Master thesis

Information Science

Compliance towards the Belastingdienst

Author:	John Akkermans
Student Number:	0313238
E-mail address:	J.Akkermans@student.ru.nl
Research number:	96 IK
University:	Radboud University Nijmegen
Faculty:	Faculty of Science, Institute of Computing and Information Sciences
Supervisor:	Dr. L. (Luca) Consoli
Reviewer:	Dr. S.J.B.A. (Stijn) Hoppenbrouwers

Version:	2.1 Final
Date:	9 June 2009

Abstract

In this thesis I have investigated whether the compliance, being the willingness of people to meet their obligations to pay taxes and to do so by using the digital system again, has been affected by the recent ICT failures at the Belastingdienst. I could imagine people have lost trust in the system to send in their tax declarations after those failures. But, after my research, with people filling out a questionnaire about their findings about the system, I can conclude this compliance of the users still is good.

Furthermore, I have determined several points where the system could be improved. Those improvements were derived from input of the questionnaire and from my literature research as well.

Besides the current degree of compliance, in this research I have also focused on the measures the Belastingdienst has taken to fix the mentioned failures and to prevent new ones. You can also find out how the Belastingdienst is dealing with compliance nowadays and how they are trying to improve it.

This research is a continuation of earlier research, in which the Technology Acceptance Model (TAM) and the DeLone and McLean model of Information System Success have been proven. Moreover, this research is a base for some possible future research again, which I have suggested also in the end.

Version control

Date	Version	
17 April 2009	0.1	
14 May 2009	1.0	
3 June 2009	2.0	
9 June 2009	2.1	Final

Preface

You are about to read my master thesis Information Science about compliance towards the Belastingdienst. It was a pleasure for me to do my research the recent months and I am proud of the result. I hope you will find the results interesting and maybe even useful.

I want to use this part of the thesis to thank Dr. Luca Consoli for supervising and coordinating my research. Also I want to thank Dr. Stijn Hoppenbrouwers for being second reviewer and his advice when needed. Furthermore, thank to all people who have participated in the questionnaire. Without their answers I would not be able to do my research.

Last, but not least I want to thank friends and family for supporting me when writing my thesis. A special word of thank to my parents for supporting me in every way in all my years of education.

Helmond, 9 June 2009
John Akkermans

Table of contents

1 Introduction 8
2 Problem statement 9
3 Theoretical framework 10
3.1 Theoretical models 10
3.1.1 Technology Acceptance Model (TAM) 10
3.1.2 DeLone and McLean model of IS success 12
3.2 Literature research 15
3.2.1 Compliance 16
3.2.2 Distance and compliance from a public administration perspective 16
3.2.3 Distance and compliance from a philosophical perspective 17
3.2.4 Distance and compliance from an organizational perspective 18
3.2.5 ICT and external compliance 19
3.2.6 Technology-Based Self-Service 20
3.3 News research 22
4 Method 24
4.1 Sub question 1 24
4.2 Sub question 2 24
4.3 Sub question 3 24
4.4 Sub question 4 25
4.4.1 Research model 26
4.4.2 Operationalisering 27
4.5 Sub question 5 28
4.6 The questionnaire 29
4.7 The analysis 30
5 The *new* Belastingdienst 33
5.1 Vereenvoudigingsoperatie 33
5.1.1 Introduction 33
5.1.2 Reducing complexity in the current organisation 34
5.1.3 Reducing complexity in the future organisation 35
5.2 Updates 37
5.2.1 Update 1: February 2008 37
5.2.2 Update 2: May 2008 41
5.2.3 Update 3: November 2008 45
6 Data analysis 50
6.1 Compliance 50
6.2 Compliance and age 52
6.3 Compliance and sex 56
6.4 Compliance and education 59
6.5 Compliance and profession 62
6.6 Compliance and times made use 65
7 Requirements 69
7.1 Non-functional requirements 69
7.2 Functional requirements 70
7.3 Remarks 70
8 Results 71
8.1 The Belastingdienst and the recent faults 71

8.1.1 ICT management and architecture 71
8.1.2 More backups 72
8.1.3 Chief Information Officer 72
8.1.4 ICT manager and ICT update course 72
8.1.5 Service-Oriented Architecture 72
8.2 The Belastingdienst and three perspectives on compliance 73
8.2.1 Compliance from a public administration perspective 73
8.2.2 Compliance from a public philosophical perspective 74
8.2.3 Compliance from an organizational perspective 75
8.3 The Belastingdienst and four factors of compliance 76
8.4 Compliance towards the Belastingdienst 78
8.5 Improve the compliance 80
9 Conclusions 82
10 Reflection 84
11 References 86
Appendix A: the questionnaire 89
Appendix B: explanation of the questionnaire 93

1 Introduction

The Dutch Tax and Customs Administration (from now on I will use the term *Belastingdienst* for this) is responsible for cashing taxes of Dutch citizens. Therefore it has to process the declarations of about six million private individuals and about one million companies. Furthermore, the Belastingdienst also pays those people who have paid too much tax in the past or it pays out bonuses for rent or care costs.

Together with all those activities the Belastingdienst has some more work processes, like fraud detection and monitoring the processes. This research is about one of the most rising and important processes, namely the information and communication technology (ICT) at the Belastingdienst, part of the facilitating central of the organization. [BEL081]

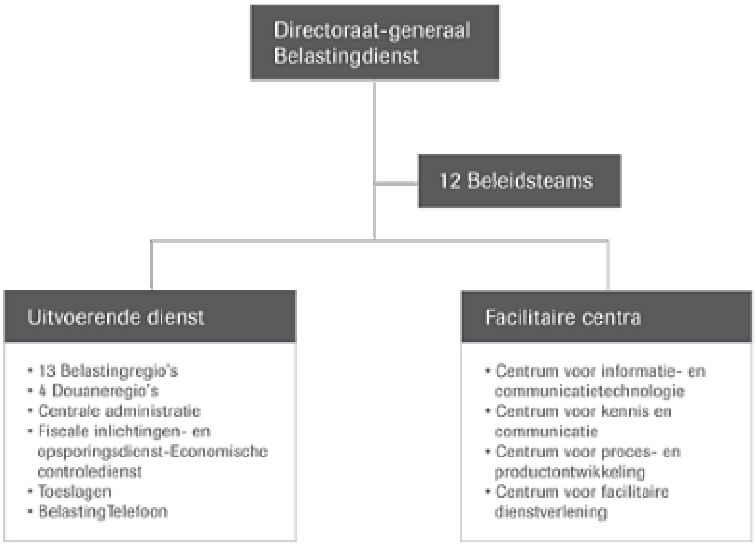

Figure 1: organogram of the Belastingdienst [BEL081]

In [BEL082] is stated that the Belastingdienst has processed 10.416.000 income declarations in 2007. About a half (45%) of those were handed in with the use of *DigiD*, a new system in which taxpayers can make use of their online identity to fill out and send in their declaration. This is an enormous growth in relation to 2006, with the use of *DigiD* in that year being just 6%.

In 2009 – when people hand in their declarations for 2008 – the system with internet declarations will disappear. In this system people could hand in their declarations by making use of a username and password. In 2009 now people have the choice of making a declaration with *DigiD* or doing so on paper. [BEL083]

Although the extensive use of this system, the Belastingdienst made a lot of mistakes with those declarations in 2008. For that reason the Belastingdienst announced some measures to improve the new system, but how have those measures worked out on the taxpayers?

Note that after some long sections or sections with a lot of text (especially the more theoretical parts of the thesis), I have added a short summary to help you keep track of the report.

2 Problem statement

Here I will introduce the problem I have investigated during my research. This problem is founded in the theoretical framework, introduced in the next section. In this framework I have studied available research to know what is playing in the field at this moment. Furthermore, I have investigated some theoretical models, to which I will reflect the problem statement of this thesis.

The problem I have investigated is if and how the compliance of Dutch taxpayers has been affected by the recent failures in ICT at the Belastingdienst. I could imagine that people are backing off a bit regarding digital declarations because of the much negative news recently. Furthermore, I wanted to investigate how this compliance could be increased by improving the system. When the Belastingdienst adapts the ICT systems for digital declarations to meet the taxpayers' wishes and requirements, the distance between them will decrease, which results in an increase of the compliance (see theoretical framework).
In a research question we get:

How and why has the compliance of Dutch taxpayers been affected by the recent ICT failures at the Belastingdienst and how can this compliance (further) be increased?

To investigate this problem I have split it up into several sub questions:

- Has the Belastingdienst learned from its faults of the past year?
  In my news research several recent failures at the ICT of the Belastingdienst have showed up. The Belastingdienst promised to take measures to solve the problems and to prevent possible new failures in the future. How have those measures turned out?
- How is the Belastingdienst dealing with the three perspectives on the compliance of taxpayers and how can it improve this?
  In my literature research I have discussed three perspectives on distance and compliance, as mentioned in [BEKK01]. How is the Belastingdienst dealing with those perspectives nowadays?
- How is the Belastingdienst dealing with the four factors of compliance?
  In my literature research I have discussed four factors of compliance. Those factors were mentioned in the discussion of a workshop about ICT and distance in [BEKK01]. How is the Belastingdienst dealing with those factors nowadays?
- What is the current degree of compliance of taxpayers toward the Belastingdienst?
  While the Belastingdienst is forcing taxpayers more and more to make use of *DigiD* , and thus a computer with internet connection, research showed that this forced use of technology-based self-service leads to a decrease of compliance. How is this tendency visible in the compliance of taxpayers toward the Belastingdienst?
- What requirements are there to improve the compliance of users?
  What wishes do taxpayers have with respect to the ICT system at the Belastingdienst? With this question I want to extract the requirements for improving the system and thus the compliance.

3 Theoretical framework

3.1 Theoretical models

I will connect the problem statement to some important and suitable models I have found during my literature research. Globally, those models are:

- Technology Acceptance Model (TAM);
- DeLone and McLean model of Information System (IS) success;

I used the word "globally" because I have also studied research articles that propose modifications or additions to the models.

3.1.1 Technology Acceptance Model (TAM)

Following [DAVI89], the Technology Acceptance Model (TAM) is an adaptation of the earlier Theory of Reasoned Action (TRA). Therefore, I will explain this TRA first in short. TRA is an so-called intention model being successful in predicting and explaining behaviour of users of technology.

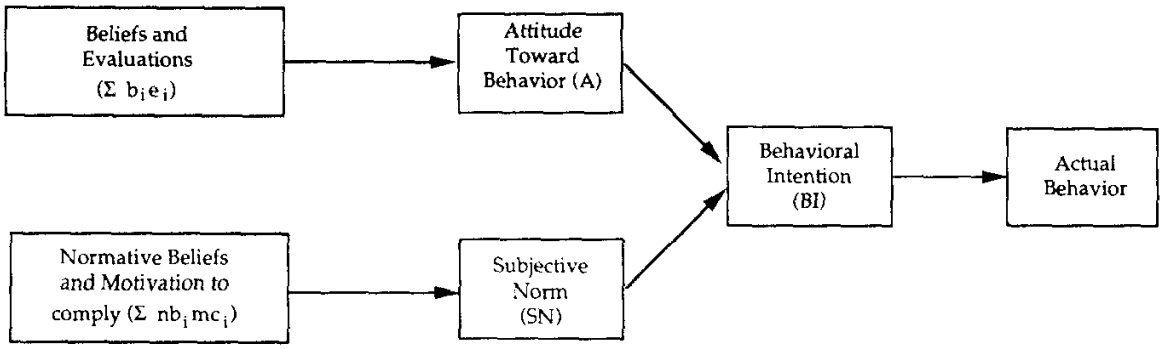

Figure 2: graphical representation of TRA [DAVI89]

In Figure 2 we see how the theory of TRA actually works. Beliefs and evaluations shape somebody's attitude how to behave towards technology. Together with the normative beliefs and motivations this leads to the intention how to behave and that result in the actual behaviour.
The beliefs and evaluations are the beliefs of consequences of performing the behaviour multiplied by a evaluation of it. Normative beliefs are perceived expectations of specific groups or individuals and the motivation to comply with those expectations.

Because TRA is very general, researchers using it have to investigate the beliefs that are salient for subjects regarding the behaviour first themselves. Furthermore, [DAVI89] states that any factor affecting the behaviour only do so by affecting the Attitude Toward Behaviour (A in Figure 2) or the Subjective Norm (SN), making those factors all "external variables". This makes TRA a mediator between the uncontrollable environment (or external) variables and the controllable internal variables (being interventions on user behaviour).

As said before, TRA is (too) general and therefore Davis introduced an adaptation of the theory in 1986 with the Technology Acceptance Model. TAM can be used for modelling user acceptance of information systems. TAM is specifically meant for computer usage behaviour.

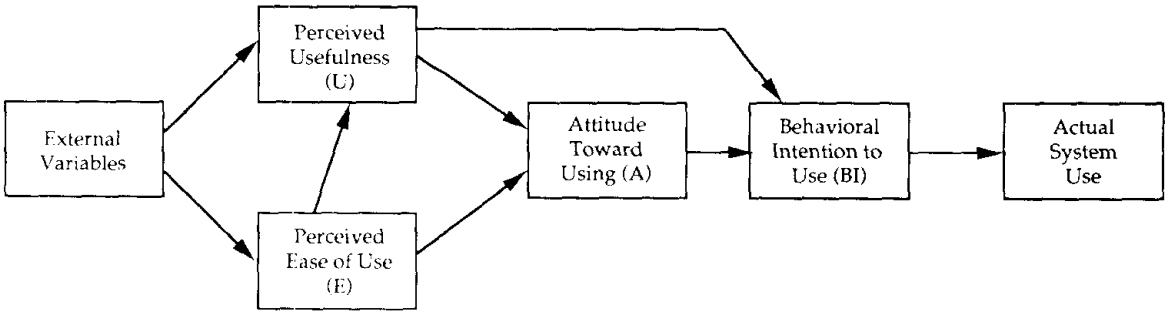

Figure 3: graphical representation of TAM [DAVI89]

As we can see in Figure 3, TAM states that the attitude toward using is determined by the perceived usefulness and the perceived ease of use. This attitude together with the perceived usefulness determines the behavioural intention to use the system which results in an actual system use. So, the key principles in TAM are the perceived usefulness – how the user sees the use of the computer system will increase his job performance (or not) – and the perceived ease of use – the degree to which the user thinks he can use the system free of effort (or not).

[DAVI89] finally gives three main conclusions from their comparison of the two models:

- People's computer use can be predicted reasonably well from their intentions;
- Perceived usefulness is a major determinant pf people's intentions to use computers;
- Perceived ease of use is a significant secondary determinant of people's intentions to use computers.

In [WU2005] has been stated that TAM is incomplete for online services. In this research they have investigated a combination of trust and TAM with TPB (Theory of Planned Behaviour). This TPB model predicts and explains human behaviour (like TRA and TAM), but also considers the roles of individual members of an organization and social system in this process. In TPB we have also three influencers on the behaviour, namely: attitude, the subjective norm and perceived behavioural control.

Because [WU2005] is about the acceptance of online tax services, in this research the researchers propose the combination of trust and TAM with TPB should be a more comprehensive model to predict the acceptance of those online tax services. [WU2005] aimed at the acceptance under citizens in Taiwan, where this acceptance was still low at the moment of the research. The researchers wanted to solve this problem with the new model they have investigated.

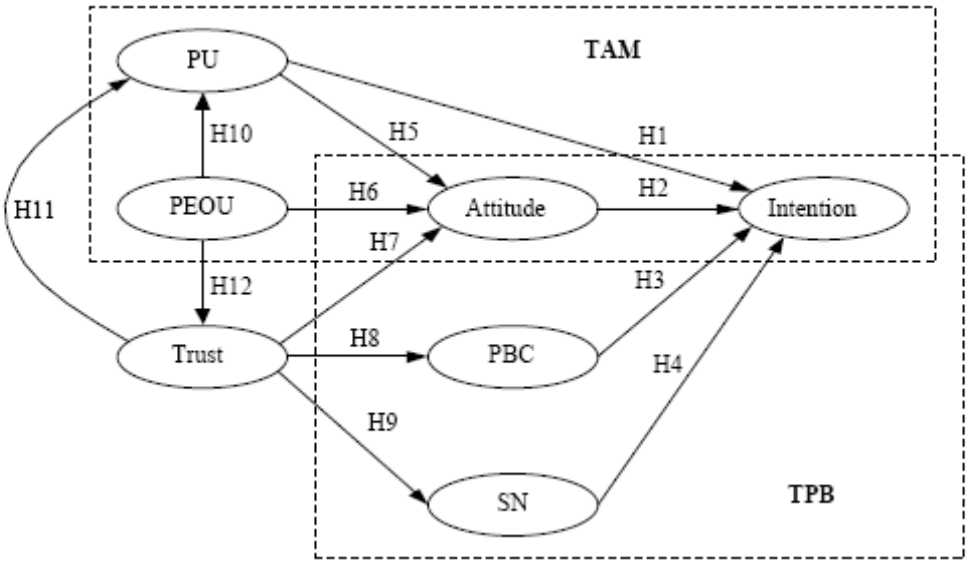

Figure 4: the research model in [WU2005]

In Figure 4 we see this model graphically represented. The connections between the influencers of the two models, TAM and TPB, and trust are hypotheses. Those hypotheses are [WU2005]:

- Hypothesis 1. Perceived Usefulness (PU) has positive effect on intention to use on-line tax.
- Hypothesis 2. Attitude has positive impact on intention to use on-line tax.
- Hypothesis 3. Perceived Behavior Control (PBC) positively influences intention to use online tax.
- Hypothesis 4. Subjective Norm (SN) has positive effect on intention to use on-line tax.
- Hypothesis 5. PU has positive impact on attitude to use on-line tax.
- Hypothesis 6. Perceived Ease of Use (PEOU) positively influences attitude to use on-line tax.
- Hypothesis 7. Trust has positive effect on attitude to use on-line tax.
- Hypothesis 8. Trust has positive impact on perceived behavior control to use on-line tax.
- Hypothesis 9. Trust positively influences subjective norm to use on-line tax.
- Hypothesis 10. PEOU has positive impact on PU to use on-line tax.
- Hypothesis 11. Trust has positive effect on PU to use on-line tax.
- Hypothesis 12. PEOU positively influences trust in using on-line tax.

The researchers have examined those hypotheses to examine the model. They have collected answers to a questionnaire of about 1000 users. With the results of those questionnaires, they concluded that the model holds; trust turned out to be very important to make people accept the use of online tax services. Trust has been proved to be an antecedent of perceived usefulness (PU) and (thus) of attitude. This implies that the online tax provider has to make sure people trust the system in first place.

3.1.2 DeLone and McLean model of IS success

In [WANG07] the DeLone and McLean model of Information System success (D&M IS success model) has been introduced. In this research the researchers have examined this model with questionnaires and as a result of the answers, they have proposed a respecification

of the model. Here, I will introduce the D&M IS success model and the respecification of the research, so I can use it in my research.

The D&M IS success model was introduced in 1992 as a model of interrelationships between six IS success variable categories: System Quality, Information Quality, IS Use, User Satisfaction, Individual Impact and Organizational Impact. [WANG07] In Figure 5 is shown how the relations are between those categories.

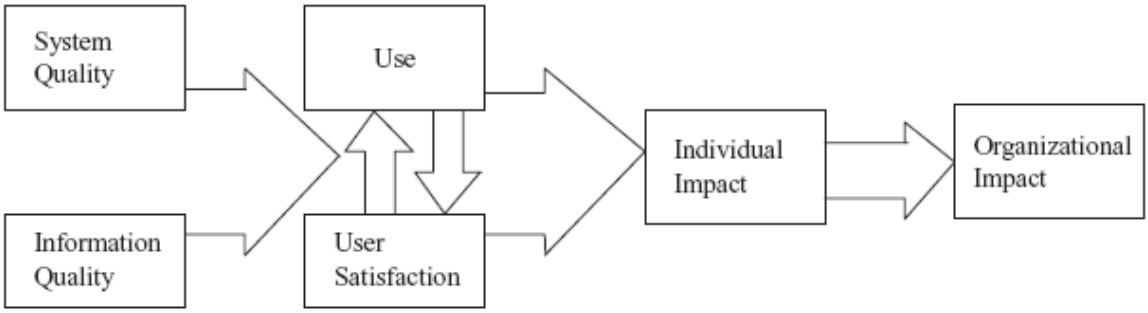

Figure 5: the DeLone & McLean IS succes model (1992) [WANG07]

After some critics on this model, DeLone & McLean have proposed an updated model in 2003. In this new model, they have added the dimension Service Quality and the impact categories are grouped into one category Net Benefits. With the proposal of this updated model DeLone and McLean suggest that their model can be adapted to the measurement challenges of the new e-commerce world. [WANG07]

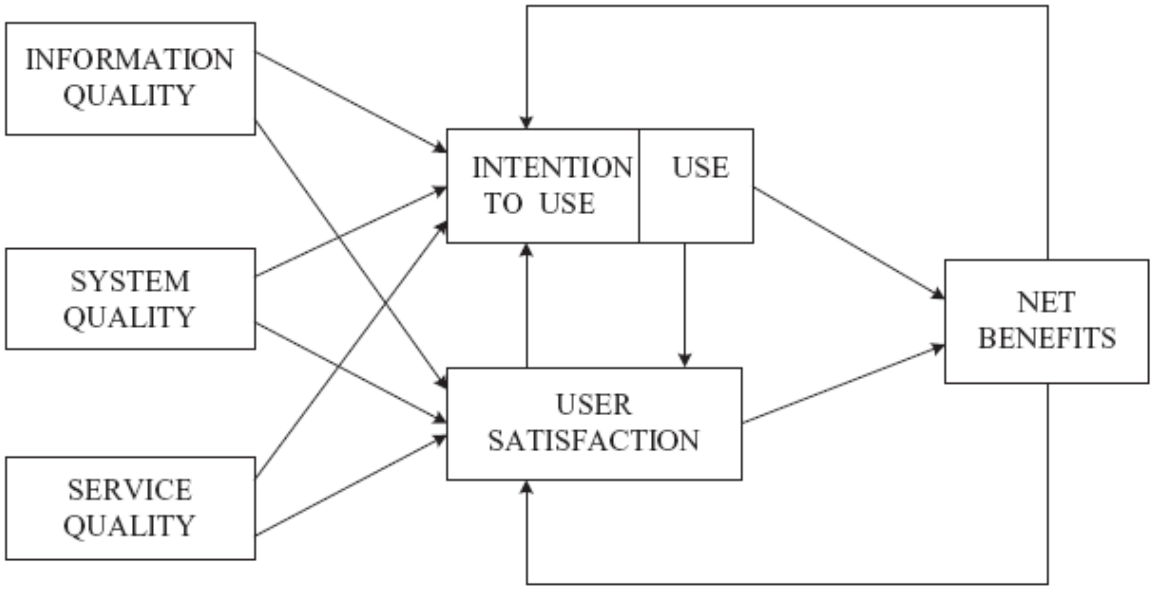

Figure 6: the updated DeLone & McLean IS succes model (2003) [WANG07]

