

CONFERENCE OF EUROPEAN STATISTICIANS

Joint UNECE/EUROSTAT Work Session on Electronic Data Reporting
(Geneva, Switzerland, 13-15 February 2002)

Topic (iv): Users' experience with online modes

RECRUITING INTERNET RESPONDENTS

Submitted by Statistics Netherlands¹

Invited paper

ABSTRACT

Various methods of data collection using the Internet can be distinguished. Choosing a certain method has implications for the survey design and how respondents can be recruited. In this paper the various forms of data collection using the Internet are discussed, a new acronym IESI, or Internet Enabled Self Interviewing, is introduced and strategies to recruit respondents are discussed. Finally, experiences of Statistics Netherlands with data collection using the Internet are described.

I. INTRODUCTION

1. The rapid growth of the Internet offers great possibilities in the field of data-collection, as it is easier, faster, and cheaper to send questionnaires to respondents and to communicate with respondents via the Internet as compared to using the more 'conventional' methods.

2. This paper addresses the methods of data collection using the Internet and its implications for recruiting respondents. In chapter II an overall definition is provided for the different methods of collecting data from respondents using the Internet. After that the basic modes of collecting data are described and evaluated. Subsequently methods of bringing the respondent into contact with questionnaires and having the respondent send the answers back are discussed. Choosing the right method depends both on respondent as well as on the survey design. Considerations on that subject are discussed in chapter III. Recruiting respondents will be discussed in chapter IV. Finally, experiences of Statistics Netherlands are described in chapter IV.

II. INTERNET ENABLED SELF INTERVIEWING

3. There are several ways in which the Internet can be used to collect data from respondents. Questionnaires can be sent using email, people can receive a letter with an invitation to visit a certain website and people can come across a questionnaire when surfing the web. Also respondents can receive a questionnaire on a CDROM of which the answers are sent back using email. The answers respondents give can be sent back by email or via the World Wide Web. Conducting a survey using the Internet is commonly referred to as CAWI, or Computer Assisted Web Interviewing. As described above, however, Internet interviewing can be more (or less, depending on the point of view) than Web-interviewing. The expression CAWI is in this paper therefore replaced by the expression Internet Enabled Self-Interviewing

¹ Prepared by Marko Roos. The author would like to thank DirkJan Beukenhorst and Peter Struijs for their careful reading of the draft paper and their highly valuable contributions.

or IESI, which can be defined as questionnaires that are completed by the respondent on a computer system of which the answers are sent back using the Internet.

4. EDI in the form of AutoFill instruments does not comply with this definition, although much of the techniques and methodology described in this paper also hold for EDI.

5. In the next section, several instances of IESI are described. The description focuses on how the respondents are brought into contact with the proper questionnaires.

II.1 Basic modes

6. Three basic modes of Internet Enabled Self-Interviewing (IESI) can be distinguished. The modes have in common that the Internet is involved in either the sending of the questionnaire or the receiving of the answers.

7. Webforms: The questionnaire is presented to the respondent in a webbrowser. There are two different kinds of webforms:

?? Static webforms: all the questions are presented in one single page. The respondent can scroll down the page and complete the questionnaire. Clicking the 'submit'-button performs basic range-checks and sends the answers back to the NSI-webserver;

?? Dynamic webforms: with dynamic webforms basically a one-page, one-question approach is used. With this mode all kinds of checks (consistency, range) can be performed. Routing of questions is also possible;

With both modes it is possible to use encryption technology to ensure safe data transmission from respondent to receiver.

8. Email forms: A very simple mode is the ASCII-based questionnaire in an email. Although no routing, no range checks and no consistency checks are possible, experiences at Statistics Netherlands show that the mode can be used to collect data very easily. The respondent receives an ASCII-questionnaire in his inbox; he replies the email and puts for instance X's in between designated brackets. He then sends the email back to the NSI. Messages between sender and receiver can be encrypted.

