

# Master Thesis:

Designing a tool for norm interventions in IT strategy projects



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Restricted version

This version of this thesis is restricted and does contain confidential chapters

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## SUMMARY

Changing an IT strategy, actually executing an IT strategy, can be problematic. Many IT strategies are developed but never executed. This same problem is likely to hold up in other project activities where planning and execution is separated in time. Typically, a consultancy firm helps a client to develop an IT strategy. Once the IT strategy is put on paper, the client chooses to implement it. Subsequently, the client often fails in implementing the developed strategy. A substantial part of this failure can be attributed to behavioral aspects.

One could argue, to increase the success rate, we have to intervene in such a way that we can influence the behavior of the people executing the strategy. Behavior can be changed in multiple ways. A method which is not regularly used in business is the use of social norms. Social norms are social rules that guide human behavior. As it turns out, social norms can be used to influence behavior over a longer period of time. There are some difficulties with social norm interventions. The social norm interventions are unknown to consultants. Further, social norms can backfire when used in the wrong situations. In this thesis, a tool has been developed which uses social norms to increase the success of implementing IT strategies.

Literature on social norm interventions, expert interviews and cases are used to build and validate the tool. The final tool exists of four steps:

**Step 1: Determine the target behavior.** Which behavior is targeted by the intervention? Some behaviors are stronger effected by norm interventions than others. Also, the behavior must impact the IT strategy project as well. For example the Key Success Factors of the project. Taking into account this kind of variables, the first step is determining the behavior that should be changed. After step 1, it is known which norm and which behavior are being targeted.

**Step 2: Determine the current situation.** Every situation is unique. For each situation a different norm intervention is useful. In step 2 a questionnaire is used to determine the current situation. The questionnaire measures the current norms in the situations. The result of step 2 is a better understanding of the situation.

**Step 3: Determine which intervention is most suitable for the situation.** Via a mapping the right intervention can be selected. A difficulty with social norm intervention is that they can backfire if used in the wrong situation. The mapping defines 5 possible situations, and for each of these situations suitable interventions are given. Selection the situation will be done based on the analysis made in step 2. This is an easy step for the consultant, because in this thesis such easy mapping is provided, helping to determine the right intervention for the IT strategy project. After step 3, it should be known which interventions can be used in this situation.

**Step 4: Execute the interventions.** In this step it is explained how interventions have to be executed. Many interventions involve sending a message to people involved in the IT strategy project. This message contains a norm of some sort. For example: “80% of the people in this company collaborate with another department on a weekly basis”. Interventions have to be adjusted for each setting. The information collected in step two has to be used to fine-tune an intervention. Further, based on the result of the execution the intervention has to be repeated.

Together, these four steps form a guide to successfully execute a norm intervention. Based on the discussions, literature and cases, other conclusions are made as well:

- The knowledge on social norm interventions is both welcome and practical from a business perspective
- Social norms play an important role in IT strategy settings
- There are three variables (subjective norm, descriptive norm and actual performance) which can be used to determine for a situation which norm interventions are most suitable
- These variables can be put into a mapping, with good practical value, that is easy to use for consultants, that helps to quickly determine which social norm intervention is suitable in a given situation. The mapping also proves to be sufficiently valid to consider in academic use.
- The mapping has limitations, and noninvolved users should use the mapping with caution

There are some limitations of this study.

- The methods that are used are good for initial investigation only
- Validating the effect of the tool on IT strategy success is to be determined by experts. The tool is not actually used in any IT strategy situation.
- The first step of the tool has not been properly validated.
- The mapping is only validated for “archetypical” situations. The marginal cases are unknown and unclear.
- There has been scarce investigation about the generalizability of the findings.

To summarize: the result is a four step tool that can be used in IT strategy settings to increase the success of implementation of that strategy. The tool is easy to use and has sufficient validation for practical use. Although the tool is ready for use, the limitations of tool and method should be taken into account.

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## 1. INTRODUCTION

“Are you influenced by what your friends do or buy?”, this is a question I often ask when I am asked to introduce my thesis. The answer is mostly the same:

*“No, I’m not”*

*or*

*“Not really, but my friends are”.*

Most people think they are only marginally influenced by what others do. People tend to attribute their behavior fully to themselves and not to the situation or to external influences. After reading this thesis you know this is not true, it is a misperception. You will see that social norms influence almost everybody’s behavior in any setting and in a much more covert and powerful ways than we imagine. You will also find that social norm interventions can be a good tool to change behavior in organizational settings. There are some difficulties though: some aspects of behavior are easier to change than others and some social norm interventions are perfect in one situation but dangerous in others. If these interventions are used wrongly, they may have the opposite effect of what is desired.

How did I get to this conclusion and why is it relevant? In September 2010 I arrived for the first time at KPMG in the IT strategy division. This would be the office I would spend the next 7 months working on my thesis. At that moment, I did not have a subject for my thesis and was looking for a good topic. That first day I spend speaking with a lot of different people; most conversations were just nice and polite conversations. Then I overheard a conversation of someone who would leave KPMG within a week. My curiosity was spiked, why would this person leave? Was the pay bad, or did he dislike the people? The answers I came up with felt unsatisfactory. Luckily the answer came soon, as I met him during a coffee break. Carefully I tried to lead the conversation to the reason for him leaving the company. While reluctant at first, after a while he looked at me rather sad and started telling:

*“About 1,5 years ago I did a consulting job, I had to advise on a project. I worked really hard and the end result was promising. We gave a presentation to the board of directors of that company and did a workshop with all key players of the project to get involvement and backing for the project. About a year later, the same company called us to solve a problem. After a day it became apparent that this was the same problem as the year before, and they just didn’t or couldn’t implement the solution we had presented. This happens a lot you know, our solutions just end up not being implemented, and this is unsatisfying for me, that is why I want to stop consulting”.*

I was puzzled at first, how could a company spend money on hiring consultants and then do nothing with the solution that was provided? Was this just incidental, or was it common? After talking to more people, it became clear that this is a major problem in consulting. Many advices end up being just that: advice. No action is taken once the advice is handed over. Why does this happen? After a short while it dawned on me that I actually knew part of the answer from another experience I have. I perform coaching for people who want to improve their social skills, and I try to help people change their behavior. Although these people are highly motivated, just telling them what to do does not work. The advice just ends up being advice, no action is taken. Old habits, friends, and fears prevent them from changing. In order to bring about change in these people all these aspects have to change first! Only with the combination of change in environment, emotion and rational thought, change can be realized.

Would the same mechanism apply for large consulting firms? This question is too complicated to answer fully in this master thesis. I knew from experience that people can have a major influence on each other's behavior; this is backed up by research as there is a large body of research on the effects of social norms on behavior. This led me to the question: Can social norms help to solve the problem of implementing an advice in a corporate setting? Eventually I looked into a more practical and specific version of this question. I looked into building a tool that can be used in IT strategy settings to partially solve the implementation problem of IT strategy. In the next chapters, the tool that I developed is presented. This tool can be used by consultants to select which norms should be changed and select which norm interventions are most useful in their IT strategy situation. Ultimately, the tool is developed to change norms and behavior in IT strategy projects which should results in better implementation of this IT strategy.

The structure of my thesis is as follows. In a background chapter the formulated problem is described and the key concepts are defined. Subsequently the structure, methodology of research and research questions are presented in the method chapter. In the method chapter, the structure of the rest of the thesis is outlined.



## 2. ACADEMIC BACKGROUND, RELEVANCE AND DEFINITION OF KEY CONCEPTS

### 2.1. THE IT STRATEGY CONTEXT AND DEFINING IT STRATEGY

The context of this thesis can be described as “IT strategy development setting with client and consultant”. What IT strategy is can be described by describing its relationship to a business strategy. A business strategy is supported by an IS strategy and the business provides directions for the IS strategy. Based on this IS strategy an IT strategy is developed. Ward and Peppard explain it as follows: “There is an IS component and an IT component. The IS strategy defines the organization’s requirement or demand for information and systems to support the overall strategy of the business; it is firmly grounded in the business, taking into consideration the competitive impact and alignment requirements of IS. (...) The IT strategy is concerned with outlining the vision of how the organizations demand for information and systems will be supported by technology – essentially it is concerned with IT supply.” Ward and Peppard show the relationship between strategy, IS strategy and IT strategy in the following diagram:



FIGURE 1: WARD AND PEPPARD DESCRIBE RELATION BETWEEN BUSINESS, IT AND IT STRATEGY

IT strategy, a term commonly used in business and consulting, is not often used in the same way in research. Business tends to use IS and IT strategy interchangeably, while as seen in the diagram of Ward and Peppard, academics do notice differences. This is not the only difference academics have with business. For example, “the academic discussion focuses on the

competitive impact of IT while the central concern of the practitioners was in delivering friction-free and cost-effective IT services to business”(Teubner 2007).

Further, in academia, a related process is researched, which is called the process of strategic information system planning. Although Ward and Peppard have written extensively on SISP, some authors argue that our understanding of information system strategy is still blurred. The process of strategic information system planning (SISP) results in an information system strategy (ISS). The information system strategy (ISS) is considered to be the same as an IT strategy (Teubner 2007). The concept of IT strategy or ISS has been widely neglected in research: “In a survey of 137 SISP related articles published between 1991 and 2004 Brown identified that only one fourth of all articles are concerned with ISS in one way or another.” They continue: “the concept of information systems strategy is ... blurred”.

In this thesis the explanation of Ward and Peppard, is used to define IT strategy. While taking into account that in business and academics disagree on what it actually means.

## 2.2. THE PROBLEM OF IT STRATEGY

The case of interest to this thesis is the process of developing and executing an IT strategy process. It is argued in this section that the step from IT strategy to IT strategy execution is a difficult one and often causes problems.

Getting a good IT strategy seems difficult. Often, the first step is developing the IT strategy plan, and many companies seek assistance from consulting firms to help develop their IT strategy (Robinson 1982; Schraeder 2002). After the strategy has been formulated, the strategy has to be implemented or executed. This is also been called “making the strategy work”. Often, this is problematic. This is schematically descriptive in figure 2.

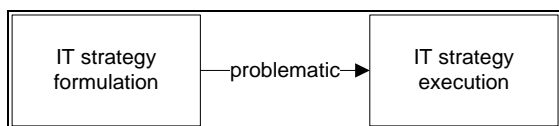


FIGURE 2: VISUALIZING THE PROBLEM SITUATION

Wilma van ‘t Kruijs (Kruijs 2010) describes in her book about (none IT) strategy implementation, that strategy implementation is a very common problem. She explains that plans are made, but executing them is difficult. Then she argues that this happens often, and she is not the only one. These problems have been known to many consultants at some of the large ‘big four’ consulting companies, and all consultants whom I asked about it acknowledged the problem. It can thus be said that the problem of not being able to execute an IT strategy (which is already developed or planned) is rather common.

The same problem can also be described by looking at the consulting process. The work of a consultant can be described as a process; the process is shown in figure 3. This version of the process based on the work of Vrakking, but other authors use similar process steps(Kurpius, Fuqua et al. 1993).

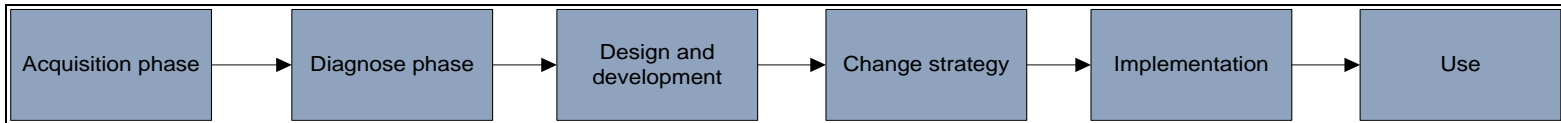


FIGURE 3: THE CONSULTING PROCESS

For the design and development phase consultants are often hired. Many clients choose to continue on their own from this phase onwards. This is the phase where the consultant typically gives a presentation of the strategy to the client, and the client wants to pick up the project from then on. Consultants argue that this transition is an important but difficult phase. It seems that clients sometimes have trouble starting the next phases after the consultants have done their job. The focus of this thesis will be exactly this transition. The “getting to execution” phase.

### 2.3. SOCIAL NORM INTERVENTIONS AS A SOLUTION FOR THE PROBLEMS IN IT STRATEGY

One of the solutions for the problem at hand might be the use of social norms. Since part of the problem is a behavior problem, and behavior is influenced by social norms, social norms might be part of the solution. Social norms prove a strong predictor of behavior for a great variety of behaviors. In the next section we will argue that social norms are also relevant in the context of IT strategy even though social norms are not often discussed in the context of IT strategy or IT strategy implementation.

Imagine working as chief information officer for a brewery. Together with 6 IT colleagues you are requested to align the IT strategy with the corporate strategy. Together with a small team you develop an IT strategy planning. Now the difficult step: implementing the strategy. One of the main aspects is the implementation of a new CRM system. In order to do this you need to have weekly meetings with IT staff and the sales team that work with the system. Now imagine the difference between the following scenarios. In the first scenario, you tell your staff that it is important to communicate between departments. Imagine a second scenario: You spread the news that that many colleagues already communicate with the sales team in weekly meetings.

What scenario will be most effective? Most people consider the second situation to be more persuasive: If your colleagues do something, you should do it to! Although no science yet, we

can feel that aspects such as norms, or peer pressure are relevant in most organizational settings. Although there is little direct evidence, some authors in related fields such as strategic planning and organizational development argue that social norms are relevant.

Long Range Planning, a journal about strategy and strategic planning. The journal clearly shows the need and demand for further focus on a better understanding of the social and people aspect in strategic planning. For example, they state that “how people act and interact in the formulation and implementation of strategy is a highly relevant research topic” (Nordqvist and Melin 2008). In the same paper, Nordqvist refers to norms as an important aspect that a leader in strategic planning should take into account. Nordqvist is not alone in this view. A second paper argues that change of strategy should be accomplished via involving people, by codifying the change in the culture (Colville and Murphy 2006). Strategic change cannot be done involving people. People are of key importance to change, and they need to be committed. As Harrington (Harrington 2004) noted: “It has become conventional wisdom that organizational members react more favorably and are more committed when they are involved in the change making”. In another paper it is argued that, top management, middle management and staff planning are important factors for strategic planning (Aldehayyat, Al Khattab et al. 2010). These people factors make or break the strategic planning. In strategy, people and thus norms are important.

Furthermore, a KPMG IT project manager stated the following when we were discussing the topic: “De relatie tussen sociale druk en de performance van IT-projecten is een interessant aspect en blijft in project- en programmamethodiek vaak onderbelicht. En dat terwijl je in een project in een snelkookpan een soort ‘afdelingscultuur’ neerzet met eigen normen binnen de muren van het project. Is de cultuur door de projectleiding te beïnvloeden? Hoe belangrijk is voorbeeldgedrag? Wat zijn de consequenties als je projectmedewerkers bij elkaar op één kamer te zet of juist op afstand van elkaar laat werken? Kortom: ik vind je onderzoek erg interessant en relevant.” Based on experience, he expresses the importance of social norms in (IT) strategy settings.

Beside the fact that norms influence behavior, two aspects of norms make them a strong candidate for solving the IT strategy problem. The first aspect is that norms are universal, they apply to and work in almost any social situation and secondly, norms tend to be stable over time.

The universal aspect of norms, as will be elaborated, is that norms tend to be related to almost any kind of social behavior. Not only are they related to any behavior, also in many situations norms form a large part of the reason why we act the way we do. It is said that norms are a fundamental component of human behavior and society. Norms are deeply engrained in the

human brain. Such a universal, fundamental and instinctual aspect is a good aspect for any behavioral change, including one which is related to IT strategy projects.

Another reason why norms are a good candidate for improving IT strategy implementation is their stability. The interventions we are looking for in IT strategy projects have to have long term effects. It is not a behavior that needs to be executed once or changed for a short period, but the behavior must be changed for a long time. So, the stability of norms makes them a good candidate. If the norms can be changed, the results will most likely last for a longer term, and that is exactly what we are looking for.

### 1.1. SOCIAL INFLUENCE FURTHER DESCRIBED

Social norms are well researched, and are seen as important predictors in a large range of broad and specific behaviors, including IT related behavior such as system use. System use is extensively researched and is seen as having an important correlation to social or subjective norm (Schepers and Wetzels 2006). Social norm is an important factor of the well-studied Theory of Planned Behavior (TPB); it has been tested in many fields and for many types of behavior and has a large influence on our behavior. Other aspects where relevance of social norms is found besides system use (Sykes, Venkatesh et al. 2009) are change management (Kotter 2000; Have, Have et al. 2010), IT usage (Huang and Chuang 2007), interpersonal influence (Cialdini 2007), and leadership (Brock and Green 2005). Finally, teams and projects are shown to be significantly influenced by team norms and group pressure (Taggar and Ellis 2007). These examples show some of the large body of evidence of the relevance of social influence in corporate, teams, projects and IT settings.

Although the effects of social influence are profound in many fields, it seems that it has not been applied often to IT strategy projects. Especially concrete interventions seem not to be even mentioned in literature. A reason for the lack of use of social influence might be that the effect of social influence is often underestimated. When people are asked to estimate such effects, they often regard it as much smaller than the factual effect of social influence. For example in energy consumption, participants believed that the observed energy usage of their neighbors (descriptive norm) had little to none impact on their energy consumption, while results showed that the descriptive norm actually had the strongest effect compared to other measured interventions (Nolan, schultz et al. 2008). People thus underestimate the effect of social influence. People do not expect that social influence had a (large) effect on their subsequent action, while it does have a large effect (Cialdini 2007; Nolan, schultz et al. 2008). The underestimation of the effect of social influence might explain why managers do not seem to use social influence to increase the success of IT strategy projects.

Another interesting aspect is social influence interventions. Social influence can be actively used by individual or organization to influence people's behavior. A wide variety of behavior has been investigated by researchers to see the effect size of social influence interventions. Social influence interventions has been shown to effectively change behavior in the field of smoking (Putte, Yzer et al. 2004), alcohol (Haines and Spear 1996), obesity (Bennett 1986), environmental friendly behavior such as towel reuse in hotels[in press] and energy consumption (Nolan, schultz et al. 2008). Because social influence seems to be effective as a persuasion tool for a broad range of behaviors, I suggest that it must be effective also in influencing behavior in IT strategy settings.

### 3. METHOD & STRUCTURE

In the prior chapter it has been argued that social norms show promising results in domains different from the ICT and implementation domain. This brings us to the main goal of this thesis:

*"Design a tool that can be used in IT strategy projects to improve implementation success via social norm interventions"*.

In the current chapter the method of developing the tool is presented. The section starts with the structure of this thesis. This is followed by the research questions and ends with the methodology for each of the parts of this thesis.

There are at least three problems when wanting to use social norm interventions. First, the knowledge about social norm intervention isn't accessible. It is mostly found in academic literature, not in a way easily accessible for management. Secondly, the impact of a social norm intervention is dependent on the situation it is executed in. In the wrong situation, it might backfire or have a different result than expected. Therefore it is necessary to know which interventions are suitable in which situation. Thirdly, not any behavior can be changed by social norm interventions. Some behavior is more likely to be influenced by social norms than other. The tool which is developed should deal with these three problems, making social norm interventions more usable in practice.

This study is a design study. That seems appropriate in this case because there is a need for a practical tool. Much information is already available and this information now needs to be transformed into a tool. According to Wieringa, having a practical problem (Wieringa 2008) is a typical engineering driver, which allows for a design study. This means that the result of this thesis should yield a solution for a problem. It also means that it does not follow the steps of empirical research but instead of a design study. Such a design cycle follows four main steps: Problem investigation, Solution design, Solution validation and solution implementation (Wieringa 2008). In our case the solution design contains multiple components. For each of these components, the design cycle is followed. Therefore, there is one main design cycle; and within that design cycle are four sub-design cycles. In this study, the first three steps of the design cycle have been executed; the solution implementation was not possible within the span of this project.

