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Topic III: Innovations in data collection and exchange

**NEW INFORMATION TECHNOLOGIES IMPACT ON DATA COLLECTION  
AT STATISTICS SWEDEN**

**Invited paper**

Submitted by Statistics Sweden<sup>1</sup>

**SUMMARY**

**I. INTRODUCTION**

1. Statistics Sweden is evaluating new methods that can improve quality and effectiveness in the process of data collection on an ongoing basis. One strategy is to reduce the amount of information that has to be collected by questionnaires by using administrative registers. Another one is to use new technologies for data collection.

2. For example, a long-term goal for Statistics Sweden is to offer all enterprises and organisations the possibility to return information through electronic questionnaires. The rapid evolution of Internet has now reached a phase where the prerequisites are available for this kind of application. Today the web-browser has more or less become the basic user interface. Organisations start using electronic questionnaires, some of them with advanced functions and the possibility to communicate with the data-collectors database on the server side.

3. There are, however, some drawbacks with the new technologies. The lack of standards on the client side makes it difficult to develop an application that works with all common browsers. HTML has been used with such inventiveness that it makes web-applications hard to maintain. Java as a standard language for script and components solves some of these problems but it requires new skills in the organisation and will not decrease the burden of maintenance. It is therefore natural that organisations search for new tools that will help them create advanced electronic questionnaires and applications without low level programming.

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1 Prepared by Hans Ireback.

## **II. NEW TOOLS**

4. To avoid the drawbacks mentioned above, Statistics Sweden is currently evaluating commercial tools that will ease development by hiding as many of the details as possible to the developer. These new tools all have in common that they use the possibility to extend the capability of Internet browsers through components. A component could be a plug-in, Java-applet or a COM component. The components could be kept quite small and the time for downloading is not a problem. This will enable the increased use of advanced and intelligent electronic questionnaires on Internet.

5. Another possible alternative that we are investigating is to use standard packages such as Word or Excel to create advanced questionnaires that could be adapted for use over Internet. Together with the possibility of using traditional in house developed Windows applications this means that we now have a broad range of alternatives for implementing electronic questionnaires.

## **III. DIRECT LINKS TO THE RESPONDENT'S INFORMATION SYSTEM**

6. The TELER project has shown that the concept of using information in the respondent's information system in an automated way is viable. In Sweden we also have the advantage of a standardised chart of account, the BAS-account. This will ease the attempts to automate the filling out of a questionnaire. One of our objectives for the year 2000 is to develop a general "auto-fill" component that can be used with different types of electronic questionnaires.

## **IV. DELIVERING AND RECEIVING SYSTEM**

7. The delivering and receiving system (DRS) is an initiative on the governmental level in Sweden. When fully developed, it will function as an information bus for governmental organisations, enterprises and individuals. The implementation builds on TCP/IP and other Internet standards. The Swedish Agency for Administrative Development assists by establishing agreements with different contractors who can offer products that support the concept. In the first version which is now available, the focus is on communication between governmental organisations.

## **V. SECURITY**

8. To create the necessary conditions for an increased use of electronic questionnaires, it is important that the respondents have confidence that National Statistical Institutes treat the data with the necessary care. Statistics Sweden offers different levels of security depending on the needs of a particular survey. The most secure level is considering all the aspects of encryption, authentication and digital signatures. Statistics Sweden is currently evaluating the Public Key Infrastructure to ensure that all these aspects are handled in a secure way.