9. Dedicated IESI-software on computer respondent: dedicated software can be installed on the computer of a respondent. This software can present the questionnaire with, depending on the software used, no limits on routing, consistency- and range checks, lookup tables (e.g.: goods classification), and multimedia applications. The respondent transmits his answers back to the webserver or email server of the NSI using the IP- or SMTP protocol and without the interference of a browser.

10. At Statistics Netherlands we use Blaise IS to create both static as well as dynamic webforms. Blaise IS is also used to manage the incoming data on the webserver. Currently the Blaise group is working on Blaise IS 2.0, which will be completely XML- and XSL based. Shortcomings of both the static webforms (extended range- and consistency checks, layout) as well as the dynamic webforms (multiple questions on a page, layout) will in this new version no longer be an issue.

11. The new version of EDISENT also makes use of the Internet to send the completed questionnaires back at Statistics Netherlands. Table 1 presents a short overview of the most important features of the modes discussed above.

	Routing	Lookup tables	Range Checks	Consistency checks
Static webforms	-	--	-	--
Dynamic webforms	++	--	++	++
ASCII-questionnaire in email	--	--	--	--
Dedicated IESI program	++	++	++	++

Table 1: features of IESI-modes

II.2 Getting the questionnaire to the respondent

12. The respondent has to be brought into contact with the questionnaire. There are several ways in which this can be achieved. One of the modes mentioned in the last section already implies a medium of transportation: an email questionnaire arrives by definition via email. In this section all the media of transportation are discussed.

13. Traditional mail

- ?? Respondents can be sent a letter with an URL pointing to the website where the static or dynamic webforms/questionnaire is located. In the letter additional information can be included on how to log in, what username to use, etc..
- ?? A CD-ROM or disc can be sent to the respondent with on it the dedicated IESI-software. The software itself contains the questionnaire. As an alternative the CD-ROM or diskette might include a link to a website where webforms are located. The CD-ROM could in that case also contain required multi-media information, look-up tables and so on.

14. Email

- ?? Respondents can receive an email containing the static version of a webform/questionnaire in the form of an html-attachment. To complete the questionnaire the respondent opens the html-page in his web-browser (usually by double-clicking it) completes the questionnaire and clicks on the submit button. The respondent does not need to be connected to the web when completing the questionnaire.
- ?? Respondents can receive an email containing a link (URL) to the website where the dynamic webform/questionnaire is located. By clicking on the link his webbrowser is opened and (after logging in) the first page of the questionnaire is displayed.
- ?? An ASCII-based questionnaire can be sent in the email itself. The respondent replies the mail, making sure the reply is still containing the questionnaire and puts, for instance, X's between brackets.
- ?? When a CD-ROM with IESI-software has already been sent, respondent-specific questionnaires can be sent using email. The questionnaire is sent as an attachment, which the respondent has to open and install into the IESI software. This can be partly automated on some systems by associating the attachment-extension (e.g.: qtn) with the IESI-software.
- ?? Finally email can be used to send the IESI-software. This is not advisable due to the long download time required for the respondent.

15. Web

- ?? Researchers can set-up a dynamic or static questionnaire on a specific website. They then use links or banners on other websites to attract people to the website where the questionnaire is located.

- ?? It is also possible to have a pop-up window appear when (certain) individuals visit a website. In this pop-up window the dynamic or static webform/questionnaire is presented. The window may pop-up for instance at each 50th visitor, or at visitors who recently visited the Amazon-site.
- ?? Software and questionnaires can be downloaded at the website of an NSI. It is possible for instance to notify a respondent that a new version of the questionnaire or a look-up table is available at the website of the NSI.

II.3 Sending the data back

16. The same three media mentioned in the section on sending the questionnaire to the respondent can be used to send back the answers the respondent has provided. In practice however, using traditional mail to send the NSI a diskette or CD-ROM with the required data on it will not or hardly be used. Reading hundreds or thousands of diskettes (or CD-ROMS) with data of respondents hardly meets the efficiency ideal of electronic data collection. The two other media of getting the data back are email and the Web.