The tool that has been developed exists of multiple parts, which will be discussed first separately. Next the tool is put together from these parts and discussed as a whole.

#### 3.1. THE STRUCTURE OF THIS THESIS

The global structure of this thesis is represented in figure 6.

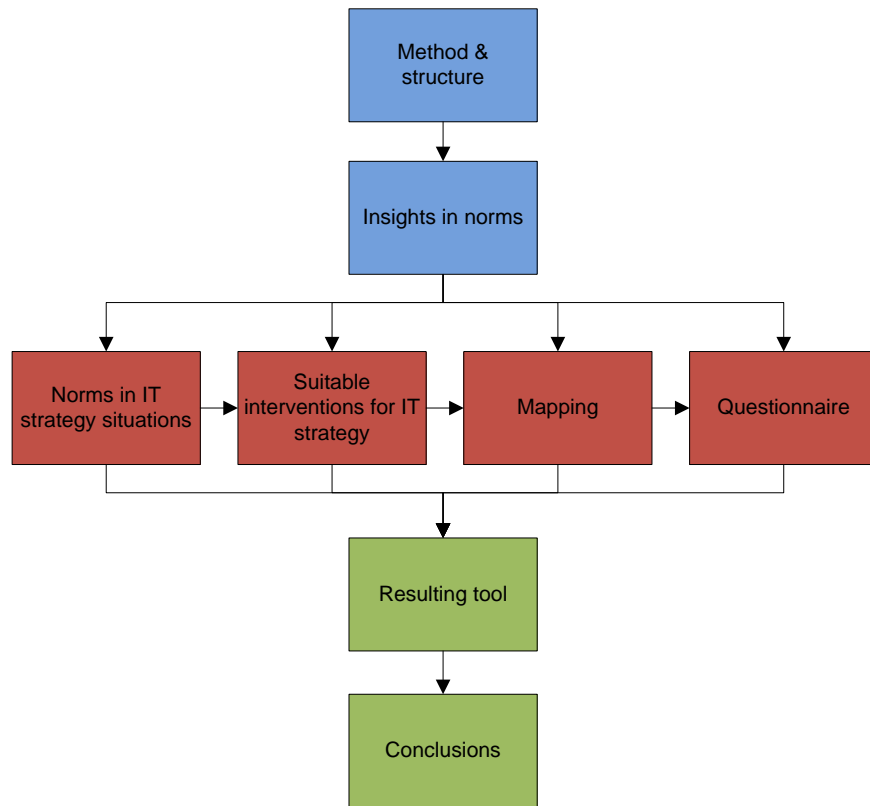


FIGURE 4: THE STRUCTURE OF THIS THESIS

This thesis contains six parts and the conclusions. Each of these parts answers one of the following research questions:

- 1) What, according to literature, are the latest insights on social norms?
- 2) What norms are relevant for IT strategy?
- 3) Which norm interventions can be used to influence behavior?
- 4) Which intervention is suitable in which it strategy situation?
- 5) How to measure the current situation in order to determine which intervention is suitable?
- 6) How practical and valid is the tool?

The dependency of the research questions can be described as follows: In question 1 the literature of norms is presented. In question 2 it is determined which type of norms and what norms are relevant for IT strategy projects. In the third research question, based on the important norms for IT strategy, the possible norm interventions are drawn from literature. For each of these norm interventions it is determined in which situation they are suitable to use. This results in the mapping in research question 4. Then, in research question 5, in order to determine a specific situation a questionnaire is build based on this mapping. Finally, this is put together and then reviewed via expert interviews.



### 3.2. METHOD FOR EACH RESEARCH QUESTION

In order to properly answer each research question, the methodology for each of the questions is further explained. Globally, there is a literature chapter, followed by the four parts of the tool. Each of the parts is designed, and validated. This ensures high quality of each of the parts of the tool. Each part has its own validation. Then, the four parts are taken together, and are validated as a whole. This is represented in the figure below. Now, for each of the research questions, the methodology and the result of each question is discussed.

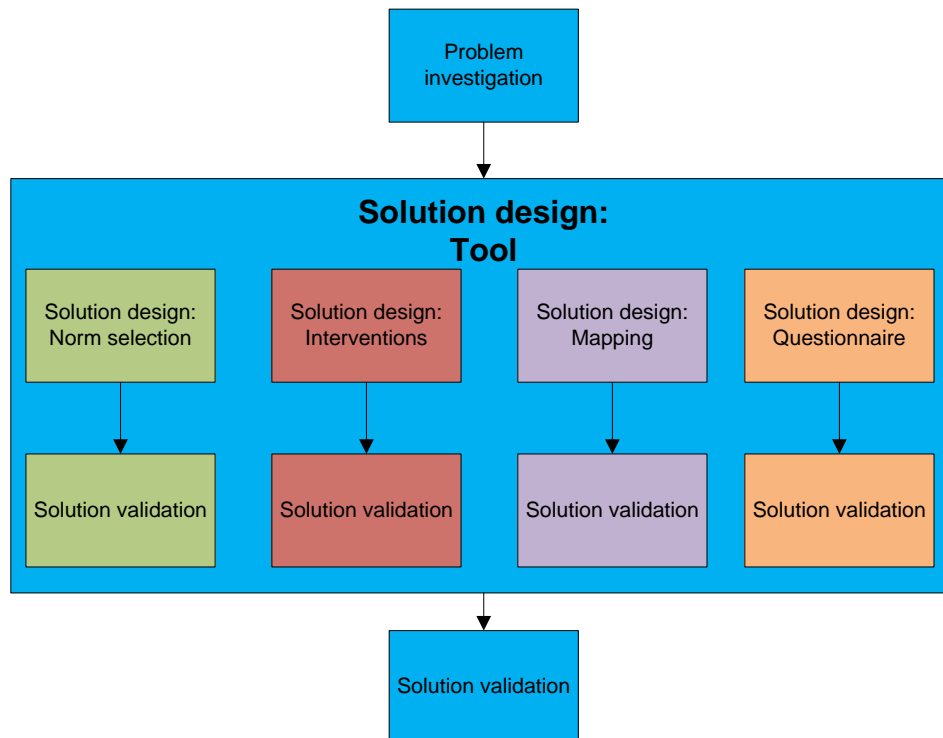


FIGURE 5: DESIGN CYCLE

#### 3.2.1. WHAT, ACCORDING TO LITERATURE, ARE THE LATEST INSIGHTS ON SOCIAL NORMS?

This chapter is aimed to get more insight into social norms. A literature study is executed to do this.

#### 3.2.2. WHAT NORMS ARE RELEVANT WITHIN IT STRATEGY?

The first part of the tool is finding the relevant social norms. The goal of this section is to gain insights into what types of norms and what norms are relevant for IT strategy projects. This part is based on literature. Based on insights and relevant knowledge it is determined which IT types of norms are relevant within IT strategy. Further, a strategy for findings relevant norms within an IT strategy project based on literature.

The result is a step by step tool which helps determine which behavior and norms should be changed.

### 3.2.3. WHICH NORM INTERVENTIONS DOES LITERATURE SUGGEST CAN BE USED TO INFLUENCE BEHAVIOR?

The goal of this question is to come up with a list of relevant norm interventions that can be used in an IT strategy setting. The same reasoning and method is chosen as in the previous question; it was chosen to base the first research question on scientific theory. Here also another option would be to ask experts or a combination of theory and experts.

### 3.2.4. WHICH INTERVENTION IS SUITABLE IN WHICH IT STRATEGY SITUATION?

Some norm interventions work better in one situation than another. It is therefore useful to determine for each situation which norm intervention is most suitable. The result of this research question is a mapping.

We will base the initial mapping on literature and reasoning. Then the mapping is improved and validated by expert interviews on the proposed mapping. Experts are asked whether they think the mapping is correct and useful in the field. It is also asked what they consider as risks when using this kind of mappings and what they thought was missing. It is chosen to do an expert interview as there was no time to statistically prove the correctness of the mapping. Another reason is that the mapping should be practical and logical and not only be correct. An expert interview can help answer these subjective questions.

### 3.2.5. HOW TO MEASURE IN ORDER TO DETERMINE WHICH INTERVENTION IS SUITABLE?

The mapping that results from the last research question will contain variables. These variables such as “current performance” are used to determine which intervention is most suitable. In order to use the tool, a consultant should have a way to measure these variables in their specific situation. As it will be further explained in the chapter itself, a questionnaire turns out to be most suitable.

The questionnaire can be tested in multiple ways. The first method of testing can be a construct validity test. This determines if the constructs used (such as current performance) are useable, i.e. are we measuring what we think we are measuring. Because the questionnaires are based on existing questionnaires it is chosen to assume the correctness of the construct validity. A second aspect can be internal validity. We have chosen to validate the internal validity of the questionnaire by testing it in two cases. An easy and frequently used statistical tool for determining statistical validity is a Chronbach Alpha test. Further details on this test can be found in the corresponding chapter.

The results of the questionnaire may later be used to do alternative statistical analysis once the tool is in use. Therefore it is important to ensure high quality of the tool.

### 3.2.6. HOW PRACTICAL AND VALID IS THE TOOL?

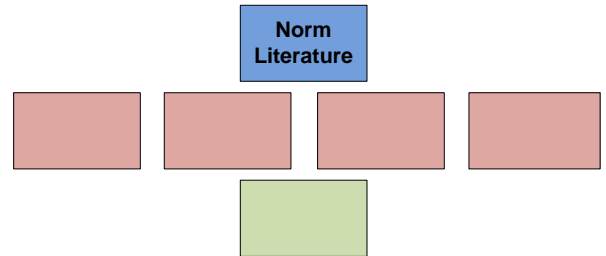
In the previous parts of the thesis, the parts of the tool have been described. For this chapter, a first version of the tool is developed and tested. We have done that by putting the validated parts of the developed tool together. A case and the tool are presented to experts who eventually are going to use the tool. By letting people actually use it in a case, it is possible to determine how practical the tool is. The cases are then discussed and the tool is improved based on the feedback.

## 4. THE LATEST INSIGHTS ON SOCIAL NORMS

### 4.1. SOCIAL NORMS ARE IMPORTANT DETERMINANTS OF A WIDE RANGE OF BEHAVIOR

Social norms are a sub component of social influence.

Social influence according to Lisa Rashotte: “Social influence is defined as change in an individual’s thoughts, feelings, attitudes, or behaviors that result from interaction with another individual or a group.” Social influence is thus also the change of any thought caused by any interaction. Norms are more specific: they are triggered by similar thoughts and behavior of others. “Social norms are sets of beliefs about what other people are doing or what they approve or disapprove” (Cialdini and Trost 1998).



Defining social norms is a good start but does not give any feeling about what social norms are or how they work. In order to get a better feeling for social norms and how they work, three scenarios will be described.

**Scenario 1: dance event.** Imagine yourself being at an event with loud music, but none of the people is dancing. It is considered ‘weird’ to start dancing now. The following images show how that can change with one dissident.



FIGURE 6: ILLUSTRATING NORMS: THE DANCING NORM

**Scenario 2: working a bit longer.** This happened to me during my internship. It is five o'clock and I like to go home. I could do some extra work but don't really feel like it, and it is not really necessary to do so. I intended to leave, but then I overhear the following conversation between two colleagues. "Did you know that 80% of the people work over hours in our company? Tonight I will stay half an hour extra too!" The other person answers with: "Yeah, I know, but the 20% are just a bunch of free riders, we do the hard work and go for the extra mile!" At that moment I decided that it was better to continue the work on my project. If my colleagues do it, so should I! In this situation, I felt a social pressure to stay at work.

**Scenario 3: Stop using Hyves.** I recently overheard a conversation in the train. It was between two girls who were about 20 years of age. One was trying to convince the other that she should stop using Hyves and start using Facebook, both quite similar websites for 'managing' your social life. None of the arguments seemed to work, until the pro-Facebook girl said: "But everybody is using Facebook now, all of my friends made a Facebook profile; it is really the right thing to do". She used social norms to convince her friend, and quite successful because her friend responded: "Really, I didn't know, than I should try it too".

Remember the last time you did something, because everybody was doing it? That is social norms at work. It is fair to say that social norms are everywhere, at work, during leisure, and among friends. Let's now further dissect norms and see what they are made of.

As it turns out, social norms are not atomic; there are many different types of social norms (Putte, Yzer et al. 2004). Three types of norms are found in literature: subjective, injunctive and descriptive norms (Klein 2005). It has been shown that the distinction between these three types is meaningful, as they are conceptually different as can be shown with statistical analysis.

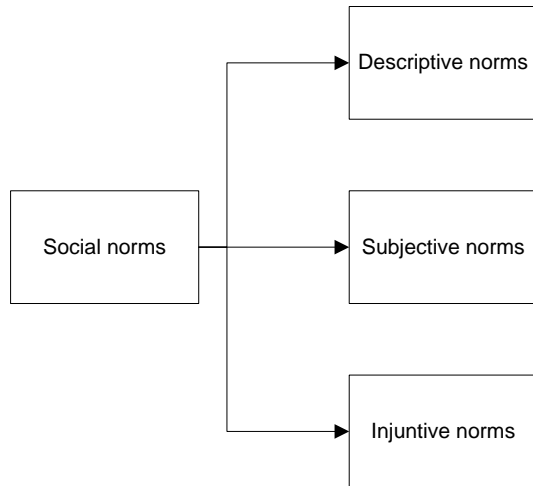


FIGURE 7: SOCIAL INFLUENCE

We will now discuss each of these types of social influence further. For each element a definition will be given and their (sometimes complex) relation with behavior is described. Also we will list examples of behaviors related to that element.

#### 4.2. THE THREE TYPES OF NORMS

In the next sections the three types of social norms are described in detail and a first overall conclusion is presented. The concepts subjective norm, injunctive norm and descriptive norm are adequate predictors of behavioral intention and behavior. They predict between 10% and 40% of the variance in behavior. For most types of behavior a significant relation between social norms and behavior has been found. Table 1 summarizes the definitions of the three types of norms.

Social influence	Definition	Example
<b>Subjective norm</b>	an individual's perception of social normative pressures, of relevant others' beliefs that he or she is expected to perform such behavior	My friend groups consider working for a consultant a good thing
<b>Injunctive norm</b>	social pressures to engage in a behavior based on the perception of what other people want you to	Society says it is good to not waste energy

	do	
<b>Descriptive norm</b>	the perception of the quantity and frequency of others performing a behavior	Seeing all your colleagues work on an IT Project

TABLE 1: THE THREE TYPES OF NORMS

4.3. SUBJECTIVE NORM

Subjective norm can be defined as: “an individual's perception of social normative pressures of relevant others that he or she should perform such behavior” (Wikipedia 2011). A subjective norm can be: my friends consider smoking to be wrong. Another example of a subjective norm is: be quiet in the university library; it is ‘not done’ to speak loudly. Subjective norms are found in many social contexts and prescribe what behavior is expected from people.

Subjective norm has received major coverage in research. Subjective norm originated as part of a theory called “theory of planned behavior (TPB)”. This theory attempts to predict what behavior a person will perform. TPB has over 5000 citations in Scopus showing it is well researched. The theory of planned behavior is considered to be a strong predictor of behavioral intention and behavior. The variance of TPB to behavior is 27% and to behavior intention 39%, according to a large meta review (Armitage and Conner 2001).

Within TPB, behavior is predicted by three variables, subjective norm is one of three variables. The aspect of subjective norm in the model of TBP is depicted in figure 8. In these studies subjective norm is found to be only a weak predictor of behavior according to the meta-analysis (Armitage and Conner 2001). In some studies, subjective norm is found to be a better predictor for behavior, with a variance of up to 30% (Schepers and Wetzels 2006). Subjective norm has been proven to be a reliable predictor of behavior but not a strong one. Thus, if it is socially acceptable to not smoke, then this has impact on actual behavior, but not a major one.

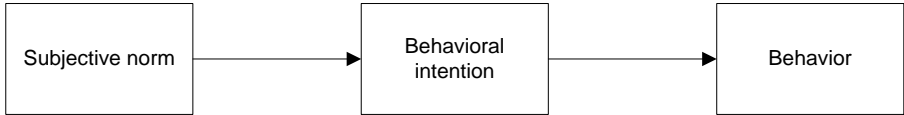


FIGURE 8: SUBJECTIVE NORM, BEHAVIOR LINK

Subjective norm is also used in the Technology Acceptance Model. TAM is based on TPB. TAM has the goal to make predictions in the use of technology. It is for example used to predict the amount of system use. In a meta-analysis study of TAM, large effect sizes are found for the correlation of subjective norm and behavioral intention(Schepers and Wetzels 2006).

Translating this to normal words, if people think using a system is the right thing to do, they will have the intention to actually use it. This intention is often seen as a good predictor of actual behavior. Concluding: if people think it is the right thing to use a system by others, they may actually use it themselves.

Subjective norm has been found – in literature - to be connected to a wide range of behaviors; the list is longer than useful for this thesis or to grasp the range. Here follows a selection of the latest 15 papers when searching for “subjective norm” on Scopus (December 2010). The list does not stop at: system usage (King and He 2006), leaving Hong Kong (Abrams, Hinkle et al. 1999), sun related behavior (Bränström, Ullén et al. 2004), drinking (Haines and Spear 1996; Maddock and Glanz 2005; Hampson, Andrews et al. 2006), customer acceptance for an airline (Kim, Kim et al. 2009), job satisfaction (Lam, Baum et al. 2003), food & fruit (McGregor, Hoerr et al. 2001; O'Connor and White 2010) and mobile data services (Yang and Jolly 2009). Most behavior proves to be affected by subjective norm, but not all are.

A noteworthy correlation is found with normative commitment. There is a relationship with work absenteeism, job satisfaction, job performance, and employee well-being. This shows that normative influences have effect on various levels of organization behavior (Meyer, Stanley et al. 2002).

To summarize: subjective norms are extensively researched among a range of behaviors. It turns out to have a correlation to behavior and behavior intention in most cases but is insignificant in others. A direct relation to social norms and behavior within organizations is found, but as yet not for IT strategy.

#### 4.4. INJUNCTIVE NORM

Injunctive norm has been described as: social pressure to engage in a behavior based on the perception of what other people want you to do (Klein 2005). There seems to be a close resemblance with subjective norm. This may be caused by lack of consensus on the definitions. But some authors state that these are different concepts, as has been shown statistically (Klein 2005). Injunctive norms seem to be more society oriented, while subjective norms are more peer oriented. A useful example of an injunctive norm is that it is wrong to be drunk during daytime. Injunctive norms also have been researched in relationship with actual behavior and behavior intention, mostly also via the theory of planned behavior.

According to studies, Injunctive norm has a positive relation with behavior and behavioral intention. Thus, if people assume society judge drinking during daytime is wrong; people will be less likely to do that.

The strength of the link between injunctive norm and behavior is dependent on some other variables. In other words, injunctive norms are moderated by some factors; this is depicted in figure 9. One of these moderating factors is the descriptive norm. If injunctive norm is considered in the theory of planned behavior, together with descriptive norm, the effects are not straight forward and there is a complex relation with descriptive norm. The effects of the injunctive norm can be close to zero or even negative when considered along the descriptive



norm [Manning 2009]. This means that the variance is determined by the descriptive norm, and there is little or no extra variance caused by the injunctive norm.

