

Web CATI (Part of NatCen's Multi-Mode Approach)

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1 Introduction

NatCen Social Research has been developing its internal capabilities in offering a multi-mode solution to its clients. The rationale for using multi-mode solutions in surveys is to maintain high response rates while maximising cost-effectiveness. This paper focuses on the combination of CATI and CAWI using both Blaise and BlaiseIS survey processing platforms. We will focus on one case study and discuss the reasons to why we have adapted this method of data collection. We also demonstrate a method of switching from Blaise Data Entry Program (DEP) to a BlaiseIS Web survey during an interview session.

This paper is a reflection of the experience of conducting NatCen's first WebCATI multi-mode project – The Evaluation of Children's Centres in England (ECCE).

1.1 What is WebCATI at NatCen?

NatCen's WebCATI is a dynamic and interactive survey processing environment that utilizes Blaise CATI system for sample management and BlaiseIS for data collection.

1.2 How does it work?

In our WebCATI environment, Blaise DEP calls Internet explorer and passes control of the survey content to BlaiseIS. Once the web survey data collection process is completed by the interviewer, the process returns the control to DEP for completion. During the data collection process in BlaiseIS, DEP locks the active interview to prevent access for other interviewers.

1.3 WebCATI Server Environment

NatCen has a Multi-Mode Unit that consists of 40 telephone workstations which are connected to a dedicated CATI server running Blaise services over a Local Area Network (LAN). Our web surveys are hosted on a remote server. The main benefit of acquiring a remote web server facility is that it provides cost-effective around the clock support.

2 The Evaluation of Children's Centres in England (ECCE) – WebCATI case study

NatCen Social Research in collaboration with the University of Oxford and Frontier Economics has been commissioned by the Department for Education (DfE) to carry out a six year evaluation of children's centres. Children's centres are intended to be accessible, welcoming places where children under five years old and their families can receive integrated, good quality services and find any information or advice they might need. Since 2010 every community has a Children's Centre. The aim of the children's centres programme is to improve developmental outcomes for all children and to reduce inequalities in outcomes between the most disadvantaged children and the rest.

The ECCE study will provide an in-depth understanding of the effectiveness of different children's centre models and will offer powerful and wide ranging evidence on the best ways to support families and children. The evaluation includes a set of surveys:

- A survey of children's centres
- A panel survey of families using the centres
- A survey of families who live in the catchment area of the centres
- In-depth interviews and visits at centres

- A cost-benefit analysis

The survey of children's centres was the first survey to be carried out as part of the ECCE, and was designed as a WebCATI survey.

2.1 Why WebCATI Multi Mode Approach?

The discussion around benefits and effects of different modes in research has always been central in the process of designing the methodology of surveys. For NatCen, the rationale for using a multi-mode design of combining web and CATI tools in surveys is fourfold:

- Maximise cost-effectiveness (since web surveys are relatively cheap to administer)
- Maintain high response rates (since telephone interviews tend to have higher response rates than web self-completion);
- Ensure population coverage (since a substantial proportion of the population may not be able to complete a web survey but will be approachable by telephone); and
- Offer flexibility to respondents in engaging with the survey.

The ECCE led with a web self-completion questionnaire and offered a telephone option for non-respondents. In addition, a telephone interviewer contacted respondents to the web questionnaire to follow-up on unanswered questions.

An important early design decision was to use the same tool for both the web and the telephone survey, using BlaiseIS. The rationale behind this was to ensure that the same questions were asked with both modes so as to ensure consistency in content. Furthermore, the use of a single instrument helped to facilitate the production of a single dataset, as opposed to separate ones for each mode. Having just one dataset saved on time and costs of data management as there was no need of editing and reconciliation between datasets.

The questions in the interview were designed so that they could be delivered orally as well as visually. Special focus was given at the interviewer briefing to the questions that were most complicated for oral administration. Interviewers were encouraged to practice reading these questions aloud, and practice the suggested adjustments, so that all questions were conveyed in a consistent and clear way over the telephone.

Given that the questionnaire was primarily intended for self-completion, it was decided to build the program in such a way that the respondent could choose to skip questions (rather than requiring them to complete each question before being allowed to move on). It was also possible to complete the questionnaire on more than one sitting and navigation bars enabled respondents to move around the questionnaire. The progress of the respondents in completing the questionnaire was monitored automatically. Key cut-off points throughout the questionnaire were programmed so that when a respondent was allocated to telephone, the interviewer would be able to see the level of completion.

