

The Dutch Annual Business Inquiry: Developing and testing the electronic form

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1. Introduction

A major issue in Dutch governmental policy as to data reporting in general is reduction of response burden. As a consequence, Statistics Netherlands strives for reduction of data reporting for individual businesses, as well as making data reporting as efficient and easy as possible. One way to do that is providing electronic questionnaires via the internet (Haraldsen, 2004).

In 2004, the paper for the Dutch Annual Business Inquiry was redesigned. First of all, the form was stripped to items necessary with regard to output demands. Secondly, the form was redesigned with regard to the structure (sections of items), instructions and wording. And thirdly, the visual design of the form was restyled. This opened the road to developing an electronic version of this complex questionnaire.

In a number of steps this form will be developed and tested. In a small usability test functional issues of the form were investigated, using a draft version that very much looked like the original paper form. This test also resulted in the identification of navigational issues, edit rules and visual design issues that make an e-form different from a paper form. The result of this test was a prototype of the e-form. In a second step the prototype will be discussed with regard to programming issues, since for various branches of establishments the form has to be generated automatically. The next step will be a large scale pilot in which the usability and data collection process of the e-form will be tested.

This paper focuses on the small usability test. In section 3 the set-up of this study will be presented, and section 4 describes the results. Recommendations are discussed in section 5. Section 6 concludes this paper. But we will start in section 2 with a short description of the Dutch Annual Business Inquiry and its redesign.

2. The Dutch Annual Business Inquiry

In the Dutch Annual Business Inquiry business are requested to provide information on benefits and losses. In 2005 a sample of about 70.000 businesses was drawn for the 2004 Inquiry. These businesses received a paper form including an advance letter, saying that –among other things– this inquiry is mandatory. About 45% of the sample is self-selecting, meaning that they receive the questionnaire every year. This concerns the larger establishments with 50 and more employees.

The longest questionnaire for large establishments consists of up to 40 pages. A questionnaire may be seen as a booklet of A4 pages, with on the right page the items and on the left page the instructions and explanations (see figure 1). The items are grouped into sections, which may be over more than 4 pages long. Sections concern issues like employees, benefits, costs, and business results. The questionnaire is characterised by many and large instructions and explanations, because of differences in definitions as used by businesses.

* The views expressed in this paper are those of the author and do not necessarily reflect the policies of Statistics Netherlands.

The questionnaire is a complicated form that is very hard to complete. This has to do with the fact that a lot of detailed information is requested. Furthermore, the information has to be collected from various departments. And most of the definitions and the order of the items on the questionnaire do not match the administrations. These aspects make the completion process of the form very cumbersome and time consuming, resulting in measurement errors. Also the lay-out of the paper questionnaire caused measurement errors.