In [WANG07] then the researchers have tried to combine the DeLone & McLean IS success model (2003) with TAM and theories of marketing literature. They also wanted to introduce the Perceived Usefulness in their research model. This resulted in the research model in

Figure 7, with a set of corresponding hypotheses, which were tested to accept or reject the research model:

- H1: Information Quality will positively affect User Satisfaction in the e-commerce context.
- H2: System Quality will positively affect User Satisfaction in the e-commerce context.
- H3: Service Quality will positively affect User Satisfaction in the e-commerce context.
- H4: Information Quality will positively affect Perceived Value in the e-commerce context.
- H5: System Quality will positively affect Perceived Value in the e-commerce context.
- H6: Service Quality will positively affect Perceived Value in the e-commerce context.
- H7: Perceived Value will positively affect Intention to Reuse in the e-commerce context.
- H8: Perceived Value will positively affect User Satisfaction in the e-commerce context.
- H9: User Satisfaction will positively affect Intention to Reuse in the e-commerce context. [WANG07]

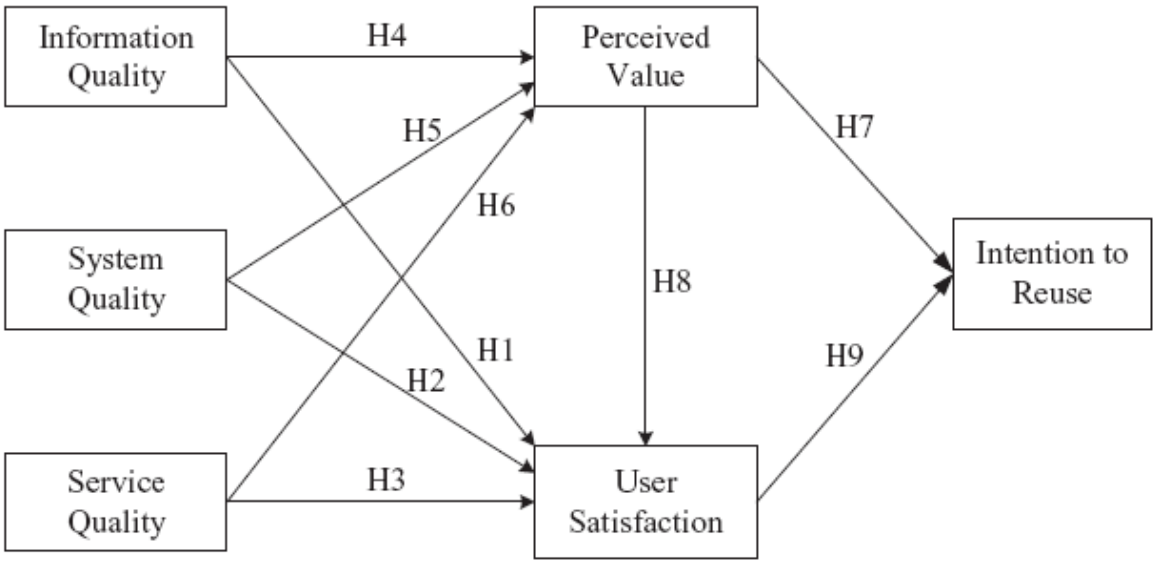

Figure 7: the research model in [WANG07]

They have replaced Perceived Usefulness with perceived value and System Use/Intention to Use with Intention to Reuse. Together with User Satisfaction those measures formed the Net Benefit Measures in their respecified model, which was constructed after the analysis of all collected data. The complete respecified model is in Figure 8.

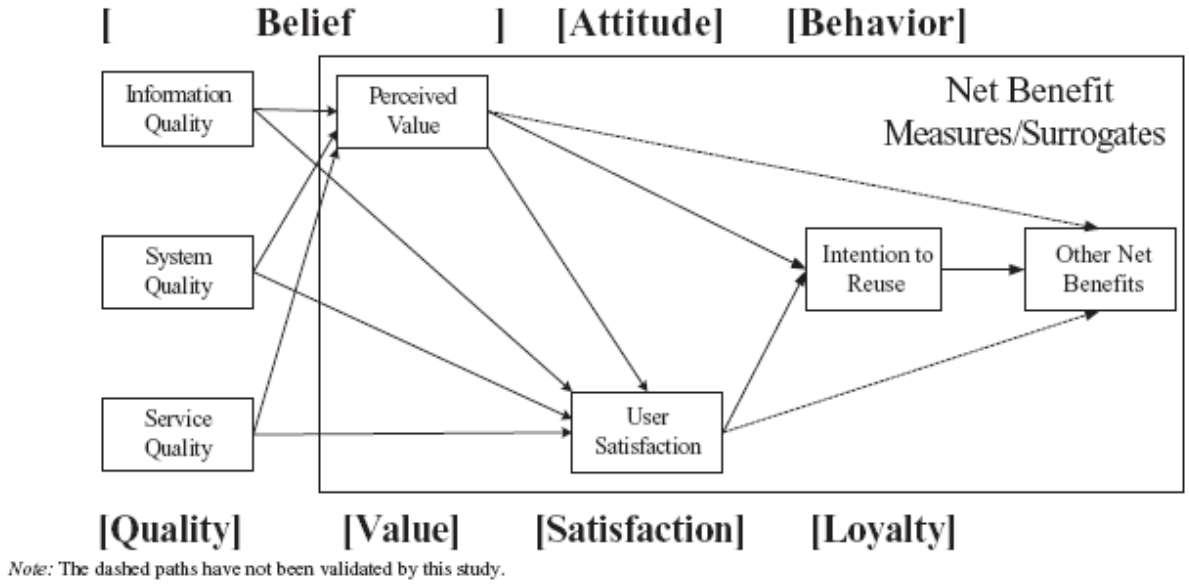

Figure 8: the respecified e-commerce success model in [WANG07]

Summary
I have discussed several theoretical models. Firstly, I have described the Theory of Reasoned Action. TRA is (too) general and therefore Davis introduced an adaptation of the theory in 1986 with the Technology Acceptance Model. TAM can be used for modelling user acceptance of information systems. TAM is specifically meant for computer usage behaviour. TAM states that the attitude toward using is determined by the perceived usefulness and the perceived ease of use. This attitude together with the perceived usefulness determines the behavioural intention to use the system which results in an actual system use. Furthermore, I have described a model which combines Theory of Planned Behaviour (TPB) and TAM, expanded with Trust.

At the end, I have introduced an e-commerce success model, which combines the concepts quality, value and satisfaction. Together those concepts are the antecedent of the concept Loyalty, which is the intention to (re)use.

3.2 Literature research

As a starting point for my plan (and thus, my thesis) I did some field research to know what research already has been done and could be useful in my own research. First of all, I made clear what compliance is. Then I have read [BEKK01], which is a research report about how people react on the extensive use of ICT at the Belastingdienst. In this report first the term “distance” (and thus compliance) is introduced from three different perspectives; the public administration perspective, the philosophical perspective and the organizational perspective. Every perspective has been considered from three angels; first is mentioned what is distance from the perspective, then how ICT affects the distance and finally what this all means when we are talking about the Belastingdienst. [BEKK01] is a conceptual exploration of 2001, which can be used as a base for further research, like mine.

3.2.1 Compliance

Following [DEWE01] the strategic goal of the Belastingdienst is compliance, with compliance being improving and maintaining the willingness of people who have to pay tax and who have used the digital system for it before, to meet their obligations to do so by using the digital system again.

We have to keep in mind that people don't have a choice in case of tax obligations; they have to pay and they have to deal with the Belastingdienst. Although, it is important for the Belastingdienst people are willing to cooperate as much as possible. When people have little compliance to the Belastingdienst, they can try to fraud or make mistakes more often.

In my research I have focussed on the digital declaration system. When talking about compliance I mean the intention of people to make use of this system to fill out and send in their tax declarations.

3.2.2 Distance and compliance from a public administration perspective

From the public administration perspective, distance has three dimensions: a physical, social and a normative dimension. When talking about the physical dimension of distance you are talking about the meaning of space between entities you can observe. In case of the social dimension you mean (social) relations between people, groups, organizations and social systems. Finally, the normative dimension of distance is about the moral sense of distance.

All these dimensions are being affected by the use of ICT. ICT challenges physical borders by connecting computer systems all over the world. *Here* is available over *there* and *there* is available over *here*. The physical distance seems to disappear with the use of ICT. But this effect results in a larger social and normative distance. People have less face-to-face contact and become more transparent. In [BEKK01] is stated that the Belastingdienst could fill out people's tax forms. Now, about eight years later, in March 2009 the Belastingdienst starts a pilot with pre-filled-out tax forms. [KPMG08]

[BEKK01] continues with two scenarios about steering and ICT regarding distance. The first scenario is called "mainframestaat" and in this scenario the world of huge systems and closed networks, with routines, regularity and reliability plays a central role. The distance with the citizens is very short, so every information about them is available everywhere. But they can also be seen as employees too now, because they can enter their own information.
In case of the Belastingdienst this means that effecitivity of supervision is increasing. The people are more transparent, which makes it easier for them to provide the needed information, but this implies they have less privacy. Furthermore, the distance has been decreased, which increases the compliance. The image now will be modern and reliable, with the citizens feeling more accessibility and the speed of information processing increases the citizens' acceptance.

The second scenario is called "internetstaat" and in this scenario the web generation in ICT makes the government more stepping back and more hybrid. The capacity of the systems increases exponentially and those systems are connected in networks in networks in networks, called the internet. Knowledge and intelligence are no longer hierarchically organised, but they are everywhere available. The government is on a large distance and just an actor in the network, with the citizens as requesting party. Voluntary and solidarity are key principles in this world.

In case of the Belastingdienst this implies that people want to enjoy the advantages of online services – such as booking a holiday – rather than use the internet for tax payment services. People seem to like the short distance between payment and supplies.

The advice in [BEKK01] from the public administration perspective is that the Belastingdienst has to focus on this short distance between payment and supplies.

3.2.3 Distance and compliance from a philosophical perspective

From the philosophical perspective, in [BEKK01] there are three types of relations that human beings have. The first one is the relation with the world and this relation needs *familiarity*. The second one is the relation with other humans and this implies *trust*. The third relation is the relation between a human being and himself. In this last type of relation *loyalty* is needed. Each type of relation is affected by education. Education decides the distance between a human and the world, other people and himself.
Distance is a constituting characteristic of people, but at the same time we are continuously trying to decrease those distances. Because without distance there is no humanity, the distance can decrease, but will never totally disappear.

ICT is used to decrease the distance, as we have seen before from the public administration perspective. ICT is – like all other technologies – a teletechnology, focused on decreasing the three types of distance. But, the actual effect of technologies are to conquer some caused psychic problems by some kind of absence, because they present this absence in a symbolic, fictive way and turn the results of the absence into a pleasure. This is called Weibel's analysis.

Following De Mul and Wertheim, the internet replaces religion in our world. The internet promises us that we know everything, that we have it always available and that it offers us almighty. Those three characteristics were regarded as qualities of God before. Thus, ICT promises us that we can conquer our humanity. But as stated in the part about distance, those distances – that hold our humanity – cannot disappear. When looking at the role of the internet nowadays we can say there has been a drastic growth of the use of ICT and this has resulted in an information overload, which makes us unworldly because we now can understand how transient we are.

We are even entering virtual worlds in which we continuously are wondering if the persons we are talking to really are the persons we think we are talking to. This is a form of distrust and so increases our distance with other humans, while this distance physically has decreased. And when looking at the many viruses and hackers' activities as side effects of ICT, we can state that our digital power is definitely no almighty. So, the use of ICT forces us to find other ways to create familiarity, trust and loyalty.

The Belastingdienst is aiming for compliance, internally and externally. To reach those goals, they have to design and implement their ICT systems in such a way that there is room for maximum familiarity, trust and loyalty with the citizens. With regard to the external compliance, the Belastingdienst needs to create suitable new interfaces for citizens. Interfaces that can show only these screens that have to be showed to a specific user; e.g. only the information needed will be asked for and presented to the user. This implies dynamic information processing at the Belastingdienst.

Furthermore, the information systems have to be designed, so that it creates trust. Therefore, the ICT must encourage personal contact (face-to-face, one-to-one). But, still we have a

critical border which holds us from making people totally transparent. When you would do so, people have little privacy left and this would give them an unsafe feeling.

When talking about the Belastingdienst, [BEKK01] states – from a philosophical perspective – that the Belastingdienst has to unify the taxpayer, who could have many different identities in virtual worlds. The Belastingdienst has to wonder if this fact affects the compliance, because with those different identities there is no durability and stability of relations – conditions of trust.

3.2.4 Distance and compliance from an organizational perspective

From this perspective, distance is viewed from an instrumental approach and from an institutional approach. In the first approach, distance is physically and geographically. In the institutional approach, functional distances are bridged and, as a result of this, functional borders and thus functional distance between organizations are fading away.
Besides this, distance has a cultural function. For a long time, distance has been seen as a barrier for creating communities – spatial and functional. In a culture of virtual communities this lack of distance plays a central role.

Because in the internet there is no real centre, in which – following classical theories – the network is being coordinated, [BEKK01] introduces three business cases, which are regarded to distance, which results in a specific way of compliance. Those three business cases are integration and disintegration, aggregation and disaggregation and intermediation and disintermediation. In the first business case, the citizens become part of the system; they are integrated into the system. In a mechanic form of integration the distance between the taxpayer and the Belastingdienst is relatively large, because all actions take place in a kind of a black box; in an interactive form of integration this distance is smaller, because the black box becomes more transparent.

The second business case throws up the question if some processes could be re-designed through the internet in such a way that those processes result in more added values for the customer (tax payer) than the current values. Therefore we need to create sub-processes (disaggregation) and we have to search for groups of processes that could offer more added values for the customer (re-aggregation). In case of the Belastingdienst this seems to be interesting, because it possibly leads to more compliance from the tax payer by thinking about how to re-design the fiscal processes.

In the third business case of intermediation and disintermediation [BEKK01] goes into the fact that the internet has made several sectors less meaningful, made markets more transparent and made intermediates have less lead in strategic information. But there have also raised some new intermediates as a result of the enormous growth of information and knowledge. For the Belastingdienst tax and administration offices are intermediates between the Belastingdienst and the citizens. Those intermediates make the distance with the citizens quite large, while the distance between the intermediates and the Belastingdienst itself is quite small.

A possibility for the Belastingdienst is to play the role of intermediate itself to decrease the distance with the citizens. One way to do so proposed in [BEKK01] is to create a kind of Belastingdienst portal in which the citizens can find every service they need anytime they need it; information, contact and transaction services available on one place for everybody. Besides the small distance, it also increases the recognizability for the tax payer and so, the

compliance. The other side of those advantages is that there are concerns about the reliability; how can people know they are communicating with the Belastingdienst instead of some hacker? Or how is the Belastingdienst supposed to know that they are really dealing with the real mister Pieterse?

In the article is suggested that the Belastingdienst could outsource one of its key processes (disaggregation) to decrease the distance with the citizens and so increase the compliance of those people. That is the question the Belastingdienst has to ask.

3.2.5 ICT and external compliance

Then [BEKK01] reports about a workshop "ICT and distance" on 13 December 2000 in Utrecht. In the results, especially the hypothesis about the relation Belastingdienst-citizen is interesting; in the next five years the citizen can individually determine the level of publicity of his personal information.

Next in the report is discussed the external compliance in relation to ICT, which is related to my research. The strategic goal of the Belastingdienst is to maintain and improve the compliance of tax payers to meet their (legal) fiscal obligations. The larger the distance between the Belastingdienst and the taxpayers, the more likely they don't meet this obligation. At the Belastingdienst this issue especially shows up in processes of supervision and service. When looking at the "driesporenbeleid" of the Belastingdienst, we will see the first track takes care of tax payers to meet their obligations by themselves. People who cannot do so, will be helped and supported.
The second track takes care of tax payers to meet their obligations after good and in time handling, together with broad supervision of the Belastingdienst.
At least, the third track is forcing tax payers to meet their obligations, correct them of punish them.

When doing research on compliance of taxpayers, you have to make a difference between two groups; individual taxpayers and a group of companies. The Belastingdienst has different ways of contacting those groups, with the distance between the Belastingdienst and individual taxpayers being larger than the distance to companies.
[BEKK01] gives four main groups of factors affecting compliance:

- Frightening: the distance between taxpayers and the Belastingdienst can be decreased (this means more compliance) by more and better control and supervision. The other way round the distance could also increase when the pressure of this control and supervision negatively affects the sense of duty;
- Sense of duty: because taxpayers have a high degree of sense of duty, the tax laws and rules could be simplified. This results in a decreased distance to the taxpayers and decreases also the (often unintentional) non-compliance;
- Consultants: consultants are intermediates which we have seen increase the distance between the Belastingdienst and the taxpayers. But, they also decrease the unintentional non-compliance by helping people who have questions or problems;
- Other factors: some demographic factors have a correlation with the degree of (non-)compliance. Those factors play an important role when looking at the influence of ICT on the (non-)compliance.

But, how is ICT affecting those four factors?

- Frightening: ICT makes it easier to control, but much more control results in just a relatively small decrease of non-compliance. Also, the privacy issue may prevent a lot

of people using electronic declaration. So, the Belastingdienst has to deal with taxpayers more kindly to decrease the distance;
- Sense of duty: here ICT can help people with their digital declaration. The complex fiscal laws and rules can be explained when necessary and more clearly. People want accessibility, clear procedures and feedback;
- Consultants: ICT makes the role of consultants as intermediates smaller. This could lead to a smaller distance between the Belastingdienst and taxpayers. But, [BEKK01] suggests to review the role of consultants because they can integrate the interests of the Belastingdienst on one side and the taxpayers on the other side;
- Other factors: it is very important to make sure that every taxpayer can make use of the digital services of the Belastingdienst. So, you have to help groups that are falling behind on closing the gap.

3.2.6 Technology-Based Self-Service

In [REIN08] I found a research about the impact of forcing people to make use of Technology-Based Self-Service (TBSS). Organizations make use of new technologies more and more in their service process, but at the same time they are asking more participation of consumers in that same service process. [REIN08] has investigated what effects an increasing TBSS means for the intentions of people in terms of using the new technology.

The study was done in the Netherlands by investigating the impact of the forced use of TBSS in train tickets service. More and more (little) stations only have a ticket machine nowadays and people have no choice but to use this machine for buying their tickets. The researchers had formulated several hypotheses, which cover the effect of forced use of TBSS on (1) the attitude toward using the TBSS itself, (2) the attitude toward the service provider, and (3) behavioural intentions. Moreover, they have investigated (4) the effect on the attitudes when people have the opportunity to fall back on interaction with a human employee and (5) the effect of previous experiences on the attitudes. For each category – (1) to (5) the appropriate hypotheses are:

- (1) the effect of forced use of TBSS on the attitude toward using the TBSS itself:
  - Hypothesis 1a: Forced use of a TBSS (vs. giving customers a choice in service delivery options) will result in less favorable attitudes toward using the TBSS.
  - Hypothesis 1b: Greater choice among service delivery options will result in more favorable attitudes toward using the TBSS.
- (2) the effect of forced use of TBSS on the attitude toward using the TBSS itself:
  - Hypothesis 2a: Forced use of a TBSS (vs. giving customers a choice in service delivery options) will result in less favorable attitudes toward the service provider.
  - Hypothesis 2b: Greater choice among service delivery options will result in more favorable attitudes toward the service provider.
- (3) the effect of forced use of TBSS on the attitude toward using the TBSS itself:
  - Hypothesis 3: The more positive the attitude toward using the TBSS (a) the more likely that the consumer will engage in positive word of mouth and (b) the less likely that the consumer will switch to another mode of service.
  - Hypothesis 4: The more positive the attitude toward the service provider (a) the more likely that the consumer will engage in positive word of mouth and (b) the less likely that the consumer will switch to another mode of service.
- (4) the effect of forced use of TBSS on the attitude toward using the TBSS itself:
  - Hypothesis 5: The availability of interaction with an employee as a fall-back option in the case of forced use of a TBSS will lead to (a) more positive

attitudes toward using the TBSS and (b) more positive attitudes toward the service provider.

- (5) the effect of forced use of TBSS on the attitude toward using the TBSS itself:
    - Hypothesis 6: Consumers' previous experience with using TBSS in general will lead to (a) more positive attitudes toward using a particular TBSS and (b) more positive attitudes toward the service provider of that TBSS.

[REIN08]

The corresponding conceptual framework is presented in Figure 9.

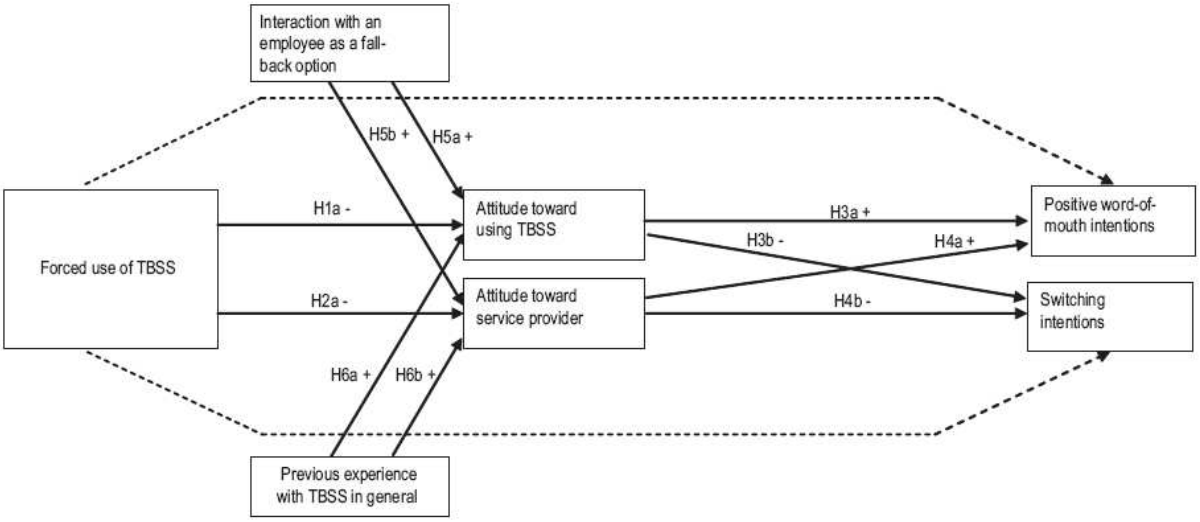

Figure 9: conceptual framework in [REIN08]

In the conceptual framework in Figure 9, we see the concepts of the hypotheses, which are connected by the hypotheses it selves. When there is a '-' after a hypothesis, the researchers have assumed a negative influence, while a '+' represents a positive influence.