17. Email

- ?? The answers on a static webform can be sent back by email, but this does not always work well. 'Behind' the submit-button of a webform an email address may be used to send the data of the form to. If the respondent hits the submit-button a new email message will be created addressed to the researchers with in the email the variable-names and the answers. The email is sent automatically. In some cases, especially with older versions of browsers and when respondents are not using a so-called pop3-server to send their email, this does not work.
- ?? The ASCII-questionnaire with the answers also is sent back by email. Once arrived, the data has to be processed in such a way that the answers are filtered out of the text. If the respondent other than giving the answers did not change anything in the text this should not be a problem.
- ?? The IESI-software that is installed on the computer of a respondent may also use the email client of the respondent to send the data. The program looks for the email client of the respondent (e.g. MS-Outlook), puts an email with the relevant data in the outbox of the respondent and the next time the respondent sends and receives email, the email will be sent to an emailaddress of the NSI. It is also possible (but technically more difficult) to evade the use of the emailclient of the respondent and to directly address the mail server of the NSI (direct SMTP).

18. Web

- ?? The data of the webforms can off course be sent back via the web. This means that the 'submit-button' of a webpage (both dynamic as well as static) addresses an http-server where the data is put into a database. When a special 'trusted third party' certificate is installed on the computer of the respondent the data can be sent on a secured channel. The address than no longer is an http-address but an https-address.
- ?? The IESI software can also make use of the web-protocol to send in the data. When submitting the data it is only necessary to have a connection to the web. No web-browser is opened to send the data. Data can be sent directly to the webserver using a secured channel.

Table 2 provides an overview of the various methods of sending and receiving questionnaire data to and from the respondent.

	Sending to respondent			Receiving from respondent		
	Mail	Email	Web	Mail	Email	Web
Static webform	Letter, disc, CDROM with URL	Email with URL, Attachment with HTML-page	Links to website with questionnaire	disc, CD-ROM	Submit to emailaddress using emailclient	submit to webserver
Dynamic webform	Letter, disc, CDROM with URL	Email with URL, Attachment with HTML-page	Links to website with questionnaire	disc, CD-ROM	None	submit to webserver
ASCII questionnaire in email		ASCII questionnaire in email			ASCII Answers + questionnaire in email	
Dedicated IESI program	disc/CD-ROM with software and standard questionnaire	Email with software (not preferred), unique questionnaire	Downloadable software, questionnaires, tables.	disc, CD-ROM	Submit to emailaddress using emailclient / direct smtp	send to webserver, no browser required

Table 2: methods of sending and receiving questionnaire data

III. CHOOSING THE RIGHT IESI-METHOD

19. Choosing between the methods (or a combination of methods) described above should depend on three factors. The first and most important factor is, of course, the technology available to the researcher. When the researcher has no access to a webserver, or does not have access to specific software, only so many options remain open. Furthermore, some methods are easier to implement than other.

20. Choosing a method has implications for the respondent. Those implications affect the willingness and ability of respondents to participate. Those implications make up for the second important factor. Ease of implementation is depending not only on technology and the respondent, but also on the way the survey is designed, which is the third important factor in choosing between the IESI-methods. In this chapter the last two factors will be discussed.

III.1 Implications for the respondent

21. Internet access: respondents have to be able to access the Internet. This may look like a simple true/false statement but there are some gradations in Internet access. Some respondents may only be able to send and receive email, for instance. Other people may have some access to the web, but they only can load webpages that do not contain Java-applets. Very often, a firewall has been installed to protect the respondent's computer from outside 'attacks'. Before sending IESI-software to respondents assessments have to be made on what kind of Internet access can be expected, and some contingency has to be planned.

22. Costs: respondents, who access the Internet by phone, pay time period for their telephone connection. Sending those respondents long questionnaires means that they have to pay more for those questionnaires. The longer a questionnaire, the higher the costs, the more likely it will be that a respondent does not respond.