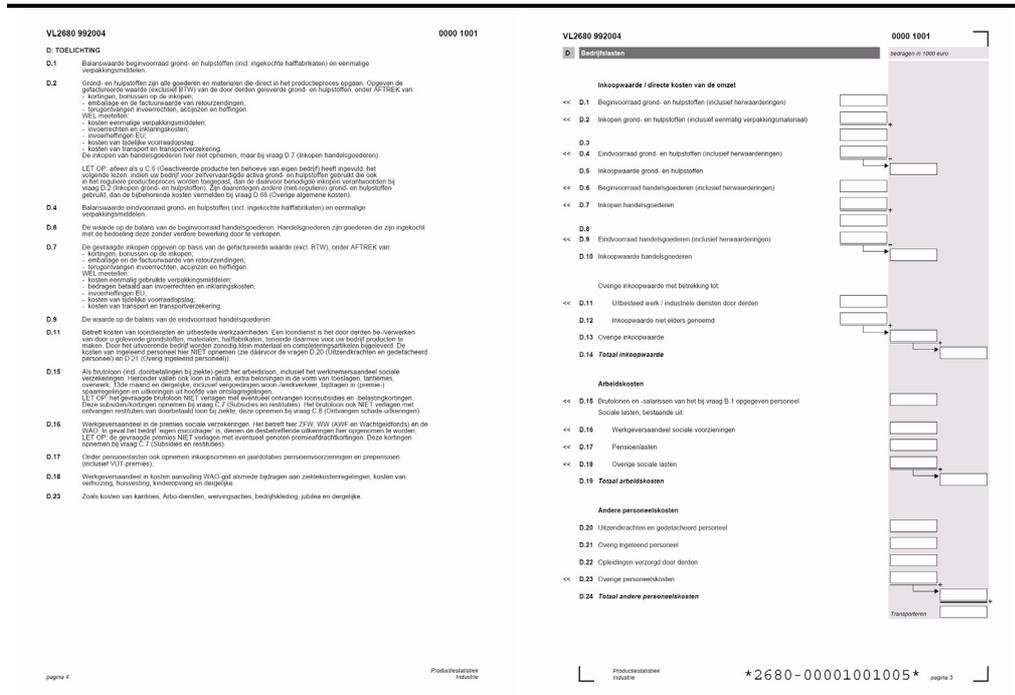


Figure 1. The original questionnaire of the Annual Dutch Business Inquiry.

These results stem from a detailed evaluation study of the paper questionnaire (Giesen, 2004, 2005). With these results in mind the structure and the lay-out of the questionnaire was redesigned. This came down to:

- Breaking down the questionnaire into smaller sections, with sections not going over a page, resulting in a better oversight for each section, and less calculation errors.
- A strict order of item label, short instruction, answer space, thus connecting –in reading order– items and answer spaces.
- Locating additional instructions and explanations at the bottom of a page, like footnotes.
- Restricting instructions and explanations to the most essential information, resulting in short and readable notes.

In figure 2 two pages of the newly designed paper form are presented. To get this result a professional designer was consulted.

c Bedrijfsopbrengsten

Netto-omzet (1)

Omzet groothandel (C1)

Handelsbedrijfsopbrengsten (C2)

Omzet detailhandel (C3)

Industriële omzet (C4)

Verhuur onroerend goed (C5)

Overige omzet (C6)

Totaal netto-omzet (C7)

Waarvan belasting (C8)

Overige bedrijfsopbrengsten (C9-C14)

Totaal bedrijfsopbrengsten (C14)

d Inkoopwaarde en directe kosten van de omzet

Inkoopwaarde handelsgoederen (D1-D4)

Inkoopwaarde grond- en hulpstoffen (D5-D8)

Overige (D9-D12)

Totaal inkoopwaarde (D11)

Waarvan import (D12)

Toelichting

1 Netto-omzet

Wel meetellen:

- overtrekkende eigenvervoer en bedrijfsverkoop;
- interne leveringen;
- In mindering brengen:
- kortingen, bonussen op verkopen;
- overtrekkende, aan de onderneming verschuldigde (zie F10);
- In mindering brengen:
- ontvangsten opbrengsten, exploitatieovereenkomsten (zie C11);
- ontvangsten voor het beschikbaar gestelde arbeidsvermogen (zie C12);
- ontvangsten schade-afkeringen (zie C12).

2 Omzet groothandel

Handelsopbrengsten: op goederen voor eigen rekening en risico ingekocht met het doel deze zonder verdere bewerking door te verkopen aan handelaars en/of bedrijfszettinge gebruikers.

3 Overige bedrijfsopbrengsten

Wel meetellen:

- opbrengsten uit bonussen, royalty's, interest, dividenden;
- ontvangsten schade-afkeringen;
- het ontvangen van schuldschijf gebruik dienstverlening, zoals van de zaak;
- Niet meetellen:
- vergoedingen voor afgevoerd personeel (zie E5);
- schade-afkeringen voor de vervangings van duurzame activa;
- zekeringsopbrengsten (zie E6).

4 Inkoop

Wel meetellen:

- kosten van eenzijdige verpakkingsovername;
- transportkosten en verpakkingkosten;
- kosten van lijnvrachtwagenvervoer;
- kosten van eigen transport en transportverzekering;
- In mindering brengen:
- kortingen, bonussen op de inkoop;
- verkoopkosten en de factuurwaarde van retourzendingen;
- teruggelaten inkoopkosten, acties en kortingen;
- verschillen aan de order (zie F10).