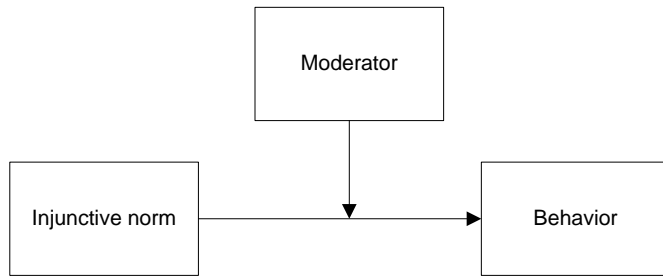


FIGURE 9: VISUAL REPRESENTATION OF RELATION BETWEEN INJUNCTIVE NORM AND BEHAVIOR

The injunctive norm is also affected by other moderating variables. A moderator is a variable which impacts the relationship between two variables as depicted in figure 9. The following moderators have been well researched: compatibility of behavior and measured norm, time interval of SN and behavior, social approval of behavior, social motivation of action in behavior and utility of behavior (is it pleasant or useful). See table 2 for a definition of each of these moderators [Manning 2009].

Moderator	Definition
Compatibility	Is the measured norm compatible with the measured behavior? For example, a broad norm such as “following religious practices is good” and specific behavior such as “praying before dinner” have a smaller relation than specific norms “praying before dinner is good” and specific behavior “praying before dinner”. The latter is considered to be more compatible. Compatible norms are expected to have a stronger relationship with behavior.
Time interval	The time between the measurement of the norm, and the measurement of the behavior.
Social approval	Is the behavior socially approved?
Social motivation	Some behavior is more socially motivated than others. For example a person who likes to be social at parties, might be socially motivated to drink, as opposed to drinking by yourself which is motivated by the taste and not by other people. Socially motivated behavior is expected to be more effected by the opinion (norm) of others.
Utility	Is the behavior considered useful or pleasurable? Useful behavior is often more elaborated on, and therefore less likely to be influenced by others.

TABLE 2: MODERATORS OF INJUNCTIVE NORMS

According to a large Meta-analysis study the effects of the injunctive norm are dependent on the type of behavior and the compatibility. If the type of behavior is more socially oriented and the descriptive norm is taken into account, then injunctive norm is likely to have a small but significant negative relation with behavior. The compatibility is also an influence on the total effect of injunctive norm on behavior, in somewhat compatible cases there is a positive effect size (0.11) in a fully compatible case the effect size is negative (-0.11) (Manning 2009).

Injunctive norms are researched in a broad range of behaviors, by definition behavior relevant to society, such as smoking or behavior in public places. Injunctive norms are not typically researched in the context of an organization, as I could not find any research looking in the like between injunctive norms and organizations. This makes sense, as by definition injunctive norms handle more broad norms, which wouldn't differ much within or even between organizations.

Concluding, injunctive norms are considered a weak predictor of behavior, and there is little evidence for corporate related behavior.

#### 4.5. DESCRIPTIVE NORM

Descriptive norm refers to the perception of the quantity and frequency of others performing a behavior. For example, how often do I see my friends perform sports? The hypothesis is that if I see or know that others perform behavior, I am more likely to follow that. Another example, if I know my neighbors do not consume much energy, I should also use little energy.

According to literature, descriptive norm has a large effect on behavior intention and behavior. The effect size and relation between descriptive norm and behavior is larger than the effect size of injunctive norm and behavior, making descriptive norm a better predictor of behavior than the injunctive norm.

The effect size of the descriptive norm is also limited by the same moderators as just discussed in the injunctive norm section as expressed in table 3. The numbers in the table represent the effect size, 0 means no effect, the higher the number, the stronger the relationship between the descriptive norm and behavior with a range between -1 and 1. A moderator which shows a large difference is seen in the upper median and lower median is social motivation. This makes sense as behavior that is socially motivated should by definition be affected by norms. This means for example that behavior which is socially motivated is highly effected by norms (effect size of 0,32) and behavior which is not socially motivated is not influenced by norms (-0,01).

Factor	Effect: Descriptive norm – Behavior
Compatibility Somewhat	0.16

Fully	0.23
<b>Time between</b>	
Concurrent	0.14
Lower median	0.14
Upper median	0.30
<b>Social motives</b>	
Less socially motivated	-0.01
More socially motivated	0.32
<b>Social approval</b>	
Approved	0.14
Unapproved	0.39
<b>Utility</b>	
Useful	0.12
Pleasant	0.31

TABLE 3: TOTAL EFFECT SIZE OF DESCRIPTIVE NORM ON BEHAVIOR WITH MODERATORS (MANNING 2009)

Many types of behaviors are influenced by the descriptive norm. A list of behavior found by a random search and selecting the top 15 articles: common food eating (Tuu, Olsen et al. 2008), speeding (Forward 2009), exercising (Priebe and Spink), drinking (Grossbard, Geisner et al. 2009) and smoking (Putte, Yzer et al. 2004). A direct link with IT strategy projects has not yet been established to my knowledge. Some initial research shows that norms are relevant for IT usage (Schot 2011). Descriptive norms are also found in team performance (Taggar and Ellis 2007). As IT projects are often executed in project teams, this gives indication that norms do play a role in IT projects.

Descriptive norms - how you perceive what your friends are doing - is thus a pretty reliable predictor of behavior in many contexts.

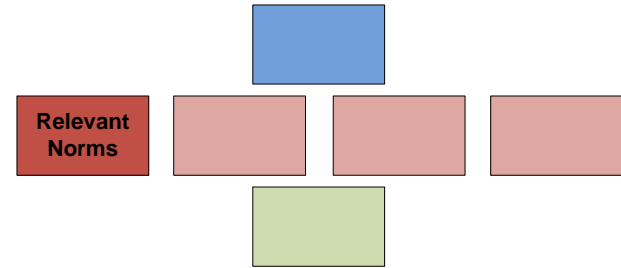
#### 4.6. CONCLUSION

Based on the research into three kinds of norms, it can be concluded that norms are well researched. For these three it is known what type of behavior is affected. It can be concluded that socially motivated or socially disapproved behavior is affected by descriptive norms For example: smoking at a party. If many people are smoking other people tend to smoke as well. Further, injunctive norms seem to have less effect on behavior and in some cases have the opposite effect. When there is a strong descriptive norm which is pro smoking (everyone is smoking) but there is an injunctive norm that smoking is bad. That injunctive norm might actually lead to more smoking, instead of less. Finally, subjective norms seem a strong candidate for behavior influence, since in a wide variety of behaviors a decent relation with behavior is found. The relation to IT strategy seems scarce from this literature.

## 5. SOME NORMS ARE RELEVANT FOR IT STRATEGY PROJECTS

### 5.1. DESCRIPTIVE NORMS SEEM MOST RELEVANT TO IT STRATEGY PROJECTS

The goal of this thesis is to use normative interventions to influence norms in IT strategy settings. Now that we have shown the latest thoughts on norms it is interesting to see what can be expected from using these norms in IT strategy settings. In this chapter I will show that the descriptive norm is considered the most relevant aspect of social influence in the IT context. This is done by reviewing each of the three facets of social norms. For each it is discussed whether they will be relevant in an IT strategy setting. It also shows that it is expected that the descriptive norm will predict 10-20% of the variance in some behavior in IT strategy settings. In other words, if we think our colleagues do something, we might do it as well. Injunctive and subjective norms seem to have a smaller relationship with IT strategy. There are three reasons why descriptive norm seems to have the strongest effect on IT strategy. Descriptive norm seems effective when looking at the moderating values of descriptive norms. Relevant studies with significant results are conducted in a similar environment. Also, descriptive norm tends to show the highest effect sizes in others situations.



In the next sections, we will explain in detail for each of the social influence aspects why they are (not) relevant to IT strategy projects. A summary is given in table 4.

Social influence facet	Moderator or aspect	Positive for IT projects	Expected result
Subjective norm	Relevant environment Overall strength	High Low	Moderate effect
Injunctive norm	Socially oriented behavior Compatibility Relevant environment	High High Low	Low effect
Descriptive norm	Compatibility Time between Socially oriented behavior Social approve Utility Relevant environment	High High Low/high? Low Low High	High effect

TABLE 4: SUMMARY OF PREDICTED RELATION BETWEEN IT STRATEGY PROJECTS AND SOCIAL INFLUENCE FACETS

#### 5.1.1. SUBJECTIVE NORM VERSUS IT STRATEGY PROJECTS

The relationship between subjective norm and IT strategy can be described as follows: If our colleagues consider it the right thing to perform certain behavior in IT strategy projects, can it be expected to have impact on our behavior?

It can be expected that subjective norm has a moderate relationship to organizational behavior such as the behavior necessary for a successful IT strategy project. It is expected because subjective norm has been shown to be relevant for a large range of behaviors, including organizational oriented behavior, behavior like team norms or IT usage. The relationship is expected to be weak, because generally the overall relationship between behavior and subjective norms is considered as weak.

#### 5.1.2. INJUNCTIVE NORM VERSUS IT STRATEGY PROJECTS

Injunctive norm is the society's pressure to perform specific behavior. Another way of expressing it: If society proclaims it is the right thing to work on the IT strategy projects, will I be more inclined to do it?

Injunctive norm is expected to have a weak relationship with IT strategy projects. Injunctive norm has a smaller overall effect than descriptive or subjective norm. Its effect is possibly significant, but not very strong. It also seems to be more applicable in generally approved behavior. Society is not expected to have any pressure in relation to IT strategy; generally people do not think much of IT strategy as something that is good or bad. Thus, injunctive norms are most likely irrelevant for IT strategy success.

#### 5.1.3. DESCRIPTIVE NORM VERSUS IT STRATEGY PROJECTS

In practice, the relationship between the descriptive norm and IT strategy projects would mean the following: Knowing that my colleagues are working on the IT strategy, does this affect my behavior towards the IT strategy?

Descriptive norms seem a good candidate for influencing IT strategy projects. It is considered a stronger predictor of behavior than injunctive or subjective norm in general.

There are several moderating effects for the descriptive norm. For each of these moderators it is assessed whether it can be expected to strengthen or weaken the link between the descriptive norm and behavior in IT strategy projects. A moderating factor is social approval, when social approval is low; the effect of the descriptive norm is higher. In the case of IT strategy projects it is questionable whether there is social disapproval, thus it is concluded that this moderator will weaken the effect of the descriptive norm on IT strategy projects. The descriptive norm seems to have a larger effect in cases where the function of the behavior is pleasure, instead of usefulness. Only few people will consider implementing an IT strategy project as pleasurable and therefore the effect of the descriptive norm on IT strategy projects is

likely to be weak as well. Descriptive norm tends to be stronger over a longer time span. In the case of an IT strategy project, taking between 3 months and a few years, this would mean that the expected relationship between IT strategy projects and descriptive norm is strong.

Descriptive norms are found relevant in a wide range of behavior, including behavior within organizations. This would suggest it might also be effective in IT strategy projects settings. Overall, the descriptive norm is a decent candidate for being a predictor of IT strategy projects. Do you see yourself help realizing the IT strategy projects if none of your colleagues are doing it?

## 5.2. FOUR QUESTIONS THAT HELP FIND RELEVANT NORMS IN IT STRATEGY PROJECTS

In the background study it has been shown that norms are most likely relevant in IT strategy settings, and in the former chapter it has been shown what type of norm is relevant in an IT strategy setting. Another important question is which specific behavior and related norms are relevant within IT strategy settings. Some behavior such as communication between departments is most likely relevant for IT settings, others such as coffee drinking during IT strategy is not. It is thus useful to consider which behavior is to be changed with the social norm interventions as not all norms will be equally relevant. In this chapter, based on knowledge gained so far, some guidelines for finding the relevant specific behavior are considered.

Although norms are the means and focus of the interventions, the result – a change in behavior – is the goal. We want to change behavior, and not norms in the end. Two questions emerge: “Which behavior contributes to IT strategy success?” and “Can this behavior be changed by social norms?”

It is outside the scope of this thesis to determine which behavior is most relevant in IT strategy settings and thus answer the first question. What can be said is that much research has been done in the area of critical success factors which often are about behavior (Umble, Haft et al. 2003). Examples of these is: end user involvement, top management support, sufficient funding, clear goals and communication between business and IT (Jang and Lee 1998; Khazanchi and Reich 2008). For this research, it is also expected that the consultants who ultimately will use this tool, are experts at knowing what is important in IT strategy settings.

The second question “can this behavior be changed by social norms?” is in the scope of this thesis. Currently, I could not find any proven way to estimate what behavior can be changed most easy with social norm interventions. There also isn't a list with important norms in IT strategy. As there seems to be no hard evidence, a rule of thumb is developed to estimate if behavior is a good target for social norm interventions.

In the previous chapter, we have shown that descriptive norms are likely to be relevant in IT strategy settings. If the behavior and the norm are strongly correlated, it can be assumed that changing the norm also has a large impact on the behavior, and when the behavior norm link is weak, a change in norm will less likely have a large impact on behavior. Although this seems plausible, it is not proof because the link is not proven to be causal, but correlational. It does seem to make sense that there should be a strong link between norm and behavior for it can be effectively targeted by norm interventions. The previous described moderators can be used to find the most relevant behavior to change. Behavior that is compatible, high on time between, socially oriented and fun, is more likely to have a strong behavior-norm link and thus have a larger impact by a social norm intervention than behavior that is not compatible with the norm, there is a low time between, and it is not socially oriented and is mostly useful and not fun. This implicates that the moderators might help estimating that the behavior is a good target for norm interventions. It is chosen to leave one moderator out (social approval) because it would most likely rule out to much behavior.

<b>Moderator</b>	<b>Questions</b>
Compatibility	Can the behavior and norm be made specific and alike?
Time between	Does the behavior happen over time?
Socially oriented behavior	Is the behavior socially oriented?
Utility	Is it fun, useful or both?

TABLE 5: SUMMARY OF QUESTIONS OF WHICH CAN BE USED TO DETERMINE RELEVANT BEHAVIOR TO CHANGE WITH NORMS

Illustrating this with an example, this would make “communication between business and IT” relevant behavior (can be specific, happens over time, is socially oriented and can be both useful and fun). It would make “usage of project software” less relevant, as it is not socially oriented.

Are all of these moderators equally important? It seems that they are probably not. If behavior is low on social orientation, it has no link between descriptive norm and behavior. Thus making it quite important that behavior is socially oriented. If it is low on utility, there is still sufficient room for impact. Based on this logic, social orientation and time between are the most important moderators. Utility and compatibility are less important.

I propose that consultants use these questions or moderators as a rule of thumb to determine which behaviors should be targeted in an IT strategy setting.

### 5.3. CONCLUSION

This chapter has a two part conclusion. The first conclusion is about which type of norms are expected to be relevant for IT strategy situations. The second conclusion is about determining which behavior can be influenced in IT strategy situations.

First, which types of norms is expected to be relevant for IT strategy situations? Descriptive norms are most likely to be effective in IT strategy situations. Descriptive norms are relevant for a wide variety of behaviors, especially if these behaviors are disapproved or socially motivated. In those cases, the descriptive norms have a strong effect on the behavior of people. As some behavior in IT strategy is considered socially motivated it can be expected that the descriptive norm should also have an effect on that behavior. Further, subjective norms seem also a likely candidate for behavior influence, mostly for the same reasons. The link between injunctive norms and behavior is less strong, also injunctive norms seem to be more relevant to societal behavior, and thus makes injunctive norm irrelevant for IT strategy.

Second, which behavior can be influenced in IT strategy situation via social norms? Literature is scarce on this topic. Based on reasoning and the previous analysis, four questions are developed in order to determine which behavior is a good candidate to change via social norms in IT strategy settings:

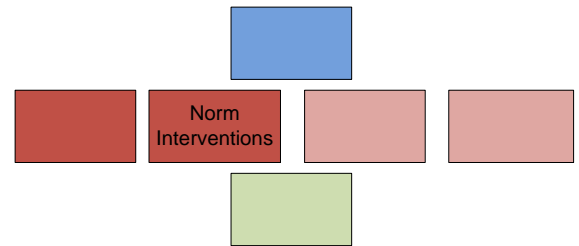
- Can the behavior and the norm be made specific and alike?
- Does the behavior happen over time?
- Is the behavior socially oriented
- Is the behavior fun, useful or both?

These questions are based on the moderators of the link between norms and behavior. If behavior is specific, happens over time, is socially oriented and fun, there is most likely a strong relation between the norm of a behavior and the behavior itself. In those cases, the norm influences the behavior. These questions can be used in IT strategy to determine which behavior is going to be influenced by social norm interventions.



## 6. APPLICATION OF NORM INTERVENTIONS TO INFLUENCE BEHAVIOR

The second research question will be answered in this chapter: “Which norm interventions does literature suggests can be used to influence behavior?” It is necessary to know which norms interventions exist and can be used in IT strategy settings. In this chapter, scientific literature is used to find norm based interventions which are proven to work.



Let’s look at social norm interventions, how can they be defined? They can be defined as: “Actions that use, change, or enforce a norm in order to change behavior”. To understand what such an intervention might look like, think about the following example: Imagine we want to decrease energy consumption of our neighborhood. We can then use social norm interventions to achieve this. An example of such an intervention is the following: people are shown that they use more energy than their neighbors by a note on their door. This note says: “Your energy consumption is higher than that of your neighbors”. Hereby giving feedback about how people act compared to the norm (the behavior of their neighbors) and showing people that they fail to meet the norm. People will then try to conform to the norm by changing their energy usage. This illustrates a typical experiment where norms are used to change behavior. The result in this experiment is that people tend to decrease their energy consumption by 20%, this is the typical result seen in such experiments.

Although some experiments have been done, the process of creating and changing norms seems poorly understood. There seems to be no meta-analysis, reviews or other papers that combine the efforts of various experiments. As Cialdini states: “Although social scientist have used norms as explanatory constructs throughout the twentieth century the empirical literature specifically studying the emergence and transmission of social norms is exceedingly small.” Thus, although there is some progress with interventions and norms, we still don’t really understand how they come about.

In this chapter, a deeper insight into the social norm interventions is presented. First, I will start with the overall conclusion from literature. Then, the social norm interventions found in literature are presented.

### 6.1. SOCIAL NORM INTERVENTIONS TYPICALLY HAVE AN EFFECT SIZE OF 20%

The overall conclusion is the following: Few experiments have been done using social influence to change behavior. Some experiments have been done in the following fields: team work, sun block usage, towel reuse, energy consumption, curb garbage, group helping behavior, alcohol usage, and team performance. Most of these interventions prove to be effective and the

typically result in an effect size of 10-40%, with most around 20%. Clear guidelines or mechanisms are not distilled from these experiments. There seem to be few interventions in a corporate setting, and I could not find any interventions done within an IT strategy setting.

It can be argued that other experiments have been done besides the ones that are presented in this thesis. Often there is a problem with these interventions, as the results from these experiments cannot be clearly attributed to norms. For example, a large scale intervention, which is a type of workshop with a large part of the organization involved, might raise the norm. The effectiveness of such intervention is not often quantified. This makes it hard to say if there is impact at all. Another complication is that such intervention does not isolate the effect of social norms, as other aspects are also influenced by the intervention. The effect might come from other variables which are also influenced. This literature is thus hard to use in this study and therefore chosen not to be used.

## 6.2. SEVEN SOCIAL NORM INTERVENTIONS

### 6.2.1. SEND MESSAGES THAT CHANGE THE PERCEPTION OF THE NORM

The first intervention changes the perception of the norm via a message. With messages that change the perception of the norm, we mean that new information that leads us to believe that a certain norm holds. For example, hearing that all your friends except for yourself, have filled in a petition, might change your perception of the norm and motivates you to act. I will illustrate this by some examples from literature.

