een hele zondag lieten doorwerken achter mijn laptop aan de keukentafel. Dank aan Peter voor de discussies over mijn onderzoek, ik snap dat dit je werk gewoon is, maar voor mij waren ze simpelweg nuttig en bereiden ze mij perfect voor op de juiste stappen. Dank aan al mijn zakelijke contacten die ik al jaren bestookte met enthousiasme op dit onderwerp zonder echt door te pakken met het onderzoek. Dank aan mijn ouders, voor de meest voorspelbare redenen, en aan mijn broers die af en toe geïnteresseerd vroegen hoe alles liep. Maar zeker ook, en niet als minste, dank aan Dokter Leyten voor je hulp 21 jaar geleden en niet minder in het afgelopen jaar.

Veel leesplezier
Doede van Haperen
Heelweg, 20 januari 2016