5 Uitbesteed werk

Betreeft alle uitbesteede werkzaamheden voorzover gericht op realisatie van omzet. Dit doet niet uitmaken ten aanzien van uitbesteed schouwmeesters of juridische adviesbureaus. Het resultaat betreft voor bijvoorbeeld opbrengsten door de order.

Figure 2. The redesigned questionnaire of the Annual Dutch Business Inquiry.

3. Testing the electronic form

The results of the evaluation of the paper form helped in thinking about the visual design of the electronic questionnaire. Because of this study, we already had a clear view on the response process with regard to this questionnaire (Giesen, 2004, 2005; see also Willimack et al., 2004). But still, some research issues had to be answered. We had to find out how the electronic form would work-out in practice, and what features had to be included in the e-form in order to make it easy to use. Another important issue was whether the paper and the electronic forms had to be designed in the same way. To research these issues a usability and test study was carried out.

At the moment we started thinking about the electronic form, the results of the evaluation study of the paper form were not yet available. So, we started with the old form (figure 1). This form was programmed in Blaise. The use of Blaise set the lay-out conditions. This form is presented in figure 3. The original sections are the tabs in the e-form. Furthermore, the form is characterised by pages that need scrolling. To help the respondent in filling-in the form, edit rules like calculations and checks were added to the e-form. To get explanations to items the key combination <Ctrl><F1> had to be pressed; this was indicated by '*'.

Bedrijfslasten	bedragen in 1000 euro
Inkoopwaarde / directe kosten van de omzet	
D.1 * Directe kosten van dienstverlening	
D.2 * Beginvorraad handelsgoederen	
D.3 * Inkopen handelsgoederen	
D.4	0
D.5 * Eindvoorraad handelsgoederen (inclusief herwaarderdingen)	
D.6 Inkoopwaarde handelsgoederen	0
Overige inkoopwaarde met betrekking tot:	
D.7 * Uitbesteed werk, werk door derden en loondiensten	
D.8 Inkoopwaarde niet elders genoemd	
D.9 Overige inkoopwaarde	0
D.10 Totaal inkoopwaarde	0
Arbeidskosten	
D.11 * Bruto-lonen en -salaries van het bij vraag B.1 opgegeven personeel	
Sociale lasten, bestaande uit:	
D.12 * Werkgeversaandeel sociale voorzieningen	
D.13 * Pensioenlasten	
D.14 * Overige sociale lasten	
D.15 Totaal arbeidskosten	0
Andere personeelskosten	
D.16 Uitzendkrachten en gedetacheerd personeel	
D.17 Overig ingeleend personeel	
D.18 Opleidingen verzorgd door derden	
D.19 * Overige personeelskosten	
D.20 Totaal andere personeelskosten	0

Figure 3. The e-form of the Annual Dutch Business Inquiry, first version.

This form was tested in three waves, as is indicated in table 1. In the first wave an on-line version of this form was tested by 15 colleagues of Statistics Netherlands. These colleagues were familiar with the paper questionnaire, like testers from the CBS cognitive lab, business interviewers, questionnaire developers, and helpdesk employees. Also the designer who redesigned the paper form was involved in this test wave.

In the second wave this form was tested in the field by 6 CBS business interviewers with 37 businesses. The questionnaire was loaded from a CD-rom on the laptop of the interviewers and completed by the interviewers at the office of the businesses. The interviewers were instructed in the use of the electronic questionnaire.

In the third wave in-depth interviews were carried out with 6 business respondents at their office. The respondents were not familiar with the questionnaire. These interviews were carried out by testers from the CBS cognitive lab in cooperation with business interviewers. The business interviewers are experts with regard to this form; they can identify errors in the completion process. These interviews were video taped. In this wave the respondents had to download the questionnaire from a CBS server via the internet (at a https-address), log-in to the questionnaire with a username and a password, complete it off-line, and send the data back via a secure internet connection to a CBS server.