An intervention which uses these kinds of messages is used in hotels to increase towel reuse: Some hotels want to increase the towel reuse of their customers. In the normal situation a note is placed in the hotel room asking the guest to reuse their towel, for environments sake. In the norm intervention, the note is replaced by a note which says: "75% of the people in this room reuse their towels". This results in a 20% increase in towel reuse (Goldstein, Cialdini et al. 2008).

The same has been done for sun block. People received either information about risk of sunbathing and the use of sunblock or information about sunblock use by other people (the norm). The norm situation effectively changed their sunblock usage (Mahler, Kulik et al. 2008), just like the hotel towel, there was a 20% increase in sun block use. Another intervention is alcohol usage in college students. From these examples some conclusion can be drawn. First, multiple carriers of information can be used, like notes, face-to-face, computer, mail or other. It is not clear which are most effective and in which situation each of them is most effective. Secondly, messages work in a variety of behaviors for different social groups.

### 6.2.2. RECRUIT LEADERS THAT SET A NORM

A second form of changing the norm is more implicit. A leader, role model of high performer, can function as a "norm setter". The workings of a leader as a norm setter can best be felt with

the following example. Imagine that Jim, good friend, star employee and project leader works one hour extra on Wednesday, while another low regarded employee who never finishes his work leaves early; whose norm are you following? If act like most people you will follow Jim and also work an hour extra. In this section I will show what literature has to say about leaders and high performers that set the norm. Unfortunately, the literature is scarce.

People tend to conform to leaders and high performers. The first evidence comes from an experiment with student groups. In this setting teams are formed and the leader either sets high or low collaboration norms. The other team members themselves have either high or low norms. It shows that the norms of the leader have most influence on the actual team behavior (Taggar and Ellis 2007) largely independent of the norms of the other team members. This illustrates that leaders set the norm.

An even more persuasive study was done in a real life setting. In a manufacturing company, people were working alone. They then received the opportunity to work in teams. Some employees joined the teams, some did not. For each team and individual the productivity before and after joining a team was measured. Upon statistical analysis it shows that team productivity is more dependent on the high achievers than on the low achievers. It was concluded that the high achievers were better at setting and maintaining a high productivity norm (Hamilton, Nickerson et al. 2003). Again the conclusion: one person, a leader or a high achiever can have a significant influence on the norm.

### 6.2.3. MAKE DESIRED BEHAVIOR PUBLIC

In this section the interventions “making desired behavior public” is explained. This is an intervention which is based on the mechanism of anonymity. Anonymity refers to being publically unknown. In this context, a person is considered anonymous when people do not know you or when you do not perform a certain type of behavior. Social norms are by definition socially motivated; it makes sense to imagine that if behavior is private, social norms are less effective. This is exactly what research shows.

The first example is a classical study on conformity. Ash’s classic experiment on conformity shows the following. Four people, one participant and three actors, are placed inside a room. They are asked to assess the length of lines on a piece of paper and judge which is the longest. People who perform this test alone tend to do this correctly 95+% of the time. If the three actors, purposely mention the wrong line, about 30% of the participants will also join the incorrect opinion of the group; they thus conform to the opinion of the group. This is quite strange, because people have no problem assessing the correct line. Still, even though they know which line is correct, they agree to the standards of the group.

When the participants were to give their answers anonymously, the conformity dropped to close to zero (Brock and Green 2005). Removing anonymity can thus raise conformity to norms.

The effects of Ash's experiment were found independent of whether the participant knew the actors, or if the actors could punish the participants. People just conformed to a group that they didn't know, and could not punish them. Ash's experiments have been performed in many forms and the results seem solid.

Another study suggesting the effects of anonymity is done by Schofield. Schofield asked people to join in a voluntary study where the norm was either absent or present and their choice would be presented either public or kept private. As predictable: when their behavior was published, people tended to conform more to the norm of joining the voluntary behavior. (Schofield 1975).

Both interventions show that making behavior public results in people complying to the norm.

#### 6.2.4. MONITOR AND GIVE FEEDBACK

Monitoring and feedback is another intervention that makes people follow the norm and act on it. Monitoring and feedback means getting information about your own behavior in comparison with the norm. I will illustrate this with an example that shows the difference between just setting the norm and making people monitor the norm. Setting a norm for energy usage can be done by messages. One can inform people what the average energy usage of the neighborhood is. One can make people experience the norm by monitoring them and providing feedback. One can send them a note saying how much energy they used compared to the norm. This is called normative feedback. This will show the effects of using monitoring and feedback in multiple interventions.

The example of the energy usage is actually executed. People got a note on their doors informing their energy use compared to the neighborhood averages (Schultz, Nolan et al. 2007). As predicted, people adjusted to the norm. This however didn't result in overall lower energy consumption. Both the high energy spenders conformed to the norm (by using less), as the low energy users conformed by started using more. The average saving was 1,72 KWh in the long term for the high energy users, which is a strong significant lowering of use.

Alcohol usage tends to be high at college students. Social norm interventions have been done to decrease alcohol misuse. Students consider it normal to drink a lot. In this case, the actual drinking behavior is lower than what students think it is. Students thus think the descriptive norm is higher than it is. For example, most students think their friends drink 8-10 drinks on a night, while their friends actually only drink 5. Students who received feedback about their behavior compared to the norm showed a decrease in alcohol misuse. Thus, students are affected by the messages of the social norm. This is concluded in a meta study of 22 studies with 7275 participants (Moreira, Smith et al. 2009). The alcohol studies is the most thorough and repeated study of changing the perception of the norm. In the alcohol misuse studies,

multiple forms of normative feedback are used. It has been tested via the web, face-to-face and via mail. All forms seem to work, where via the web is considered the cheapest and just as effective as the others.

The same has been tested with curb collection (Schultz 1999), production norm (Schultz, Juran et al. 1999) and in group helping behavior for productivity norms (Bamberger and Levi 2008). These show similar results as drinking and energy usage. In curb side collection people got feedback via a door hanger, this resulted in significant increase in the participation and total amount of recycled material. In the papers about the production norm, the authors argue that social norms apply in small groups because people can monitor each other. The monitoring ensures the effectiveness of the social norm.

This evidence shows that social norms can be strengthened by monitoring and giving normative feedback. This results in a significant improvement in social norm in a multitude of behaviors.

#### 6.2.5. PROMOTE AND ALLOW PEER PRESSURE

This intervention doesn't seem to be researched at all. It was mentioned by another norm researcher V. Schot. The intervention will work as follows. People who already perform the desired behavior are asked to put pressure on the peers who do not perform the desired behavior. It is expected that this intervention will result in higher compliance with the norm. I couldn't find any literature supporting this intervention. I do expect it to work, because it is likely to increase the sense that one is monitored, which is researched and considered effective.

#### 6.2.6. ADD GROUP INCENTIVES

Group incentives can raise group norms. Multiple authors suggest that group incentives can increase group performance via group norms. In the example giving in the introduction, it can be seen that when there is a group benefit from a certain behavior, the whole group will cooperate to enforce this behavior. In the case of a soccer team, the entire group benefits if other players join the training, this will give them incentive to use group pressure to ensure people come to training. Group pressure based on this mechanism is also found in organizational settings.

If a company changes performance management from individual incentives, to group incentives, an increase in average performance is seen. One of the mechanisms of how this works, is via elimination of the free rider (Hamilton, Nickerson et al. 2003; Taggar and Ellis 2007). If there is a group incentive to perform, and one of the group members fails to contribute to this performance, the other group members are likely to pressure him into cooperating (Fehr and Fischbacher 2004; Fehr and Fischbacher 2004). Also, when in a team, you don't want to let down the other members and thus tend to try to keep up realizing the performance. As one of the authors from the journal states: "Free-riding may be mitigated by

peer pressure to achieve a group norm". Such norms may arise, we argue, from intra team bargaining in which worker heterogeneity affects group norms through different threat points among workers".

Thus, raising group incentive might increase performance and adherence to high group norms. The group incentive doesn't have to be financial, as can be seen in the soccer example. Currently, there seems no literature which states that non-financial team incentives are considered effective, but there is also no proof for the opposite. I expect that non-financial group incentives also work to increase team performance or adherence to team norms. For example, removing anonymity for the performance of a team might work as well as financial team incentives.

#### 6.2.7. GIVE MEANS FOR SOCIAL PUNISHMENT OR REWARDS

In literature some other interventions are found. It is problematic considering these interventions pure norm interventions. These interventions can be called incentive based interventions. Complying or non-complying with norms can result in punishment or reward. This punishment or rewards can be either financial or socially. It is hard to draw the line and determine which interventions are still norm interventions and which aren't. For this thesis, if the norms are enforced by financial incentives, it is not considered a normative intervention. If the norms are enforced by social incentives, it can be considered a normative intervention. Norms are inherently social, and the social gains such as approval or rejection can be considered norm interventions.

Literature shows that giving the possibility for social punishments leads to adherence to social norms. It is thus expected that increasing social incentives when complying with a norm or social punishment when failing to adhere to the norms, will be effective interventions (Gächter and Fehr 1999; Fehr and Falk 2002; Fehr and Gächter 2002; Fehr and Fischbacher 2004; Fehr and Fischbacher 2004).

### 6.3. DESIGN CHOICES

All interventions which suited the norm intervention definition which could be found in academic literature have been collected and discussed in the past chapter.

It is chosen to base the interventions on academic literature. Academic literature ensures that the interventions are likely to have an effect, it adds to the credibility. Other sources could have been popular literature or experts. As the interventions form the foundation, and the foundation has to be credible for good quality, academic literature is selected as the main source. Peer reviewed articles are considered very reliable and thus proof a better foundation than the less credible sources.

It is chosen to focus on general psychology literature for interventions and not specifically IT strategy. The reason is that within IT strategy there is only limited information on norm interventions, too limited to be useful for our goal. Further, the general psychology literature is sufficiently large and mature on norms and norm intervention.

It also has been chosen to make no selection (at first) on norm interventions which can be used in IT strategy. All interventions intuitively make sense in an IT strategy setting. Only during experts interviews it turns out that some intervention might be less appropriate. Thus the entire list of intervention is used for further development of the tools.

The final decision was to merge some of the interventions into one category in the sections of this chapter, for example: messages about the norm contain multiple types of interventions. Because they follow the same logic, it is chosen to group them in the section above. In the final tool, these interventions are handled separately.

#### 6.4. CONCLUSION

Within social psychology, some research has been done on social norm interventions. The research field is active, but scattered. There seem to be little overlapping theories or descriptions of the mechanism of social norms interventions. There is an interesting body of knowledge, when taken together, can be used as a toolbox of social norm interventions. In total, 7 types of social norms interventions are found in literature. Each of these types seems relevant for IT strategy situations:

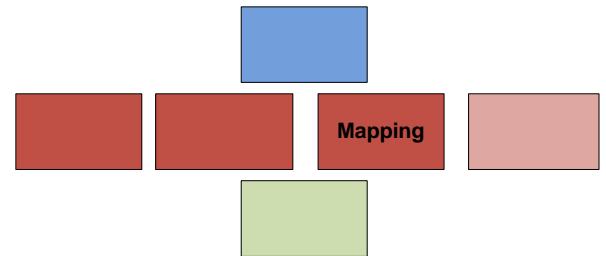
- 1) Send messages that change the perception of the norm
- 2) Recruit leaders that set a norm
- 3) Make desired behavior public
- 4) Monitor and give feedback
- 5) Promote and allow peer pressure
- 6) Add group incentives
- 7) Give means for social punishment or rewards

These interventions cannot be directly used out of the box. These are generic interventions and can be executed in different ways. They can be seen as blueprints for interventions.

Although each of these social norm interventions seem relevant for IT strategy situations, most of them are never investigated in corporate settings. In the available literature there is no hint at why these interventions cannot work in such settings.

## 7. WHICH IT STRATEGY SITUATION REQUIRES WHICH NORM INTERVENTIONS?

In past chapter, three categories of norm interventions are distinguished: setting the norm, monitoring the norm and enforcing the norm. In total 7 types of norm interventions are discussed.



It is necessary to build a mapping which maps for each situation which norm interventions are most effective.

There are two main reasons for this, first it turns out that for some situations some norm interventions are more suitable than other norm interventions. For example, removing anonymity in a situation where most people do not perform the desired behavior will most likely result in the boomerang effect (Cialdini 2003). Thus, the opposite of what is desired can happen if the wrong intervention is used in a situation. There is another argument for having a mapping for interventions. A list of 7 interventions is impractical at best. Consultants will have to choose from 7 interventions, which is a lot. Making it easier to choose an intervention will be useful for practical application. For these two reasons, it is useful to look into the next research question: “Which IT strategy situation requires which norm intervention?”

In this chapter a mapping is proposed for IT strategy situations and interventions. The result is a mapping between different situations of an IT strategy and the relevant norm interventions for these situations. In this chapter the improvements of the mapping are also discussed. Improvements are based on discussions with three experts on change management.

### 7.1. THE RESULTING THREE VARIABLES WHICH DETERMINE THE RIGHT INTERVENTION

The overall goal of this chapter is to find the variables that are useful to select the right interventions for a situation. An analysis is done to find which variables determining the usability of an intervention. The analysis can be found in appendix 4. The result is that there are three useful variables:

- Actual performance
- Descriptive norm
- Subjective norm

The three variables above are useful variables to considered when selection a norm intervention in an IT strategy setting. An example to demonstrate the usefulness of actual performance as a variable is presented: If actual performance is high (many people perform the desired behavior), it is wise to communicate this: “67% of the people communicate with another department at least once a week”. Communicating the performance in a low performance setting will often backfire: “15% of the people communicate on a weekly basis” is



likely to result in less people to communicate instead of more. Thus, actual performance is a useful variable.

Much effort has been put into having a good process of building the mapping. The process involved looking at multiple variables, doing checks for these variables and testing different forms of mappings. For more details on how the variables are found and built into the mapping, please read appendix 4.

## 7.2. PROPOSED MAPPING

The process of finding the mapping resulted in the following. It seems that most interventions are hard to execute if the subjective norm is low. Thus, a high subjective norm situation is a necessary pre-condition. If that is the case, most interventions are possible to carry out. This will now be further discussed.

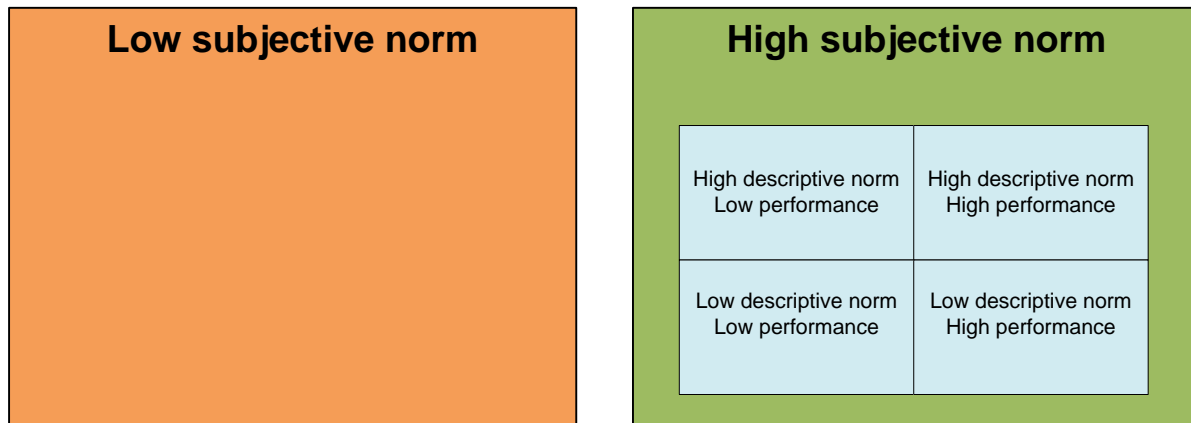


FIGURE 10: FINAL MAPPING

### 7.2.1. GETTING A HIGH SUBJECTIVE NORM

The subjective norm can either be low or high, and independent on the other variables, the same interventions have to be executed in the low and high situation. The subjective norm is the start point, remember that the subjective norm is “behavior what is thought to be considered the right behavior by relevant peers”. If there is a low subjective norm, one could argue that people don’t even intellectually know that it is deemed important by others. People should at least know what is expected from them. Thus, start with bringing the subjective norm to acceptable levels makes sense. Later interventions might involve making the behavior public, or giving feedback about the norm. If at that moment it comes as a surprise that the behavior is important.

With a high subjective norm, the norm doesn’t have changed. With a low subjective the subjective norm has to be changed by an intervention. Communicating the norm would be the

first step here. As seen in the chapter on interventions, multiple means of communication can be used to communicate this norm.

### 7.2.2. THE MATRIX

The second part of the mapping is that of the descriptive norm and performance. The subjective norm should be high before continuing with this part of the mapping.

The next table contains a summary of this section. In this section the interventions will be described for each of the situations. Remember, the subjective norm is high in each of these situations.

<p><b>High descriptive norm, low performance</b></p> <ul style="list-style-type: none"> <li>• Give means for social punishment or rewards</li> <li>• Monitor and give feedback</li> <li>• Promote peer pressure</li> </ul>	<p><b>High descriptive norm, high performance</b></p> <ul style="list-style-type: none"> <li>• Add group incentives</li> <li>• Recruit leaders that set a norm</li> </ul>
<p><b>Low descriptive norm, low performance</b></p> <ul style="list-style-type: none"> <li>• Send messages that change the perception of the norm               <ul style="list-style-type: none"> <li>• About peers who perform the behavior</li> <li>• Lie about the actual performance</li> <li>• Use a reference group with high performance</li> </ul> </li> </ul>	<p><b>Low descriptive norm, high performance</b></p> <ul style="list-style-type: none"> <li>• Make desired behavior public</li> <li>• Send messages that change the perception of the norm: Communicate actual performance</li> <li>• Normative feedback: tell people they fail to meet the performance norm</li> </ul>

TABLE 6: FINAL MAPPING WITH NORM INTERVENTIONS

### 7.2.3. LOW DESCRIPTIVE NORM, LOW PERFORMANCE

This is a difficult situation. Most people do not perform the behavior and this is (accurately) known by most. Possibilities are:

- Send messages that change the perception of the norm
  - About peers who perform the behavior
  - Lie about the actual performance
  - Use a reference group with high performance

### 7.2.4. HIGH DESCRIPTIVE NORM, LOW PERFORMANCE

There is a mismatch between actual and perceived behavior. People think others do more than they actually do. In this case, removing anonymity or communicate actual performance would result in communicating a low descriptive norm and potentially actually lower performance (boomerang effect).

- Give means for social punishment or rewards
- Monitor and give feedback

#### 7.2.5. LOW DESCRIPTIVE NORM, HIGH PERFORMANCE

There is a mismatch between the actual behavior and perceived behavior. People think others aren't performing while they do. Possible interventions in this case are:

- Make desired behavior public
- Send messages that change the perception of the norm: Communicate actual performance
- Normative feedback: tell people they fail to meet the performance norm

#### 7.2.6. HIGH DESCRIPTIVE NORM, HIGH PERFORMANCE

The descriptive norm is high and so is performance, further increasing performance can be done via two interventions:

- Add group incentives
- Recruit leaders that set a norm

### 7.3. IMPROVING THE MAPPING

To ensure a validated and high quality mapping the mapping has to be improved. It is chosen to interview experts to do this. Other methods for improvement and validation are quantitative validation. Unfortunately, there were no resources available to validate the mapping in a quantitative method. Experts can also help to evaluate the mapping, experts can help to validate and see limitations of the mapping based on their knowledge and experience.

In total three experts are asked to discuss the mapping and the use of norm interventions in an IT strategy setting. The experts were presented the list of intervention and the proposed mapping as shown in figure X above. They were not given the final version of the tool. Based on the list of interventions and the proposed mapping, the experts were asked their opinion about the completeness and correctness of the list and mapping. In this chapter, the improvements of the mapping based on the discussions with these experts are presented. In this chapter the result of these discussions are grouped in four themes.