23. Operating system: IESI-software that has to be installed on the respondent's computer is meant to work on a specific Operating System (OS). The respondents may not work with that OS. This implies that the IESI software will not work. Assessments will have to be made on what kinds of operating systems to expect when IESI-software is sent to the respondents.

24. Technical knowledge: respondents are, generally speaking, no computer experts. What may look self explanatory and easy to the makers of the IESI-questionnaires, may very well look very complicated to the respondent. When technical knowledge of computer software or hardware is required to install or use the IESI-questionnaires, the odds are that a certain number of respondents will not participate. Usability tests of the software may help overcome this problem.

III.2 Survey design

25. Single mode vs. mixed mode: one of the main problems of using the Internet as a tool for data collection is that not yet everybody is able to access the Internet. When setting up a survey that has to be representative for a certain population, the method that is chosen to collect the data has to provide in the contacting of each unit in the sample. Thus, choosing for a mode wherein the Internet is the only medium is only suitable for either samples that do not have to be representative, or for very specific populations (e.g.: visitors of Yahoo).

26. On the other hand, the more traditional modes for collecting data are faced with a sharp decline in response. The non-response in telephone interviewing and person-to-person interviewing can partly be contributed to the increasing growth of the 24-hours economy, where people are no longer available on the more traditional hours.

27. Sending paper questionnaires by traditional mail is a mode, which is not affected by either the non-availability, or the lack of representatively described above. Unfortunately those questionnaires do not have the advantages of electronic questionnaires such as routing, range checks and consistency checks. Adding to this, paper questionnaires in practice also suffer from low response rates.

28. A mixed mode approach could address those problems: respondents who are able to use the Internet can fill out the questionnaire electronically, whereas people who do not are either visited by an interviewer or called by a call-centre. Based on the assumption that electronic surveys are cheapest, telephone interviewing is somewhat more expensive and person-to-person interviewing is most expensive. A mixed mode, multi-layered approach could help overcome the growing non-response rates. The majority of the response in such an approach would be obtained by the cheapest method, leaving extra budget that can be spend on getting a higher response in the remaining modes.

29. Unfortunately a mixed mode (especially combined with a multi-layered approach) comes with a downside, namely the cost of logistics. It would take quite an effort to keep track of the responding and non-responding units in the sample, thus maybe partially negating the (supposedly) cost-saving effect of the Internet mode.

30. Panels (or repeated measures) vs. single measure based: the decisive factor for an email-based approach vs. a non-email-based approach (traditional mail or web) is whether there are multiple contact moments between the researcher and the respondents. When there are multiple contact moments, the researcher has more opportunities to persuade a respondent to give his emailaddress. This emailaddress then can be used to establish an internet-based exchange of questionnaires and answers. A panel or repeated measurers-based survey provides the researcher with those frequent contacts. Investing in panel members, for instance by installing IESI-software for the respondent, may be more rewarding; panel members send and receive questionnaires more often and the investment has only to be made once.

31. When working with a single measure-based survey those contact moments are more rare. Generally speaking the only contact moment with respondents from the sample is when the questionnaire is administered. In those cases a non-email-based approach should be chosen. There are some exceptions. Some sample-based surveys re-approach the respondents to administer a follow-up questionnaire. The re-approach of respondents could very well be done using email.

32. It also is possible to set up a design where at the first contact moment a respondent is asked whether he is prepared and able to give his emailaddress. The people who have provided their emailaddress are subsequently sent the questionnaire by email. People who did not provide an emailaddress are contacted using traditional media. The main problem with this approach is that it doubles the opportunity for not responding, i.e. the respondents who have sent in an emailaddress by traditional mail may not respond to the questionnaire in the e-mail. Single measure based surveys therefore in general have to rely on a non-email-based approach, whereas panel based surveys can make use of an email-based approach.