After analyzing the response the researches were able to conclude that all hypotheses hold, except 6b. So, from all assumptions only the assumption that a previous experience with some general TBSS would have a positive influence on the attitude toward the service provider needed to be thrown away. Moreover, they concluded that having no choice adversely affects the attitude and behaviour. But, on the other hand, offering more choices does not linearly lead to a more positive attitude and behaviour. When people could fall back to employees when necessary, the negative effects of the forced use could be decreased possibly. [REIN08]

Summary
We have formulated compliance being improving and maintaining the willingness of people who have to pay tax and who have used the digital system for it before, to meet their obligations to do so by using the digital system again.

Furthermore, we have seen three perspectives on compliance; a public administration, a philosophical and an organizational perspective. I have also introduced four factors affecting compliance: frightening, sense of duty, consultants and other demographic factors. I have discussed how ICT is affecting those factors.

Least, I have discussed a research about the impact of forcing people to make use of Technology-Based Self-Service.

3.3 News research

In the past year the Belastingdienst was in the news because of problems with the software for digital declarations. Earlier, people were not using digital declarations very much [BEL082], so most of the news came about from the year 2006. In this section I have summarized those news articles.

In 1997 the Belastingdienst announced for the first time that it wants to offer people the opportunity to hand in tax declarations online. At that moment the organization just had analyzed the advantages and disadvantages and concluded that it must be possible to come up with online tax declarations in 1999. [COM971]

The then Dutch minister Gerrit Zalm of Finances came in 2003 up with the idea of online tax declarations. He then believed people could make the switch from paper to computer and is supported by data of the Belastingdienst; in 2003 75% handed in the tax declaration by floppy or internet, in 2002 67% and in 2001 33%. [NUN031]

In France, people had to pay twenty euro less tax in 2005 when they make an online declaration instead of doing so on paper. With this measure the government there tried to stimulate people to make their declarations online. There came a lot of criticism on this, with people stating that people who have no computer and/or internet (who still exist) are harmed for no reason. [ZDN051]

In February 2008, the Belastingdienst had to ask 730,000 taxpayers to hand in their digital declarations again, because of a defect in the software. This year it was the first time taxpayers had to use their *DigiD* and for that reason the software was adapted. Dutch State Secretary of Finances Jan Kees de Jager decided to reorganize the ICT department of the Belastingdienst. He announced the installation of a department “ICT management and architecture”, which is under direct supervision of the ministry to assure a central steering. [NUN081]

At the same time a news article reported that it is false to blame *DigiD* for the problems at the Belastingdienst. “GBO-Overheid”[1] suggested that the problems were at the Belastingdienst with the configuration of ports for receiving the digital declarations. [COM082] In the end it

[1] “GBO Overheid” is responsible for a number of ICT systems at the government; http://www.gbo-overheid.nl/

turned out that the software defects were caused by procedures out of the time of declarations on paper. A so-called chain test – testing of composing, sending, receiving and handling – was not carried before the taxpayers were using it. So, the first declarations we processed by an untested system. Jan Kees de Jager now has ordered to make backups in the system after every phase in the chain to prevent another loss of digital declarations. [COM083]

Already in April 2006 the *Platform voor InformatieBeveiliging (PvIB)* had announced that the use of *DigiD* as digital authentication method for online tax services would be too weak. The Belastingdienst replied by telling that the organization uses more checks to authenticate the online declarations. [NUN061]

In July 2008, the Belastingdienst announced that from 15 September 2008 a Chief Information Officier (CIO) will be installed. Furthermore, all departments get an ICT-manager and managers get an ICT update course. With those measures the Belastingdienst wants to prevent new ICT failures. [TWE081]

In August 2008, a Dutch taxpayer complained about the information service of the Belastingdienst. In 2007, he was advised to turn off his virus control program while entering his digital declaration. Afterwards, his computer was filled with viruses and adware and he lost some documents. When he went with his problems to the State Secretary of Finances, he got the answer that even inexperienced computer users should know that turning off the virus control is not without danger. Next, the man went to the "Nationale Ombudsman"[1] and this organization judged in 2008 that the Belastingdienst should have taken responsibility for the problem and they have to offer a way to hand in digital declarations without any problems. [NUN082]

In September 2008, Kees Jan de Jager judged the Belastindienst and concluded that it would take about eight years to get the ICT of the Belastingdienst in order and that all problems are fixed. One of the planned measures is the implementation of a Service-Oriented Architecture (SOA) to decrease the number of applications, with each application having their own database. Such a SOA will store all data centrally and can handle all processes central through the use of web services and the use of standardization. [COM081]

From 2009 people have to make use of the *DigiD* system for handing in their tax declarations. This news was announced in 2006. With the use of sms as security measure of identification the government thinks the system has got a stronger security. The declarations by internet (with password) and the tax floppy have disappeared and people can hand in declarations by making use of *DigiD* or filling out paper forms. [DIGI06]

[1] http://www.ombudsman.nl/

4 Method

Here I will discuss the method I have used to answer the five sub questions and how this has resulted into the answer to my research question *How and why has the compliance of Dutch tax payers been affected by the recent ICT failures at the Belastingdienst and how can this compliance (further) be improved*. As we have seen in the section *Problem statement* this research questions has been split up into five sub questions, of which I will here give the method used to answer them.

4.1 Sub question 1

Has the Belastingdienst learned from its faults of the past year?

In the theoretical framework I have discussed a news research about the faults at the Belastingdienst in the past year(s). Some measures there have been announced to fix those faults and to prevent new ones, but which of them have actually been implemented within the Belastingdienst?

This sub question I have answered by doing an extensive literature research. I have read the project plan of the *Vereenvoudigingsoperatie* at the Belastingdienst and the three updates regarding this plan. Also some news research has been done to find out which measures really have been taken to fix the faults and to prevent new ones.

Here, the research element is The Belastingdienst as an organization.

4.2 Sub question 2

How is the Belastingdienst dealing with the three perspectives on the compliance of tax payers and how can it improve this?

In the theoretical framework I have described three perspectives on compliance; a public administration, a philosophical and an organizational perspective. How is the Belastingdienst dealing with those perspectives on the compliance actually?

I have answered this sub question by doing an extensive literature research as well. I have read the project plan of the *Vereenvoudigingsoperatie* at the Belastingdienst and the three updates regarding this plan. I have linked the concepts out of those reports to the concepts of the theoretical framework.

Here, the research element is The Belastingdienst as an organization.

4.3 Sub question 3

How is the Belastingdienst dealing with the four factors of compliance?

In the theoretical framework I have described four factors of compliance; frightening, sense of duty, consultants and other factors. But, how is the Belastingdienst actually dealing with those factors?

I have answered this sub question by doing an extensive literature research as well. I have read the project plan of the *Vereenvoudigingsoperatie* at the Belastingdienst and the three updates regarding this plan. I have linked the concepts out of those reports to the four factors of compliance.

Here, the research element is The Belastingdienst as an organization.

4.4 Sub question 4

What is the current degree of compliance of tax payers towards the Belastingdienst?

For the sub questions 4 and 5 I have made use of a questionnaire, which consisted of several statements. Respondents were asked to assign a score to each statement. I have used a own research model to compose the questionnaire. Firstly, I will discuss this research model. In the section *Reflection* I will also discuss my research model afterwards. In section 4.6 I will discuss the questionnaire and the choices I have made when composing it.

This research is connected with taxpayers, which are the research elements of this sub question. With taxpayers I mean in this research private individuals who have to pay tax in 2009 (over their income of 2008) and who had to pay tax in 2008 (over their income of 2007) and who have made use of the digital declaration at least once.
Because I wanted to look for a general degree of compliance, but also if this degree depends on demographical factors (such as age, gender, education), I have decided to not further restrict the research elements.

4.4.1 Research model

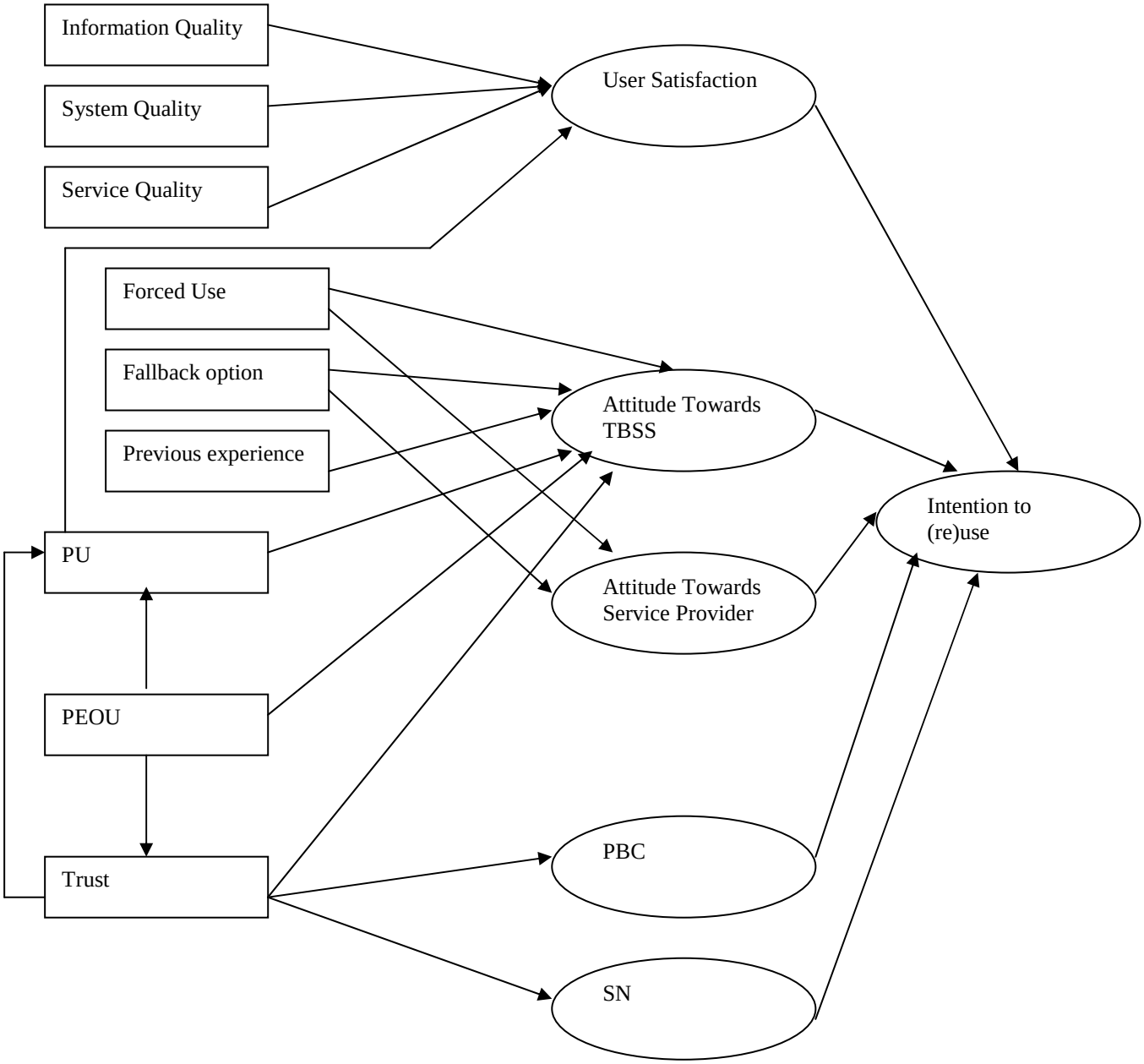

Figure 10: my research model as a combination of TAM – extended with Trust – and e-commerce success model in [WANG07]

I have combined the research models from my literature research into one model, which is presented in Figure 10. This model consists of the concepts and relations between them (proven in the corresponding research) from the models presented in Figure 4 (Trust with TAM and TPB) and Figure 8 (respecified e-commerce success model based on DeLone & McLean and TAM). Those concepts are said – in the theoretical framework – to be predictive for the actual intentions (and thus) use of the system.
Like stated in the introduction of the problem statement in section 2, I also want to involve the more and more forced use of the technology-based service of the Belastingdienst.

This research model I have used for measuring the current state of compliance, which I have concluded from the intention of people to (re)use the system. On the left you see the influencers of the original models (and now in my research model) in rectangles.

I have decided to create a new research model, because I wanted to take advantage of both the Technology Acceptance Model (TAM; 3.1.1) and the DeLone and McLean model of Information System success (D&M IS success model; 3.1.2), which both have been used in previous research. In the theoretical framework I have discussed those two models in detail and I have also mentioned some previous research in which the models already had been respecified (TAM was combined with TPB). For creating my own research model I chose to use the respecified models instead of the original ones, because the respecified models are the result of more recent research. Furthermore, I have expanded my research model with a framework of Technology-Based Self-Service (TBSS; 3.2.6 and Figure 9).

As we have seen in the theoretical framework, in TAM/TPB (Figure 4) the concepts Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and Trust determine the Attitude of people. Furthermore, Trust also determines Planned Behavior Control (PBC) and Subjective Norm (SN). Together with Attitude, PBC and SN determine the Intention of people to reuse a technological system. The concepts in the model are linked with hypotheses, which the researched have found out all to be true, which implies the model holds.

When combining the TAM/TPB model with the D&M IS success model I have assumed Perceived Value being similar to Perceived Usefulness; when people think the system has value for them, they think it is useful to them. Therefore, in my research model Perceived Usefulness determines – together with Information Quality, System Quality and Service Quality the User Satisfaction.

Then I expanded the research model with the framework of TBSS, because the online declaration system of the Belastingdienst is a very nice example of a TBSS in which technology has been used to provide self service to people. In this framework, the Forced Use of TBSS, a Fallback Option and Previous Experience with TBSS determine the Attitude, which has been divided into Attitude towards the TBSS and towards the Service Provider (here, the Belastingdienst).

4.4.2 Operationalisering

The variables linked to my research model:

- BelLearned — degree of how the Belastingdienst has learned from its faults
- BelPersp — how the Belastingdienst is dealing with the three perspectives on compliance
- BelFactors — how the Belastingdienst is dealing with the four factors of compliance

- InfQuality — quality of information in the online declaration system
- SysQuality — quality of the system of the online declaration system
- SerQuality — quality of the service in the online declaration system
- Quality — general degree of quality of the online declaration system
- ForcedUse — degree of feeling the use of the system is forced
- FallbackOption — the opportunity to fall back on employee interaction
- PrevExperience — degree of previous experience with TBSS in general
- PU — perceived usefulness

- PEOU perceived ease of use
- Trust degree of trust in the system
- UserSatisfaction degree of users being satisfied with the system
- AttitudeTBSS attitude towards the system
- AttitudeProvider attitude towards the provider of the service/system
- PBC degree of perceived behaviour control
- SN degree of subjective norm
- Intention the intention of users to (re)use the system
- Compliance the compliance of taxpayers to the Belastingdienst

- DecFactors factors which decrease Compliance
- IncFactors factors which increase Compliance

From the research model, we get the following relations between those variables:

- InfQuality → UserSatisfaction
- SysQuality → UserSatisfaction
- SerQuality → UserSatisfaction
- PU → UserSatisfaction
- PEOU → PU
- Trust → PU
- ForcedUse → AttitudeTBSS
- FallbackOption → AttitudeTBSS
- PrevExperience → AttitudeTBSS
- ForcedUse → AttitudeTBSS
- FallbackOption → AttitudeProvider
- PU → AttitudeTBSS
- PEOU → AttitudeTBSS
- Trust → AttitudeTBSS
- Trust → PBC
- Trust → SN
- UserSatisfaction → Intention
- AttitudeTBSS → Intention
- AttitudeTBSS → Intention
- PBC → Intention
- SN → Intention

Expanded with:

- Intention → Compliance
- InfQuality /\ SysQuality /\ SerQuality → Quality
- BelLearned → Quality
- BelPersp → Quality
- BelFactors → Quality
- DecFactors → Compliance
- IncFactors → Compliance

4.5 Sub question 5

What requirements are there to improve the compliance of users?

In the questionnaire there were six statements covering possible improvements for the system of digital declarations. Together with the possibility to describe in their own words at which point(s) the system could be improved, I have derived requirements to improve the system. When listening to the users, the Belastingdienst decreases the distance to the users and thus increases the compliance of them.

The research element in this sub question is a group of taxpayers.

I have translated the improvement points to basic and generic requirements and then I have combined requirements that represent the same improvements. In this process of requirements engineering it is important to consider all wishes, but also try to extract requirements from more advanced and experienced users in either the tax or ICT area. I have assigned a priority score to each requirement by using the formula:

(*hours on computer* + *hours online services*) * *times made use of system*

The concepts *hours on computer*, *hours online services* and *times made use of system* are derived directly from the questionnaire, in which those concepts are represented by just a basic information question.

When a respondent has either an ICT related profession or a tax related profession only, I have multiplied the result of the formula with 1.5. When a respondent has both an ICT related profession and a tax related profession, I have multiplied the result of the formula with 2. Doing so, I could order the requirements following their priority, with requirements mentioned by several respondents or requirements from somebody with a tax related profession having a higher priority.

Furthermore, I have divided the requirements into non-functional and functional requirements. Within the non-functional requirements I have combined requirements into main categories, such as availability and security.

4.6 The questionnaire

I have made use of a questionnaire to get the results, needed to answer the sub questions 4 and 5. This questionnaire was mainly quantitative, so I have used the results of it as numbers which in a statistically way can answer the sub questions. Only the open question about improvement points has been used in a qualitative way.

In the questionnaire I have asked people to assign a score to statements. Those statements are related to the factors from the 9 influencers of my research model (the rectangles in Figure 10). Also, the respondent could explain his thoughts about improvements in his own words at the end of the questionnaire. Furthermore, I have asked them which concepts they think should be improved in the digital declaration system with six statements. With those extra statements – and the open question – I will got the requirements from the users. Based on their computer experience in general, experience with online services and experience with the digital declarations system of the Belastingdienst – which all are questions in the questionnaire already – I have given the requirements of each respondent a priority score, which I have already explained in section 4.5. I have done this because I think the requirements of more experienced users will be more thought out.

I thought it would be a good idea to measure the influencers on a scale from 1-5. So, the questionnaire consisted of questions in which people gave a weight from 1-5 to several statements related to one (or more) influencers (and thus concepts) of the research model. I think by choosing this scale, I got the best results. [SEGE99] supports this by proposing to use five to seven answer categories with a neutral center.

Because I think my research needs to be representative in the first place (to be determined afterwards), I have decided to use a controlled snowball effect to reach a representative group of respondents; people who actually use the digital declaration system. So, when I gave the questionnaire to the people I know, I have asked them to pass it (the link to the online questionnaire) through to people they know/think make use of the digital declaration system of the Belastingdienst, but with respect to my orders. Those orders were simple and clear: pass it through to someone of the other sex, by prefer in another age group. This respondent should be asked to pass the questionnaire through one more time.
Because some people – especially after more than one iteration – would probably not respond to my questionnaire, I have planned to have 2 iterations to get my respondents. In the first iteration, I have addressed about 40 people, consisting of people out of two main groups: friends (about 18-26 years old) and family (various, but mainly > 26 years old).

I have decided to use an online questionnaire only, because it seemed more practical to me for my respondents and me. Now, I got a data file with all the answers and I didn't have to enter all data of questionnaires on paper into a file myself. Moreover, this way I think the privacy and anonymity of the respondents was guaranteed maximally. When they would give me their answers on paper I would be able to trace them, but with the online questionnaire, I got just one data file with all answers of all respondents together. This way the controlled snowball effect remains, because the link to the online questionnaire was such a specific one, only people who really got it, would get onto the questionnaire.

With regard to the contents of the questionnaire, I have decided to limit the number of questions and statements as much as possible to prevent people had to spend too much time on the questionnaire. After 9 basic introduction questions, people had to assign a score to 26 statements and in a final question they could describe desired improvements in their own words. Furthermore, with every influencer (the rectangles on the left side in Figure 10) being covered by one or more statements in the questionnaire and some statements seem similar, I had shuffled the statements to prevent people of thinking they are answering the same questions more than once.

You can find a copy of the questionnaire in Appendix A.

4.7 The analysis

For analyzing the results of the questionnaire I have made use of Microsoft Excel, because I know the program very well and because the data file with all answers was an Excel file as well.

In a first step I have filtered out the respondents that fit in the criteria of the research elements. In other words, the respondents who have filled out a tax declaration themselves in both 2008 and 2009 and who have used the system of digital declarations at least twice (2009 could become the second time).

Then, every influencer (the rectangles on the left side in the research model in Figure 10) is covered by one or more statements in the questionnaire, as follows:

Influencer: Information quality
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is

Influencer: System quality
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt

Influencer: Service quality
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen

Influencer: Forced use
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen

Influencer: Fallback option
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen

Influencer: Previous experience
Mijn ervaring met de digitale aangifte is tot op heden positief

Influencer: Perceived Usefulness
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte
Ik vind de mogelijkheid van digitale aangifte nuttig

Influencer: Perceived Ease of Use
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet

Influencer: Trust
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is

Every statement had been assigned a score of 1-5.
In the data file every statement has a column, with all respondents below each other. So, I calculated an average score (being 1-5 with one decimal) for every statement first. Then, one

or more statements determine an influencer, so I calculated the average score of the influencers by taking the average of the corresponding statements (see the tables above).

One or more influencers determine the score for a concept, following my research model. So, I have calculated the score of the concepts by taking the sum of the corresponding influencers (see the research model in Figure 10).
Finally, I calculated the compliance by taking the sum of all concepts.

This makes the concept *Intention to re(use)*, which I assumed to be a measure of compliance, can have a score of 14-65. With this scale I made categories which helped me conclude:

- Score >= 50: compliance is very good
- Score >= 45: compliance is good
- Score >= 40: compliance is average
- Score >= 35: compliance is bad
- Score < 35: compliance is very bad

Because I am also interested in the compliance in relation to some demographic factors, I then repeated the previous analysis steps for the respondents, after I divided them into groups depending on their:

- Age;
- Sex;
- Education;
- Profession;
- Times made use of system for digital declarations.

5 The *new* Belastingdienst

In the past year the Belastingdienst was in the news because of problems with the software for digital declarations. I have studied news articles about those problems in section 3.3 and I have also mentioned some measures, announced by the Belastingdienst. But, what about those measures nowadays? Which measures have been taken to prevent (software) problems? The Belastingdienst has started a project called *Vereenvoudigingsoperatie* as a reaction on the problems. In this project the organization takes measures to fix the problems – mentioned in the news research – and to prevent new ones. Moreover, the Belastingdienst wants to reduce the complexity and make things easier for people who have to pay taxes. In terms of my research this project tries to decrease the distance with the people and thus tries to increase the compliance towards the Belastingdienst. In this section I will describe the project in detail, together with all updates that have been given until now. Why all updates and not just the most recent? Because of the fact the Belastingdienst has announced a project plan, which could change when necessary.
Together, those reports give a good overview of the current situation at the Belastingdienst and how the Belastingdienst is dealing with compliance.