Table 1. An overview of the test waves

	Wave 1	Wave 2	Wave 3
Period of testing	August 2004	October 2004	November/December 2004
Questionnaire	Blaise	Blaise	Blaise
On/off-line	On-line via internet	Off-line, installed from CD-rom on laptop of business interviewer	Off-line, downloaded via the internet
Number of completions/ interviews	15	37	6
Tested by:	CBS cognitive lab testers, business interviewers, helpdesk employees, questionnaire developers, designer	6 CBS business interviewers	Business respondents interviewed by 2 CBS business interviewers and 2 cognitive lab testers

4. Results of the test study

In this section the results of the three test waves will be described. The results will be presented in the order of the response process, i.e. 1) retrieving the questionnaire, 2) starting-up the questionnaire, 3) introduction to the questionnaire, 4) filling-in the questionnaire, 5) transmitting the data and 6) deleting the questionnaire.

4.1. Retrieving and installing the questionnaire

In the test, three ways of distributing the questionnaire have been used. The on-line version, in wave 1, was characterised by long sending and receiving sessions. Even for fast data connections the time needed to receive a new page lasted much more than 5 seconds. This was due to the length of the questionnaire and the included edit rules. Distributing the questionnaire via CD-rom, as was used in wave 2, on a large scale is relatively expensive.

In testing wave 3 (with the downloadable version) the problems regarding retrieving and installing the questionnaire we observed, mainly had to do with getting the https-address right. In this wave respondents had to type in a long https-address from a letter. This gave rise to typing errors. Also the fact that a secured address was used (https) brought about errors in the address: people did not see the 's'. Once the respondent had logged-in on the CBS-server the questionnaire could be downloaded and installed. The install procedures did not cause major problems. One respondent could not download the questionnaire because of a firewall.

4.2. Starting-up the questionnaire

Once the questionnaire had been installed on the computer, it could be opened. In wave 3, however, respondents first had to log-in to the questionnaire by use of a username, a password and an additional security code. This procedure did not cause any trouble, except for the use of the additional code. The meaning of this code was not clear: it was meant to prevent unauthorised logging-in to the questionnaire by hacked username and password. This holds especially for on-line questionnaires.

4.3. Introduction to the questionnaire

After the respondent had logged-in to the questionnaire, a first page with information regarding the questionnaire was presented. This page contained information on the sections of the questionnaires and their order, as well as information on how to navigate, get to instructions, and transmit the data.

This was done in wave 3. In the previous waves, the first page was the first page with data boxes. In these waves the 'respondents' did not know what to do, although they were familiar with the questionnaire.

4.4. Filling in the questionnaire

Completing a questionnaire like the Annual Business Inquiry is a very complex process. During the test interviews respondents were sitting in front of their computer, surrounded by lots of administration papers, papers for making notes, and a calculator. During the filling-in process they went from the questionnaire to the administration papers, getting a pen to make notes, going back to the questionnaire on the screen, grabbing the mouse to open the explanations to the item, getting up to fetch additional administration papers, typing in numbers in the calculator, etc, and finally entering the data in the questionnaire. Also, they could be disturbed by the phone ringing, and colleagues coming in asking for information. In this process respondents easily got lost in the questionnaire. Therefore, the usability of the e-form is of great importance.

The focus of the test was on the usability of the questionnaire. Our assumption is that when respondents have difficulties with the usability they will get irritated and finish completion (resulting in item-nonresponse) or will choose a satisficing response strategy (i.e. estimate answers and complete it quickly, resulting in measurement errors; Krosnick, 1991). Aspects that have to do with usability are the visual lay-out and navigation. To improve the usability also some means of aid were mentioned by the respondents during the interviews. These aids deal with printing, searching, calculating, carrying-over, explanations, and progress indication. These issues will be discussed in this subsection.

4.4.1. Visual lay-out and navigating

The e-questionnaire is composed out of tabs (as can be seen in figure 3). Each tab corresponds with a section on the paper questionnaire. In the tested questionnaire the tabs are labelled A, B, C, etc. The tabs, at the top of the screen, were not identified as tabs, and as such did not help respondents in finding his way. Respondents did not see that they could skip from one tab to the next by clicking the tabs.

Because respondents did not identify the tabs as the separate sections of the questionnaire, they got lost. After completing the items in the first tab, and pressing <enter> to the last item, they were automatically led to the next tab. All of a sudden a screen with empty answer spaces was presented. This confused respondents, and made them ask where the answers had gone. They had not noticed that a new tab was presented. Only after they were instructed by the interviewer, they knew how to deal with the tabs. One respondent remarked that a structure like the explorer would be more logical, with all sections listed at the left side of the screen.