33. Business surveys vs. household- and personal surveys: business surveys as well as household surveys and persons of course can make use of the Internet as a way to collect data. There are however differences between businesses on the one hand and households and persons on the other that have implications for which IESI method to choose. Although it is very important to realise that it is a 'real life person' that provides the answers for a business, there still can be made a distinction what methodology to use. One of the main differences may lie in the technical infrastructure of a business. Many companies nowadays protect themselves against viruses and unwanted activities of their employees by installing firewalls between the workstation of employees and the Internet. Also there may be a strong policy against installing software individual employees receive. In this way, companies raise the barrier for employees and thus for researchers to engage in Internet-interviewing.

34. When asking a respondent for his e-emailaddress it also has to be made clear that he has to be able to read email at his workstation: an Internet computer 'somewhere in the building' does not provide easy access to IESI-questionnaires. A researcher may have to rely on more than one method to deliver a questionnaire to a respondent (an email version of the software for the respondents who can not visit the web).

35. When working with household- or personal surveys those limitations mostly do not apply, so all IESI methods go. For both business surveys as well as household or personal surveys it is very important though to remember that a respondent is not by definition a computer expert. In fact, it may save the researcher in the end a lot of work when he bases the implementation of an IESI methodology on the assumption that a respondent is a complete layperson in the field of computers, the Internet and the like.

36. Other factors: there are more factors that have an impact on the decision what IESI-method to choose. Some of those factors will be discussed briefly in this section. Researchers may want to use multi-media applications in their questionnaires. Those applications tend to be sizeable in terms of size in megabytes, so those kinds of applications preferably have to be sent by CD-ROM. It is possible to use a dynamic questionnaire when multi-media applications are wanted, but this means that either a respondent has a broadband connection to the Internet or he has a lot of patience.

37. For the same reason it is important to consider how much time respondents need to complete the questionnaire. When a respondent has to be online for more than a quarter of an hour, it may be questionable whether he is going to complete the questionnaire. Longer, more complex questionnaires may very well better be sent to the respondent on a CD-ROM.

38. When sensitive questions are asked, the respondent may feel that it is very important that only the researcher reads the answers he gives. The researcher has to ensure the respondent that his data are transmitted safely to the designated destination. Using public- and private-key technology can do this.

IV. RECRUITING RESPONDENTS

39. Data collection using the Internet requires investments. Those investments have to be made profitable. When only a small number of respondents are willing to deliver their data using the Internet, the investment will not pay off, in fact, it may even cost more because of the logistics required to control

two flows of data. So mass is needed to make the IESI methods more efficient and cost saving. Bringing in respondents depends on two factors: the ability of the respondent to participate and the willingness.

40. Ability: ability means that a respondent should both have the technical as well as the mental abilities to send and receive questionnaires via the Internet. A person may have all the infrastructure required to make use of even the most demanding IESI-methodology, if he does not know how to install a program or a public key certificate he will not send in data electronically. When recruiting respondents it should be made clear to them that no technical knowledge is needed. Participating should be as easy as filling out an emailaddress (and even that can go wrong). When providing the respondent with software the installation guide should leave no ambiguities on how to install and use the needed software on different systems. It has already been mentioned earlier in the paper, but it is very important to approach the respondent as a layperson in the field of computer software.

41. Willingness: the willingness of the respondent is something that can be changed. Efforts of the researchers should be aimed at making the respondent have a positive attitude towards participation. Respondents may have initially a negative or neutral attitude towards transmitting data using the Internet. It is particularly important that respondents initially do not have the opportunity to say 'no, we do not want to participate'. This means that a respondent never is directly asked 'do you want to participate, yes or no'. If a respondents initially says 'no', he is primed to say 'no' all other times he is asked. When saying 'no' a respondent constructs a reason and this will be reinforced every time he is asked. When he is not faced with a choice, the attitude of a respondent remains neutral to participating, whereas if he is faced with a choice, he is either 'in favour' or 'against' participating.