Access to the web instrument for the telephone interviewers was through the CATI management system, to allow the interviewers to manage their assignments as they would normally do in a CATI survey. Before calling up the web instrument, the interviewer was taken through a short CATI questionnaire to ascertain whether the respondent wished to complete the questionnaire online or as a telephone interview and whether an appointment was needed to continue filling in the questionnaire. When contact was made by telephone interviewers, the introductory text in the short CATI questionnaire was tailored to the respondent's level of completion of the survey.

3 WebCATI Questionnaire Development

The questionnaire for the Evaluation of Children's Centres in England was initially developed as a CATI questionnaire and tested with the Blaise DEP to enable a faster method of testing routings and textfills. It was then further developed as a web instrument in BlaiseIS where we made sure that

layout and behaviour of the survey functioned correctly for both web and CATI modes. Our focus was mainly on questionnaire usability and accessibility for both respondents and interviewers.

3.1 The WebCATI System Process

A Blaise CATI instrument was implemented to regularly update sample from the web database. This information was then presented to the interviewer via the CATI dial screen. The interviewer could then check the web status outcome code prior to calling the respondent.

3.2 Passing parameters from Blaise DEP to BlaiseIS

Once the respondent agreed to participate in the survey, a procedure was executed from DEP to call the Internet browser and pass parameters such as login details from the CATI sample to the BlaiseIS instrument based on indicative value (CATIX) (Figure 1).

Figure 1: Procedure for passing parameters from DEP to BlaiseIS

```
PROCEDURE RunWeb
PARAMETERS
  IMPORT pStart : STRING
  ALIEN('WebProcs.msu', 'doAll')
ENDPROCEDURE

FIELDS
StartWeb "Do you want to start " : STRING[100]
ShowWeb "INTERVIEWER: DO YOU WANT TO DO THE WEB SURVEY NOW
StartWeb "CODE 'Yes' IF YOU WANT TO ACCESS THE WEB QUESTIONNAIRE": (Yes, No, Done "")
RULES
StartWeb.Show
ShowWeb
IF (ShowWeb = Yes) THEN
StartWeb := 'http://www.myserver.co.uk:80/project/survey.asp?KeyValue=' + {passw} + '&CATIX=1'
  Runweb(StartWeb)
  Showweb := Done
ENDIF
```

The key value (passw) and the field representing the mode (CATIX) were passed to the web questionnaire in a query string in a command line constructed in the CATI questionnaire. The command line was then passed to a Manipula script which we called from the CATI questionnaire as an alien procedure. The Manipula script ran the browser and navigated to the web questionnaire.

The interview starter (BiInterviewStarter.asp) for the web questionnaire retrieved the value from the query string and stored this into the XML stream so it could be used for routing. The value in the field was used to determine whether the questionnaire was being completed by the respondent or by a telephone unit interviewer.

Figure 2 shows the interviewer view of the screen in CATI, before calling on the web survey.

Figure 2: Interviewer view of DEP screen



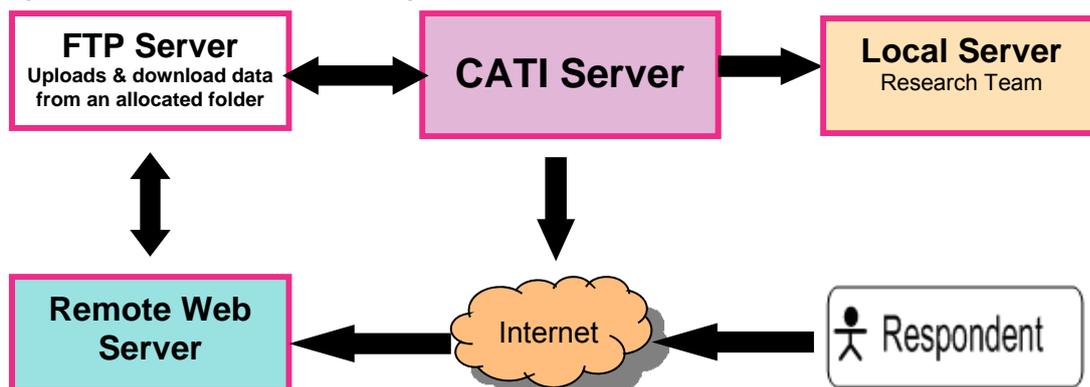
3.3 DEP and BlaiseIS locking mechanism issues

Early on at the start of the telephone fieldwork, we came across a problem relating to interview management. After the web questionnaire was opened we noticed that the CATI form was released and became available to the call scheduler within the current daybatch after 10 minutes. This was because we called the browser with the wait parameter. The solution was to omit the wait parameter. The disadvantage of this was that it was possible to tab out of internet explorer, back into the DEP to complete the administration on a serial number before completing the interview in IE, however this was outweighed by the advantage that the record lock persisted throughout interviews longer than 10 minutes. This risk could be tackled with interviewer training and instructions at briefings.