- **Theme 1 - Improving the mapping:** This is a change in the mapping itself.
- **Theme 2 - Improving the usability:** These changes are more superficial, as the mapping will not be changed, only the representation.
- **Theme 3 - Limitations of the mapping:** These are discussed.
- **Theme 4 - Useful addition:** The final theme is the presentation of a useful addition.

First, the overall conclusion of the discussions is presented.

### 7.3.1. THE OVERALL MAPPING IS SUFFICIENT, BUT SOME IMPROVEMENTS ARE NECESSARY

It seems based on the discussion that the overall mapping seems correct. The mapping should help consultants to evaluate which intervention is most suitable for their situation. The mapping seems complete as there are no interventions missing. Some changes are necessary for better usage. It should become more clear that most interventions can be punishment or reward focused. The usability of the tool can be raised by having better definitions as the definitions used in the mapping can be confusing. The usability can be further improved by also describing the expected effects of each of the interventions. Finally, the mapping only incorporates three variables of the situation, while many others can be relevant. It should be clear to the users of the interventions that the mapping is just preliminary and that the mapping is limited in its predictive power. Adding experienced change consultants to a project team can mitigate this problem. The mapping might be extended in the future to incorporate selection of the norm to influence, as not all norms will be suitable to change via norm interventions.

### 7.3.2. IMPROVEMENT ON MAPPING: ADDING POSITIVE INTERVENTIONS AND REFORMULATING INTERVENTIONS TO ENSURE COMPLETENESS OF THE INTERVENTIONS LIST

The first theme, improvement on mapping, is the only theme with changes in the mapping itself. The conclusions surrounding this theme based on the discussion with experts is now presented.

According to experts, the list of interventions seems fairly complete. Multiple interventions for multiple situations are discussed. It seems that the interventions are primarily based on punishment and failing to meet the norm. It is argued that norms might also work by motivating and are used “positively”. Thus, instead of failing to meet the norm, succeeding into joining the group that does meet the norm! This punishment and negative orientation which is the current basis of the list of intervention is not inherently caused by literature it is based on. Literature seems neutral about norms, not describing it punishment oriented or reward oriented [source]. The impression of the interventions being negative is most likely caused by the explanation given during the interviews. In the mapping and the eventual tool, it is important to stress that norms can be both rewarding and punishing.

### 7.3.3. IMPROVEMENTS IN USABILITY

The second theme, improvement in usability, will discuss changes in appearance or guidelines surrounding the tool. There are three aspects which are discussed in this theme:

- Importance of other factors which aren't incorporated in the tool
- Explaining the effects of each interventions
- Better define the variables used in the mapping

## **Consultants must be aware of other important factors to assess which intervention is chosen**

The mapping contains three factors to assess the situation. This gives an initial overview of the situation and helps assess which intervention is suitable. Many other factors are also relevant. Users of the mapping should be made aware of these factors so they can take these into account as well.

Two factors are suggested in the discussion with experts which are considered relevant to add as a reminder for the consultant: Escalation level, intervention style/school.

When selecting interventions, it is important to pick an intervention type. Depending on the company and the current phase of the project, the overall type of intervention is often chosen according to one of the experts. For example, a learning approach or a punishment/reward approach can be selected. Depending on the type of intervention chosen it can be more or less suitable to pick an intervention or norm interventions as a whole. For example, norm interventions, might be a useful addition to punishment or reward, but less useful in a learning situation. Robin suggests that incorporating intervention type might be useful for the mapping.

The escalation level of the situation is also relevant. In some situations participants do not know that some behavior is expected from them. In that case the level of escalation is low. In other situations people know there are negative consequences from not complying with the expected behavior. In the second case, the level of escalation is already high. It is argued by the author that if the level of escalation of the intervention does not roughly match the level of escalation of the situation, people might have resistance to the intervention. For example, if the level of escalation is low, i.e. people don't know it's expected to be at work before 9:00. If then the first intervention would be: publish a list of people who are late. People might feel betrayed or treated unfair. They didn't know it was that important. For them it feels like they are punished out of the blue! Thus, there is an indication that taking the level of escalation into account might improve the mapping.

## **Explain the effects of each intervention**

Currently, for each intervention it is shortly explained what it is. For each intervention will be added what expected effect it is expected to have. This will make the mapping more easy to use as it is clear what the expected results are. An example of this might be: "The effect of using normative feedback is that participants tend to converge to the norm. People who are above the norm, tend to lower their efforts, people who are below the norm tend to increase their efforts". It is expected that this helps consultants to better choose the right interventions.

## **Better define the scales**

In the current version, it might be unclear what for example “high descriptive norm” means. Especially if the norm is a negative one like: “not using forbidden software”. What does it mean when the descriptive norm is high on not using forbidden software? This is too complex and not easy to understand. Currently, no clear solution is found for limiting this confusion.

#### 7.3.4. LIMITATIONS OF THE MAPPING

The third theme is limitations. The experts discussed some limitations of the tools; these are now discussed in two short topics.

##### **Mappings are limited and this should be communicated clearly to avoid misusing interventions**

A word of caution will be added to the mapping. The mapping is merely a first assessment to give initial direction, not a final verdict. Reality is very complex and the mapping can never encompass the complexities of the situations it will be applied to. Consultants who use the mapping must be highly aware of these limitations. If interventions are used in the wrong way or wrong situations the results might be opposite of what is desired.

##### **Experienced change consultants should be on the project team**

Interventions are considered hard to choose. It can be hard to judge which intervention is suitable. Although the mapping is supposed to give guidance to the consultants, it is still possible to select or implement an intervention which has undesirable results. Experienced change consultants have developed the intuition and knowledge to better assess the outcome of interventions. Experts can take into account many more variables than a mapping. Variables such as: interplay of interventions, culture, timing, etc. If in doubt about the chosen intervention or the execution of such intervention, it might be wise to add an experienced change consultant to the team.

#### 7.3.5. FUTURE ADDITIONS: HELP CONSULTANT ASSESS WHICH NORMS TO INFLUENCE

The fourth and final theme is future additions. One idea for future extension came forth from the discussion, that idea will now be presented.

In an IT strategy project there will be multiple relevant norms. There will be performance norms, effort norms, teamwork norms, decision norms to name a few. Not all of these norms will be good candidates to influence. Based on the situation, but also the norm itself the norm can have more effect on the outcome and can be easier or harder to influence. Based on literature it is known that for example socially oriented norms have a larger correlation with behavior. Thus, these kinds of norms are more likely candidates to show a significant result from the interventions than behavior which isn't socially oriented. An example for the situation, it seems that behavior which already has a bit of performance has better impact from norms

than situation where the performance is low. This aspect is covered in step 1 of the tool. This step was at the moment of interview was not developed. Based on this interview, this part is added to the tool. Design choices

It is chosen to use a mapping which is relatively simple to use. Also, mappings such as the 2x2 matrix which is used in this thesis are often used in business to reduce complexity which is useful in this situation.

There are multiple ways to do this. For example, a list of relevant situations for each intervention could be written down. Or the expected result for each intervention for each situation could be explained. Each variable is divided in high and low situation. As these variables are continuums, there would have been other possibilities. For example, splitting into high, medium and low, or make it an even smoother scale. For reducing complexity a high/low scale is chosen. With three variables this results in maximum of 8 situations instead of 27 with a 3 part scale. Other methods which could have been accessible are also considered. For simplicity it is chosen to use the high/low scale.

Another choice for this chapter is to avoid complexity traps such as defining what exactly is a high subjective norm or low subjective norm. Also the tipping point (from low to high) is remained vague. The main goal is not to determine exactly what the tipping point is but to give consultants a tool to select what interventions are suitable in their situation. A rough guide or mapping is sufficient for that situation.

#### 7.4. CONCLUSION

The goal of this chapter was to make it easier to find the suitable intervention for a situation. A mapping shows to be an appropriate support to. Based on an analysis of the literature three appropriate variables are found for an intervention:

- Subjective norm
- Descriptive norm
- Actual performance

The resulting mapping was tested by three experts on change management. During an interview they concluded that the mapping is logical, complete and useful. They warned that the mapping should not be used by people who have little understanding of change, and that such a mapping comes with limitations, as reality is too complex for a mapping to deal with. Based on the discussion the initial mapping is improved in some ways:

- Consultants must be aware of other important factors to assess which intervention is chosen

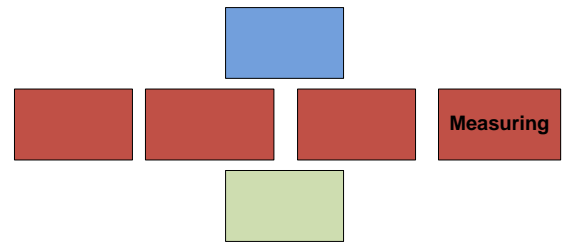
- Explain the effects of each intervention
- Better define the scales

Finally, one of the experts noted that the mapping did not provide any guidelines to determine which norms or behavior should be changed. Based on this note, step 1 of the tool is developed. The result can be found in Chapter 4 about which norms to select.



## 8. MEASURE THE CURRENT SITUATION IN ORDER TO DETERMINE THE MOST SUITABLE NORM INTERVENTION

We have shown that three variables are necessary to determine which norm interventions are most suitable. The three variables are: subjective norm, descriptive norm and actual performance. In order to use the mapping in real IT strategy situation, a situational analysis is necessary.



A Questionnaire is used to measure the variables. Two of the three variables that we would like to measure are norms. Norms are by definition perception, and perception can be well measured with a questionnaire. Further, measuring in our case should be relatively easy as there is no time for more elaborate measuring. Preferably, the tool should work as a thermometer, instantly giving the temperature. IA questionnaire offers a “quick” way to measure norms and performance.

Figure 14 shows the structure of this chapter. The three steps that lead to the final questionnaire are represented in blue.

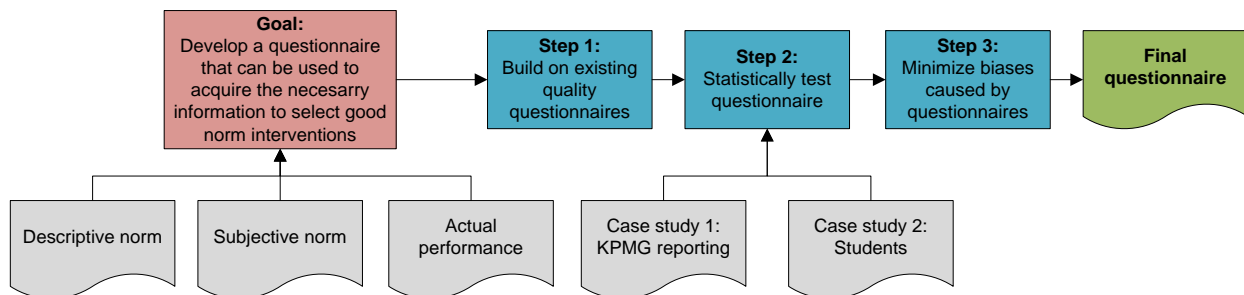


FIGURE 11: PROCESS DIAGRAM - DEVELOPING THE QUESTIONNAIRE THAT COLLECTS DATA TO DETERMINE THE RIGHT INTERVENTION

### 8.1. THE FINAL RESULT: THE QUESTIONNAIRE

The final questionnaire contains 4 constructs and 1 check: Subjective norm, descriptive norms, and individual and team performance and as a check: respondent information. Each construct exists of a set of questions. To ensure accurate scores and good validity, the questions in the constructs are carefully chosen. The questions have been selected as follows. Firstly, selection of a question is based on questionnaires used in other relevant research. Further, the questions are tested in two case studies. Finally, the questionnaire is adjusted via an analysis of reduction of common biases. The final questionnaire can be found in appendix 3. Table 7 gives a summary of the final constructs:

Construct	# questions	Example question
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Subjective norm	8	Ik vind het goed als andere regelmatig bezig gaan met het IT project
Descriptive norm	6	Ik zie collega's regelmatig bezig met het IT project
Individual performance	4	Ik ben blij met de kwaliteit van het werk dat ik lever aan het IT project
Team performance	5	Het team werkt snel en efficiënt
Respondent information	Any	Ik ben project manager/teamlid

TABLE 7: SUMMARY OF FINAL QUESTIONNAIRE

All data will be collected via questionnaires. It can be argued that “harder” data is better but unfortunately these are not readily available for norms. Sometimes these are available for performance, but there is a need for a more general approach. This forced me to use only questionnaires, with all the disadvantages thereof. Because we need as realistic results as possible, we have chosen spend considerable effort in making the questionnaire as good as possible.

## 8.2. BUILT ON EXISTING QUESTIONNAIRES

The final version of the questionnaire is a combination of three questionnaires that were used in other investigations. All three constructs, subjective norm, descriptive norm and actual performance are commonly found in literature. This enabled us to make use of existing questionnaires. In chapter 4 the constructs of subjective and descriptive norms have been discussed. It became clear that they are well defined and well researched concepts that can relatively easy be adopted. In most of these papers, actual behavior or actual performance is a construct. Thus, all three concepts are commonly found, used and defined in other research, and can thus easily be adopted

Many papers in the literature on norms use the same sort of questionnaires. We have chosen for a questionnaire which uses a 5-point Likert scale. An example of a 5-point Likert scale is presented in table 8. Most of the norm research papers use self-evaluation forms with Likert scales to measure norms (Priebe and Spink ; Putte, Yzer et al. 2004; Nolan, schultz et al. 2008). In these questionnaires, each of the norm constructs is supported with 4-8 questions. Conveniently, most research is done with the constructs subjective and descriptive norms (Manning 2009). They can thus easily be used for our tool.

The final result is a questionnaire based in 5 point Likert scales with two norm constructs. The first is descriptive norm, which exists of 6 items (questions), and secondly subjective norms which exists of 8 items (questions).

Question	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I enjoy reading this thesis					X
This thesis is of high quality		X			
The thesis is of academic quality			X		

TABLE 8: EXAMPLE OF A 5-POINT LIKERT-SCALE

The second type of questionnaire is used to measure performance. IT project research often uses self-evaluation questionnaires to measure individual, team or project performance. Individual performance is eventually chosen from Rego and Chunha, who use a measure of self-reported individual performance (Rego and Cunha 2008). They have again based their questionnaire on previous papers. This resulted in the third construct, that of individual performance with a five-point Likert-scale existing of four questions. In the final version, four more questions are added for accuracy.

Finally, team performance is added. Team performance is used in multiple papers (Patterson, Carron et al. 2005) as an important construct in IT projects. It is also measured on a five point Likert scale. It exists of five questions.

A few changes had to be made to the questionnaires. Firstly they were translated into Dutch and secondly they had to be rephrased to IT strategy settings. It was then checked by multiple colleagues to ensure no translation errors were made.

### 8.3. STATISTICALLY TESTING THE QUESTIONNAIRE

To improve validity and quality of the questionnaire, it has been tested twice. The first test is executed at KPMG. The second test is performed with students. In the first the statistical test consisted of testing construct validity, more specifically an internal validity test via Chronbach alphas. In the second test, two aspects where considered.

#### 8.3.1. TEST CASE: KPMG

The questionnaire was first tested at KPMG. Ideally an IT strategy setting should be used but this was unfortunately not possible. Therefore I used another topic where personal effectiveness is relevant. The topic of the first case is the following: The extents to which people finish documenting before they send out a rapport to a client. In discussion with a partner (most senior level within KPMG), I found this problem. This problem can also be related to norms, thus I could use this case to test my questionnaires within KPMG. I have sent the questionnaire to 35 people via e-mail; I've got 12 respondents (34% response rate). This was lower than expected and desired, but sufficient to do preliminary internal validity tests.

In this version of the questionnaire, four types of norms were tested (explicit norms, subjective, injunctive norms, descriptive norm). Only one measure for performance was used and that is individual performance. The results of this test run are presented in table 9.

Measure	Chronbach	Remarks
Explicit norm	0,5	
Subjective norm	0,85	Deletion of question "Ik denk dat het juist is om regelmatig bezig te gaan met".
Descriptive norm	0,771	
Injunctive norm	0,822	
Injunctive & subjective combined	0,8	Deletion of question "Ik denk dat het juist is om regelmatig bezig te gaan met"
Individual performance	0,922	

TABLE 9: QUESTIONNAIRE INTERNAL VALIDITY VIA CHRONBACH ALPHA IN KPMG CASE

Concluding, it can be said that the constructs have a high internal validity according to the Chronbach alpha measure. According to some sources, a Chronbach alpha higher than 0,7 is sufficient (Wikipedia 2010). Some argue that 0,6 can be considered sufficient in some cases, but I would consider that too low. Further, it is considered that a Chronbach between 0,8 and 0,95 is ideal (Peterson 1994). The aim is therefore to achieve those Chronbach Alphas. Some of the measures could be combined such as the injunctive and subjective measure, and then they still hold a high Chronbach alpha.

In the final version the explicit and injunctive norms were dropped. At the time of testing it was not sure what the final three variables to measure the situation were. The test resulted in three constructs with validity above 0,8 which is ideal: subjective norm, descriptive norm and performance.

A funny observation, although there were only 12 participants (a too small group to do a correlation analysis): there seems to be a correlation between the descriptive norm and the subjective performance of the participants, with a significance of 0,09.

### 8.3.2. TEST CASE: STUDENTS

The second case involved students. A group of 300 students between the age of 16 and 28 was sent an email asking to fill in the questionnaire. This resulted in 62 respondents. It was the same questionnaire as has been sent within KPMG. The only difference in the questionnaire was that the subject is changed from reporting to studying. The students were asked about the study norms and their own study behavior. Because there were enough respondents for a more complex analysis, two analyses could be done. The first was another internal validity

check and the second a regression analysis, in order to see whether the concepts were not too much related and gave additional variance.

Measure	Chronbach	Remarks
Explicit norm	0,826	
Subjective norm	0,676	To low
Descriptive norm	0,721	
Injunctive norm	0,761	
Injunctive & subjective combined	0,828	
Individual performance	0,907	

TABLE 10: QUESTIONNAIRE INTERNAL VALIDITY VIA CHRONBACH ALPHA IN STUDENT CASE

Subjective norm can be considered too low. But when combined with injunctive norm it is within the ideal range. Descriptive norm is a bit on the low side. Therefore I chose to include two more questions related to descriptive norm in the final version of the questionnaire. These are based on a discussion with an academic who is also studying norms (Vincent Schot).

An additional analysis is performed. This is an analysis of the regression between the constructs. There is a positive correlation between individual performance and each of the norms, all highly significant (see next table). But descriptive norm and explicit norm are highly correlated among each other. This indicated that they individually have a relationship with performance, but maybe not when taken together. In other words, looking individually, explicit norm seems to have a relationship with performance, but maybe when taking into account explicit norm, this relationship might fade, because all the variance is determined by the overlapping aspects with between subjective and injunctive norm.

#### Correlations

		collect_explicit	collect_descri	collect_subject	collect_result
collect_explicit	Pearson Correlation	1	,389**	,373**	,370**
	Sig. (2-tailed)		,003	,004	,004
	N	58	58	58	58
collect_descri	Pearson Correlation	,389**	1	,164	,425**
	Sig. (2-tailed)	,003		,218	,001
	N	58	58	58	58
collect_subject	Pearson Correlation	,373**	,164	1	,338**
	Sig. (2-tailed)	,004	,218		,009
	N	58	58	58	58
collect_result	Pearson Correlation	,370**	,425**	,338**	1

Sig. (2-tailed)	,004	,001	,009	
N	58	58	58	58

\*\* Correlation is significant at the 0.01 level (2-tailed).