5.1 Vereenvoudigingsoperatie

Here, I will discuss [MINF07]. In this plan, the Ministry of Finances describes how it wants to improve the Belastingdienst. For my thesis, I have focussed on the ICT part of the plan.

5.1.1 Introduction

At the Belastingdienst are about a hundred applications, with applications build in other eras of time, with the ideas and languages of that specific time. This makes the network of applications as a whole a very complex and rigid system. Traditionally, the systems are built in such a way that the application and its data files are one. Because of this, communication between applications (and its data files) is difficult and not flexible at all.
In [MINF07] is announced that in the next years the Ministry of Finances will focus on improving the ICT at the Belastingdienst and on solving the problems.

Until [MINF07] was introduced, at the Belastingdienst automation was build just to drive a work process, as a one-on-one mapping to the manual process. At this moment a new goal has priority: people and companies have to be served fast and good. Not only a change in automation will be needed, also service, handling complains and accessibility by telephone have to improve. In [MINF07] a set of measures regarding all those areas has been announced, with most of them have to be realized in a short period of time.

The Dutch legislator wants to see new laws and measures being implemented in the system of the Belastingdienst quicker. In the current system this is impossible. With the changes of the plan, it will be easier and (so) quicker to implement those laws and measures. On the other hand, those laws have to be simplified as well. The Belastingdienst is specialized in carrying out large homogenous tasks, while the current tasks are far from homogenous and generic. The current laws are asking for specialized and heterogeneous systems. In [MINF07] is announced the Belastingdienst is going to implement such systems, but it also asks the legislator to make the laws and measures less complex.

Four areas of attention are introduced following the plan for reducing complexity:

- Additional taxes and SUB/Walvis[1];
- Reducing complexity in the current organisation;
- Reducing complexity in the future organisation;
- Reducing complexity in the laws.

Because only the second and third areas have to do with the ICT architecture of the Belastingdienst (directly), I have focussed on those two points. I will now discuss what plans have been made for them in [MINF07].

5.1.2 Reducing complexity in the current organisation

Measures here are divided into measures for citizens and measures for companies. Because in my research I have focussed on compliance of citizens, I will do the same here without ignoring the measures for the companies (some of those measures even combine the two groups).

Measures announced to reduce complexity in the current organisation:

1. Bother people not more than necessary
   In 2008 the Belastingdienst will introduce a first version of the pre-filled out declaration. People simply check and add missing data. After 2008 more and more data will be pre-filled out. With this method in the Belastingdienst the accent shifts towards gathering and collecting information and checking the correctness of it. Monitoring shifts from individual declarations of individual people towards monitoring of mass information more and more.

2. More and improved service over the Internet
   The information on the website has to be improved; not only the information itself, also the accessibility of it. People expect a good and fast search function on the site, which leads them quickly to the desired information. A news service will be installed to provide more actual information, which is asked by people as well.
   Furthermore, more and more forms have to be accessible in a digital form on the website, with a possibility to return those forms digitally as well. The same with appeals and delay requests.

3. Be accessible for people
   When new laws are introduced, or existing laws are changed, and in times of mass campaigns, more people ask questions. This puts the accessibility under pressure. The *Belastingtelefoon* will be arranged in such a way, its accessibility will be at least 80%, no matter what. This percentage is based on a new norm, which also represents people who cannot establish a connection with the Belastingdienst at all.
   Furthermore, the Belastingdienst will contact people more and more in the evening for solving problems and gathering information. At the moment of [MINF07] an experiment for gathering information by telephone was running.

4. Serve people in a better way

[1] SUB-Walvis is de overheveling van het heffen en innen van de premies werknemersverzekeringen van uitvoeringsinstituut UWV naar de Belastingdienst. Daarvoor moest de premieadministratie van het UWV gekoppeld worden aan de loonbelastingadministratie van de Belastingdienst; http://www.nrc.nl/nieuwsthema/belastingdienst/article1855303.ece/SUB-Walvis

People also wants to be helped in a good and fast way. To reach this, the Belastingdienst has started a pilot in which people can communicate changes via the *Belastingtelefoon*. If the pilot becomes a success, it will be considered to make it possible to communicate house movements and other personal information. The *Belastingtelefoon* becomes a kind of a Customer Centre, where people get help immediately when needed.

5. Speed up processes for people
   People may expect a faster response of the Belastingdienst. So, to take away the most important complains on this point, the Belastingdienst comes up with measures like fixing complex questions, which the Belastingdienst passes through to Belasting regions, fixing appeals and complains, handling mutations on bank accounts, calculating payments with open tax assessments and realizing paybacks.

6. Solve problems together with the people
   When problems seem to be very large and generic, people and the Belastingdienst will solve those problems in direct contact with each other.

5.1.3 Reducing complexity in the future organisation

This part of the plan is divided into two phases, which are carried out besides each other. Here, I will discuss both of them.

First phase: basic facilities
The focus in this phase is mainly on the realization of some basic facilities, which are necessary to support the current and future processes. The basis assumption here is that the Belastingdienst will develop all facilities in the framework of e-government, with no own development.

The basic facilities that have to be developed are:

- Digital port
  One central port for receiving data from and communicating with people. This port could make the communication with the people more flexible and faster and one central port could be better secured. This digital port is based on Service Oriented Architecture, which makes it possible to call the appropriate services.

- Portals
  With portals the Belastingdienst can provide personal and non-personal information to people. The *Belastingtelefoon* can make use of those portals to get actual information of the people that are calling for help or for mutations. The realization of portals has to improve (directly and indirectly) the service.

- Data management
  Data files will be separated from the applications and stored in a central file. This measure results into a separation of the data layer and the application layer.

- Service bus
  Complex links between applications and data files will be reduced to simple and standardized links in the so-called “Belastingdienst Servicebus”. This service bus provides the communication between the applications and the data files.

Second phase: fundamental changes in the process architecture
In the 13 regions of the Belastingdienst a high degree of integration has been reached; all tax laws are handled in it. The software systems are supporting this integration insufficiently, because every system has been developed for exactly one law; almost each functionality is specific. Moreover, there are a lot of duplicates, with functions that are the same being developed for every law and so for every system separately. Also, the systems are developed in their era of time and over the years adapted and expanded, without good revision and supervision.

The Belastingdienst now chooses for a new process architecture with a shift from tax laws orientation towards an orientation on business functions, that suit more processes. Although, this seems to be an internal issue, [MINF07] states it mainly has an external effect:

- People and companies will be served faster and better;
- Less time needed for implementing new laws in the existing systems;
- The automated systems will be standardized and are protected better against the future.

The most important business functions within the Belastingdienst are:

- Gathering and collecting information;
- Determining basic principles;
- Formalizing rights and duties;
- Settling the financial position.

The total of those business functions forms the business functions model. When something happened in the life of someone, there has to be determined a fiscal result for this happening. The data management provides information about the happening and the fiscal laws result into the determination of a basic principle. Next, this principle will be formalized en then an amount will be paid out or desired.

With the new architecture of business functions applications and data files will be separated, making communication between applications less complex or even needless, because an application just uses the central stored data files. This change of focus to business functions makes it also possible for the Belastingdienst to make use of commercial software, instead of developing and maintaining itself. This used to be a basic principle in the organisation, because the Belastingdienst is the only tax organisation in the Netherlands and so there is no market for specific tax software with all rules and measures.

But, with the change to more generic software, the Belastingdienst also wants to start using commercial software, by prefer open standard software. This implies that not every detail of the complex tax laws can be automated and the processes have to be adapted to the software, instead of the other way round. Of course, the Belastingdienst has to make sure the information in the software remains confidential no matter what.

What does this change mean for people and companies? Well, when something changes in the situation of people or companies, they had to communicate this change to every relevant tax department, with the corresponding formalities. On the side of the Belastingdienst, employees had to combine information from different systems to inform people as good as they could. In the new situation, with the focus on business functions, the Belastingdienst will define important events (such as birth, marriage, divorce and death) and the corresponding fiscal aspects. All together this has to result into a faster and improved service towards people and companies.

As a final note, [MINF07] states that – because the world is changing all the time – the plan is not a final rigid plan for the next years. The plan has to change together with changes in the world of the Belastingdienst and the Ministry of Finances will report the state and plans every half year. Those reports I will discuss in the next section.

Summary
We have seen the Belastingdienst has released a plan to reduce complexity in its organisation. This report consists of two main parts: the current organisation and the future organisation. In the future organisation two phases have been determined: one to realise some basic facilities and a next one with fundamental changes in the process architecture.

5.2 Updates

5.2.1 Update 1: February 2008

[MIN081] is the first update given by the Ministry of Finances about the project of reducing complexity at the Belastingdienst. I will discuss the most important aspects of the report here.

Reducing complexity in the current organisation
In the plan several measures were announced to reduce the complexity in the current organisation. What are the states of those measures?

1. Bother people not more than necessary
   Due to problems with the wages declarations, the introduction of the pre-filled out declaration has been postponed to 2009. In 2008 a pilot will start for the income declarations of 2007. As of 2009 pre-filled out declarations will be expanded, depending on the quality and availability of the needed information (especially the information about wages).

2. More and improved service over the Internet
   Since 26 September 2007 a new search function has been implemented on the website, which scores maximally in the test of "Stichting Waarmerk drempelvrij.nl"[1]

   As of September also a digital news service has been installed on the website: "Belastingdienst Actueel". In a period of time more and more news on paper will be replaced by this digital news service.

   Since 1 January 2008 digital forms are online at the website for delay requests and appeals. As of 1 April 2008 it has to be possible to return those forms directly and digitally as well. Private individuals sign those forms with their *DigiD*, while enterprisers sign in their personal domain.

   Futhermore, the Belastingdienst investigates the possibilities for providing the services to people and companies to third parties (such as consulates) as well. It is unknown yet when this could be implemented.

[1] Stichting Waarmerk drempelvrij.nl; http://www.drempelvrij.nl/

3. Be accessible for people
   With 88%, 89% and 89% in October, November, December, the accessibility of the *Belastingtelefoon* was above the norm of 80%. Those measures are based on the new measure method that has been introduced within the Belastingdienst.

   The pilot with reminder and collection telephone calls has been finished and evaluated. Although people are satisfied with this method, the Belastingdienst has decided not to implement this measure yet, because the results are not better while the costs are much higher.

   In busy periods the *Belastingtelefoon* was opened longer. The effect of this measure was very positive, so the Belastingdienst has decided to continue this measure.

4. Serve people in a better way
   The pilot with mutations via the *Belastingtelefoon* has been evaluated in the fourth quarter of 2007. This has resulted into a continuation of the mutations by telephone and the Belastingdienst is investigating to make other kinds of mutations possible as well.

5. Speed up processes for people
   The percentage of people that have been called back in time was 91%, 89% and 80% in October, November and December. We can conclude the Belastingdienst has realised this measure. For the processing of appeals and complains, some improvements are necessary, because the Belastingdienst scores below the norm at this point.

   Fast mutations on bank account numbers and calculating payments with open tax assessments have been implemented. The realization of (fast) paybacks has been implemented partial, but as of November 2007 this succeeded in 100% of the cases.

Reducing complexity in the future organisation

This part of the update focuses on reducing complexity in the future organization of the Belastingdienst. It discusses the current state of the planned measures (what has been done already) and the changes that have been made to the original plan (what the Belastingdienst is going to do). Firstly, the four main targets of the operation are summarized:

- Improving the *service* towards people and companies;
- Guaranteeing the *continuity* of the processes of the Belastingdienst;
- Improving the *adaptivity*;
- Reach a *cost level*, in accordance with the market.

In the report has been stated that the Belastingdienst has decided to trust people more in case of mutations. To serve people in a faster way mutations will be processed in advance and will only be undone when a data registry doesn't validate the information. Just in some cases the information will be checked (to detect fraud) and when the Belastingdienst thinks someone tries to fraud, the mutations will only be processed when validated by the data registry.

Then an update about the two phases has been given in the report:

First phase: basic facilities

This first phase has to be realized until May 2009 and steps into the existing ICT facilities. It grants the continuity of the Belastingdienst and it results into long-term problem solving. Phase 1 is important in itself, but it also forms a base for the measures of the second phase. In other words, the products of phase 1 (the basic facilities) are the basis of the second phase.

In phase 1 we have four steps:

1. Cleaning up the existing portfolio, such as software, applications and licences
   In this step not only the existing systems will be cleaned up, but also consists of some measures to prevent new pollution. The target of this step is to have less software maintenance and management need and to reach lower failure vulnerability. This step contributes to the *continuity*, *adaptivity* and *cost level* main targets.

   To reach this, applications will be cleaned up by choosing one application out of several different applications that are carrying out the same tasks at the moment. Furthermore, the existing programming will be cleaned up to make sure all functionalities have been programmed once and unambiguous.

   Those steps will be carried out in 2008.

2. Delivering of generic facilities
   Besides the generic facilities of the plan, in this first update also a new facility has been introduced; production control and steering. This facility makes it possible to follow and monitor the complete automated process from the start to the finish. This supports bug tracking and tracing.

   The generic facilities keep on developing, making them flexible and the Belastingdienst must find a balance between a standard solution – which are stable, generic and cheap) – and special wishes for applications – which are incidental, different and expensive).

   This step forms a condition for cleaning up, migrating and eliminating and installing new facilities. It contributes to the *continuity*, *adaptivity* and *cost level* main targets.

   To reach this, in the first half of 2007 a lot of preparation work has been done. In 2008 the facilities will be built and expanded where needed. Also, the facilities will be installed in the “Belastingdienst Servicebus”, which will continue even after 2008.

3. Migration and elimination of existing applications and systems to suit the generic facilities
   We can talk about savings when the old and expensive facilities will be replaced by cheaper and generic facilities in new processes. Existing software systems will be adapted to suit the generic facilities.

   Target of this step is to decrease the maintenance need and so this step contributes to the *service*, *continuity* and *cost level* main targets.

   To reach this in 2007 a plan has been made for the migration and elimination of old facilities and to replace them with new generic facilities. In 2008 this plan will be carried out with the installation of an infrastructure for several large applications with the service bus. Some existing portals will be migrated en eliminated into one generic

portal, with information of different kinds of taxes and applications. The existing document management system will be migrated into one content management system with unambiguous information for people and companies.

4. Installation and connection of the facilities, which will be designed in such a way they use the new generic facilities
   Target of this final step is to make use of the generic facilities to decrease the develop need and to shorten the run time. So, this step contributes to the *service*, *continuity*, *apdaptivity* and *cost level* main targets.

   To reach this in 2007 the Belastingdienst has determined which generic facilities could be used by basic registries and an automated application has been developed (KLOP2), which gives all personal information about a tax payer on the screen of employees of the *Belastingtelefoon*. KLOP2 is a practice experiment to prove the generic facilities of step 2 are currently working fine. In 2008 the first release of KLOP2 has to be in use and then this application will be adapted and expanded, based on user comments. KLOP2 will also be expanded with more personal information.

It has been planned to have created a basis for step 2 at the end of 2008.

Second phase: fundamental changes in the process architecture
The following activities are planned in this phase:

1. Continue developing business functions architecture
   To make internal processes less complex and more standardized a new business functions architecture will be developed. Target is to model all aspects (execution, information systems and infrastructure) in detail and linked as generic as possible. This has to result into the delivery of services and products in a fast, flexible and cheap way. So, this step contributes to the *service*, *adaptivity* and *cost level* main targets.

   To reach this, in 2007 a business functions architecture at concern level has been composed, as result of intensive discussions with management and staff of the Belastingdienst and experts. Based on preliminary research principles of control have been determined. In 2008 the architecture will be tested with practice experiments (see step 2) and completed. Furthermore, a framework of rules will be composed to process specific events. The technical architecture will be completed at the end of 2008 and the used market products are just temporary; the practice experiments will make use of components that are available in the Belastingdienst yet. The definitive fulfilment of the architecture will be realised after 2008.

2. Practice experiments of two complex situations with a lot of interaction between the Belastingdienst and people and companies
   This step is the preparation of a broader implementation of the new business functions architecture. The practice experiments have to proof the new architecture actually works and they have to make people used to it. The idea behind it is that people have only once contact with the Belastingdienst in case of an event. This step contributes to the *service* and *adaptivity* main targets.

   The practice experiments have been prepared in 2007. In 2008 those experiments will be carried out and the results will result into a plan of change, after an evaluation of

the results and effects. The experiments also make people get used to the new architecture.

3. Preparation of the change process implementation business architecture
   The decision-making has to be prepared to the approach of change after the practice experiments and the results of those experiments. So, this step contributes to the *service* and *adaptivity* main targets.

   In 2008 a plan of change will be composed as a result of steps 2 (and 1). In this plan every aspect (such as organisation, personnel, ICT, etc.) will be reflected.

The *Algemene Rekenkamer* has concluded that a lot of ICT projects at the Dutch government are not manageable, because they get too complex and ambitious due to a combination of political, organisational and technical factors. The recommendations of the *Algemene Rekenkamer* are:

- Begin small and show it works;
- Build in phases to the desired situation;
- Secure the relation with the current organisation.

In this first update the project plan of the *Vereenvoudigingsoperatie* has been expanded with a new – fifth – area of attention: steering of the ICT organisation of the Belastingdienst. This area has the following principles to make projects manageable again, based on the advice of the *Algemene Rekenkamer*:

- Decision-takers will be drawn into the planning;
- Decision-taking will be done in phases, so things could be rethought;
- Decisions will be taken based on good business cases;
- Decisions can be judged on feasibility and effectiveness by external and internal parties.

Besides financial advantages, the project for reducing complexity has several non-financial benefits for the Belastingdienst. The realisation of the four main targets has to result into:

- Increasing the compliance;
- Increasing service level;
- Less administrative tasks for people and companies;
- A faster total overview of the fiscal position of people and companies;
- People and companies have to inform the Belastingdienst just once in case of an event;
- Better product quality, with less error recovery.

5.2.2 Update 2: May 2008

The second update [MIN082] was published in May 2008. This report looks back from March 2008 until May 2008 and also describes the schedule and plans. I will here discuss this report.

Reducing complexity in the current organisation

In the plan several measures were announced to reduce the complexity in the current organisation. What are the states of those measures?

1. Bother people not more than necessary
   The pilot with the pre-filled out declarations was finished and the Belastingdienst was satisfied with the results. Several points of attention and improvements have been

determined for the final process. The evaluation of the pilot will be finished in June 2008.

The pre-filled out declaration has to grow gradually, based on the results of preceding steps, the quality and the – in time – availability of the information that has to be filled out. In 2009 the pre-filled out declaration will be used incrementally.

2. More and improved service over the Internet
   As of January 2008 new forms are available at the website of the Belastingdienst for requesting delay and appealing. Those forms can be filled out electronically, printed and send. It was also possible to send a delay request via Internet.

   Since 31 March 2008 entrepreneurs have the possibility to request a delay via their personal domain. Sending in appeals will be possible as of 1 July 2008. Private individuals sign those with their *DigiD*, while entrepreneurs can do so in their personal domain.

   The Belastingdienst is still investigating the possibilities for providing the services to people and companies to third parties (such as consulates) as well. It is unknown yet when this could be implemented. In [MIN082] they are thinking about a system in which authorized people can make use of the services.

3. Be accessible for people
   In January the *Belastingtelefoon* had a low availability score (68%). They point at an unexpected high demand and technical problems as causes. Moreover, due to the low availability, there was also a lot of repeat traffic with people calling back over and over trying to get in touch with an employee.
   In February and March the availability score was much better with 83% and 82%.

   Still, in busy periods the *Belastingtelefoon* has extra opening hours and the availability on Saturdays was good with an average score of 98%.

4. Serve people in a better way
   As of 1 May 2008, mutations by telephone are expanded with income mutations. Furthermore, direct mutations (by employees of the *Belastingtelefoon*) will be possible as of 2009. In general, there will be a shift of activities from back office to front office, making the number of contact moments as small as possible to help people as fast as possible.

5. Speed up processes for people
   In the first three months of 2008 the percentage of people that have been called back in time was (cumulative) 92%. This is an improvement with regard to de score of 85% in 2007.

   The norm of 100% for processing appeals and complains has not been reached in the first three months of 2009, with a score of 83%. By continuously paying attention to decreasing inventories and by speeding up the processing, the Belastingdienst hopes to increase the score.

In the first quarter of 2008 87% of the complains was processed in time. With a norm of 100% still some improvements are necessary here and the Belastingdienst wants to improve the score by increasing the executive attention.

The target of fast mutations on bank account numbers and calculating payments with open tax assessments have been implemented and has been reached in the first quarter of 2008 again with a score of 100%.

Reducing complexity in the future organisation
Again the two phases of this aspect are discussed in [MIN082]:

First phase: basic facilities
The four steps of this phase 1:

1. Cleaning up the existing portfolio, such as software, applications and licences
   The Belastingdienst has finished checking which applications could be replaced by some common facilities and what the consequences are of those replacements. In the following period the applications actually will be organised and cleaned up.

   In May 2008 a call for tenders has been started to select one or more suppliers for reducing the excesses within the applications.

2. Delivering of generic facilities
   Five subprojects have been started:
   - Realizing of generic facilities Data management, Bus and Portal;
   - Realizing of generic facility Product control and steering;
   - Realizing of generic facility Port;
   - Realizing of generic facility Administrative information facility;
   - Realizing of infrastructural facilities for the generic facilities.

   The Bus facility has been developed and is almost finished. The Belastingdienst wants this facility be delivered in the beginning of June 2008.

   A new OIT part (Order management Intensive Monitoring) of the generic facility Product control and steering has successfully started on 2 March 2008. Advantages of this part are improvement of sorting, searching and inventory management. The first experiences are positive.

   An analysis has been finished of how BRI (Basic Registration Income) optimally can use the new generic facilities.

3. Migration and elimination of existing applications and systems to suit the generic facilities
   There are six sub projects within this activity:
   - Migrating and eliminating with Port;
   - Implementing KLOP2 and eliminating KLOP1;
   - Migrating by Content Management;
   - Migrating and eliminating with the Bus;
   - Migrating and applying Production control and steering;
   - Migrating and eliminating with the Portal.

The orders for this activity are in the exploration phase or have finished this phase already. The orders can be carried out when the generic facilities have been developed and are in production.

4. Installation and connection of the facilities, which will be designed in such a way they use the new generic facilities
   At this moment two sub projects are being carried out:
   - Orders that come close to the generic facilities Bus and Data management;
   - Realization of KLOP2.

   In March 2008 KLOP2 has been test as an experiment. This application has been realized with the generic facilities Data management, Bus and Portal. KLOP2 has been installed as a pilot and on a small scale. By using KLOP2 the processing time of a telephone call will be decreased. In 2008 the effects of using KLOP2 will be measured.

Second phase: fundamental changes in the process architecture
The following activities are planned in this phase:

1. Continue developing business functions architecture
   The first version of the business architecture has been delivered at the end of last year (2007). At this moment this architecture is being developed further and tested by the results of the process designs. Shortly a new release of the architecture will be released, where this new release is being test at this moment.