Furthermore, some tabs were long pages, since they corresponded to long sections on the paper questionnaire. This made scrolling necessary, which resulted in respondents having a bad overview of that section.

An e-form should be clear and user friendly, like every questionnaire (Dillman, 2000; Fowler, 1995). The lay-out should be functional in the sense that it should help the respondent in finding

his way through the questionnaire. Furthermore, respondents want to know what sections of the questionnaire are completed and what still has to be done. The visual layout of the tested e-form did not meet these needs. During the test, this resulted in a lot of questions by the respondents, on how to continue and where to go next. Because of unexpected skips, some respondents were lost in the questionnaire.

4.4.2. Printing

Respondents requested for the possibility of printing the questionnaire. In the tested questionnaire no printing option was available.

We found that respondents would like to make a paper copy for several reasons. First of all, while completing the questionnaire, they want to know where they are and what data they have already entered. Secondly, when other departments have to be consulted, separate sections of the questionnaire can be passed-on on paper. After the questionnaire has been completed, they want to check the data on paper and get authorisation for sending the data to Statistics Netherlands. And finally, they want a paper copy for their archives.

4.4.3. Searching aid

While filling-in the questionnaire, some respondents ticked off the items in their administration already entered. At the end of the questionnaire they noticed that not all items had been checked off. But, they did not know where to put these items. Up to this point, the questionnaire was leading in the response process, meaning that they searched for the items in their administration that matched the definitions on the questionnaire (or at least, what they thought would match). From this stage on, however, the administration became leading. Now, they had to find the entries in the questionnaire that matched the items in the administration. At this point, respondents would find it useful when they could search for labels, instead of having to browse through the questionnaire and hoping to find the correct item. Here, respondents indicated that an entry-search facility would be helpful.

4.4.4. Automatically adding and subtracting

In the tested questionnaire, items were automatically added or subtracted. This is a major feature of computer-assisted data collection (Couper et al., 1998; De Leeuw, Hox & Snijkers, 1995). Respondents were positive about this feature. In some cases, however, the results were unexpected or it was unclear where the numbers came from. This was the case when the calculated numbers were not logical, or when the results were put at the end of the page and respondents had to scroll to find them.

4.4.5. Carrying-over (imputations)

In the paper form, many relations between items exist. E.g., the summation at the end of a page has to be carried over to the next, or the summation of a section is used in another one. On paper, respondents have to be instructed in these matters (like is also the case with adding and subtracting). In the e-form these rules had been computerised. We believed that this would make the form easier to complete, since on paper many respondents had shown difficulties with these rules (Giesen, 2004, 2005). We found, however, that respondents got confused, when e.g. the computerised imputation rules were not logical to them, or when it was not clear where the imputed number came from. Furthermore, they could not edit the imputed numbers, since these answer spaces were locked.

4.4.6. Instructions and explanations

In the tested questionnaire explanation windows could be opened by pressing <Ctrl><F1>. Explanations were indicated by ‘*’ with items. Respondents, however, did not notice this mark. Therefore, they were not aware that explanations were available. Also, once they noticed the ‘*’, they did not know what it meant. Only after they were told that an explanation window could be opened and how that should be done, they used it. (But, then again, as we know from the evaluation of the paper form, they only read explanations when they do not know what is being meant.)

4.4.7. Progress indicator

Since respondents cannot easily brows through an electronic questionnaire, as is the case with paper forms, respondents indicated that a progress indicator would be desirable. This indicator gives feedback to the respondent as to what parts have been completed and what still has to be done.

4.5. Transmitting the data

As to sending back the data, respondents had to log-in to the internet. Before doing so, the respondent had to confirm that all relevant items had been completed. After this had been done a pop-up window appeared asking whether the data should be transmitted now.

In this process a number of problems appeared. First of all, after completeness had been confirmed, respondents had to press <enter> to continue. The interviewer had to tell this to them. Secondly, in a number of cases, respondents didn’t manage to log-in to the CBS server because of technical problems. Also, respondent were confronted with messages from the computer saying that ‘manipula.exe’ was trying to connect to a remote server. This computer program was part of the e-form, but since respondents were unaware of this hidden part, they did know what to do.