TABLE 11: QUESTIONNAIRE CORRELEATION BETWEEN CONSTRUCTS

This can be found by doing a regression analysis. The result can be found in the following table. The effect of the explicit norm turns out insignificant when taking into account the descriptive norm. This is another suggestion that the explicit norm is useless in this study.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,284	2,056		2,569	,013
	collect_explicit	,134	,071	,241	1,877	,066
	collect_descri	,351	,137	,331	2,573	,013

a. Dependent Variable: collect\_result

TABLE 12: QUESTIONNAIRE REGRESSION TEST1

It is expected that when doing the same for descriptive and subjective norm, both will have a considerable effect on the individual performance. If this is not the case, there might be statistically no difference between the two. Fortunately, subjective and descriptive each have a significant effect on performance in the case of students.

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,463	3,364		,138	,891
	collect_descri	,403	,125	,379	3,213	,002
	collect_subject	,447	,191	,276	2,335	,023

a. Dependent Variable: collect\_result

TABLE 13: QUESTIONNAIRE REGRESSION TEST

Concluding notes on the regression. There seems to be no statistical significance use in adding explicit norms to the research model. Further, descriptive and subjective norm both have a significant relation between student learning norms and student self-evaluation of their learning performance.

### 8.3.3. RAISING THE RESPONSE RATE

Improving the quality of the research can be done by achieving higher response rates. This has two advantages. First, you make sure you have a representative sample of the group. With a low response rate, you might already select a specific type of people and this might bias your results. Secondly, higher response rate means more responses and this raises the significance of the results.

Briefly, I divided the student group actually in three groups of 100 people. And send them three different messages. The first was an informational message, the second a normative message, and the third a normative message with some enforcement in it. The response rate was as follows. (It doesn't add up to 62 because some were invited via other means).

Message	Respondents	Participants	Response percentage
Informational	16	123	13,0%
Normative	19	121	15,7%
Normative and enforce	22	131	16,8%

TABLE 14: QUESTIONNAIRE RESULTS RESPONSERATE PER MESSAGE

This indicates, although it is not statistically significant, that sending normative emails should raise the response rate. It must be noted that the response rate is still low.

### 8.4. MINIMIZE BIASES IN QUESTIONNAIRE

A much cited article, called "Common Method Biases in behavioral Research: A critical review of the literature and recommended remedies", gives guidance when doing research in Behavioral science. One could argue that my questionnaire is a behavioral science one, and thus the problems and remedies presented in this article should apply to mine. It is thus useful making sure there are as little biases as possible.

The basic premise is that a questionnaire will introduce some biases. And based on the type of measuring and the type of situation these biases will be more pervasive than in other situations. In my situation the chance for biases is particularly high. This section will discuss the potential problems and the remedies I used to minimize them.

The common bias paper distinguishes between four categories of causes for biases: Common rater effects, item characteristics, item context effects, measurement context effect. Unfortunately, this questionnaire is affected by all of these.

The best solution is getting the predictor and criterion variables from different sources or in different context. This means for example that the norm is measured via a questionnaire, and that performance is measured via a performance system. This is unfortunately not possible.

It is also not possible to determine the bias in advance or during the research, therefore it will be hard to take it into account as a statistical variable. Two improvements remain: procedural remedies and single common method factor approach.

#### 8.4.1. PROCEDURAL REMEDIES

- 1) A few things can be done to improve the procedure of the questionnaire. The following aspects are implemented in the questionnaire. Guarantee anonymity: This lowers social desirable answers. This is added to the e-mail which is send.
- 2) Separate concepts mentally: The norms and performance measures are on separate pages and both have an introduction.
- 3) Use different scale: The norms and performance use different scales, the performance uses a 10 point scale
- 4) Use different type of questions: Different wording in norm and performance questions(Podsakoff, MacKenzie et al. 2003).

#### 8.4.2. SINGLE COMMON METHOD

Single common method is a statistical procedure which enables a researcher to account for biases after they did the data collection. More on this method and the results can be found in the data analysis chapter.

### 8.5. DESIGN CHOICES

In this section a measuring tool in the form of a questionnaire is developed. To arrive to this questionnaire some design choices have been made. Some are already described in the section above, other deserve some extra attention.

There are several reasons for using a measuring tool. As argued in the previous chapter, only a rough estimate is necessary, selection of norm interventions is not a hard science. A consultant can also choose or estimate the performance. This would be a faster method, but that has two major draw backs compared to the questionnaire. The first advantage of the questionnaire is that it results in real data that can be used in the intervention. Most of the interventions are based on messages about the norm. The questionnaire can provide data for the content of these messages, as gut feeling cannot. Further, gut feeling is sometimes wrong as there can be a misperception. There can be a low descriptive norm and high performance. This means that there is a misperception of the reality. A consultant is likely to have the same misperception and might conclude a low performance based on a low descriptive norm. Using the questionnaire limits this problem.

Other forms of data collection exist. For this topic, a questionnaire is used. The most important reason is that there seems to be no other means to measure norms. For the actual performance, this is not true; there are many ways to measure the actual performance.



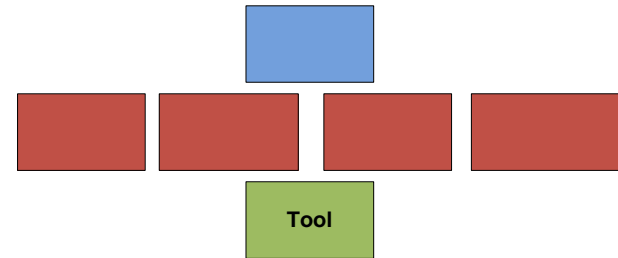
Unfortunately it isn't possible to determine in this thesis for each situation how to collect this data. Out of necessity a questionnaire is chosen. But, if possible it is advised to use different sources of data for the actual performance were possible.

## 8.6. CONCLUSION

How to measure the current situation in order to determine which intervention is suitable? It is possible to measure the three variables which are used in the mapping to determine the current situations. This can be done by a questionnaire which measures the three variables of the situations (subjective norm, descriptive norm and actual performance). This questionnaire is based on the widely used questionnaires, questionnaires used in norm research. Based on the use of other questionnaire I can be said that the constructs are likely to have a strong external validity. Based on the statistical testing done in this thesis via Chronbach Alpha's it can be said that the constructs of the questionnaire have sufficiently strong internal validity.

## 9. VALIDATION OF THE TOOL

This thesis has started with the description of a problem in IT strategy execution. In the process of IT strategy the step from strategy development to strategy execution is sometimes problematic. Sometimes the strategy is developed but never executed. In order to overcome this problem a tool is developed. So far, the four elements of the



tool have been developed. Firstly we have developed four questions to determine which behavior should be changed. Secondly, interventions based on norms were acquired from literature which could help stimulate useful behavior resulting in better IT strategy execution. Further we gave a mapping to select the right intervention for a situation. This mapping can assist consultants in selecting the right interventions. This mapping was improved and validated by feedback from three experts. Finally, a questionnaire has been developed that can be used to assess the interventions that are appropriate in a particularity situation.

The combination of these four elements results in a tool. In this Chapter the tool will be tested.

In three different tests, consisting of five cases, and with the help of three experts, the strengths and limitations of the tool are evaluated. In this chapter we present the process and results of these tests.

The first test is done by the author. I have used a case which is considered important by KPMG. The tool is used to measure the situation, and an appropriate intervention is chosen for that situation. It is then discussed to what extend the results where as expected. The second test is done with the help of a norm expert. This expert currently performs research on norm interventions by testing the interventions in different cases. At this moment he picks his interventions based on his expertise and on his knowledge of the interventions. Two cases that he used in his research are discussed and the mapping is tested. The third test is executed with two experienced KPMG IT strategy consultants. These people will eventually have to use the tool. The above information is summarized in table 15.

Type of test	Cases	Experts
Self test	KPMG internal case	Author
Discussion & Interview	MySite (2x) Knowledge management system	Norm expert
Case study	Cooperating hospitals Healthcare insurance corporation	Two KPMG consultants

TABLE 15: SUMMARY OF TEST AND CASES EXECUTED FOR THE VALIDATION OF THE TOOL

In appendix 1 the first version of our tool used in these cases is presented. This version is presented to each of the experts. During the cases feedback was used to improve the tool. The final version of the tool is given in appendix 2 and is further discussed in the discussion section of this chapter.

## 9.1. TESTING WITH A SIMPLE CASE

The mapping is tested in a real case, titled “report building at KPMG”.

### 9.1.1. THE CASE OF REPORT BUILDING AT KPMG

Report building is important for KPMG. Every project results in a report and is supported by a case file. It is considered important that the file on which the report is based should be finished before a report is send to a client. This seems not always to be the case. There is thus, is a discrepancy between desired behavior (finishing the file first) and actual behavior (not finishing the final file before sending the report). A norm intervention might be used to improve the desired behavior. We will describe what norm intervention the mapping suggests we use in this situation.

### 9.1.2. THE RESULTS OF THE CASE

Firstly, the current situation should be assessed. Three variables are important: Subjective norm, descriptive norm and actual performance. To measure these variables in this case a questionnaire is used to measure them. The questionnaire can be found in chapter 11. The results are to be found in appendix 6. A summary of the findings is presented in table 16:

Measure	Result	Translation
Subjective norm	High subjective norm	People know it is considered the right thing to finish the files before sending the reports
Descriptive norm	Low descriptive norm	People don't see or believe that other people finish the files before sending the report
Performance	High performance	People think the performance is reasonably high at KPMG

TABLE 16: CASE STUDY "REPORTING AT KPMG" RESULTS OF THE QUESTIONNAIRE

Currently, it is known, which situation we are in, and thus the appropriate interventions are also known. The proposed interventions in this high performance low descriptive norm case would be:

- Make desired behavior public
- Send messages that change the perception of the norm: Communicate actual performance
- Normative feedback: tell people they fail to meet the performance norm

### 9.1.3. LESSONS LEARNED

Performing this case went relatively smooth. After an initial problem to obtain permission to send out the questionnaire, the results were easily gathered. The results were easy to interpret, thus the appropriate interventions could easily be selected. Unfortunately, we did not have the opportunity to execute the interventions.

## 9.2. TWO CASES WITH AN EXPERT ON NORM INTERVENTIONS

This expert currently performs research on norm interventions by testing them in different cases. At this moment he uses his expertise and his knowledge of the interventions. Two of his experiments have been used to evaluate the tool. For each case we will discuss the situation and the choice of the interventions that are suggested by the mapping. Further we describe the relation between the resulting interventions and the interventions that the researcher picked himself. In this case the tool suggested the same interventions as the expert, which was encouraging. Any discrepancy between the interventions suggested by the expert and by the mapping will be discussed and evaluated.

Both cases are not related to IT strategy, but both cases do relate to IT. Both cases involved changing behavior in the domain of IT usage.

### 9.2.1. IT USAGE WITH MYSITE

The first case involves KPMG. KPMG has a profile portal, in which all the employees may upload their CV, a photo and other information. Unfortunately, not all profiles were filled with information. Important CV's were missing in many cases. To persuade people to complete their profiles, we have chosen to use norm interventions. There were two target groups for the interventions, having different types of work. The first group is called P&T and the second group is called R&C. A questionnaire was used to measure the norms about using MySite to the P&T group. The norms were not measured for the R&C group. For both group actual performance data was used. The difference between the groups gives us the actual performance. That proved high in the P&T group, and low for the R&C group. The results are summarized below:

<b>Measure</b>	<b>Result</b>	<b>Translation</b>
Subjective norm	High subjective norm	People know it is considered the right thing to fill in the profile on MySite
Descriptive norm	Low descriptive norm	People don't see or believe that other people fill in their profile on MySite
Performance	High performance	The actual performance is high, thus many people have actually filled in their MySite profile.

TABLE 17: RESULTS OF QUESTIONNAIRE IN THE MYSITE P&T CASE

Measure	Result	Translation
Subjective norm	Not measured expected: high	People know it is considered the right thing to fill in the profile on MySite
Descriptive norm	Not measured expected: low	People do not see or believe that other people fill in their profile on MySite
Performance	<b>Low performance</b>	The actual performance is low, thus few little people have actually filled in their MySite profile.

TABLE 18: RESULTS OF QUESTIONNAIRE IN THE MYSITE R&C CASE

Table 19 (below) shows the suggested interventions based on the mapping. In the table, also the interventions selected by the expert are given before knowing about this mapping. Both selections are mostly the same. The only difference is that the expert also used “communicate about peers who perform the behavior” in the P&T (high performance situation).

	R&C	P&T
Mapping	<ul style="list-style-type: none"> <li>Send messages that change the perception of the norm                             <ul style="list-style-type: none"> <li>About peers who perform the behavior</li> <li>Lie about the actual performance</li> <li>Use a reference group with high performance</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Make desired behavior public</li> <li>Send messages that change the perception of the norm:                             <ul style="list-style-type: none"> <li>Communicate actual performance</li> </ul> </li> <li>Normative feedback: tell people they fail to meet the performance norm</li> </ul>
Expert	<ul style="list-style-type: none"> <li>Send messages that change the perception of the norm                             <ul style="list-style-type: none"> <li>About peers who perform the behavior</li> <li>Lie about the actual performance</li> <li>Use a reference group with high performance</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>Communicate about peers who perform the behavior</b></li> <li>Make desired behavior public</li> <li>Send messages that change the perception of the norm:                             <ul style="list-style-type: none"> <li>Communicate actual performance</li> </ul> </li> <li>Normative feedback: tell people they fail to meet the performance norm norm</li> </ul>

TABLE 19: COMPARING THE MAPPING WITH SUGGESTIONS FROM A NORM EXPERT

### 9.2.2. KM PORTAL

The second case is the Knowledge Management portal at KPMG. Knowledge is considered important for consultancy, and KPMG wants to increase the use of knowledge management. Vincent Schot (Schot 2011) did not actually perform an intervention but he researches the case

as a possibility. He also measured the three variables necessary for the tool. Anyhow the case can still be used to evaluate the outcome of the tool. A questionnaire was sent out to measure the descriptive and subjective norm. Usage statistics have been used to determine actual performance. The outcome of these questionnaires and the usage statistics is presented in table 20.

Measure	Result	Translation
Subjective norm	Low subjective norm	People know it is considered the right thing to use the knowledge management website
Descriptive norm	Low descriptive norm	People don't see or believe that other people use the knowledge management website
Performance	Neutral performance	The actual performance is high, about 30% of the people are using the knowledge management website regularly.

TABLE 20: RESULTS OF QUESTIONNAIRE IN THE KM PORTAL CASE

In this case the mapping suggests to first raising the subjective norm. If the subjective norm is high, then other interventions can be executed. In a discussion with Schot he suggested that before doing norm intervention to arrange other things first. He suggested that management support, spreading the idea that it is considered important to use the tool, or incentive alignment, should be done first. There were two reasons for this. The first was because knowledge management brings other dynamics (losing power, costs time) and therefore should be handled first. The second reason was that it is important for people to consider it important before doing other interventions. This reason corresponds closely to the reasoning behind the mapping: in a low subjective norm situation, first the awareness or subjective norm should be raised.

### 9.2.3. LESSONS LEARNED [IK VIND DIT EEN BEETJE VAAG VERHAAL; KAN HET KORTER?]

Overall, the mapping seems accurate because the expert and the mapping propose the same interventions for the same situations. This is positive.

Four improvements could be distilled from the case. The first improvement is the “communicate about peers” intervention. Schot considered this can be executed in any situation. There is no evidence that this intervention should work less or more effective depending on the situation, thus supporting this suggestion.

The second improvement would be the “lie about performance intervention”. This intervention might not work in cases that people can “check” the truth. In the original setting where this intervention was tested the participants could not check the facts. In many organizational settings the facts can be checked and the intervention might backfire. Also from a moralistic point of view, this intervention might be not usable in business.

Schot also pointed out that in the low subjective norm settings, more interventions were possible. He suggested for example financial incentive alignment. Norm interventions and other interventions can and should thus be used together.

### 9.3. TESTING WITH IT STRATEGY CONSULTANTS

Two other cases were presented to two IT strategy consultants. For details on the cases and the interview, see Appendix 5.

#### 1.1.1. LESSONS LEARNED

The case will be summarized. Firstly the overall conclusion is presented. Then, for two of the four steps in the tool, only brief conclusions will be given as there is little comment on these steps. Finally, for two other steps the feedback is described in more detail.

#### **The norm intervention tool seems potent and interesting for future use**

The overall conclusion of the case study is that the tool is potent and seems interesting to use in projects. Both consultants had “ahha” moments during the case studies and were making references how the tool could have been useful in other projects. This seemed to indicate that they understood the usefulness. Also comments such as “this would have worked in project X” indicated the potency.

Although the tool generally seemed useful, there were problems using it. The first and the final step seem problematic. In the second case fewer problems were experienced. The consultants had used the tool in the first case, which made it easier to use it.

#### **Two steps were considered easy and logical**

Step 2 was executed with relative ease. The definitions of subjective and descriptive norm gave some problems. This was solved by improving the glossary and adding examples. Another problem was to decide what to do in a situation where the norm was not either low or high. This was then added to the explanation.

Step 3 was executed with great ease. There were no problems mentioned with this step.

#### **Two steps turned out difficult or incomplete**

The consultants experienced problems executing step 1. It turned out that the new terms were hard to understand as a result of wrong and too abstract wording. Step 4 was in this case not executed. The interventions were only discussed but not actually used. The resulting discussions turned out to be fruitful. Step 4 was understandable but raised more questions than it answered. Questions like: How many times do we repeat an intervention, how much time between exposure, when do we change intervention type, can we combine it with non-

norm interventions? These are good questions, but unfortunately mostly out of the scope of this thesis.

#### 9.4. CONCLUSIONS

The general goal of this thesis was to develop a tool to improve success in IT strategy settings using social norms. In this final chapter the first version of this tool has been tested in five case studies. The cases have put focus on usability and correctness of the tool. Due to time and case restrictions it has not been possible to measure the success of the tool in IT strategy settings.

Overall it can be said that the tool is considered useful, practical and effective, according to all experts. One expert commented that the mapping is both useful and correct. Two experts considered the potential use of the tool in various other cases, which suggested they valued such a tool.

Some aspects of the tool were considered difficult to understand, other aspects were considered incomplete or abstract. Step 1 was considered confusing and hard to understand. Therefore step 1 is rewritten and an easier to understand explanation of the definition is added. Step 2 and 3 of the tool were mostly considered adequate Step 4 was better understood, but opened many new questions. For example: “how many times should an intervention be executed?” Questions which currently cannot be answered based on current state of research. These are therefore not changed in the final version, but remain open questions, to be considered in future research.

Based on the suggestions for improvements the following changes have been made to the first version, resulting in the final version of the tool as described in Appendix 1:

- 1) Added “key concepts with examples”
- 2) Complete rewrite of step 1. Replacing the word “desired norm” with “desired behavior”
- 3) Unified formatting
- 4) Less usage of abstract terms. Replacing difficult terms with explanation.
- 5) Added a warning that key concepts should be properly read/understood before using the tool
- 6) Many small changes



## 10. FINAL CONCLUSIONS

This chapter concludes the thesis. The research was a design study in which a tool for selecting and executing norm intervention in IT strategy settings is developed. In this final chapter, the tool is discussed from the perspectives of lessons learned, limitations and implications.