3.4 Automating WebCATI Sample Process

The ECCE had its own folder structure on the remote web server. This structure contained a VB script that executed a Blaise Manipula program to convert the Blaise data to ASCII, and upon completion encrypted the data into a zip file and transferred it to the FTP directory. Web survey data was transferred to the CATI Server using a secure FTP server/system (FIPS 140-2 compliant). A Manipula script updated the current web status of each case in the CATI sample. This script was scheduled to update CATI sample hourly and then other processes were employed to generate progress reports and interim datasets for MMU.

Figure 3: Servers and Data Flow Diagram



4 Challenges

Teams at NatCen were faced with different challenges in different surveys working with NatCen's WebCATI.

4.1 Post Launch Program Changes

Although quite rare, post launch changes to a program may be sometimes required. While these sorts of amendments are a fairly simple and quick task in a CATI environment, these can be quite complicated in a web survey. When a survey is launched and respondents are made aware that the survey is available to them, the only option to make amendments is to block access to respondents while the survey is taken offline. It is difficult to anticipate when a respondent might be accessing the questionnaire, as we would not want to cut off people in the middle of filling in the questionnaire, and risk losing the information they had entered. In this respect, a web survey is less flexible than CATI.

4.2 Handling Question Text for CATI and Web

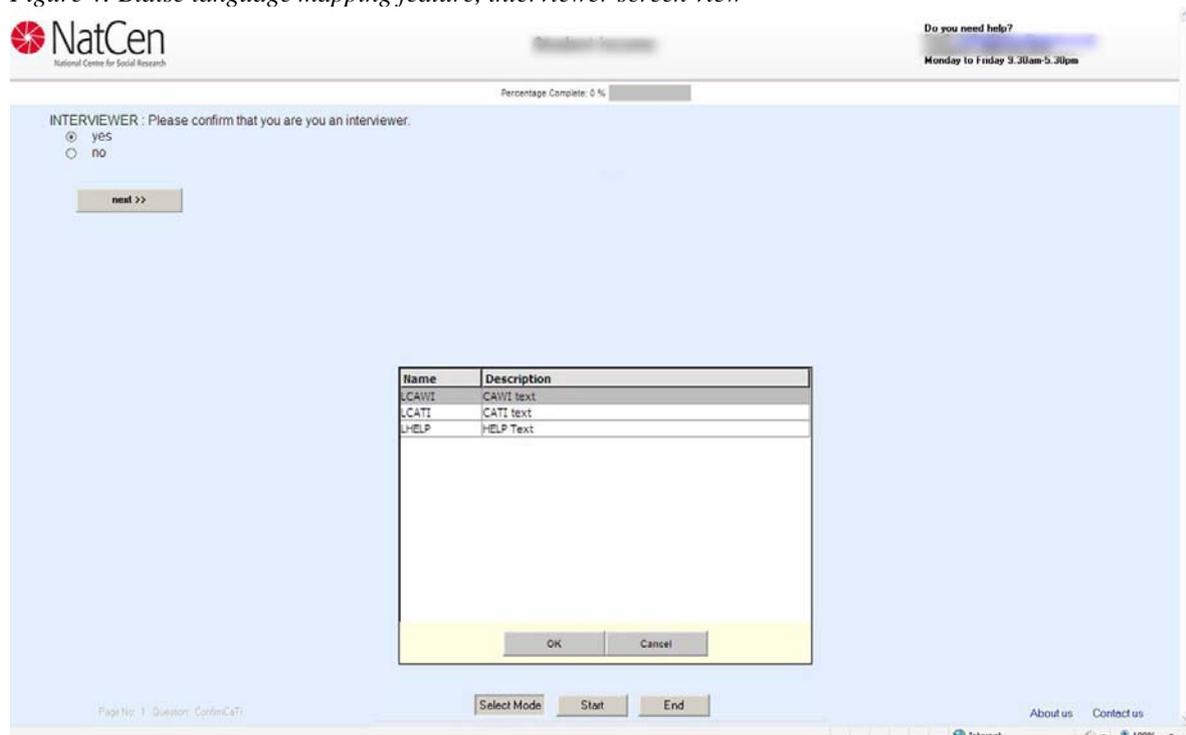
Using the same instrument for both modes posed a challenge in terms of question wording and layout design. In the ECCE we used textfills in the body of the question when wording tweaks were made between the self-administered and interviewer-administered mode. However, those textfills had an impact on the question layout, especially when interviewer instructions were added.