2. Practice experiments of two complex situations with a lot of interaction between the Belastingdienst and people and companies
   In Augustus 2008 the practice experiment “death” will start, followed by “starting entrepreneur” a month later.

3. Preparation of the change process implementation business architecture
   The activities in preparation of the plan of change are ongoing. This summer the plan will be worked out further in workshops, with both internal and external people involved.

Steering of the ICT organisation of the Belastingdienst
There has been installed a (relatively) small team ICT management and architecture, which is going to support the management team of the Belastingdienst. This team will be expanded with external people, because the Belastingdienst believes this mix of internal/external together decentral/central suits best in the organisation.
At this moment selection talks are held to find a CIO (Chief Information Officer), who will be added to the team as well to ensure maximal attention of the management team to steering of the ICT organisation.

In the beginning the new team has focussed on the analysis of the causes of some damage cases. This analysis resulted into improvements in three areas:

- Improvement of the test path
  An external organisation has investigated the test function of the Belastingdienst and they came up with a plan of improvements, consisting of 8 sub activities:
  - Phased start of production must be the implementation assumption;
  - Set-up of a Risk Inventory Team;

- Installation of a adequate tracking of damage, linked to a even adequate processing of it;
- Active monitoring of the Port;
- Management of the manufacturing chain;
- Development and implementation of a test strategy;
- Realisation of an assembly test environment;
- Realisation of an acceptance test environment.

- Control of input
  A first global inventory of the incoming flows has been finished and now for every flow an approach will be designed.

- Control of output
  Existing appointments have been renewed and it will be checked if those new appointments will be complied.

5.2.3 Update 3: November 2008

The second update [MIN083] was published in November 2008. This report looks back from April 2008 until November 2008 and also describes the schedule and plans. I will here discuss this report.

Reducing complexity in the current organisation
In the plan several measures were announced to reduce the complexity in the current organisation. What are the states of those measures?

1. Bother people not more than necessary
   In 2009 there will be a broad scaled pilot with pre-filled out declarations for people who send in their declarations electronically. As of 2 March 2009 a special version of the declaration software program will be available in which personal information can be picked up.

2. More and improved service over the Internet
   Sending in appeals via Internet has been available since 1 July 2008. Private individuals sign with their *DigiD*, where entrepreneurs can do so in their personal domain. All desired digital forms have now been realized.

   It is still being investigated if and how those services can be made available to third parties – such as tax consultants – as well.

3. Be accessible for people
   In the months April until September the availability score was 80%, 81%, 78%, 82%, 85% and 90%. When calculated on a year, an availability score of 80% is achievable. In busy months this score is lower than the year average. [MIN083] concluded a improved availability has been achieved.

4. Serve people in a better way
   Those measures are finished.

5. Speed up processes for people

Processing appeals and complains in time still needs a lot of attention. It is necessary to decrease the number of old appeals that haven't been processed yet, because a paradox applies to the current situation; the processing of old appeals results into a lower in time score for current appeals.

The score of 89% of in time processed complains shows this aspect has been improved again, but it is still (far) below the norm of 95%.

Reducing complexity in the future organisation
Again the two phases of this aspect are discussed in [MIN083]:

First phase: basic facilities
In general the focus in 2008 was on the realization of the generic facilities.

The four steps of this phase 1:

1. Cleaning up the existing portfolio, such as software, applications and licences
   Cleaning up the applications portfolio is more difficult than expected, because the applications and its data files are connected, wired and dependent of each other in a very complex way (as stated in the project plan of the operation). At this moment a research is ongoing to find out ways to reach the goals of this step (partially) anyway.

   The project of cleaning up technical excesses has been put out. The research to this cleaning has started in October 2008.

2. Delivering of generic facilities
   The states differ per generic facility:
   - The internal Portal is being tested with the under development application KLOP2. For the external Portal some security issues have to be solved. The planned delivery of the external Portal is in 2009.
   - The Content Management facility has been finished and existing systems could be migrated to this new generic facility. Next year this facility will be finished.
   - The experiences with KLOP2 have resulted into changes within the development of the facilities Bus and Data management. Both facilities now are planned to be ready mid-2009.
   - In the previous months there has been done research for the generic facility Port to be able to decide whether a new Port will be developed (based on components available on the market) or the existing Port will be expanded. A decision will be made when the definition study phase (details follow) has been finished.
   - The planned activities around the generic facility Production control and steering have been finished mainly. The process and information architecture has been delivered like being planned. The enrolment of OIT 6.0 (Order management Intensive Monitoring) has been finished. This gives tax regions the possibility to regulate their work flows.
   - In 2008 a generic facility has been added to the programme: Business Intelligence. The first phase – determining and formulating research and program plans – of this facility has been finished in 2008. At this moment a

definition study has been started and there has been purchased a SAS[1] package, which has to be adapted to the use within the Belastingdienst.

3. Migration and elimination of existing applications and systems to suit the generic facilities
   Only when the generic facilities have been delivered, the migration and elimination can be started.
   - The first migration orders have been given and started with the help of the generic facilities Content Management and Portal.
   - The migration of current processes to new facilities OIT and IPC (Integral Planning and Control) has been started with the help of the facility Production control and steering. This provides people and companies information that is in time, complete and correct. Furthermore, it will be clearer where in the process inventories are formed and/or failures arise.
   - As a result of the changes in the schedule of the facilities Data management, Bus and Portal, the linked migration and elimination orders are delayed as well.

4. Installation and connection of the facilities, which will be designed in such a way they use the new generic facilities
   As of March 2008 a new release of KLOP2 has run as an experiment on a small scale in the production environment. Several experiences are derived, which have resulted into adaptations. As of October the application is running again and the test users are satisfied with it. The experiences have also led to changes in the generic facilities and this made the release had to be rebuilt in some components. The consequences of this are that a new KLOP2 application will be delivered in the second quarter of 2009.

Second phase: fundamental changes in the process architecture
The following activities are planned in this phase:

1. Continue developing business functions architecture
   There has been created a new business architecture based on consequently separating business functions, rules and data with also standardization of business functions. The separation and standardization are the condition for improved service, adaptivity, continuity and cost control. A second version of this architecture has been finished at the end of June 2008. At this moment some external people are reflecting on this architecture. The experiences of the practice experiments can force other changes of the architecture.

2. Practice experiments of two complex situations with a lot of interaction between the Belastingdienst and people and companies
   As of the end of November the practice experiment “death” – in which people can communicate the death of somebody just once to the Belastingdienst, that processes this change in all appropriate tax departments – will start in region Zuid-Oost Brabant. This experiment will be supported by a service team of the Belastingdienst. In January 2009 a web portal will be opened which shows changes and makes it easy to process the experiment. The experiment will be finished in the first quarter of 2009 and has to give evidence that this way of working results into:
   - Improved service to people thanks to a event-driven processing;

[1] SAS; http://www.sas.com

- One information position, shared by a citizen and a employee of the Belastingdienst;
- On-term cost savings, because people can help their selves and cheaper products or services.

Also, a second practice experiment – "starting entrepreneur" – will start. In this experiment a web portal will be used, too, with the same facilities as used in the "death" experiment. Starters can decide which level of electronic service they want to have from the Belastingdienst. This experiment has to proof that an event-driven treatment results in improved service. Also the working of one information position has to be proven, with adaptivity and cost savings are other effects. At the latest in 2008 this experiment will start in region Randmeren.

3. Preparation of the change process implementation business architecture
   The plan of change describes how the Belastingdienst could transform from the current tax oriented way of working to a way of working based on events and business functions. The results of the practice experiments are important inputs of the plan of change and because those experiments are delayed, the plan of change will be delivered somewhat later on as well.
   The plan of change offers a base for controlled change making the interests of people, companies and the Belastingdienst balanced and transparent.

Steering of the ICT organisation of the Belastingdienst
In the second update only some short-term measures have been discussed, but in [MIN083] also several structural long-term measures are introduced. I will discuss both the short-term and long-term measures here.

Short-term measures
The risk-reducing measures of the recent months are showing results now, with the number of production failures being decreased. Furthermore, the CIO has been installed as of 15 September 2008 and team ICTRA (ICT Control and Enterprise Architecture) has been completed as of 1 September 2008. This team will control the following short-term measures:

- Determining a procedure for production failures

- Improving test path
  Four measures have been implemented:
  - Phased starting of production;
  - Installation of the Risk Intervention Team;
  - Adequate detection and processing of production failures;
  - Active monitoring of the Port

  Those measures have prevented the Belastingdienst from six production problems with saved costs of 550,000 euro).
  Moreover, as of December more test managers will be hired.

- Control of input and output
  Measures have been implemented to secure messages in the receiving process. Electronic messages will be checked when signed and after being signed they will be saved. In all channels backups will be made and messages will be buffered and archived to prevent loss of information. Still more research in ongoing on how to secure every way of information delivery.

Random control of output has been implemented as well. Several production runs were recovered and fixed. Moreover, the corresponding errors in the applications were checked and when possible fixed to prevent the same failures in the future.
In several flows the number of random controls will be increased, because wrong messages have passed the checks anyway.

Structural measures
At 1 January 2009 the plan of improvement measures for 2009 will start. At 30 June 2009 the latest, a plan will be presented for improving the ICT organisation in 2010, 2011 and 2012. For now, three priorities have been chosen, which I will discuss here:

- Information facility strategy and control
  Responsibilities have been made clear and based on the business strategy of the Belastingdienst there will be defined frames, related to sourcing, execution of e-Government policy and the distribution of financial resources. The result of those measures has to be a clear information facility organisation which works faster with less chance of failures.

- Business architecture and portfolio management
  The focus here is on reducing complexity in the processes within the Belastingdienst and improved service to the people. A first version of the information facility strategy will be delivered in December, which is the base for portfolio management: steering of the execution of projects, products and services.
  Also in December the so-called Architecture Board will start. This Board is an institution that makes it possible to steer and control out of architecture.

  Those measures, together with the results of phase 2 of the operation reducing complexity in the future organisation, will structurally improve the information facility at the Belastingdienst.

- Information facility strategy and control
  As for 2009 a set of measures has been announced to improve the quality of the ICT service. The mentioned short-term measures will be implemented in the test process and they will be made structural as well. Moreover, a standardized approach based on the market standard *Tmap* will be developed and all activities in increasing the ICT knowledge by education and hiring will be continued.

  Furthermore, the predictability and controllability of ICT projects at the Belastingdienst can be improved for the aspects of time, budget and quality. Measures to reach this target are the installation of the project management method *Prince II*, the use of standard reports, the installation of Gateway reviews and the ongoing criteria on business cases of a project.

  Finally, there is being worked on uniform and consistent work methods in the designing and building of systems.

6 Data analysis

The questionnaire was online from 4 March 2009 until 27 March 2009 and in that period 39 people filled it out. In this section I will discuss the results and analyze the answers for my research.

6.1 Compliance

First, I have filtered out the respondents who have paid taxes over their income in 2008 and 2009 and who have made use of the system of digital declarations at least twice. After this first step 27 respondents were left. With their answers I continued and I analyzed their answers following the influencers and concepts of my research model. As we have seen in the Method section, every influencer was covered by one or more statements in the questionnaire. I calculated the average score for every influencer by calculating the average score of the statements that are covering that influencer. So, then we get (n = 27):

Statement	**Average Score**
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is	3,7
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	3,8
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,8
Influencer: Information Quality	**3,8**

Statement	**Average Score**
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,8
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,8
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	3,8
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt	3,7
Influencer: System Quality	**3,8**

Statement	**Average Score**
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,8
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost	3,8
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen	3,8
Influencer: Service Quality	**3,8**

Statement	**Average Score**
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen	2,6
Influencer: Forced Use	**2,6**

Statement	**Average Score**
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,4
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen	3,4
Influencer: Fallback Option	**3,4**

Statement	Average Score
Mijn ervaring met de digitale aangifte is tot op heden positief	4,2
Influencer: Previous Experience	**4,2**

Statement	Average Score
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels	2,8
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte	4,1
Ik vind de mogelijkheid van digitale aangifte nuttig	4,6
Influencer: Perceived Usefulness	**3,8**

Statement	Average Score
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken	4,0
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen	3,9
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet	4,0
Influencer: Perceived Ease of Use	**4,0**

Statement	Average Score
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen	4,0
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,8
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0
Influencer: Trust	**4,0**

Overview of influencers:

Influencer	Average Score
Information Quality	3,8
System Quality	3,8
Service Quality	3,4
Forced Use	2,6
Fallback Option	3,4
Previous Experience	4,2
Perceived Usefulness	3,8
Perceived Ease of Use	4,0
Trust	4,0

With those influencers we can calculate a score for the other concepts, as follows:

Influencer	Score
Information Quality	3,8
System Quality	3,8
Service Quality	3,4
Concept: User Satisfaction	**11,0 / 15**

Influencer	Score
Forced Use	2,6
Fallback Option	3,4
Previous Experience	4,2
Perceived Usefulness	3,8
Perceived Ease of Use	4,0
Trust	4,0
Concept: Attitude towards TBSS	**22,0 / 30**

Influencer	Score
Forced Use	2,6
Fallback Option	3,4
Concept: Attitude towards Service Provider	**6,0 / 10**

Influencer	Score
Trust	4,0
Concept: Perceived Behavior Control (PBC)	**4,0 / 5**

Influencer	Score
Trust	4,0
Concept: Subjective Norm (SN)	**4,0 / 5**

With those concepts we can calculate a total score for the Intention to (re)use, which represents the compliance:

Concept	Score
User Satisfaction	11,0
Attitude towards TBSS	22,0
Attitude towards Service Provider	6,0
Perceived Behavior Control (PBC)	4,0
Subjective Norm (SN)	4,0
Compliance: Intention to (re)use	**47,0 / 65**

Furthermore, I have done some analysis on compliance in relation to:

- Age;
- Sex;
- Education;
- Profession;
- Times made use of system for digital declarations.

The results of this analysis I will give in the following sections.

6.2 Compliance and age

I have split the respondents up following their age, so every respondent is in exactly one of those categories:

- < 20 years old;
- 20-29 years old;
- 30-39 years old;
- 40-49 years old;
- 50-59 years old;
- >59 years old.

With my results of the questionnaire, the respondents where divided in those categories:

Category	# respondents
<20 years old	1
20-29 years old	6
30-39 years old	5
40-49 years old	6
50-59 years old	8
>59 years old	1
Total # respondents	27

Statement	**Average Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50-59**	**> 59**
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is	3,0	4,0	3,8	3,2	3,9	3,0
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	3,0	4,0	3,8	3,5	4,1	4,0
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,0	4,0	3,6	4,0	3,7	4,0
Influencer: Information Quality	**3,0**	**4,0**	**3,7**	**3,6**	**3,9**	**3,7**

Statement	**Average Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50-59**	**> 59**
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,0	4,0	3,6	4,0	3,7	4,0
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,0	3,7	4,0	4,2	3,8	3,0
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	3,0	4,0	3,8	3,5	4,1	4,0
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt	2,0	3,8	3,8	3,7	3,6	4,0
Influencer: System Quality	**2,8**	**3,9**	**3,8**	**3,8**	**3,8**	**3,8**

Statement	**Average Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50-59**	**> 59**
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	4,0	3,7	3,4	3,2	3,4	3,0
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost	1,0	3,5	3,2	3,2	3,1	3,0
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen	2,0	4,0	3,8	4,0	3,5	4,0
Influencer: Service Quality	**2,3**	**3,7**	**3,5**	**3,4**	**3,3**	**3,3**

Statement	**Average Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50-59**	**> 59**
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen	2,0	2,8	2,6	2,6	2,6	1,0
Influencer: Forced Use	**2,0**	**2,8**	**2,6**	**2,6**	**2,6**	**1,0**

Statement	Average Score					
	< 20	20-29	30-39	40-49	50-59	> 59
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,0	3,7	3,4	3,2	3,4	3,0
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen	4,0	3,2	3,0	3,0	4,0	4,0
Influencer: Fallback Option	**3,5**	**3,4**	**3,2**	**3,1**	**3,7**	**3,5**

Statement	Average Score					
	< 20	20-29	30-39	40-49	50-59	> 59
Mijn ervaring met de digitale aangifte is tot op heden positief	4,0	4,2	4,2	4,5	4,0	4,0
Influencer: Previous Experience	**4,0**	**4,2**	**4,2**	**4,5**	**4,0**	**4,0**

Statement	Average Score					
	< 20	20-29	30-39	40-49	50-59	> 59
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels	2,0	2,8	3,2	2,7	3,0	1,0
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte	3,0	4,3	4,0	4,0	4,1	4,0
Ik vind de mogelijkheid van digitale aangifte nuttig	4,0	4,7	4,8	4,2	4,9	4,0
Influencer: Perceived Usefulness	**3,0**	**3,9**	**4,0**	**3,6**	**4,0**	**3,0**

Statement	Average Score					
	< 20	20-29	30-39	40-49	50-59	> 59
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0	3,7	4,2	3,5	4,6	4,0
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken	4,0	4,0	4,0	3,3	4,4	4,0
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen	3,0	3,7	3,8	3,8	4,6	2,0
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet	4,0	4,2	4,0	3,7	4,0	4,0
Influencer: Perceived Ease of Use	**3,8**	**3,9**	**4,0**	**3,6**	**4,4**	**3,5**

Statement	Average Score					
	< 20	20-29	30-39	40-49	50-59	> 59
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen	4,0	3,8	4,2	3,7	4,4	4,0
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,0	3,7	4,0	4,2	3,8	3,0
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0	3,7	4,2	3,5	4,6	4,0
Influencer: Trust	**3,7**	**3,7**	**4,1**	**3,8**	**4,3**	**3,7**

Overview of influencers:

Influencer	**Average Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
Information Quality	3,0	4,0	3,7	3,6	3,9	3,7
System Quality	2,8	3,9	3,8	3,8	3,8	3,8
Service Quality	2,3	3,7	3,5	3,4	3,3	3,3
Forced Use	2,0	2,8	2,6	2,6	2,6	1,0
Fallback Option	3,5	3,4	3,2	3,1	3,7	3,5
Previous Experience	4,0	4,2	4,2	4,5	4,0	4,0
Perceived Usefulness	3,0	3,9	4,0	3,6	4,0	3,0
Perceived Ease of Use	3,8	3,9	4,0	3,6	4,4	3,5
Trust	3,7	3,7	4,1	3,8	4,3	3,7

With those influencers we can calculate a score for the other concepts, as follows:

Influencer	**Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
Information Quality	3,0	4,0	3,7	3,6	3,9	3,7
System Quality	2,8	3,9	3,8	3,8	3,8	3,8
Service Quality	2,3	3,7	3,5	3,4	3,3	3,3
Concept: User Satisfaction	**8,1 / 15**	**11,6 / 15**	**11,0 / 15**	**10,8 / 15**	**11,0 / 15**	**10,8 / 15**

Influencer	**Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
Forced Use	2,0	2,8	2,6	2,6	2,6	1,0
Fallback Option	3,5	3,4	3,2	3,1	3,7	3,5
Previous Experience	4,0	4,2	4,2	4,5	4,0	4,0
Perceived Usefulness	3,0	3,9	4,0	3,6	4,0	3,0
Perceived Ease of Use	3,8	3,9	4,0	3,6	4,4	3,5
Trust	3,7	3,7	4,1	3,8	4,3	3,7
Concept: Attitude towards TBSS	**20,0 / 30**	**21,9 / 30**	**22,1 / 30**	**21,2 / 30**	**23,0 / 30**	**18,7 / 30**

Influencer	**Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
Forced Use	2,0	2,8	2,6	2,6	2,6	1,0
Fallback Option	3,5	3,4	3,2	3,1	3,7	3,5
Concept: Attitude towards Service Provider	**5,5 / 10**	**6,2 / 10**	**5,8 / 10**	**5,7 / 10**	**6,3 / 10**	**4,5 / 10**

Influencer	**Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
Trust	3,7	3,7	4,1	3,8	4,3	3,7
Concept: Perceived Behavior Control (PBC)	**3,7 / 5**	**3,7 / 5**	**4,1 / 5**	**3,8 / 5**	**4,3 / 5**	**3,7 / 5**

Influencer	**Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
Trust	3,7	3,7	4,1	3,8	4,3	3,7
Concept: Subjective Norm (SN)	**3,7 / 5**	**3,7 / 5**	**4,1 / 5**	**3,8 / 5**	**4,3 / 5**	**3,7 / 5**

With those concepts we can calculate a total score for the Intention to (re)use, which represents the compliance:

Concept	**Score**					
	< 20	**20-29**	**30-39**	**40-49**	**50- 59**	**> 59**
User Satisfaction	8,1	11,6	11,0	10,8	11,0	10,8
Attitude towards TBSS	20,0	21,9	22,1	21,2	23,0	18,7
Attitude towards Service Provider	5,5	6,2	5,8	5,7	6,3	4,5
Perceived Behavior Control (PBC)	3,7	3,7	4,1	3,8	4,3	3,7
Subjective Norm (SN)	3,7	3,7	4,1	3,8	4,3	3,7
Compliance: Intention to (re)use	**41,0 / 65**	**47,1 / 65**	**47,1 / 65**	**45,3 / 65**	**48,9 / 65**	**41,4 / 65**

6.3 Compliance and sex

I have split the respondents up following their gender, so every respondent is in exactly one of those categories:

- Male;
- Female.