### 10.1. FINDINGS

In this section, the main issues of this thesis are discussed. The findings to be discussed are:

- The knowledge on social norm interventions is both welcome and practical from a business perspective
- Social norms can play an important role in IT strategy settings
- There are three variables (subjective norm, descriptive norm and actual performance) that can be used to determine for a situation which norm interventions are most suitable
- These variables can be put into a mapping, from a practical value perspective. It is easy to use for consultants and helps to quickly determine which social norm intervention is suitable in a given situation.
- The mapping has limitations, and non-involved users should use the mapping with caution. The mapping takes into account three variables. Other variables are relevant as well and should be taken into consideration. The mapping also has some grey areas where it is not clear which interventions should be used.

1. The first result of this study is about the use of literature on social norms that can be practiced by organizations. *Here we find that using this knowledge on social norm interventions is both relatively practical and welcome from a business perspective.* At this moment norm interventions are not often used in practice. This followed from interviewing change experts and became apparent by the lack of knowledge in practice. The experts mentioned that norm interventions are interesting but currently are not (explicitly used) in the toolbox of the change consultant. It also turns out that it is practical to use norm interventions in practice. In Chapter 4 where norm interventions are introduced it turned out that each of the interventions found in literature are quite simple by nature. They are easy to understand and can be implemented in many situations, including IT strategy settings. Often a norm intervention is as simple as sending a message or making behavior more public by putting it online. With modern communication tools within organizations like email and company portals, such interventions can be executed with relative ease. Another reason that the translation from literature to practice is practical is that there seems to be a practical need for such tools, so that, there is little resistance for actual adoption of the tool. The interest of KPMG in doing this project and the enthusiasm of the consultants about the tool show a need from practice and willingness to

use norm interventions. These findings may hold for other organizational settings as the experts who were interviewed were not only active in IT strategy practice but also in change management. One expert has executed some norm interventions in other organizational settings [Schot 2011]. This supports that norm interventions are possibly relevant also for organizations that desire behavior change in other cases as well. Thus, although norm interventions are currently poorly used in practice today and there is an increasing body of knowledge in literature, *this study gives evidence that the bridge from literature to practice is both possible and welcome.*

2. A second finding is that there is *evidence that social norms play a distinct role in IT strategy projects.* As discussed in the background (Chapter 2), the “people aspect” of IT strategy execution is important for project success. Change in the behavior of people in IT strategy settings is needed to increase project success. Based on the theory of planned behavior and based on the expert interviews, it is concluded that norms play at least an interesting role in IT strategy execution projects. From this theory and from the analysis of the type of norms that might work in IT strategy situation it came forth that norms determine about 20% of the variance in behavior. We have found that norms are not currently considered while executing IT strategy. This corresponds to what can be expected in other corporate settings. What makes norms and norm intervention especially interesting is twofold. The first is that the social aspect of IT strategy situation is often underestimated in terms of importance. Secondly, norms are stable and long term. Interventions for IT strategy may thus change behavior to a new stable form and for a longer period. This makes them interesting for IT strategy projects.

3. An issue not mentioned often in literature is: “which intervention to use in which situation?” Norm interventions can backfire (boomerang effect) but research on other possible problems are scarce in literature. For practical purposes some guidelines are necessary to select the right interventions in a situation, because of the difficulty of such selection. Experts warn against using the norm interventions without due consideration. A first guideline in the form of a mapping has been developed to help understand which interventions are suitable in which situation. The result is twofold: the first is the conclusion that there is a need for better understanding on what norm to use in what situation. Currently there is too little information. The second finding is an answer to fulfill this need in the form of mapping. The mapping shows that it is possible to find variables to determine the effectiveness and risk of specific norm intervention in a particular situation. This also shows what kind of variables in the situation can be looked at to determine the risk and effectiveness of using norm intervention. Three useful variables have been found:

- Subjective norm: to what extent do people consider the desired behavior to be “the right thing to do according to others”

- Descriptive norm: to what extent do people think other people perform the desired behavior
- Actual performance: to what extent is the desired behavior actually executed

These variables prove to be interesting to determine the effectiveness of a social norm intervention in a situation from an academic perspective. Furthermore, based on the interviews, some additional variables are considered to select the right norm interventions for a situation such as “escalation of current interventions”. These additions show that the list of variables which are used in the mapping is not exhaustive.

The mapping has limitations, which are found after the initial version was built. Although the mapping shows what to do in archetypical situations, there rises ambiguity when a variable scores not high or low. Some situations are less clear. What to do if there is only a moderate actual performance? Another example: the current mapping forces a norm intervention to be in one category or another, and not in both. Furthermore, because of the distinction of either "high or low" descriptive / subjective / performance, the approach seems rather black or white. Also the expendability of the mapping can be improved. For example, an intervention should be representable along the three axes used in the mapping (descriptive norm, subjective norm and actual performance), otherwise it cannot be put into the mapping. Other approaches other than the mapping can be thought of which are just as easy to understand, but give more room for nuances. The result thus is that a mapping is an agreeable way to help understand which interventions are suitable in which situation, but better ways can be thought of. A further discussion about the mapping is found in the limitations section (11.2) *The Proposed mapping gives insight into which types of interventions are useful in which situations. However, to apply it to a specific situation expertise and insight of the consultant is required.*

## 10.2. LIMITATIONS

This study has several limitations. Some of them originate in the method used, which was known in advance. Other limitations are considered in hindsight. The following limitations will be discussed:

- Methods which are used are good for initial investigation only
- Validating the effect of the tool as a whole on IT strategy success is to be evaluated by experts. The tool has not been actually used in an actual IT strategy situation.
- The first step of the tool (determining which behavior to change) has not been properly validated
- The mapping has been validated only for “archetypical” situations. The limits, in boundary situations are unknown and unclear
- There has been little investigation about the generalizability of the findings.

Some limitations are caused by the method. This study has been a design study with a somewhat academic founding. Within the scope of this project, a full evaluation by means of a field test has not been possible. Therefore we have chosen to validate the tool by the available means, such as expert interviews, literature studies and case studies. The approach and validation of the mapping and the interventions list are acceptable for the goal, a practical tool. From a methodological perspective the validation has still to be improved. Each of the tool parts are validated either by empirical tests (the questionnaire), literature (selection of intervention and intervention list) or by experts (the mapping and intervention list). Then the combination of these four elements, the tool itself, is tested via expert interventions. Interviews, which are used as the primary method in this thesis, may be less reliable than doing an experiment with formal measuring tools. Further, the execution of this method, the interviews, was limited because of time and availability constraints.

Another limitation of the method is the validation of the tool via cases. The case studies were designed to optimally validate the entire tool. The actual situation has permitted us to validate the usage of the tool to some extent. Within the scope and the limitations of the situation, it was possible to get an initial understanding if the tool would increase the success of an IT strategy. It is not possible to assess to what extent the tool actually reaches its goal of increasing IT strategy implementation success. In the cases with the two consultants, the most important validation, the tool has been used, but the interventions were not actually executed, thus not showing support via measurement or qualitative interview for the impact the tool is meant to have. Claims can be made based on the interviews and cases; these should be considered as evidence but not as decisive about the effectiveness of norm interventions of the tool in the situation of IT strategy. Actual use will have to determine the actual impact.

In Chapter 3, on social norms, a way for consultants to find useful norms in IT strategy settings has been considered. It was meant to be a very practical approach because it was only realized late in the process of building the tool that selecting the right behavior or norm was of great importance. Although a first attempt has been made, this part is fragile and merely shows the direction. No validation other than brief discussions during the case have validated or improved this approach. Interviews with experts about the cases did give an indication that the norms and target behavior to be selected by the consultant were useful.

As has been discussed before the mapping certainly gives improvements. It can be said that the mapping is considered valid and acceptable and thus a good start. It does have several limitations. The mapping is clear in archetypical situations where the variables of the environment (subjective norm, descriptive norm and actual performance) are either high or low. In more moderate situations, where it cannot be said to be high or low, the mapping has a weakness. Also the "boundary" situations, where it is no longer 'high or low' has not been clearly

defined. Other aspects, such as expandability, exceptions, suitability for different cases, elegance and more, are all inclined to improve. This study shows a first attempt for such a classification and it seems necessary to make such mapping to gain understanding on how to improve it. From a practical perspective it is the only mapping available, and based on the tests with the experts, it is sufficient for using in a tool.

A final limitation of this work is the question of the generalizing of the results.

A better understanding of the generalizability would have increased the value of the thesis and the quality of the findings. For example, knowledge about the use of the tool in other types of companies, in government organizations, or schools would be useful. Also, generalization of the usefulness of the tool in situations like IT projects and teams is not discussed. And further, more information about group sizes and interventions style is welcome. Is the tool useful in small and large organizations, or should the interventions then be adjusted? These questions remain unanswered, as this study provides no means and scope to answer them, but they remain important to consider.

### 10.3. FURTHER RESEARCH

Some investigations raise more questions than they answer and this may certainly be true for this thesis. In this section future research is discussed.

It has been shown that more knowledge is needed on which norms or what behavior should be targeted in an IT strategy setting. Or more general in any setting, what behavior should be targeted and which norms should be targeted with norm interventions? There is no knowledge which norms are easiest or most impactful to influence. A brief attempt has been made to use the knowledge on norms and moderators between norm and behavior link to provide insight in the matter. This can be used as a first thought for future research in this area. For all practical purposes, this knowledge is necessary for sound application of norm interventions.

As Cialdini (Cialdini and Trost 1998) already states, there is little understanding of the mechanisms behind the norm interventions. A question like: “is there only norm activation, or is there change of perception?” will have to be answered to increase insight in the use of norms. Based on the list of different norm interventions that have been considered in this thesis it may now be easier to find commonalities between the interventions. This may help establish the mechanisms of norm interventions.

More information on the effects of different implementation methods of the norm interventions has to be gathered. For example, information about the usefulness of repeating social norm interventions is useful. Questions such as: “Does the medium (conversation, e-mail, snail mail, a note) impact the effect of the intervention?” have to be answered. This

information will help to increase the effectiveness of how norm interventions can be applied in practice.

Finally, a better understanding on what intervention to use in what situation should be developed. A first attempt, via mapping, has been made to increase our understanding of the need for such mapping. Also do we need more information on what a mapping may look like and what the problems remain to be met. Further research should come up with better mappings or different approaches to help people understand and choose what interventions to use in the respective situations.

#### 10.4. IMPLICATIONS OF THE RESULTS

This thesis gives implications for the future. Both implications for practice and for research are discussed in this final part.

In practice, the door has been opened a little further for the consulting business to enter into the realm of norms and norm interventions. By building the tool, norms have been presented to a big four company, and the practical nature of this work makes it easier to use academic knowledge on norm interventions in practice. Furthermore, we expect that some of the interventions will be used by KPMG and their clients. This should hopefully be the largest contribution of this thesis. It is now somewhat easier to execute norm interventions and more in the mind of a small group of consultants. They may actually start using the interventions that academics have been researching for two decades now. This thesis shows that norms can be used in business and that although there is still little recognition, once familiar with the concept, people are open to it. For practice, an easy to use small list of norm interventions is now available. The list includes for each norm intervention the expected effects and possible dangers while adopting them. Business managers can use the list for their benefit. Also, the mapping can help establish which interventions are useful in their situation. Finally, the questionnaire is a tool that gives a better understanding of the norms in the situations where they need to establish change.

The implications for research may also be of importance. Because part of the literature about social norm interventions is brought into practice, some knowledge gaps in the current knowledge could be found. Thus, new information is available on what is still needed. Some first directions and ideas for these knowledge gaps have been presented and discussed throughout this thesis. The new ideas and initial attempts may also be used as ideas and suggestions for future research. The following useful aspects can be used in practice:

- The tool as a whole for relatively inexperienced consultants
- The interventions list for experienced change consultants

- The norm selection tool for many types of settings to assess if a proposed norm is apt to create change
- The questionnaire can be used to gain understanding of the use of norms in a particular situation.
- The reports on discussions with the experts may be used to increase understanding of the limitations of norm interventions in practical situations.

Some ideas are in their infancy such as the thoughts about what norms should be targeted; others are more mature such as the list of interventions.

Hopefully, our results find their way into the realm of norm literature and/or a handbook for professionals. This allows other people to also reap the benefit of a better understanding of social norms and the matching social norm interventions.

## ACKNOWLEDGEMENTS

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# APPENDIX 1: VERSION ONE OF THE TOOL

## Four steps to norm interventions Step one: Determine the goal

### Why do a norm intervention?

First, it is important to evaluate why the norm intervention will be used, what is the goal? An example of a goal can be: Faster execution of an IT strategy

When the goal is known, it is important to select the norm that is going to be changed. It is important to select a norm that can be influenced and that is a key success factor for the goal. Examples of such norms in IT strategy projects are:

- Cooperation norm: Regular collaboration with partner firms is important
- Communication norm: Regular communication between business and IT is important

### Questions that can help to determine the norm to target

Some norms can be targeted more easily than others. The following guidelines may help find to target the most useful norm to influence.

- Key success factor: Will this norm contribute to my goal?
- Social oriented norms: Is this behavior socially oriented?
- Effective for norms: Does this behavior happen over a longer period?

The result of step one can be placed on the right side of this sheet. These results will be used in step 2.



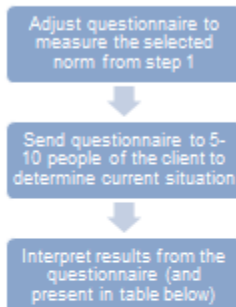
### Result step 1:

What is the goal?

Which norm is targeted?



## Four steps to norm interventions Step two: Determine current situation



### Determine current situation

Norm interventions are powerful tools. Norm interventions can sometimes produce effects which weren't planned, or norm interventions might backfire. To ensure the desired results from an intervention it is important to select the right norm intervention for the right situation.

Based on literature and discussions with KPMG experts, a mapping is developed to evaluate for each situation which norm intervention is most appropriate.

In order to select the right intervention it is necessary to know how strong the norm (which is selected in step 1) currently is and to what extent the desired behavior (selected in step 1) is already executed.

This is translated to three variables of a situation which are used to select the right interventions.

- What is the current subjective norm (high or low?)
- What is the current descriptive norm (high or low?)
- What is the actual performance (high or low?)

The questionnaire at the end of this presentation can be used to measure these three variables. The three steps on the left can be used to collect the final results from the questionnaire. An example of a result of the questionnaire is presented in bold in the table on the left.

The result, which can be put in the table on the bottom left are used as input for step 3.

### Result step 2:

Variable measured	Interpretation
Subjective norm	<b>High / Low</b>
Descriptive norm	<b>High / Low</b>
Actual performance	<b>High / Low</b>





## APPENDIX 2: FINAL VERSION OF THE TOOL

Major changes:

- 7) Added “key concepts with examples” (as these were too difficult in the first version)
- 8) Complete rewrite of step 1. Replacing the word “desired norm” with “desired behavior”
- 9) Unified formatting
- 10) Less usage of scientific terms. Replacing difficult terms with explanation.
- 11) Added a warning that key concepts should be properly read/understood before using the tool
- 12) Many small changes

### Key concepts with examples

Case	Subjective norm	Descriptive norm	Actual performance
<b>MySite</b>	I think my boss thinks it is the right thing to fill in your MySite profile	I think none of my colleagues have filled in their MySite profile	75% of the people in ITA have filled in their MySite according to MySite stats
<b>Cooperating hospitals</b>	It is considered a good thing to communicate with other hospitals	I think most of my colleagues cooperate every week with other hospitals	60% of the people have weekly meetings with staff from other hospitals
<b>Explanation</b>	What people “think is considered the right thing by others”	What people “perceive to be common behavior”	What actually is done

## Four steps to norm interventions Step 1: Determine the desired behavior



### Result step 1:

What is the goal?

Which desired behavior is targeted?

#### Step 1: Determine the desired behavior

It is very important to select the right norm to intervene and select the most effective desired behavior. Step 1 is about finding this desired behavior.

With the guidelines below, the desired behavior can be found. Examples of such behavior in IT strategy projects are:

- Cooperation behavior: Weekly collaboration with partner firms is important
- Communication behavior: Daily communication between business and IT is important

#### Guidelines for finding desired behavior

- 1) Find the critical success factors of the IT strategy project: "Cooperating is a CSF"
- 2) Describe the CSF as specific behavior: "cooperating regularly between departments when planning"
- 3) Is the behavior social oriented? "required: yes"
- 4) Is the behavior executed over a longer period or regularly? "required: yes"

The result of step 1 can be placed on the left side of this sheet. These results will be used in step 2.



## Four steps to norm interventions Step 2: Determine current situation

Adjust questionnaire

Send questionnaire

Interpret results

### Result step 2:

Variable measured	Interpretation
Subjective norm	High / Low
Descriptive norm	High / Low
Actual performance	High / Low

#### Step 2: Determine current situation

Norm Interventions are powerful tools. Norm Interventions can sometimes produce effects which weren't planned or can even backfire. To get the desired results, it is important to select the right norm intervention for your given situation.

In order to select the right intervention it is necessary to know what the norms currently are in your situation and to what extent the desired behavior is already executed. There are three variables which are used to select the right interventions.

- Current subjective norm (high or low?): "I think it is the right thing to often cooperate with other departments often"
- Current descriptive norm (high or low?): "I think my colleagues often cooperate with other departments often"
- Actual performance (high or low?): "50% of the people often cooperate with other departments often"

#### Getting the results through a questionnaire

The questionnaire at the end of this tool can be used to measure these three variables. The three steps on the left can be used to collect the final results from the questionnaire. For each variable, select either high or low in the table on the left.

This result will be used as input for step 3.





## Four steps to norm interventions

### Step 3: Determine which intervention is most suitable

	Low performance	High performance
High descriptive norm	<ul style="list-style-type: none"> <li>Use guilt to punish (penalize) free riders</li> <li>Monitor and feedback</li> </ul>	<ul style="list-style-type: none"> <li>Group incentives</li> <li>Team leaders</li> </ul>
Low descriptive norm	<ul style="list-style-type: none"> <li>Communicate about peers who perform the behavior</li> <li>Use about the actual performance</li> <li>Use a reference group with high performance</li> </ul>	<ul style="list-style-type: none"> <li>Remove anonymity</li> <li>Communicate actual performance</li> <li>Normative feedback: tell people they fail to meet the performance norm</li> </ul>

#### Step 3: Select intervention based on mapping

In step 2, three variables are measured in the situation through a questionnaire. These variables can now be used to select the right interventions.

First, there are two main types of situations: low subjective norm (below in orange) and high subjective norm (left in green). The diagram on the left shows four possible situations in the high subjective norm situation (the blue boxes). In the boxes the name of the interventions which are suitable for that situation are presented.

#### Using the mapping to find the interventions

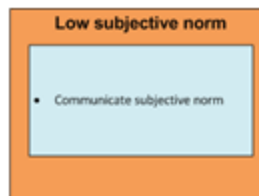
Using example results from step 2, (such as high subjective norm, low descriptive norm and high actual performance) would result in the blue box in the green square on the lower right.

The results of this step, step 3, are found on the left side.

#### Result step 3:

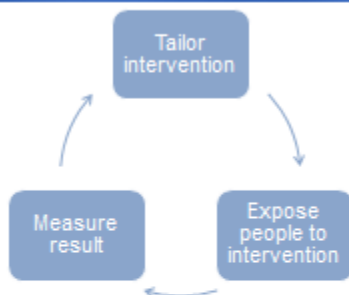
The following three interventions would thus be useful in the example situation:

- Remove anonymity
- Communicate actual performance
- Normative feedback



## Four steps to norm interventions

### Step 4: Execute intervention



#### Result step 4:



#### Step 4: Execute intervention

In the step 3, the interventions were selected. This step, step 4, is about executing the selected interventions.

Each intervention has to be tailored to the situation. In sheet X each of the interventions is described in more detail.