42. Reasons (not) to participate: what are the reasons for respondents to participate? Even though it is done on a computer a respondent still has to complete a questionnaire. Nevertheless, respondents have to be convinced that completing electronic questionnaires is better than completing the paper version. Those advantages could be:

- ?? No more paperwork: letters, envelopes and questionnaires no longer have to be stacked high on the desk; a single email or the like suffices;
- ?? Convenience: some respondents do all their work with computers, so completing a questionnaire on the computer is more convenient;
- ?? Shorter and better questionnaires: questionnaires can be made shorter because of routing in the questionnaire. Range- and consistency make for higher quality answers so that respondents do not have to be called back;
- ?? State of the art: completing questionnaires using the Internet looks more 'state of the art';
- ?? Suitable: compared to face- to face or telephone interviewing electronic questionnaires can be completed when it is suitable for the respondent.

43. Respondents may not only see the benefits of responding by the Internet; they also may have some (valid or invalid) objections. Research at Statistics Netherlands indicated a variety of reasons for not participating. The most frequently mentioned were:

- ?? Safety: respondents fear that it is not safe to transmit their data by the Internet;
- ?? Survey-burden: respondents are afraid that participating will lead to even more questionnaires being sent to them;
- ?? Not allowed: the management does not allow respondents to participate;
- ?? Complicated: respondents fear that specific (computer) knowledge is required to participate and feel that they lack this knowledge;
- ?? Not convenient: respondents think that completing a questionnaire on the computer is as (in)convenient as completing it on paper;
- ?? Change of computer system: respondents expect a change of their computer infrastructure and want to wait until that has been accomplished.

When recruiting respondents, those arguments have to be expected and counteracted beforehand as far as possible.

44. Communication instruments: the respondent has to receive information that brings to the spotlight the advantages of participating and information that counteracts their objections. The moments of providing that information may vary: for instance on questionnaires or during visits when dealing with panel-respondents, or with a brochure when dealing with non-panel respondents. Very often, a mix of communication instruments is needed to convince the respondent.

45. The communication instruments that can be applied are for instance:

?? Paper questionnaire	Call centre
?? Website	Letters
?? Brochure	Visiting interviewers
?? Editorials in trade journals	Special information meetings

46. One principle of providing information using these channels is that the layout of the information is consistent. When a respondent comes across information in a trade journal and a week later he comes across information on the paper questionnaire, there can be no doubt as to whether he has seen that information before.

47. Another important basic principle is that respondents should not have to look for where they can apply. The moments and places on where they can apply have to be plentiful and obvious. Do not for instance only set-up a website where respondents can apply, because for the majority of the respondents that takes too much effort. After all, completing a NSI-questionnaires is not among the most important and joyful things respondents do on a days work, so each extra action asked is one too many.

V. EXPERIENCES AT STATISTICS NETHERLANDS

48. At Statistics Netherlands we have been experimenting with the use of the Internet as a data collection tool since 1997. We conducted a series of tests, focussing both on developing methodology for social surveys as well as for business surveys. Those tests led in the spring of 2000 to the implementation of one of the described methods. In the next sections we will briefly describe the implementation of earlier developed methodology into a substantial number of (short) business surveys.

49. In May 2000 a project called 'E-Quest' (short for Electronic QUESTionnaires) was started. The aim of this project was to implement the possibility to send and receive electronic questionnaires into the existing processes of some twenty short-term panel business surveys. Another aim was to convince one-third of the 27000 companies who were participating in the panel to send in their data electronically. The way this was handled will be discussed in the next section. In the second section the used methodology for implementing electronic questionnaires into the data collection process is described.

V.1 Recruiting 9000 companies

50. The 27000 companies that participated in the 20 business surveys receive a questionnaire on a monthly or quarterly basis. Those questionnaires are roughly the same for all of the 20 statistics and mainly consist of a question for the turnover of the requested period. It was decided though, that the 20 different statistics would be implemented gradually, thus gaining the opportunity to timely enact on unforeseen difficulties.

51. First of all, all questionnaires were provided with an extra question, asking the respondent for his emailaddress in case he was willing to send and receive his questionnaires by the Internet. We did explicitly not give the respondent the opportunity to let us know that he was not interested in participating. This was done because more soliciting-actions were planned, and we did not want to prime the respondent to a negative answer.