With my results of the questionnaire, the respondents where divided in those categories:

Category	**# respondents**
Male	19
Female	8
Total # respondents	27

Statement	**Average Score**	
	Male	**Female**
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is	3,7	3,5
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	4,1	3,4
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,9	3,6
Influencer: Information Quality	**3,9**	**3,5**

Statement	**Average Score**	
	Male	**Female**
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,9	3,6
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,8	3,8
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	4,1	3,4
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt	3,8	3,4
Influencer: System Quality	**3,9**	**3,5**

Statement	Average Score	
	Male	Female
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,4	3,4
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost	3,3	2,8
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen	3,7	3,9
Influencer: Service Quality	**3,5**	**3,3**

Statement	Average Score	
	Male	Female
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen	2,6	2,6
Influencer: Forced Use	**2,6**	**2,6**

Statement	Average Score	
	Male	Female
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,4	3,3
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen	3,6	3,0
Influencer: Fallback Option	**3,5**	**3,1**

Statement	Average Score	
	Male	Female
Mijn ervaring met de digitale aangifte is tot op heden positief	4,2	4,3
Influencer: Previous Experience	**4,2**	**4,3**

Statement	Average Score	
	Male	Female
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels	2,9	2,7
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte	4,3	3,5
Ik vind de mogelijkheid van digitale aangifte nuttig	4,7	4,4
Influencer: Perceived Usefulness	**4,0**	**3,5**

Statement	Average Score	
	Male	Female
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,1	3,8
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken	4,2	3,5
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen	4,1	3,5
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet	4,1	3,6
Influencer: Perceived Ease of Use	**4,1**	**3,6**

Statement	Average Score	
	Male	Female
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen	4,1	3,9
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,8	3,8
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,1	3,8
Influencer: Trust	**4,0**	**3,8**

Overview of influencers:

Influencer	Average Score	
	Male	Female
Information Quality	3,9	3,5
System Quality	3,9	3,5
Service Quality	3,5	3,3
Forced Use	2,6	2,6
Fallback Option	3,5	3,1
Previous Experience	4,2	4,3
Perceived Usefulness	4,0	3,5
Perceived Ease of Use	4,1	3,6
Trust	4,0	3,8

With those influencers we can calculate a score for the other concepts, as follows:

Influencer	Score	
	Male	Female
Information Quality	3,9	3,5
System Quality	3,9	3,5
Service Quality	3,5	3,3
Concept: User Satisfaction	**11,3 / 15**	**10,3 / 15**

Influencer	Score	
	Male	Female
Forced Use	2,6	2,6
Fallback Option	3,5	3,1
Previous Experience	4,2	4,3
Perceived Usefulness	4,0	3,5
Perceived Ease of Use	4,1	3,6
Trust	4,0	3,8
Concept: Attitude towards TBSS	**22,4 / 30**	**20,9 / 30**

Influencer	Score	
	Male	Female
Forced Use	2,6	2,6
Fallback Option	3,5	3,1
Concept: Attitude towards Service Provider	**6,1 / 10**	**5,7 / 10**

Influencer	Score	
	Male	Female
Trust	4,0	3,8
Concept: Perceived Behavior Control (PBC)	**4,0 / 5**	**3,8 / 5**

Influencer	Score	
	Male	Female
Trust	4,0	3,8
Concept: Subjective Norm (SN)	**4,0 / 5**	**3,8 / 5**

With those concepts we can calculate a total score for the Intention to (re)use, which represents the compliance:

Concept	Score	
	Male	Female
User Satisfaction	11,3	10,3
Attitude towards TBSS	22,4	20,9
Attitude towards Service Provider	6,1	5,7
Perceived Behavior Control (PBC)	4,0	3,8
Subjective Norm (SN)	4,0	3,8
Compliance: Intention to (re)use	**47,8 / 65**	**44,5 / 65**

6.4 Compliance and education

I have split the respondents up following their education, so every respondent is in exactly one of those categories:

- WO;
- HBO;
- MBO;
- Voortgezet Onderwijs;
- Anders.

With my results of the questionnaire, the respondents where divided in those categories:

Category	# respondents
WO	4
HBO	12
MBO	7
Voortgezet Onderwijs	3
Anders	0
Total # respondents	26

Statement	Average Score			
	WO	HBO	MBO	VO
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is	4,3	3,5	3,5	3,7
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	4,3	4,0	3,6	3,7
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	4,0	3,9	3,6	4,0
Influencer: Information Quality	**4,2**	**3,8**	**3,5**	**3,8**

Statement	Average Score			
	WO	HBO	MBO	VO
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	4,0	3,9	3,6	4,0
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	4,5	3,8	3,6	3,7
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	4,3	4,0	3,6	3,7
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt	4,0	3,7	3,6	3,7
Influencer: System Quality	**4,2**	**3,8**	**3,6**	**3,8**

Statement	Average Score			
	WO	HBO	MBO	VO
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,8	3,1	3,9	3,3
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost	3,8	3,0	3,1	3,0
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen	3,5	3,8	3,7	4,3
Influencer: Service Quality	**3,7**	**3,3**	**3,6**	**3,6**

Statement	Average Score			
	WO	HBO	MBO	VO
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen	4,0	2,1	2,7	2,0
Influencer: Forced Use	**4,0**	**2,1**	**2,7**	**2,0**

Statement	Average Score			
	WO	HBO	MBO	VO
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	4,0	3,2	3,4	3,3
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen	3,8	3,1	3,9	3,0
Influencer: Fallback Option	**3,9**	**3,1**	**3,6**	**3,2**

Statement	Average Score			
	WO	HBO	MBO	VO
Mijn ervaring met de digitale aangifte is tot op heden positief	4,0	4,3	4,1	4,3
Influencer: Previous Experience	**4,0**	**4,3**	**4,1**	**4,3**

Statement	Average Score			
	WO	HBO	MBO	VO
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels	3,5	2,7	2,7	2,3
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte	4,0	4,2	4,0	4,0
Ik vind de mogelijkheid van digitale aangifte nuttig	5,0	4,5	4,4	4,7
Influencer: Perceived Usefulness	**4,2**	**3,8**	**3,7**	**3,7**

Statement	Average Score			
	WO	HBO	MBO	VO
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0	4,1	4,0	4,0
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken	4,3	4,1	3,7	4,0
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen	3,5	4,2	3,7	4,0
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet	4,3	4,1	3,7	4,0
Influencer: Perceived Ease of Use	**4,0**	**4,1**	**3,8**	**4,0**

Statement	Average Score			
	WO	HBO	MBO	VO
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen	4,5	4,0	4,0	3,7
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	4,5	3,8	3,6	3,7
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0	4,1	4,0	4,0
Influencer: Trust	**4,3**	**3,9**	**3,9**	**3,8**

Overview of influencers:

Influencer	Average Score			
	WO	HBO	MBO	VO
Information Quality	4,2	3,8	3,5	3,8
System Quality	4,2	3,8	3,6	3,8
Service Quality	3,7	3,3	3,6	3,6
Forced Use	4,0	2,1	2,7	2,0
Fallback Option	3,9	3,1	3,6	3,2
Previous Experience	4,0	4,3	4,1	4,3
Perceived Usefulness	4,2	3,8	3,7	3,7
Perceived Ease of Use	4,0	4,1	3,8	4,0
Trust	4,3	3,9	3,9	3,8

With those influencers we can calculate a score for the other concepts, as follows:

Influencer	Score			
	WO	HBO	MBO	VO
Information Quality	4,2	3,8	3,5	3,8
System Quality	4,2	3,8	3,6	3,8
Service Quality	3,7	3,3	3,6	3,6
Concept: User Satisfaction	**12,1 / 15**	**10,9 / 15**	**10,7 / 15**	**11,2 / 15**

Influencer	Score			
	WO	HBO	MBO	VO
Forced Use	4,0	2,1	2,7	2,0
Fallback Option	3,9	3,1	3,6	3,2
Previous Experience	4,0	4,3	4,1	4,3
Perceived Usefulness	4,2	3,8	3,7	3,7
Perceived Ease of Use	4,0	4,1	3,8	4,0
Trust	4,3	3,9	3,9	3,8
Concept: Attitude towards TBSS	**24,4 / 30**	**21,3 / 30**	**21,8 / 30**	**21,0 / 30**

Influencer	Score			
	WO	HBO	MBO	VO
Forced Use	4,0	2,1	2,7	2,0
Fallback Option	3,9	3,1	3,6	3,2
Concept: Attitude towards Service Provider	**7,9 / 10**	**5,2 / 10**	**6,3 / 10**	**5,2 / 10**

Influencer	Score			
	WO	HBO	MBO	VO
Trust	4,3	3,9	3,9	3,8
Concept: Perceived Behavior Control (PBC)	**4,3 / 5**	**3,9 / 5**	**3,9 / 5**	**3,8 / 5**

Influencer	Score			
	WO	HBO	MBO	VO
Trust	4,3	3,9	3,9	3,8
Concept: Subjective Norm (SN)	**4,3 / 5**	**3,9 / 5**	**3,9 / 5**	**3,8 / 5**

With those concepts we can calculate a total score for the Intention to (re)use, which represents the compliance:

Concept	Score			
	WO	HBO	MBO	VO
User Satisfaction	12,1	10,9	10,7	11,2
Attitude towards TBSS	24,4	21,3	21,8	21,0
Attitude towards Service Provider	7,9	5,2	6,3	5,2
Perceived Behavior Control (PBC)	4,3	3,9	3,9	3,8
Subjective Norm (SN)	4,3	3,9	3,9	3,8
Compliance: Intention to (re)use	**53,0 / 65**	**45,2 / 65**	**46,6 / 65**	**45,0 / 65**

6.5 Compliance and profession

I have split the respondents up following their profession, so every respondent is in one or more of those categories:

- ICT gerelateerd;
- Belasting gerelateerd;
- Anders.

With my results of the questionnaire, the respondents where divided in those categories:

Category	# respondents
ICT gerelateerd	4
Belasting gerelateerd	1
Anders	23
Total # respondents	28

People could fill out more than one answer to this question, so the total number of respondents could (and here, is) larger than the actual real number of respondents.

Statement	Average Score		
	ICT	Belasting	Anders
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is	4,0	5,0	3,6
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	4,0	4,0	3,8
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	4,3	5,0	3,7
Influencer: Information Quality	**4,1**	**4,7**	**3,7**

Statement	Average Score		
	ICT	Belasting	Anders
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	4,3	5,0	3,7
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	4,0	4,0	3,8
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	4,0	4,0	3,8
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt	4,0	4,0	3,6
Influencer: System Quality	**4,1**	**4,3**	**3,7**

Statement	Average Score		
	ICT	Belasting	Anders
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,5	3,0	3,4
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost	3,8	4,0	3,0
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen	4,0	4,0	3,7
Influencer: Service Quality	**3,8**	**3,7**	**3,4**

Statement	Average Score		
	ICT	Belasting	Anders
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen	2,8	2,0	2,5
Influencer: Forced Use	**2,8**	**2,0**	**2,5**

Statement	Average Score		
	ICT	Belasting	Anders
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,3	3,0	3,4
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen	3,5	2,0	3,4
Influencer: Fallback Option	**3,4**	**2,5**	**3,4**

Statement	Average Score		
	ICT	Belasting	Anders
Mijn ervaring met de digitale aangifte is tot op heden positief	4,3	5,0	4,2
Influencer: Previous Experience	**4,3**	**5,0**	**4,2**

Statement	Average Score		
	ICT	Belasting	Anders
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels	3,0	3,0	2,8
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte	4,5	5,0	4,0
Ik vind de mogelijkheid van digitale aangifte nuttig	4,5	5,0	4,6
Influencer: Perceived Usefulness	**4,0**	**4,3**	**3,8**

Statement	Average Score		
	ICT	Belasting	Anders
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,3	5,0	4,0
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken	4,3	5,0	3,9
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen	4,5	5,0	3,8
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet	4,3	5,0	3,9
Influencer: Perceived Ease of Use	**4,3**	**5,0**	**3,9**

Statement	Average Score		
	ICT	Belasting	Anders
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen	4,3	5,0	4,0
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	4,0	4,0	3,8
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,3	5,0	4,0
Influencer: Trust	**4,2**	**4,7**	**3,9**

Overview of influencers:

Influencer	Average Score		
	ICT	Belasting	Anders
Information Quality	4,1	4,7	3,7
System Quality	4,1	4,3	3,7
Service Quality	3,8	3,7	3,4
Forced Use	2,8	2,0	2,5
Fallback Option	3,4	2,5	3,4
Previous Experience	4,3	5,0	4,2
Perceived Usefulness	4,0	4,3	3,8
Perceived Ease of Use	4,3	5,0	3,9
Trust	4,2	4,7	3,9

With those influencers we can calculate a score for the other concepts, as follows:

Influencer	Score		
	ICT	Belasting	Anders
Information Quality	4,1	4,7	3,7
System Quality	4,1	4,3	3,7
Service Quality	3,8	3,7	3,4
Concept: User Satisfaction	**12,0 / 15**	**12,7 / 15**	**10,8 / 15**

Influencer	Score		
	ICT	Belasting	Anders
Forced Use	2,8	2,0	2,5
Fallback Option	3,4	2,5	3,4
Previous Experience	4,3	5,0	4,2
Perceived Usefulness	4,0	4,3	3,8
Perceived Ease of Use	4,3	5,0	3,9
Trust	4,2	4,7	3,9
Concept: Attitude towards TBSS	**23,0 / 30**	**23,5 / 30**	**21,7 / 30**

Influencer	Score		
	ICT	Belasting	Anders
Forced Use	2,8	2,0	2,5
Fallback Option	3,4	2,5	3,4
Concept: Attitude towards Service Provider	**6,2 / 10**	**4,5 / 10**	**5,9 / 10**

Influencer	Score		
	ICT	Belasting	Anders
Trust	4,2	4,7	3,9
Concept: Perceived Behavior Control (PBC)	**4,2 / 5**	**4,7 / 5**	**3,9 / 5**

Influencer	Score		
	ICT	Belasting	Anders
Trust	4,2	4,7	3,9
Concept: Subjective Norm (SN)	**4,2 / 5**	**4,7 / 5**	**3,9 / 5**

With those concepts we can calculate a total score for the Intention to (re)use, which represents the compliance:

Concept	Score		
	ICT	Belasting	Anders
User Satisfaction	12,0	12,7	10,8
Attitude towards TBSS	23,0	23,5	21,7
Attitude towards Service Provider	6,2	4,5	5,9
Perceived Behavior Control (PBC)	4,2	4,7	3,9
Subjective Norm (SN)	4,2	4,7	3,9
Compliance: Intention to (re)use	**49,4 / 65**	**49,4 / 65**	**46,3 / 65**

6.6 Compliance and times made use

I have split the respondents up following the number of times they made use of the system of digital declarations, so every respondent is in exactly one of those categories:

- 2 times;
- 3 times;
- 4 times;
- 5 times;
- more than 5 times.

With my results of the questionnaire, the respondents where divided in those categories:

Category	# respondents
2 times	5
3 times	2
4 times	4
5 times	1
>5 times	15
Total # respondents	27

Statement	Average Score				
	2	**3**	**4**	**5**	**>5**
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is	3,5	3,5	4,0	5,0	3,5
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	3,6	4,0	3,8	5,0	3,9
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,6	4,0	4,0	4,0	3,8
Influencer: Information Quality	**3,6**	**3,8**	**3,9**	**4,7**	**3,7**

Statement	Average Score				
	2	**3**	**4**	**5**	**>5**
Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is	3,6	4,0	4,0	4,0	3,8
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,6	4,0	3,3	5,0	3,9
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is	3,6	4,0	3,8	5,0	3,9
Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt	3,6	4,0	3,8	4,0	3,6
Influencer: System Quality	**3,6**	**4,0**	**3,7**	**4,5**	**3,8**

Statement	Average Score				
	2	**3**	**4**	**5**	**>5**
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,4	3,5	3,5	4,0	3,3
Bij eventuele problemen worden deze naar mijn tevredenheid opgelost	2,6	3,5	3,0	5,0	3,2
Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen	3,8	4,0	3,5	4,0	3,7
Influencer: Service Quality	**3,3**	**3,7**	**3,3**	**4,3**	**3,4**

Statement	Average Score				
	2	**3**	**4**	**5**	**>5**
Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen	2,2	3,5	2,0	5,0	2,5
Influencer: Forced Use	**2,2**	**3,5**	**2,0**	**5,0**	**2,5**

Statement	Average Score				
	2	**3**	**4**	**5**	**>5**
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk	3,2	3,5	3,3	5,0	3,4
Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen	3,2	4,0	2,5	4,0	3,6
Influencer: Fallback Option	**3,2**	**3,8**	**2,9**	**4,5**	**3,5**

Statement	Average Score				
	2	3	4	5	>5
Mijn ervaring met de digitale aangifte is tot op heden positief	4,2	4,0	3,8	5,0	4,3
Influencer: Previous Experience	**4,2**	**4,0**	**3,8**	**5,0**	**4,3**

Statement	Average Score				
	2	3	4	5	>5
Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en - regels	2,4	3,5	2,5	3,0	2,9
Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte	3,6	4,0	4,3	5,0	4,1
Ik vind de mogelijkheid van digitale aangifte nuttig	4,4	4,5	4,8	5,0	4,6
Influencer: Perceived Usefulness	**3,5**	**4,0**	**3,8**	**4,3**	**3,9**

Statement	Average Score				
	2	3	4	5	>5
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0	2,5	4,0	5,0	4,1
Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken	3,8	3,5	4,0	5,0	4,0
Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen	3,2	4,0	4,0	2,0	4,2
Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet	3,8	4,0	4,0	5,0	3,9
Influencer: Perceived Ease of Use	**3,7**	**3,5**	**4,0**	**4,3**	**4,1**

Statement	Average Score				
	2	3	4	5	>5
Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen	4,4	3,5	3,8	5,0	4,0
Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is	3,6	4,0	3,3	5,0	3,9
Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is	4,0	2,5	4,0	5,0	4,1
Influencer: Trust	**4,0**	**3,3**	**3,7**	**5,0**	**4,0**

Overview of influencers:

Influencer	Average Score				
	2	3	4	5	>5
Information Quality	3,6	3,8	3,9	4,7	3,7
System Quality	3,6	4,0	3,7	4,5	3,8
Service Quality	3,3	3,7	3,3	4,3	3,4
Forced Use	2,2	3,5	2,0	5,0	2,5
Fallback Option	3,2	3,8	2,9	4,5	3,5
Previous Experience	4,2	4,0	3,8	5,0	4,3
Perceived Usefulness	3,5	4,0	3,8	4,3	3,9
Perceived Ease of Use	3,7	3,5	4,0	4,3	4,1
Trust	4,0	3,3	3,7	5,0	4,0

With those influencers we can calculate a score for the other concepts, as follows:

Influencer	Score				
	2	3	4	5	>5
Information Quality	3,6	3,8	3,9	4,7	3,7
System Quality	3,6	4,0	3,7	4,5	3,8
Service Quality	3,3	3,7	3,3	4,3	3,4
Concept: User Satisfaction	**10,5 / 15**	**11,5 / 15**	**10,9 / 15**	**13,5 / 15**	**10,9 / 15**

Influencer	Score				
	2	**3**	**4**	**5**	**>5**
Forced Use	2,2	3,5	2,0	5,0	2,5
Fallback Option	3,2	3,8	2,9	4,5	3,5
Previous Experience	4,2	4,0	3,8	5,0	4,3
Perceived Usefulness	3,5	4,0	3,8	4,3	3,9
Perceived Ease of Use	3,7	3,5	4,0	4,3	4,1
Trust	4,0	3,3	3,7	5,0	4,0
Concept: Attitude towards TBSS	**20,8 / 30**	**22,1 / 30**	**20,2 / 30**	**28,1 / 30**	**22,3 / 30**

Influencer	Score				
	2	**3**	**4**	**5**	**>5**
Forced Use	2,2	3,5	2,0	5,0	2,5
Fallback Option	3,2	3,8	2,9	4,5	3,5
Concept: Attitude towards Service Provider	**5,4 / 10**	**7,3 / 10**	**4,9 / 10**	**9,5 / 10**	**6,0 / 10**

Influencer	Score				
	2	**3**	**4**	**5**	**>5**
Trust	4,0	3,3	3,7	5,0	4,0
Concept: Perceived Behavior Control (PBC)	**4,0 / 5**	**3,3 / 5**	**3,7 / 5**	**5,0 / 5**	**4,0 / 5**

Influencer	Score				
	2	**3**	**4**	**5**	**>5**
Trust	4,0	3,3	3,7	5,0	4,0
Concept: Subjective Norm (SN)	**4,0 / 5**	**3,3 / 5**	**3,7 / 5**	**5,0 / 5**	**4,0 / 5**

With those concepts we can calculate a total score for the Intention to (re)use, which represents the compliance:

Concept	Score				
	2	**3**	**4**	**5**	**>5**
User Satisfaction	10,5	11,5	10,9	13,5	10,9
Attitude towards TBSS	20,8	22,1	20,2	28,1	22,3
Attitude towards Service Provider	5,4	7,3	4,9	9,5	6,0
Perceived Behavior Control (PBC)	4,0	3,3	3,7	5,0	4,0
Subjective Norm (SN)	4,0	3,3	3,7	5,0	4,0
Compliance: Intention to (re)use	**44,7 / 65**	**48,2 / 65**	**43,7 / 65**	**60,1 / 65**	**47,2 / 65**

7 Requirements

Following [KULA04] a requirement is something that a computer application must do for its users; a specific function, feature, quality, or principle that the system must provide to merit its existence.
With requirements there is a difference between functional and non-functional requirements. [KULA04] defines functional requirements as what the users need for the system to work (functions and features), while non-functional requirements have been defined as the hidden areas of the system that are important to the users even though they may not realize it.

In this section of my thesis I will discuss the requirements the respondents of my questionnaire came up with, with regard to the digital declaration software of the Belastingdienst. Following my method I have ordered them to their priority score. Finally, 11 respondents had filled out points of which they think it could improve the digital declaration software. Together with the six "requirements statements" of my questionnaire this has resulted in the requirements I will discuss now.

7.1 Non-functional requirements

Most of the improvement points have resulted in non-functional requirements, with people stating they want things clearer and easier to use. Also, the six statements of my questionnaire about points which the respondents would like to see improved were non-functional. The scores of those statements are:

Statement	**Average score**	**Priority score**
Ik vind dat de kwaliteit van de verschafte informatie in de digitale aangifte verbeterd moet worden	3,1	310
Ik vind dat de kwaliteit van de service door de Belastingdienst – in geval van problemen bij het gebruik van de digitale aangifte – verbeterd moet worden	3,0	300
Ik vind dat de digitale aangifte leerzamer zou moeten zijn; ik vind dat ik er meer van zou moeten leren	2,9	290
Ik vind dat de digitale aangifte gemakkelijker te gebruiken moet zijn	2,9	290
Ik vind dat het systeem van digitale aangifte beter beveiligd moet worden	2,7	270
Ik vind dat de digitale aangifte sneller in te vullen moet zijn	2,6	260

I have translated all of them in the following non-functional requirements:

NF 100	**Usability**	**Priority score: 2330**
NF 101	A first page with just information (for a small declaration) and after this front page a possibility to navigate to more and more detailed information, including jurisprudence. A more complete help function with very detailed information about all fiscal laws, functions and measures in a language that everybody understands	324 + 126 + 20 *+310* = **780**
NF 103	Clearer interfaces with just the questions, remarks and information that are applicable for this specific tax payer	144 + 216 = **360**
NF 104	*The quality of the service – in case of problems – should be improved*	***300***
NF 106	*The system should be easier to use in general*	***290***
NF 107	*The system should be more instructive*	***290***
NF 105	*The digital declaration should be filled out faster*	***260***

NF 102	In a two persons declaration the most favourable spreading of costs and benefits should be suggested automatically	**50**

NF 400	**Security**	**Priority score: 270**
NF 401	*The system's security should be improved*	***270***

NF 300	**Availability**	**Priority score: 264**
NF 301	New versions should contain less (no) errors and failures	**264**

NF 200	**Traceability**	**Priority score: 68**
NF 201	Show information about the amount of taxes in every band has been calculated	**68**

The italic printed requirements have been derived from the six statements of the questionnaire.