After the data had been transmitted, a confirmation was received, thanking for the data. Respondents were positive about this message. However, after this message window was closed, the window saying that the data are ready to be sent appeared again on the computer screen. This was very confusing. Some respondents thought that the data had to be sent again, although a confirmation had been received.

4.6. Deleting the questionnaire

After the response process was completed, respondents might want to delete the questionnaire from their computer. In this study, respondents did not indicate that they would like to do this.

5. Recommendations and discussion

Based on the results of our research the following recommendations are proposed with regard to the electronic questionnaire of the Dutch Annual Business Inquiry.

5.1. Retrieving and installing the questionnaire

- As to this long and complex questionnaire we recommend a downloadable questionnaire that has to be installed on the computer, and completed off-line. This recommendation is based on our experience in this study and the evaluation of the paper form (Giesen, 2004, 2005). A rule of thumb (as used by the Dutch Tax Office) is that questionnaires of over 25 items should be off-line versions.

With regard to the completion process, this questionnaire may be completed in several sessions, and by several people from several departments. A downloadable form makes it possible to stop and start again at any appropriate moment. Also, all information with the questionnaire and entered data are available, making skipping through the questionnaire possible and keeping track of the overview. Furthermore, the time to be on-line is relatively short, in comparison to an on-line version.

A drawback of the off-line version is that businesses with firewalls may not be able to retrieve the questionnaire. Our expectation with regard to this issue is, however, that in practice this may not be a big problem. This is based on the experiences with the Dutch Tax Office. Since 2005, businesses are compelled to use electronic tax forms, that have to be downloaded via the internet.

- Downloading and installing should be clear and simple. This could be done by providing an internet site with a simple http-address (like e.g. www.mycbs.nl). When this site is a personal site, this site should be secured by e.g. a username and a password. Preferably, the download and install procedures are in accordance with known conventions as used by e.g. MS-Windows.

5.2. Starting-up the questionnaire

- The questionnaire may start with a log-in procedure. Since the respondent may feel that the questionnaire contains confidential data, a log-on procedure may be needed. A respondent will then be asked whether he would like to protect the questionnaire from being opened by unauthorised personnel by use of a username and a password. This procedure may be optional.

5.3. Introduction to the questionnaire

- The test study shows that respondents need a clear introduction to the questionnaire. After having logged-in, the questionnaire should open with this page, listing information on the structure of the questionnaire, how to proceed, how to navigate, get to explanations, fill-in data and transmit the data. This page should, however, not exceed one screen.

5.4. Filling-in the questionnaire

- The visual design should be functional in the sense that it should help the respondent in finding his way through the questionnaire, and providing information on what has been completed already and what has to be done still. Furthermore, as also does show the evaluation of the paper form (Giesen, 2004, 2005), the questionnaire should be composed in a consistent way; every lay-out element that is not consistent may confuse respondents.

The composition of the questionnaire should be instantly clear and simple. This also holds for how to navigate. The tabs and the long pages (making scrolling necessary) did not help getting an overview of the questionnaire. A set-up that people are used to is a design with the sections listed at the left side of the screen, like in figure 4. As to such structure, Punsellie (2004) recommends to make it not too deep. According to him a structure with more than 4 levels already results in people loosing oversight. Also, each level should consist of no more than 7 items. This should help presenting all relevant options at every moment.

In the literature on Web questionnaires a lot of attention is given to the visual design and navigating (see e.g. Best & Krueger, 2004; Punsellie, 2003; Schonlau et al., 2002; Vroom,

2002; Van der Geest, 2001; Dillman, 2000). This indicates that these issues are important as to the usability.