52. Next, the respondents were sent a personalised letter in which it was explained what the advantages were for the respondent if he would agree to send in his data electronically. In one case, we added an answer sheet on which a respondent could fill out his emailaddress. This worked really well; for one particular statistic the main number of registrations originated from this answer-sheet.

53. After that (5 months after the beginning of the project) a brochure was sent to the respondents in which we addressed 10 topics of which we thought were keeping the respondents from registration. Topics included security, limitations and advantages for the respondents. In the brochure we directed those who wanted to register to our website or to the extra question on the questionnaire. No peak in the number of registrations was noticed after the brochure was sent.

54. Finally the call-centre of Statistics Netherlands was employed to call a certain number of the businesses that had not yet registered. A selection of 6200 companies was made on the basis of specific criteria. Those criteria included number of employees and branch of trade. This campaign turned out to be very successful. Of the 6200 companies 5100 were asked whether they could use email and whether they wanted to register. Of those 5100 companies 3291 were able to send and receive email. Of those 3291 finally 2547 companies gave their emailaddress.

55. At the end of the project approximately some 7000 businesses had sent Statistics Netherlands their emailaddress. This was not the number of respondents we had initially hoped for, but if we would have had the funding to continue our call-centre activities, it is very likely that we would have achieved our goals.

56. A vast number of those emailaddresses came from the call-centre activity. It is, however, dangerous to conclude that all future activities should be aimed at deploying the call centre. It is conceivable that if the respondents would not have had the information provided, for instance, in the brochure, that they just would have said 'no' when called by the call centre. A recruiting campaign in our view still should consist of a variety of communication instruments.

V.2 Implementing electronic questionnaires

57. After receiving and processing the emailaddress of a company a so-called test-email is sent. By sending this email the emailaddress is tested. In the email the respondent is asked whether he is able to use or 'surf' the Internet or whether he is confined to the use of email.

58. The companies that respond to the test email are then activated, which means that they are shut out of the ordinary statistical process of paper questionnaires and are ready for surveying by email or the Internet.

59. The primary concern of Statistics Netherlands is the guaranteed safety of the data that is being sent in by the companies. We therefore had to look for a method to have the company send us the data in a way that no one else would be able to read the companies data. We chose two approaches, one for the Internet respondents and one for the email-only respondents. The Internet-respondents are sent by e-mail a third party certificate including our public key. The email-only respondents are sent a program (EDISENT) with a built in data-encryption module. This program also automatically puts an email with the encrypted answers in the outbox of the user's email client.

60. The email-only respondents are sent a monthly or quarterly reminder to fill out and send in the questionnaire. The Internet-respondents are sent an email containing the Blaise-IS generated questionnaire. Hidden in the questionnaire, we put the ID of the respondent. Respondents fill out the questionnaire, click on the 'send' button and our dedicated server receives the data. It is then automatically decrypted. Each day, on a specified moment, the database is emptied and processed. After that, the data is sent to the designated statistical department.

61. A system was built to control the flow of data. Letters are for instance automatically sent to respondents who don't respond to the test email. Despite that, one of the main outcomes of our evaluation was that it is very difficult to get a full grasp over the data-flow. We still have to work very hard to get the emails on the right time to the right people and we have to put a lot of effort in maintaining a good overview of the process.

VI. CONCLUSIONS

62. Investments in the various IESI-methods have to be made profitable by recruiting a certain minimal number of respondents. Choosing an IESI-method depends on the way the survey is designed. The IESI method that is chosen defines what infrastructure and technical knowledge is required from the respondents

63. Whether respondents are going to participate depends on their (technical) ability and their willingness. The willingness of respondents can be influenced with a communication strategy where objections are countered and advantages are accentuated. Applying has to be made real easy for the respondent, whereas a call-centre call asking directly for an e-mail address seems to work best.