7.2 Functional requirements

Just one of the improvement points turned out to be a functional requirement, being a desired feature of the system of digital declarations. I have made a single use case for this requirement:

Use Case Number	001
Use Case Name	User copies declaration of last year
Initiating Actor	User
Description	When a user copies his declaration of last year, all data has to be copied, where now some information is not being copied.
Completeness	Facade
Use Case Complexity	High (because at this moment a complete new architecture of systems and applications is being developed and implemented as well)
Architectural Priority	Low
Business Priority	Low
Dependency	Low
Source	User
Comments	-

7.3 Remarks

Some respondents had filled out improvement points regarding pre-filled out declarations. I have decided to ignore those points when deriving the requirements to improve the current system, because those things already are part of the system as of this year. Because the possibility of making use of pre-filled out digital declaration forms was there in 2009 and some people still coming up with this as an improvement point, the Belastingdienst may wonder if the possibility of pre-filled out declarations has been acquainted with the tax payers.

8 Results

Here I will relate my research to my research questions. The results of my research are the answers to those questions, which I will discuss here.

8.1 The Belastingdienst and the recent faults

In the news research I have found and discussed some recent faults and failures at the Belastingdienst. Dutch State Scretary of Finances Jan Kees de Jager reacted on those faults by announcing some measures to fix and prevent those and possible future mistakes. But, what really has been done about it? Which of those measures have actually been implemented within the Belastingdienst? I will discuss the current state of the announced measures in this section to see if and how the Belastingdienst has learned from its faults.

Globally, De Jager announced five measures:

- The installation of a department "ICT management and architecture";
- More backups;
- The installation of a Chief Information Officer;
- All departments get an ICT manager and managers get an ICT update course;
- Implementation of a Service-Oriented Architecture.

8.1.1 ICT management and architecture

As of 1 September 2008 team ICTRA (ICT Control and Enterprise Architecture) has been completed. This team will control the following short-term measures:

- Determining a procedure for production failures;
- Improving test path;
- Control of input and output.

We have seen that the improved test path has prevented the Belastingdienst from six production problems with saved costs of 550,000 euro. Messages now are being secured when they have been received. They are being checked and signed and then they will be saved. In the output several production runs have been recovered and fixed.

In the future several structural measures have to be implemented as well:

- Clearer responsibilities and defined frames, related to sourcing, execution of e-Government policy and distribution of financial resources, based on the business strategy;
- Reducing complexity in the processes within the Belastingdienst and improved service to the people;
- The Architecture Board – which makes it possible to steer and control out of architecture – will start in December 2009;
- Improve the quality of the ICT service. The short-term measures have to be made structural;
- Uniform and consistent work methods in the designing and building of systems.

Together, all those measures have to result into the realization of a clear information facility organisation which works faster with less chance of failures.

8.1.2 More backups

As we have seen in the project plan of the *Vereenvoudigingsoperatie*, measures have been implemented to secure messages in the receiving process. Electronic messages will be checked when signed and after being signed they will be saved. In all channels backups will be made and messages will be buffered and archived to prevent loss of information. Still more research in ongoing on how to secure every way of information delivery.

So, when people send in their digital declaration, those will be checked and signed. After that they will be saved and a backup will be made. This has to prevent the Belastingdienst of losing sent in declarations, as we have seen in [NUN081].

8.1.3 Chief Information Officer

As of 15 September 2008 Wim Sijstermans is the Chief Information Officer at the Belastingdienst. In [COM084] he stated that the end user always has to play a central role when designing and developing (new) software systems. Furthermore, he wants more realistic time schedules and cost estimations. The installation of this Chief Information Officer is part of the steering of the ICT organisation in the *Vereenvoudigingsoperatie* at the Belastingdienst, which we have seen has to control the input and the output and which implies clearer responsibilities and defined frames, related to sourcing, execution of e-Government policy and distribution of financial resources, based on the business strategy.

8.1.4 ICT manager and ICT update course

In [COM091] has been released the Belastingdienst already gives managers an ICT course, but this course is not the course that is being developed as part of the *Vereenvoudigingsoperatie*. The new CIO is in charge of this measure and at this moment the content of the course is being determined. Furthermore, the Belastingdienst is investigating whether this ICT update course will be sourced out, or given by one of the preferred suppliers.

8.1.5 Service-Oriented Architecture

In the *Vereenvoudigingsoperatie* applications within the Belastingdienst have been separated; data files are unlinked from its corresponding application and the data files will be stored in a central place. The implementation of this Data management facility is somewhat more difficult than expected, but still the Belastingdienst aims for a separation in applications. The communication between the applications and the appropriate data files goes by the generic facility Service bus.

Moreover, a Digital port makes the communication with the people more flexible and faster and one central port could be better secured. This digital port is based on Service Oriented Architecture, which makes it possible to call the appropriate services (and thus the data files).

Furthermore, some information Portals have been implemented. With KLOP2 the Belastingdienst now can get available information about somebody all together. This KLOP2 works with the Service bus also, with getting data from different departments and data files. With this KLOP2 application, based on SOA, employees of the *Belastingtelefoon* can get an overview of all information about somebody, instead of having to enter different applications with each different data files. This makes the Belastingdienst can offer better and faster service to people.

8.2 The Belastingdienst and three perspectives on compliance

In the theoretical framework I have introduced three perspectives on compliance:

- Compliance from a public administration perspective;
- Compliance from a public philosophical perspective;
- Compliance from an organizational perspective.

Here I will describe how the Belastingdienst is dealing with those perspectives on compliance.

8.2.1 Compliance from a public administration perspective

From [BEKK01] we have seen that ICT challenges physical borders by connecting compyter systems all over the world. *Here* is available over *there* and *there* is available *over here*. People have less face-to-face contact, but they are more transparent. The Belastingdienst has more and better information about people through the use of ICT systems. In [BEKK01] was stated that the Belastingdienst even could fill out people's tax forms. And now, eight years later, in 2009, a broad scaled pilot with pre-filled out declarations will be started for people who send in their declarations electronically.

Moreover, the Belastingdienst has started developing generic facilities for supporting its processes. The focus is now on business functions, with events are playing a central role. When an event occurs, a process will be started, which needs one or more generic facilities to process the event. I have discussed the term "mainframestaat" in which every information is available everywhere, with people are being able to enter their own information. The Belastingdienst deals with this aspect by implementing a Portal, which is expected to be finished in 2009. In this Portal actual information will be available anytime, anywhere. In Data management applications have been separated from its data files, which now are stored in one central file. This makes the communication between applications – through the Bus – easier and more flexible. Those generic facilities imply that information is available wherever needed, because an application can just call the central data file.

There already has been a pilot with KLOP2, which combines personal information of people to present a complete overview with just one button press. The experiences of users are very positive, so there is still development on KLOP2 going on.
Furthermore, there is still ongoing research on the implementation of a Digital port, which regulates the communication between the Belastingdienst and people. With this port people can communicate changes (events) and information easier with the Belastingdienst and the Belastingdienst can inform people in a better and faster way. The Belastindienst already has provided the possibility to fill out and send in forms electronically for appealing and requesting delays. The digital port has to expand and support this service.

Of course, at the Belastingdienst people were always able to enter their own information (sending in their declarations is one big information communication), but the Belastingdienst is trying to improve this to increase the compliance of people to do so. The mentioned measures and facilities are examples of this.

The "mainframestaat" also contains a modern and reliable image. The Belastingdienst tries to improve its image in this way by trying to provide more, better and more complete information to people and companies. This also makes the people feel the Belastingdienst is more accessible form them, with the *Belastingtelefoon* becoming a kind of Customer Centre and which will be opened longer in busy periods. This measures speeds up the information processing which increases the people's acceptance (and thus) compliance. Moreover, more

and more events can be communicated electronically by filling out and sending in digital forms.

The second term that was discussed in the public administration perspective on compliance was the “internetstaat” in which ICT makes the government stepping back and more hybrid. Systems are connected in networks in networks, the Internet. Knowledge and intelligence are available everywhere and people are the requesting party, with voluntary and solidarity being the key principles. The Belastingdienst deals with those issues by redesigning its complete ICT architecture. The current portfolio (being software, applications and licences) are being cleaned up. This is more difficult than expected, so this measure is still ongoing and research has been done to find out how to complete the clean-up anyway.

Furthermore, applications and its data files will be separated and are all together connected to a Belastingdienst Servicebus. This makes the communication between them less complex and the data is available everywhere and when needed, because in this new situation those files are stored in a central place and not in just one application anymore.

In [BEKK01] we have also seen that people want to enjoy the advantages of online services rather than use the internet for payment services. This feeling of people of course is difficult (impossible?) to change and this feeling is very much related to the compliance issue, which is a target of the *Vereenvoudigingsoperatie* as a whole. So, the Belastingdienst tries to increase the compliance with this operation and hopes to increase the compliance to make people rather want to use the internet for payment services.

8.2.2 Compliance from a public philosophical perspective

We have seen that The Belastingdienst now is redesigning its complete ICT architecture to create familiarity, trust and loyalty with the tax payer. [BEKK01] suggested the Belastingdienst has to create suitable new interfaces that can only show these screens that have to be showed to a specific user, which implies dynamic information processing. The Belastingdienst does so by implementing a new software system called KLOP2. In KLOP2 information of different areas about a tax payer is presented combined from different data files in just one overview.

To serve people in a faster way mutations will be processed in advance and will only be undone when a data registry doesn’t validate the information. Just in some cases the information will be checked (to detect fraud) and when the Belastingdienst thinks someone tries to fraud, the mutations will only be processed when validated by the data registry. This gives people an improved feeling of trust, with the Belastingdienst processes their input immediately and just checks afterwards when they think something is wrong.
When looking at my questionnaire and the results for the concept Trust, I can conclude the trust of people in the digital declaration system of the Belastingdienst is very good with a score of 4,0 (out of 5).

Here again, loyalty is difficult (impossible?) to change and this feeling is very much related to the compliance issue, which is a target of the *Vereenvoudigingsoperatie* as a whole. So, the Belastingdienst tries to increase the compliance with this operation and hopes to increase the compliance to make people become more loyal with regard to use the digital tax declaration system. On the other hand, [BEKK01] suggests the Belastingdienst has to encourage personal contact, face-to-face and one-to-one. The Belastingdienst tries to do so by calling back people

more and faster, but at the same time the communication is becoming more digital with digital forms on the website and the implementation of (information) portals.

I think the Belastingdienst has to pay more attention to the fallback option and forced use aspects of my research model. Those two concepts were proven antecedents of the attitude towards both the system and the Belastingdienst. Those attitudes then were proven antecedents of the intention to (re)use the system for sending in digital declarations. Actually, at this moment the Belastingdienst focuses very much on automating its processes, but I think they have to keep in mind there will always be group of people who falls behind when talking about using ICT. Those people have to be supported more and better and they must have a good alternative way for sending in their digital declarations if they can't or don't want to use the digital system for it.

Familiarity is being reached by improving the accessibility and by calling people back when needed. In this way people get a feeling that the Belastingdienst tries to serve them as good as possible with maximum effort. Furthermore, the Belastingdienst has made the *Belastingtelefoon* more important, more effective and has given it a more central role in the service process. The *Belastingtelefoon* becomes a kind of a Customer Centre, where people get help immediately when needed and where they can communicate mutations, which will be processed faster.

8.2.3 Compliance from an organizational perspective

From the organizational perspective we have three business cases: integration and disintegration, aggregation and disaggregation and intermediation and disintermediation. In case of integration and disintegration people become part of the system. The Belastingdienst is trying to integrate people in the system by giving them the opportunity to enter their own information more and more and by processing their input immediately. This is based on the implemented Service-Oriented Architecture, which makes it possible to get personal information from different services and show it to employees who are communicating with the people. In the future it has been planned to give people their own personal website on which they can maintain their own information, without having to communicate with employees anymore. This has been related to the third business case of intermediation and disintermediation. Consultants, who help people with their tax declarations, increase the distance between people and the Belastingdienst. This implies a decreasing compliance. The Belastingdienst now tries to be a consultant itself by helping people more and better with their declarations, with the personal websites being good examples of this.

With regard to the second business case the Belastingdienst has re-designed its complete process architecture and made a shift from a tax laws oriented architecture to event oriented architecture. When an event occurs people communicate this to the Belastingdienst, where a process will start, followed by all needed processes to process the event. Based on experiences this architecture will be adapted to improve. [BEKK01] also states the Belastingdienst has to think about outsourcing one of its key processes (disaggregation) to decrease the distance with the people. The Belastingdienst has not outsourced key processes, but has been involving third parties more and more to review and monitor (key) processes. Furthermore, the Belastingdienst thinks about outsourcing an ICT update course for its ICT managers.

When talking about re-designing processes through the Internet, the Belastingdienst has taken a lot of measures to increase the compliance from this point of view. The tax payer can find

more, better and more recent information on the website, the search function has been updated and information portals have been installed. Also, we have seen that the Belastingdienst wants to introduce a system with everybody having a personal website to maintain his personal information. People then can make mutations by themselves instead of having to call the *Belastingtelefoon*.

In the third business cases of intermediation and disintermediation [BEKK01] suggested the Belastingdienst could play the role of intermediate – which are between the Belastingdienst and the people – itself. The Belastingdienst tries to do so now by providing more and better information to the people in a more direct way. People can enter their own information and are being served in a faster and better way. Moreover, the Belastingdienst tries to help people by providing them a pre-filled out declaration form, of which a pilot will start in 2009. With those measures a person needs less help of advisors of consultants and so the distance between the Belastingdienst and people has been decreased, with the compliance has been increased.

Also the personal website is a good example of the disintermediation at the Belastingdienst. The Belastingdienst offers people more and more services to communicate with the Belastingdienst directly, without the help of consultants which [BEKK01] states are increasing the distance, and so decreasing the compliance. When the Belastingdienst makes things easier people need less help and they can communicate with the Belastingdienst directly.

8.3 The Belastingdienst and four factors of compliance

In the theoretical framework I have discussed the four factors of compliance in [BEKK01]. Those factors are frightening, sense of duty, consultants and some other demographic factors. In the chapter about the *new* Belastingdienst I have described the *Vereenvoudigingsoperatie* and all the measures within this project at the Belastingdienst. Here, I will conclude how the Belastingdienst is dealing with the four factors of (external) compliance.

The distance between tax payers and the Belastingdienst can be decreased by more and better control and supervision. ICT supports this and makes it easier to control and supervise. But, more control by ICT means people get frightened about their privacy and will avoid using the ICT. The Belastingdienst now is experimenting with the pre-filled out digital declaration. This gives more control and supervision, but people have less privacy. When more and more information is being pre-filled out, people have less privacy, because the Belastingdienst then has to gather information from banks too, for example. I think this privacy issue will be an obstacle when implementing this pilot.

More and better control are also the main target of the ICTRA team. As of 1 September 2008 this team ICTRA (ICT Control and Enterprise Architecture) has been completed. This team will control the following short-term measures:

- Determining a procedure for production failures;
- Improving test path;
- Control of input and output.

We have seen that the improved test path has prevented the Belastingdienst from six production problems with saved costs of 550,000 euro. Messages now are being secured when

they have been received. They are being checked and signed and then they will be saved. In the output several production runs have been recovered and fixed.

In the future several structural measures have to be implemented as well:

- Clearer responsibilities and defined frames, related to sourcing, execution of e-Government policy and distribution of financial resources, based on the business strategy;
- Reducing complexity in the processes within the Belastingdienst and improved service to the people;
- The Architecture Board – which makes it possible to steer and control out of architecture – will start in December 2009;
- Improve the quality of the ICT service. The short-term measures have to be made structural;
- Uniform and consistent work methods in the designing and building of systems.

Together, all those measures have to result into the realization of a clear information facility organisation which works faster with less chance of failures.

Tax payers have a high degree of sense of duty, so [BEKK01] proposed to simplify tax laws and rules. Instead of really changing the rules and laws – which will be very difficult and will have huge impact – ICT can help here by giving more, more detailed and on demand information. You then make the rules easier to understand for people, which implies they can fill out their declarations better and even faster.
The implementation of the information portals and the KLOP2 system are good examples of this improved help service.
People want accessibility, clearer procedures and feedback. The *Belastingtelefoon* has longer opening hours, so it's more accessible in the first place. When people really are connected all appropriate information is available for the employee thanks to KLOP2, which implies the service is better. Procedures have been simplified by expanding the number of digital forms.

Consultants, who help people with their tax declarations, increase the distance between people and the Belastingdienst. This implies a decreasing compliance. The Belastingdienst now tries to be a consultant itself by helping people more and better with their declarations. The generic facilities are good examples of this and recently has been announced all people get a personal website on which they can see and change their personal information. [NUN091] With this personal website the Belastingdienst wants to make things clearer for people and itself. People need less help and can communicate with the Belastingdienst directly.

Regarding the other demographic factors, the Belastingdienst has to take care that every tax payer still can fill out his declaration. Although, the Belastingdienst works hard to extend en improve the digital services, still 546.500 of the total number of declarations in 2009 were sent in on paper (7,8%). [MINF09] With a tendency of extensive use of ICT and making the digital declaration system the only way for sending in declarations, the Belastingdienst has to make sure every tax payers will be able to do so. At this moment I think there will be always people who don't have a computer with an internet connection or people who don't have the required computer skills to fill out a digital declaration. Following my questionnaire people still have a little perceived forced use of the digital declaration; with a score of 2,6 out of 5 this feeling is not very positive. People feel they have no alternatives for filling out their declaration, besides the digital way. Based on this, I conclude there still is some need for other ways to send in tax declarations.

8.4 Compliance towards the Belastingdienst

From the data analysis in section 5, we can conclude the compliance of users towards the digital declaration system of the Belastingdienst is *good* with a score of 47,0. This conclusion can be drawn based on the scale we have introduced in the method section.

People in the age of 50-59 have the highest degree of compliance towards the Belastingdienst, followed by 20-29 and 30-39. Those age categories have a *good* compliance score. Old (>59) and young (<20) people have the lowest degree of compliance, that is with 41,4 and 41,0 only *average*.

When we look at sex, we can conclude that men have a higher compliance than women. Men have a compliance score of 47,8 which we call *good*. Women have a *average* score – although, near by *good* – with a score of 44,5.

Furthermore, people with a WO education have a higher compliance than people with other educations. The compliance score of people with WO education is *very good* with a score of 53,0. People with a VO and HBO education have the lowest compliance score: 45,0 and 45,2 which even is *good*. People with a MBO education have a *good* compliance as well, with a compliance score of 46,6.

People who have an ICT or tax background have a higher degree of compliance than people who don't have this background. People with an ICT or a tax background both have a compliance score of 49,4 which is *good*, almost *very good*. People with other backgrounds have a compliance score of just 46,3 which is even *good* as well.

When we look at the times made use of the digital declaration system, we could state that people who have used the program 5 times have the highest degree of compliance, which is *very good* with a score of 60,1. Also, the compliance of more than 6 times users is *good* (47,2). The compliance of 2 times and 4 times users is falling behind somewhat, with scores of 44,7 and 43,7 which still is *average*. The scores of 3 times users is *good* with a score of 48,2. We can conclude (a bit careful) that more frequent users have a higher compliance than people who don't use it very frequently (yet). The paradox here is that those people maybe don't want to use the system anymore (because of their lower compliance).

The highest compliance we have seen at a WO educated man, in the age of 50-59 years old, with a ICT or tax related profession and who has made use of the system for 5 times.
The lowest compliance we have seen at a VO educated woman, younger than 20 years old, with no ICT or tax related profession and who has made use of the system for 4 times.

Because ICT and online services are part of a new generation, with young people are growing up with it nowadays, those two statements seems a bit contradictory. I had expected the highest compliance to be in the age categories between 30 and 50 years old. Not younger, because those younger people haven't used the system very much already with studying for example. It is surprising to see the highest compliance is in the category 50-59 years old, because those people are not part of the new generation and they haven't grew up with ICT and online services.

My expectations are founded by [DEAN08] in which researchers have done research to the effect of age on the use of self-service based (shop) technologies. In [DEAN08] the results show that relatively older people (aged 49+) have less confidence in using self-serviced based technology, and are missing human interaction. Maybe the fact we here are talking about paying taxes, which is a very old phenomenon, makes older people have more compliance than younger people, who maybe see it more as a obligation instead of having a sense of duty.

The fact that the lowest compliance is at a younger than 20 years old, is a bit dubious, because in my research just one respondent was in that specific age category. Therefore, I think there is no ground for concluding this category really has the lowest compliance. The chance of getting just a disappointed user of the system in this category is too large.

In [BEL084] we can see that as of 2003 the use of digital declarations has been increased. In 2003 35% of the declarations was send in on the Internet, in 2004 42% and in 2005 62% of the total number of declarations has been made on the Internet. As of 2006 the use of *DigiD* was supported, with 6% of the declarations were sent in with *DigiD*. Moreover, 68% was sent in on the Internet. In 2007 the use of the Internet has decreased (29%), but the use of *DigiD* (45%) makes the use of digital declarations being increased again (74%).

Based on the results of my questionnaire, which shows a good compliance under users of the digital declaration system, there is no ground to doubt whether the use of digital declarations will stick. This has been confirmed by [MINF09] which states that 7 million declarations have been sent in (until 1 April 2009). Just 546.500 of those were on paper (7,8%), so the remaining 92,2% were sent in with the use of the digital declaration system.
Moreover, the use of the pre-filled out digital declarations seems to be very successful. In [MINF09] has been stated about 2 million declarations have made use of this new system for sending in declarations.

When looking at my research model, we see that the concept User satisfaction has been determined by the influencers Information Quality, System Quality and Service Quality together with Perceived Usefulness. The Belastingdienst tries to improve the quality aspects with the implementation of information portals, the new Service-Oriented Architecture, a new search function on the website and the introduction of KLOP2. With those measures the Belastingdienst wants to bother people not more than necessary, to provide more and improved service over the Internet, to be accessible for people, to serve people in a better way, to speed up processes for people and to solve problems together with the people. Those six measures also have to improve the attitude of people, towards the system and towards the Belastingdienst itself.

Furthermore, the Belastingdienst has improved the *Belastingtelefoon* to make sure people can reach somebody for help and when they are connected they will be helped sufficiently. Employees of the *Belastingtelefoon* now have more and better information about the people who are calling.

Trust is being improved by checking more afterwards. When people make mutations those will be processed in advance and will only be undone when a data registry doesn't validate the information. Just in some cases – when the Belastingdienst thinks somebody tries to fraud – the information will be check before it will be processed.

When talking about Perceived Usefulness and Perceived Ease of Use, the Belastingdienst tries to improve those influencers by speeding up processes (more and more processes become digital). The best example of this is the pre-filled out digital declaration, which should save people a lot of time when filling out their declarations.

Based on my research model we can see the *Vereenvoudigingsoperatie* of the Belastingdienst consists of several measures that fit into the model that I have used in this research to determine the current degree of compliance, when talking about making use of the digital declaration system.