#### Tailor the intervention

Most interventions involve sending a message. These messages have to be tailored to the situation. For example, the actual performance has to be communicated. An example can be: "80% of your colleagues communicate with the business side every week, unfortunately you have not had any contact".

#### Expose people to intervention

People will have to be exposed to the intervention. For example by e-mail.

#### Measure result

Go back to step 2 of this tool and: What is the new 'actual performance'? If the actual performance is as desired, thus, if the goal is met, then go to step 1 and determine other behavior: what is a good candidate to change in this project.

If the actual behavior is not as desired, repeat step 3 and 4. Norm interventions, especially those who involve a form of feedback, tend to have greater effect when they are repeated over time. Norms tend to be rather stable, therefore repeated exposure is important for change in norms. If the behavior has changed, this should be reflected in the next iteration of messages.



## APPENDIX 3: FINAL VERSION QUESTIONNAIRE

Vragen
<b>Descriptive norm</b> Ik zie collega's regelmatig bezig met het IT strategie project Ik zie mijn manager regelmatig bezig met het IT strategie project Ik weet dat collega's regelmatig bezig zijn met het IT strategie project Ik weet dat mijn manager regelmatig bezig is met het IT strategie project Ik weet dat de meeste van mijn collega's regelmatig bezig zijn met het IT strategie project  Ik zie dat de meeste van mijn collega's regelmatig bezig zijn met het IT strategie project
<b>Subjective norm</b> Ik denk dat het juist is om regelmatig bezig te gaan met het IT strategie project Ik denk dat andere het goedkeuren als ik regelmatig bezig ben met het IT strategie project  Ik vind het goed als andere regelmatig bezig gaan met het IT strategie project Ik keur het goed als andere regelmatig bezig gaan met het IT strategie project Ik denk dat het niet goed is om regelmatig bezig te gaan met het IT strategie project Ik denk dat andere het niet goed vinden als ik regelmatig bezig ben met het IT strategie project  Ik vind het slecht als andere regelmatig bezig gaan met het IT strategie project Ik keur het af als andere regelmatig bezig gaan met het IT strategie project
<b>Actual Performance</b> Andere denken dat ik regelmatig bezig ben met het IT strategie project Ik ben zelf regelmatig bezig met het IT strategie project Ik ben goed bezig met het IT strategie project Ik geloof dat ik een effectieve medewerker ben binnen het IT strategie project Ik ben blij met de kwaliteit van het werk dat ik lever binnen het IT strategie project Mijn manager denkt dat ik een effectieve medewerker ben binnen het IT strategie project  Mijn collega's denken dat ik een erg productieve medewerker ben Ik draag bij aan het op tijd afronden van het IT strategie project Ik draag bij aan het binnen budget afronden van het IT strategie project

## APPENDIX 4: DETERMINING THE VARIABLES WHICH DETERMINE THE CHOICE OF INTERVENTION

A proper mapping satisfies at least the following two conditions:

- Distinction of mapping should be meaningful
- Mapping should be mutually exclusive and collectively exhaustive (MECE) (Minto 2008)

If the mapping is MECE, all situations are covered, and only covered once. If there is overlap in the mapping, it might complicate the mapping. Further, if the categories in the mapping are not meaning full, the mapping can just as well not exist.

Now the process of finding these three variables is explained. In order to find these variables, it is important to understand the difference between meaningful and meaningless variables. I will present two examples now, an example of a useful (meaningful) variable and a useless (meaningless) variable. The meaningful variable to describe the situation is actual performance. A meaningful variable means that in one end of the spectrum for that variable a certain set of interventions is useful and on the other end of the spectrum for that variable, other interventions are useful. For actual performance it can be seen that the list of intervention is mostly different in the high and low situation (see table below). Actual performance is thus a meaningful variable when determining which intervention is suitable for a situation.

<b>Situation</b>	<b>Intervention</b>
Low actual performance	<p><b>Communicate about high descriptive norm of others</b></p> <p><b>Team leaders</b></p> <p><b>Use guilt/shame mechanism</b></p> <p>Group incentive</p> <p>Raise peer pressure</p>
High actual performance	<p><b>Communicate subjective norm</b></p> <p><b>Remove anonymity</b></p> <p><b>Normative feedback</b></p> <p><b>Monitor and feedback</b></p> <p>Use guilt/shame mechanism</p>

	<p>Group incentive</p> <p>Raise peer pressure</p>
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TABLE 21: LOW AND HIGH PERFORMANCE AND NORMATIVE INTERVENTIONS

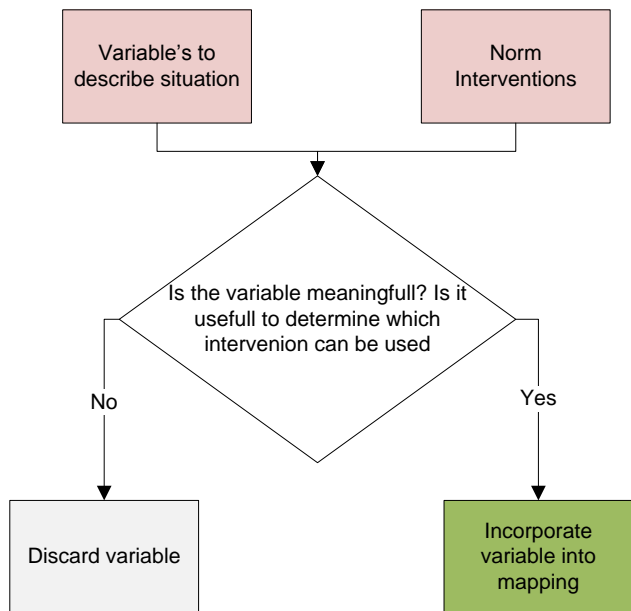
The meaningless variable is leadership involvement. The leadership involvement of an IT strategy situation has no impact on the usefulness of a norm intervention. In the next table it is shown that for the possible leadership situations (high leadership involvement and low leadership involvement) the same norm interventions are useful.

Situation	Intervention
Low leadership involvement	<p>Communicate subjective norm</p> <p>Communicate about high descriptive norm of others</p> <p><b>Team leaders</b></p> <p>Remove anonymity</p> <p>Normative feedback</p> <p>Monitor and feedback</p> <p>Use guilt/shame mechanism</p> <p>Group incentive</p> <p>Raise peer pressure</p>
High leadership involvement	<p>Communicate subjective norm</p> <p>Communicate about high descriptive norm of others</p> <p>Remove anonymity</p> <p>Normative feedback</p> <p>Monitor and feedback</p> <p>Use guilt/shame mechanism</p> <p>Group incentive</p> <p>Raise peer pressure</p>

TABLE 22: LOW AND HIGH LEADERSHIP INVOLVEMENT AND NORMATIVE INTERVENTIONS

For leadership involvement it can be seen that the list of possible interventions is the same in the high and low leadership situation. The only difference is highlighted in bold, which is “team leaders”. The distinction between the low and high situation is almost nothing, thus leadership involvement is considered meaningless. Leadership involvement is therefore removed from the list of useful variables.

Now we better understand what kind of variables to describe the situation we are looking for, let’s further look into the process of how this is realized. Ideally, all meaningful variables are found. The way this is done is represented in figure X. It presents that there are two inputs: Variables to describe the situation (such as leadership) and norms (such as remove anonymity). The end result is a list of meaningful variables to describe the situation.



The total approach of finding the right variable and finding the final mapping can be described as a four step process:

- 1) List all interventions with their restrictions
- 2) List important variables that define the situation
- 3) Remove meaningless variables
- 4) Combinations of variables

The steps are discussed below. For each step the actions and the result is presented.

**Step 1: List all interventions.** The goal of this step is to have an exhaustive list of interventions. These are the interventions that will be assigned to their useful situations. In our case, this list

consists of the 7 social norm interventions discussed in last chapter. An example of such an intervention is: “Remove anonymity”.

**Step 2: List important variables that define the situation.** The goal is to cover all relevant situations. Unfortunately, there are almost any number variables to describe the IT strategy setting. Some of these variables are not relevant for the selection of an Intervention. As shown before, the “leadership involvement” is not relevant. Coming up with a list of potential useful variables is done in a brainstorm and by use of literature. During a brainstorm and the addition of literature, a list of possible variables was developed by the author. One of the sources for this list was the change readiness factors that are used by KPMG [kpmg 2010]. Some of the variables that were considered are: “Descriptive norm, injunctive norm, subjective norm, actual performance, leadership style, Motivation, change capability of organization, Clarity of goal and sufficient resources”. Based on common sense, most variables were dropped immediately, as they didn’t seem meaningful in the case of norm interventions. Five variables are considered potentially relevant: “Descriptive norm, clarity of goals subjective norm, actual performance and leadership style”.

**Step 3: Determine if the variable is useful (meaningful).** How this step is executed is actually already described in the introduction. Here it is described in more detail. All the variables can be seen as continuums. For example, performance can be expressed in multiple ways and it is not black or white. The actual performance can be good, very good and everything in between. In the case of this mapping, it is useful to determine just a few situations for sake of simplicity. For each variable there were two cases: high or low, for example, high performance or low performance. For each of these cases, the 7 norms were put into the high, low or both. If it were to be placed in both groups (high and low), then for that intervention the variable is meaningless. Determining if the intervention is expected to have a negative or non-significant effect in a situation is done by the author. This is based on the knowledge gained in the first the chapter; it could be decided with relatively high certainty when norms would be effective in which situation.

After doing this for each of the variables, the final list of meaningful variables is:

- **Subjective norm**
- **Descriptive norm**
- **Actual performance**

Let’s recap first. From all possible variables to describe an IT strategy situation, it seems that three variables are important to assess which intervention will be useful in that situation. We have executed a step by step process to find these variables.

**Step 4: Combining variables.** At this moment, with three variables left, there seem to be 8 possible situations. For example: high subjective, low descriptive and high actual performance would be one situation. The 8 situations are presented in figure 1. There are multiple ways to represent a 2x2x2 matrix; this one is chosen for no particularly reason.

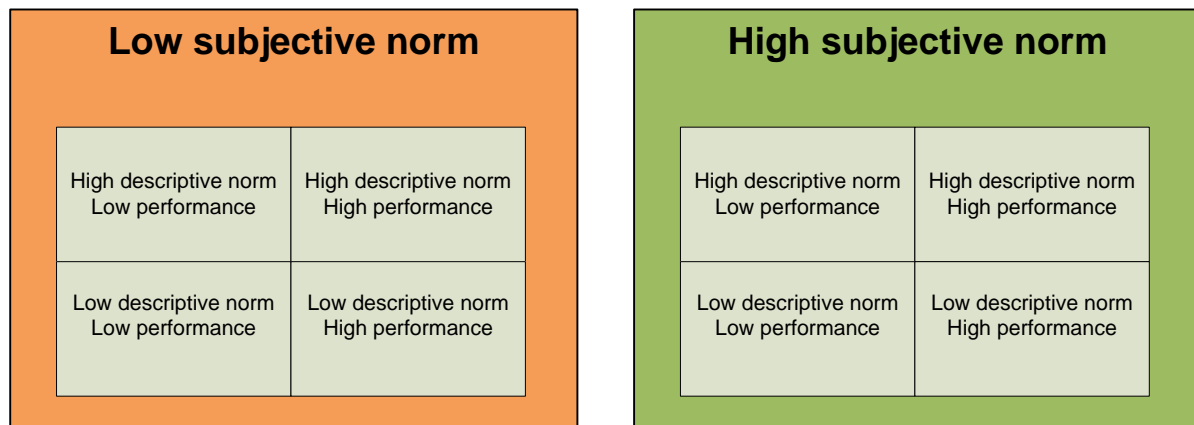


FIGURE 12: 8 POSSIBLE SITUATIONS WITH THREE VARIABLES, NEAR FINAL MAPPING, BUT STILL TOO MANY MEANINGLESS VARIABLES

For each of these 8 situations, the possible interventions are assigned. For example, in the high subjective norm, high descriptive norm and low performance norm situation, the intervention “Punish free riders” can be assigned, because it can be expected to be a useful intervention in that situation. It turns out that some of the 8 situations have the same interventions. Again, this would mean the distinction is meaningless. It seems that in the low subjective norm situation, most interventions aren’t useful. This brings us to the final mapping.

#### UNDERSTANDING THE MAPPING

At this moment, the process of developing the mapping is discussed. Also, the final mapping is presented. Not all interventions are useful in all situations, with this mapping we have a better understanding which intervention is useful which situation. It turned out that three variables about the IT strategy situation are relevant: subjective norm, descriptive norm and actual performance. If we know these variables about the environment, we can decide which intervention should be used to increase certain desired behavior.

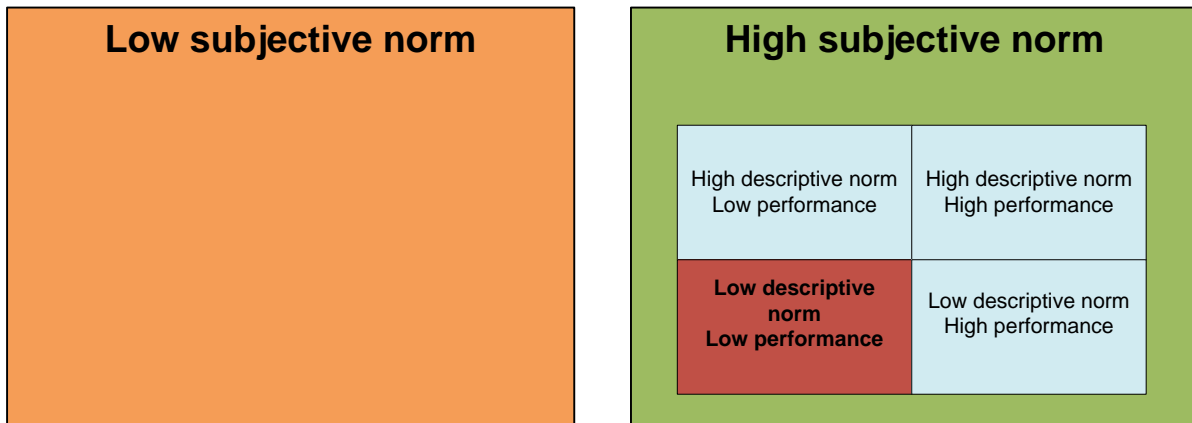
To gain a better understanding of the mapping, let’s take the mapping for a test ride in the fictional IT strategy situation we described in the introduction. In our fictional setting, communication is considered a key success factor for execution of the IT strategy. In this situation a large goal is to increase communication about the IT strategy. Which interventions can be used in this situation? That depends! It turns out that people know that communication is considered important. Thus, there is a high subjective norm. But people think others aren’t

communicating and this is actually, true, the actual communication is poor (thus performance is low). Summarizing:

Variable	Result
Subjective norm	High
Descriptive norm	Low
Actual performance	Low

Using this result in the mapping the following can be seen. Our situation is marked red in figure X. We now know that we can use any of the following interventions:

- Communicate about peers who perform the behavior
- Lie about the actual performance (like Cialdini with his towels)
- Use a reference group who does perform well



Two questions arise at this moment. Is this mapping correct and how do we know these variables in our IT strategy situation? In the following section of this chapter three change management experts are interviewed, they assess if the mapping is correct and what the risks of using the mapping are.



## APPENDIX 5: DESCRIPTION CASE STUDIES KPMG CONSULTANTS

The process of selection the cases and testing the cases involved two IT strategy consultants who each have over four years of consulting experience. Both IT strategy consultants have no experience with norm or norm interventions, their expertise lies in IT strategy. The following three criteria were considered when selecting the cases:

- 1) The case should primarily be an IT strategy development case
- 2) The case should involve a TransForum Workshop
- 3) One case should be unknown for one consultant, and the other for the other consultant

The first two selection criteria ensure the right types of projects are chosen. As the tool will be used in IT strategy projects where TransForum is used, it makes sense to use these cases as well for testing. The final selection criterion is research based. The cases are executed in a role-play / case setting. Having two perspectives on each case, the perspective of someone who knows the case, and the perspective of someone who doesn't know the case, gives more information on the usability of the tool than two consulting with a similar perspective.

Both projects which are selected are already executed in the past. For both projects, the IT strategy is already developed and the clients are currently executing the IT strategy. KPMG is no longer actively involved in the cases.

The setup was as follows. The consultant who knew the case, role played the client. The other consultant, who didn't know the case, acted like himself. His goal was to select the right intervention and discuss how and if this intervention would succeed. They received the tool in the form of a PowerPoint presentation as their guideline.

Based on this protocol, two aspects of the tool are tested.

- Usability of the tool
- Correctness of the interventions.

### 10.4.1. SAMENWERKENDE ZIEKENHUIZEN CASE

#### **Case description**

Four hospitals in the Netherlands are going to cooperate on different aspects. The need for cooperation is twofold: It is necessary for survival and there are efficiency benefits. One aspect of this collaboration is the IT. KPMG is asked to investigate the current IT organization for each of the four hospitals and how the to-be architecture has to be. A road map shows how the hospitals will reach the to-be situation. Important aspects of this roadmap are defining the milestones, actions and the areas of focus.

One of the focus areas in the project is cooperation. There has to be a transition from focus on the individual hospital to a focus on the cooperation. According to the consultants this is a common struggle. A main struggle is alignment, some of the hospitals are considering steps that others haven't even thought of, or have just executed.

**Norm selection**

Can norm intervention help in such a case? Therefore it is important which norm can be influenced in this situation. The cooperation norm is a likely candidate. According to the consultants cooperation is a key success factor. Cooperation is also a likely candidate for a norm intervention. Cooperation behavior is clearly social, and is important over a longer time span. These are important variables suggesting a strong link between norm and behavior!

**Measurement results**

The results the consultant received in doing the case are presented in table 23. Remember, the measurement results are not really measure. They are designed for the case.

Measure	Result	Translation
Subjective norm	High subjective norm	People know it is considered the right thing to cooperate with other hospitals.
Descriptive norm	Low descriptive norm	People don't see or believe that other cooperate with the other hospitals.
Performance	Low performance	The actual performance is low, only some people cooperate with other hospitals on a regular basis.

TABLE 23: RESULTS OF QUESTIONNAIRE IN THE SAMENWERKENDE ZIEKENHUIZEN CASE

**Intervention discussion**

This is the first time the consultants saw and used to tool, without any training or prior knowledge on norms or norm interventions.

10.4.2. THE ONVZ CASE

**Case description**

ONVZ is a Dutch healthcare insurance firm. ONVZ asked KPMG to help developed their IT strategy. Two important aspects of this strategy were: The ICT architecture and the organization of the ICT-function. KPMG helped ONVZ develop both. In a subsequent workshop, KPMG and ONVZ built a roadmap to make the next action more concrete. Also, prioritizing the next actions and putting in responsibility.

**Norm selection**

In the ONVZ case norm selection is less straight forward. It has been chosen because it has a larger technical component. Technical components tend not to be influenced by norms, so a social aspect of the IT strategy has to be found. During a workshop between ONVZ and KPMG a list of conditions are found for the success of the IT strategy. The following concerns might be useful to change via norm intervention:

- 1) User commitment
- 2) involve business
- 3) communicate with the business
- 4) commitment project team
- 5) Making knowledge available
- 6) Project organization

First four components can be grouped into one norm: regular communication to increase commitment between business and IT project.

**Measurement result**

Measure	Result	Translation
Subjective norm	High subjective norm	People know it is considered the right thing to communicate between business and IT
Descriptive norm	Low descriptive norm	People don't see or believe that other communicate between business and IT
Performance	High performance	The actual performance is high, when most people often communicate between business and IT

TABLE 24: RESULTS OF QUESTIONNAIRE IN THE ONVZ CASE

## APPENDIX 6: RESULTS FROM QUESTIONNAIRE KPMG