- Scrolling should be avoided as much as possible. Each section should be made to fit on a computer screen.
- The questionnaire should be composed out of small, clear sections. Here, the redesign of the paper form (as discussed in section 2) helped in designing the electronic form.
- The questionnaire should have a printing function. This may be a function asking for which section of the questionnaire should be printed, like: this section (empty), this section (including answers), the whole form (including answers), or an empty form.
- An entry-search facility would help in getting a better match between administration and the questionnaire items, instead of matching on face value and what comes first. This facility would help in making completion easier as well as reducing measurement errors.
- Edit rules with regard to calculations and carrying-over (imputations) should be implemented in the form. However, these rules should be clear and logical to the respondents. Although not tested in this study, we state that the same holds for consistency and range checks. However, experience with computer-assisted data collection (Haraldsen, 2004; Couper et al., 1998; De Leeuw, Hox & Snijkers, 1995) shows that edit rules should be implemented with care and tested carefully. Too many interruptions and error messages may frustrate the response process, and irritate respondents. When occurring, clear error messages should indicate the error to the respondent.
- Instructions and explanations should be presented in a clear way. It should be clear to respondents at once that explanations to items are present, and that they can be viewed simply by clicking a button. This button and short instructions should be presented in such a way that they will attract attention, i.e. placed where the eye is. The explanations themselves should be clear and short, as are the instructions to the new paper form (see section 2).
- While completing an electronic questionnaire, respondents need to get feedback on their progress. A clear progress indicator should be implemented.

5.5. Transmitting the data

- Before asking for transmitting the data a confirmation on the completeness of the data should be asked. This may not only be interpreted as a check to whether the questionnaire is completed, but also whether the data are correct.
- Technical problems with regard to the transmission process should be avoided. This means that this process should be tested carefully.
- The transmission of the data should be answered with a “thank you” message, indicating that the data have been received. After this message has been presented on the respondent’s screen, the send-button should not be presented anymore.

5.6. Deleting the questionnaire

- Although this study did not provide any data on the need to delete the questionnaire afterwards, we feel that this option should be implemented in the system. In most software programs this is a default option.

With these recommendations in mind and following guidelines as presented in the literature on

internet surveys (see e.g. Dillman et al., 2004; Best & Krueger, 2004; Haraldsen, 2004; Punselie, 2003; Schonlau et al., 2002; Vroom, 2002; Van der Geest, 2001; Dillman, 2000), this questionnaire was redesigned. The result is presented in figure 4. This e-form is designed in Adobe In-design with help of a professional designer. It is considered a prototype of the visual design, showing how the questionnaire should look like, including some functionalities. The next steps are the development of the actual electronic questionnaire and testing its usability.

Figure 4. The e-form of the Annual Dutch Business Inquiry, prototype.

6. Conclusions

Completing the Dutch Annual Business Inquiry questionnaire is a very laborious and complex process (Giesen, 2004, 2005). Also we know that business respondents are poorly motivated to complete questionnaires like these (Willimack, 2002). They do not see many benefits for themselves; it only brings about costs. This results in kick-and-rush behaviour (d'Haens & Steehouder, 2000) and satisficing (Krosnick, 1991): respondents jump at the questionnaire, read badly, and provide the answers that are easiest to them. When the questionnaire is badly designed, this behaviour will even be stronger. Ultimately, respondents will stop responding.

In order to prevent this behaviour from occurring, the electronic questionnaire as tested needs a lot of improvement. As a result of the test, many recommendations have been suggested. In general, these recommendations have to do with making the electronic questionnaire clear and logical in every way. This means that the questionnaire should be simple, clear and consistent with regard to the visual design and its features. Also the structure of the questionnaire should be logical to the respondent, and should help to keep overview. Breaking down the questionnaire into small parts and small tasks, may help in completing it step-by-step. Since in these internet questionnaires for Computer-Assisted Self-administered Interviewing (CASI) no interviewers are present to provide assistance, instructions and explanations should also be clear at once. And, built-in features should be transparent. Hidden rules and features that may come about

unexpectedly may confuse the respondent and make them feel uncertain, even when they are familiar with the paper form. To paraphrase Van der Geest (2001): Web questionnaire design is communication design.

In general, questionnaires should be easy to use, i.e. respondent friendly (Snijkers, 2002); and, the visual design and its features should support the response process. This test shows that completing a questionnaire on the computer and reading from the pc-screen is different from completing a paper questionnaire. This is also concluded by Haraldsen (2004) and Dillman (2000). In order to make the questionnaire work well, the visual design and its features have to be adapted to the chosen medium. As a consequence, the electronic questionnaire should be designed differently than the paper form.

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