8.5 Improve the compliance

In section 7 I have discussed the requirements people have regarding the digital declaration system of the Belastingdienst. I will give here a summarization of the most important improvement points. Most of the points mentioned by the respondents turned out to be non-functional requirements, which I have defined as the hidden areas of the system that are important to the users even though they may not realize it. Also, six statements in the questionnaire are about areas of improving the system and those six statements were non-functional as well.

The most important thing people want to be improved in the system of digital declarations of the Belastingdienst is the **usability** of it, with two important requirements:

- A first page with just information (for a small declaration) and after this front page a possibility to navigate to more and more detailed information, including jurisprudence. A more complete help function with very detailed information about all fiscal laws, functions and measures in a language that everybody understands;
- Clearer interfaces with just the questions, remarks and information that are applicable for this specific tax payer.

The second most important area to be improved is the **security** and the **availability**, with people want new versions should contain less (no) errors and failures. The Belastingdienst has announced that a standardized approach based on the market standard *Tmap* will be developed for testing (new) software systems.

The single functional requirement is that people want all data and information being copied when he copies the declaration of last year. The copy function/feature in the systems needs to be reviewed, checked and changed.

In [HUNG09] about user acceptance of intergovernmental services training has been determined as an antecedent of attitude of users as well. Although this concept wasn't really in the scope of my own research, it doesn't mean I have to ignore it when talking about improving the compliance. I think a more trained user can use the system better, faster and easier. This, we have seen in my research – improves the compliance. So, the Belastingdienst has to think about how it could train users in using the digital declaration system. A possibility to do so could be the implementation of a kind of a digital assistant, such as the *paper-clip* in Microsoft Office. To prevent users get annoyed by it, it should be able being switched off when people don't want to use it (any)more.

Furthermore, I think it would be good if the Belastingdienst adds some questions to their software for digital tax declaration. A kind of a questionnaire immediately after somebody has

used the system. You then will get answers when people have the most recent feeling about using the system and this feeling has not been influenced yet. Those questions have to be small and people should be able to answer them in a fast way. So, you can think of questions that cover the influencers of my research model, like:

I think the information quality is:
[very good] – [good] – [average] – [bad] – [very bad]

I think the quality of the system is:
[very good] – [good] – [average] – [bad] – [very bad]

I think the service quality is:
[very good] – [good] – [average] – [bad] – [very bad]

I think the system is useful:
[true] – [false] – [neutral]

I think the system is easy to use:
[true] – [false] – [neutral]

I trust the system:
[true] – [false] – [neutral]

What do you think should be improved with the highest priority?
[…]

Although, a lot of people will skip those questions, you will get some feedback and the Belastingdienst gives users a feeling they can help to improve the system.

9 Conclusions

In the results chapter I have answered my sub questions with a lot of information and all appropriate results of my research. In this chapter I will overview and summarize the most important points and draw some clear conclusions. Moreover, I will discuss the answer to my main research question.

From the problem statement chapter I here repeat the research question:
How and why has the compliance of Dutch taxpayers been affected by the recent ICT failures at the Belastingdienst and how can this compliance (further) be increased?

Well, in the first place we have seen the Belastingdienst has taken several measures to fix the recent ICT failures and to prevent new ones. A large project called the *Vereenvoudigingsoperatie* has been started and several measures turned out to be successful already. The most important aspects of this project to reduce complexity in the organisation of the Belastingdienst are:

- Implementation of a Service-Oriented Architecture with applications separated from its data files;
- Several changes and measures in the organisation of the Belastingdienst. A Chief Information Officer has been installed and ICT managers will get an ICT update course;
- More and improved backups of all incoming messages;
- More and improved information supply (via the website, via the *Belastingtelefoon*) towards people;
- More and improved service (via the website, via the *Belastingtelefoon*) towards people.

Furthermore, the Belastingdienst gives people a feeling of trust with accepting mutations immediately. Just when the Belastingdienst presumes fraud, the information will be checked. Also the pre-filled out declaration is a very good and actual example of the *new* Belastingdienst. With filling out all available information already, the Belastingdienst provides a service to the tax payers, who now more and more only have to check and sign instead of filling out all information by themselves.

Here I have to point at the critical point of privacy. When more and more information is being pre-filled out, people have less privacy, because the Belastingdienst then has to gather information from banks too, for example. I can imagine people could have objections to this ongoing loss of privacy. I think the Belastingdienst has to pay more attention to this, because I haven't read much about it in the project plan and updates.

The compliance of the users of the digital declaration system turned out to be good nowadays – after the ICT failures of recent years I have discussed in the news research – with a score of 47,0. The results summarized with regard to several demographic factors:

- Men have a higher compliance than women;
- WO educated people have the highest compliance, VO and HBO educated people have the lowest compliance;
- People with an ICT or tax background have a higher compliance;
- More frequent users of the system have a higher compliance.

We have seen the compliance could be improved by improving the usability, security and availability of the system. Furthermore, when looking at the functionalities, people want an improved copy function to copy the information of last year into their current declaration. With the upcoming pre-filled out declaration this may be needless in the near future, but the Belastingdienst has to take this requirement into account anyway. Finally, I have also discussed that training the users may improve their compliance or give them a feeling of participating by asking to their experiences right after they have used the system.

10 Reflection

In this final chapter I will discuss my research as a reflection. What is good and what should I have done in a different way? Also, I will suggest some future research, which could be based on my research results.

When I had published my questionnaire, some people send or told me their findings about the questions. There were some complains about duplicate questions, which were not in the questionnaire actually. Because some statements really were very similar to each other (especially those statements within one concept) I can imagine people thought there were duplicate statements.

Moreover, some people told me they filled out the questionnaire, but they don't fill out their tax declaration themselves. Or some people told me they even didn't fill out the questionnaire for that reason. Because I only wanted people who do so to be part of my research and thus research elements they were (automatically) removed from the research. This resulted in a relatively small number of final respondents who suited all of my criteria. From the 39 total respondents only 27 respondents remained. Therefore, I have to be careful with generalization and drawing conclusions over the total group of users of the digital declaration system. If and why people indeed make use of consultants to fill out their tax declarations now seems to be an interesting aspect in future research based on the outcome of my research.

Although, I have to be careful with generalization and drawing conclusions over the total group of users of the digital declaration system, my research shows the distribution of compliance among those users very good. I have analyzed not only the compliance in general, but also in relation to several demographical factors, such as age and sex.
Also the improvements could be very useful for the Belastingdienst to take into account. Here it doesn't really matter how much people have mentioned it, but the fact some point has been mentioned at all could make the Belastingdienst aware of it.

Furthermore, the privacy issue in the pre-filled out declaration has to be taken into account in future research. Like stated, this gives more control and supervision, but people have less privacy. When more and more information is being pre-filled out, people have less privacy, because the Belastingdienst then has to gather information from banks too, for example. I think this privacy issue will be an obstacle when implementing this pilot, but of course this assumption has to be confirmed (or not) by decent research.

Another good subject for future research may be the effect of age on the compliance of a user. In my research we have seen relatively older people have the highest degree of compliance, which is contra-intuitive and I have found contradictory research results. But, because taxes are very old, I can imagine this needs a separate new future research.

When I have derived the current degree of compliance of users of the digital declaration system of the Belastingdienst, it turned out to be very difficult to find data (of before the ICT failures) to compare with. The previous research was about compliance of user in general, where I have focussed on the use of the digital declaration. In the end I decided to compare my results with the data of [BEL084], which contains data about the (re)use of the digital

declaration. Future research can use the results of my research to compare the then current degree of compliance with the then previous degree.

Lastly, I will take a look at my research model. I think this model holds after my research. The Belastingdienst has taken and is still taken a lot of measures to reduce the complexity in its organisation to increase the user satisfaction, which we have seen is an antecedent of the intention to use the digital declaration system. In section 8.4 I have described how those measures fit into my research model.

11 References

[BEKK01] Prof. Dr. V.J.J.M. Bekkers et al., *De Belastingdienst: ICT, afstand en compliance*, 2001

[BEL081] The Belastingdienst, The Organisation, http://www.belastingdienst.nl/organisatie/, as on 28 November 2008

[BEL082] *Year Report 2007*, The Belastingdienst, 2008, 40-43

[BEL083] The Belastingdienst, Aangifte doen: hoe werkt het? Aangifte, http://www.belastingdienst.nl/particulier/aangifte_doen_hoe_werkt_dit/aangifte_doen_hoe_werkt_dit-01.html#P13_1288, as on 15 December 2008

[BEL084] *Beheersverslag 2007*, The Belastingdienst, 2008

[COM081] *ICT Belastingdienst pas over 8 jaar op orde*, P. van der Beek, Computable, 2008, http://www.computable.nl/artikel/ict_topics/overheid/2691191/1277202/ict-belastingdienst-pas-over-8-jaar-op-orde.html

[COM082] *DigiD is niet de oorzaak van problemen Belastingdienst*, P. van der Beek, Computable, 2008, http://www.computable.nl/artikel/ict_topics/overheid/2366963/1277202/digid-is-niet-de-oorzaak-van-problemen-belastingdienst.html

[COM083] *Papier blijkt oorzaak probleem Belastingdienst*, P. van der Beek, Computable, 2008, http://www.computable.nl/artikel/ict_topics/overheid/2369945/1277202/papier-blijkt-oorzaak-probleem-belastingdienst.html

[COM084] *Sijstermans: "De oogkleppen moeten af"*, J. van Bentum, Computable, 2008, http://www.computable.nl/artikel/ict_topics/overheid/2704718/1277202/sijstermans-de-oogkleppen-moeten-af.html

[COM091] *Belastingdienst geeft managers al ICT-cursus*, R. van Heur, Computable, 2009, http://www.computable.nl/artikel/ict_topics/loopbaan/2864596/1458016/belastingdienst-geeft-managers-al-ictcursus.html

[COM971] *Digitale Belastingdienst: Internet-aangifte*, Computable, 1997, http://www.computable.nl/artikel/nieuws/212565/250449/digitale-belastingdienst-internetaangifte.html

[DAVI89] Fred D. Davis et al., *User Acceptance of Computer Technology: A Comparison of Two Theoretical Methods*, Management Science Vol. 35 No. 8, 1989

[DEAN08] Dwane H. Dean, *Shopper age and the use of self-service technologies*, Managing Service Quality Vol. 18 No. 3 pp. 225-238, 2008

[DIGI06] *Belastingaangifte vanaf 2008 verplicht met DigiD*, Digitaal Bestuur, 2006, http://digitaalbestuur.nl/nieuws/belastingaangifte-vanaf-2008-verplicht-met-digid

[HUNG09] Shin-Yuan Hung et al., *User acceptance of intergovernmental services: An example of electronic document management system*, Government Information Quarterly Vol. 26 pp. 387–397, 2009

[KPMG08] *Pilot vooringevulde aangifte inkomstenbelasting gaat in 2009 beginnen*, KPMG Meijburg & Co Nederland, 2008, http://www.meijburg.nl/nieuws/actueel/pilot_vooringevulde

[KULA04] Daryl Kulak et al., *Use Cases, Requirements in Context*, Second Edition, Addison-Wesley, 2004

[MINF07] *Plan van aanpak Vereenvoudigingsoperatie Belastingdienst*, Ministry of Finances, 2007

[MIN081] *Programma complexiteitsreductie Belastingdienst - voortgangsrapportage*, Ministry of Finances, February 2008

[MIN082] *Tweede halfjaarsrapportage Vereenvoudigingsoperatie Belastingdienst*, Ministry of Finances, May 2008

[MIN083] *Derde halfjaarsrapportage Vereenvoudigingsoperatie Belastingdienst*, Ministry of Finances, November 2008

[MINF09] *7 miljoen aangiften binnen*, Ministry of Finances, April 2009

[NUN031] *Zalm wil digitale aangifte verplicht stellen*, Nu.nl, 2003, http://www.nu.nl/internet/162381/zalm-wil-digitale-aangifte-verplicht-stellen.html

[NUN081] *Excuses na nieuwe problemen bij Belastingdienst*, Nu.nl, 2008, http://www.nu.nl/news/1455510/30/Excuses_na_nieuwe_problemen_bij_Belastingdienst.html

[NUN082] *Belastingdienst in gebreke bij digitale aangifte*, Nu.nl, 2008, http://www.nu.nl/news/1709210/50/Belastingdienst_in_gebreke_bij_digitale_aangifte.html

[NUN061] *'Beveiliging DigiD te zwak voor belastingaangifte'*, Nu.nl, 2006, http://www.nu.nl/internet/713339/beveiliging-digid-te-zwak-voor-belastingaangifte.html

[NUN091] *'Blauwe envelop gaat er uit'*, Nu.nl, 2009, http://www.nu.nl/economie/1959680/blauwe-envelop-gaat-er-uit.html

[REIN08] Machiel J. Reinders et al., *Consequences of Forcing Consumers to Use Technology-Based Self-Service*, 2008

[SEGE99] J. Segers, *Methoden voor de maatschappijwetenschappen*, 1999, Van Gorcum & Comp BV

[TWE081] *Cio moet verdere ict-problemen Belastingdienst voorkomen*, O. van Miltenburg, Tweakers, 2008, http://tweakers.net/nieuws/54447/cio-moet-verdere-ict-problemen-belastingdienst-voorkomen.html

[WANG07] Yi-Shun Wang, *Assessing e-commerce systems success: a respecification and validation of the DeLone and McLean model of IS success*, 2007

[WU2005] Ing-Long Wu et al., *An extension of Trust and TAM model with TPB in the initial adoption of on-line tax: An empirical study*, 2005

[ZDN051] *Online aangifte: 20 euro minder belasting*, J. Biesemans, ZDNet, 2005, http://www.zdnet.nl/news.cfm?id=42018

The picture on the cover is from *Het Financieele Dagblad*, http://www.fd.nl/csFdDossiers/8199266/Belasting_rekenen_460.jpg

Appendix A: the questionnaire

This is the questionnaire I have used in my research. It was online (in a digital form) from 4 March 2009 until 27 March 2009.

Compliance en de Belastingdienst
Enquête

Deze enquête is onderdeel van het afstudeeronderzoek van John Akkermans voor de opleiding Informatiekunde aan de Radboud Universiteit Nijmegen. In dit onderzoek wil ik antwoord krijgen op de vraag of het vertrouwen van mensen in de digitale aangifte van de Belastingdienst is aangetast door de fouten die er de afgelopen tijd zijn opgetreden. Het onderzoek is overigens niet in opdracht van de Belastingdienst, maar kan uiteindelijk wel leiden tot een aanbevelingsrapport voor deze organisatie.

Alle resultaten – en dus ook uw antwoorden – zullen volstrekt **anoniem** worden behandeld!

Voor vragen en opmerkingen kunt u een e-mail sturen naar J.Akkermans@student.ru.nl

---

Voor elke vraag geldt dat er slechts één antwoord mogelijk is, tenzij uitdrukkelijk anders vermeld.

Geslacht:
- [ ] Man
- [ ] Vrouw

Leeftijd:
- … jaar

Hoogst genoten opleiding (afgerond of mee bezig):
- [ ] WO
- [ ] HBO
- [ ] MBO
- [ ] Voortgezet Onderwijs
- [ ] Anders, namelijk: …….

Beroep / vakgebied / studie (meerdere antwoorden mogelijk):
- [ ] ICT gerelateerd
- [ ] Belasting gerelateerd
- [ ] Anders

Vult u in 2009 als particulier een belastingaangifte in over uw inkomsten in 2008?
- [ ] Ja
- [ ] Nee

Vulde u in 2008 als particulier een belastingaangifte in over uw inkomsten in 2007?

[ ] Ja
[ ] Nee

Aantal uren per week (gemiddeld) dat ik gebruik maak van de computer:

… uur (aantal uren invullen)

Aantal uren per week dat ik gebruik maak van online diensten (zoals bankzaken, belastingzaken, winkelen):

… uur (aantal uren invullen)

Dit jaar doe ik aangifte via de digitale manier voor de:

…e keer (aantal keren invullen)

Op de volgende pagina's worden u 26 stellingen voorgelegd. Wilt u deze beantwoorden door aan te geven in hoeverre u het eens of oneens bent met elke stelling, volgens onderstaande verdeling:

1 = zeer mee oneens
2 = mee oneens
3 = neutraal
4 = mee eens
5 = zeer mee eens

Ik heb het gevoel dat de digitale aangifte voldoende beveiligd is

1 2 3 4 5

Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk

1 2 3 4 5

Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte goed wordt onderhouden en indien nodig wordt bijgewerkt

1 2 3 4 5

Als ik mijn digitale aangifte wil gaan invullen en versturen is dit altijd mogelijk en lukt dit zonder problemen

1 2 3 4 5

Ik denk dat de informatie die verschaft wordt bij de digitale aangifte correct is

1 2 3 4 5

Mijn ervaring met de digitale aangifte is tot op heden positief

1 2 3 4 5

Ik vind dat de kwaliteit van de service door de Belastingdienst – in geval van problemen bij het gebruik van de digitale aangifte – verbeterd moet worden

1 2 3 4 5

Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en -regels

1 2 3 4 5

Ik vind dat de kwaliteit van de verschafte informatie in de digitale aangifte verbeterd moet worden

1 2 3 4 5

Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte

1 2 3 4 5

Bij eventuele problemen worden deze naar mijn tevredenheid opgelost

1 2 3 4 5

Ik vind de mogelijkheid van digitale aangifte nuttig

1 2 3 4 5

Ik vind dat het programma voor digitale aangifte duidelijk is en gemakkelijk te gebruiken is

1 2 3 4 5

Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om contact op te nemen met een menselijke helpdesk

1 2 3 4 5

Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte bruikbaar is

1 2 3 4 5

Ik vind dat het systeem van digitale aangifte beter beveiligd moet worden

1 2 3 4 5

Ik vind dat het me niet zoveel moeite kost om het programma voor digitale aangifte te gebruiken

1 2 3 4 5

Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet

1 2 3 4 5

Voor mijn gevoel heeft de belastingdienst er geen baat bij om mijn gegevens te vervalsen

1 2 3 4 5

Ik vind dat de digitale aangifte sneller in te vullen moet zijn

1 2 3 4 5

Door het gebruik van het programma voor digitale aangifte hoef ik minder moeite te doen om mijn aangifte te doen

1 2 3 4 5

Als ik tegen problemen aanloop bij mijn digitale aangifte, zijn er voor mij voldoende mogelijkheden om mijn aangifte alsnog in te vullen

1 2 3 4 5

Ik heb het gevoel dat de informatie die verschaft wordt bij de digitale aangifte objectief is

1 2 3 4 5

Ik vind dat de digitale aangifte gemakkelijker te gebruiken moet zijn

1 2 3 4 5

Er zijn naast de mogelijkheid van digitale aangifte nog voldoende andere mogelijkheden voor mij om mijn aangifte in te vullen

1 2 3 4 5

Ik vind dat de digitale aangifte leerzamer zou moeten zijn; ik vind dat ik er meer van zou moeten leren

1 2 3 4 5

Tot slot, in welk(e) opzicht(en) zou u het systeem van digitale aangiften verbeterd willen zien?

Hartelijk bedankt voor uw medewerking!

Appendix B: explanation of the questionnaire

As a starting point for my questionnaire, I have analyzed the questionnaire used in [WU2005]. Also some references in that article seemed to be useful as well to compose my own questionnaire.

Information quality
Intuitive.

System quality
In [PRES05] are four measures mentioned which could be useful indicators for measuring software quality. So, for my questionnaire I will use those factors to measure the system quality as perceived by my research elements. Those four measures are:

1. Correctness
2. Maintainability
3. Integrity
4. Usability

I have used those four factors to formulate statements to measure system quality, because the system in my research is the software system for digital declarations of the Belastingdienst.

For those factors I have formulated the following statements:

1. De informatie die verschaft wordt bij de digitale aangifte is correct;
2. De digitale aangifte is voldoende beveiligd;
3. De informatie die verschaft wordt bij de digitale aangifte is bruikbaar;
4. De informatie die verschaft wordt bij de digitale aangifte wordt goed onderhouden en indien nodig bijgewerkt.

Maintainability of the system is a bit difficult to measure from the users, because this can be perceived better from the viewpoint of the person's who have to maintain the system. I decided to measure it from the viewpoint of the user by asking how the user perceives the information is maintained.

Service quality
Intuitive.

Forced use
Intuitive.

Fallback option
Intuitive.

Previous experience
Intuitive.

Perceived Usefulness
Following [SHEN06] perceived usefulness is defined by Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance". In this case *job performance* would be *performance to send in his or her declaration*. So, I formulated several statements to cover this definition:

1. Door gebruik te maken van digitale aangifte krijg ik meer inzicht in de belastingwetten en –regels
2. Door gebruik te maken van digitale aangifte ben ik minder tijd kwijt met het doen van mijn aangifte
3. Ik vind de mogelijkheid van digitale aangifte nuttig

Perceived Ease of Use
Following [VENK96] perceived ease of use can be determined by:
1. General computer self-efficacy of a user
2. Objective usability of a specific system will not have a significant impact in determining perceived ease of use of a system before direct hands-on experience with the system
3. Objective usability of a specific system will have a significant impact in determining perceived ease of use of a system after direct hands-on experience with the system.

So, in my questionnaire those findings have resulted in the following statements to cover those three factors:
1. Het programma voor digitale aangifte is duidelijk en gemakkelijk te gebruiken;
2. Het kost me niet zoveel moeite om het programma voor digitale aangifte te gebruiken;
3. Het lukt me om het programma voor digitale aangifte te laten doen wat ik wil dat het doet.

Trust
Following [GEFE03] trust in an online environment can be determined by:
1. A belief that the vendor has nothing to gain by cheating;
2. The belief that there are safety mechanisms into the web site;
3. Having a typical interface;
4. Having a easy-to-use interface.

So, in my questionnaire I have formulated statements which cover those four factors:
1. De belastingdienst heeft er geen baat bij om mijn gegevens te vervalsen;
2. De digitale aangifte is voldoende beveiligd;
3. Het programma voor digitale aangifte is duidelijk en gemakkelijk te gebruiken.

Of course, questions that show up with more than one category will be asked just once.

After I have formulated those statements I have shuffled them to be able to check consistency in the respondent's answers afterwards. Furthermore, it prevents people from thinking they are answering "the same" questions, because some questions are related to each other.

References
[GEFE03] D. Gefen et al., *Trust and TAM in Online Shopping: An Integrated Model*, 2003

[PRES05] R. Pressman, *Software Engineering A Practitioner's Approach Sixth Edition*, 2005, McGraw-Hill, pp. 662-663

[SHEN06] D. Shen et al., Social Influence for Perceived Usefulness and Ease-of-Use of Course Delivery Systems, Journal of Interactive Online Learning Volume 5 Number 3, 2006

[VENK96] V. Venkatesh et al., *A model of the antecedents of perceived ease of use: Development and test*, 1996

[WU2005] Ing-Long Wu et al., *An extension of Trust and TAM model with TPB in the initial adoption of on-line tax: An empirical study*, 2005