In later surveys we decided to handle wording tweaks using the Blaise Language mapping feature.

Intro
"Now follows some questions about your local area."
"Now I'd like to ask you about your local area."
: TQNoAnswer

This option was only made available for the interviewer, so they could select 'CATI' option to change the wording to read more fluently for an interviewer-administered interview. This ensured consistency across interviewers and simplified the process of adapting the wording of the questionnaire to the different modes (Figure 4).

Figure 4: Blaise language mapping feature, interviewer screen view



4.3 Issues working with a remote Web Server

As the data was held on a remote server it was not instantly available to interviewers. We therefore needed to schedule a process to download data on an hourly basis. This delay was acceptable in the projects we have done so far.

We also discovered that a live server environment was not ideal for testing other surveys. When carrying out the testing we sometimes had errors installing or removing the server manager. Our IT infrastructure team has addressed these issues and configured a local test web server.

4.4 Data Security Issues

Blaise database (.bdb) is not encrypted and secured and so standard FTP was not a safe option for transferring Blaise data to our internal network. NatCen has strict data security rules for sending and receiving data to the remote web server. Currently the following are the only acceptable methods:

- PGP encryption (a higher standard of encryption required by some clients)
- File transfer over secure electronic connections

4.5 CATI Management Summary Screens

Supervisors at the multi-mode unit monitored WebCATI progress through Blaise CATI case Management (btmana.exe) screens. We updated CATI sample with data received from the Web surveys on an hourly basis. Supervisors and interviewers could see updated information via the dial screen or the overview screens. However, we had to address the issue with stats in the CATI summary reports, as they were recording CATI call outcomes only.

4.6 Collecting Paradata information (Using Journal instead of Audit trail)

BlaiseIS does not produce the same audit trail information as normal CATI. There is some information that is captured in a journal file such as time spent on a page. Our aim would be to capture more paradata in the future.

4.7 Training and usability issues for CATI interviewers

When designing a WebCATI survey the need for interviewer training in carrying out the survey must be carefully considered. In addition, the program needs to be easy to use by the interviewers so that they can manage their assignment effectively and access the questionnaire without difficulties. The approach of using BlaiseIS to set up the program for WebCATI surveys proved to be the best solution for both interviewer training and usability.

NatCen telephone interviewers are very experienced using the Blaise CATI system, so choosing BlaiseIS meant that after some initial training they became familiar with the web interface. This lessened the burden of learning new systems or ways of working and enabled continuation of regular practices. The Blaise CATI frontend enabled cases to be managed within the CATI Management system in the same way that any other CATI sample was managed. It also enabled interviewers to move seamlessly into the web questionnaire when conducting an interview over the phone. For the telephone interviewers this meant that it was easy to adapt to the new system.

5 Conclusion

The WebCATI multi-mode instrument is a relatively new development in NatCen, which has been in use in a number of surveys over the past year. Although it is still a learning and development process for all involved, it is agreed that the solution of WebCATI multimode instrument in surveys, particularly in this age of tighter budgets for research, provides an effective method of data collection. We plan to continue to develop it in future surveys.

There were some challenges in working with the WebCATI methodology and some disadvantages. One disadvantage was longer development time. It was necessary for the questionnaire to work as both self-completion and interviewer administered survey, so much consideration needed to be given

to question wording (to account for the different modes) and the question layout. Therefore, question design, programming and testing took longer than usual. In addition, due to the survey being available online for the respondents to fill in at any time at their on convenience, there was a need for around-the-clock technical support to the survey. At the moment this is not something that is manageable for NatCen to provide in-house and so an external solution was adapted. Finally, since data is stored in a remote server in the first instance, monitoring fieldwork progress was challenging and required a third party application to produce daily progress reports.

However, it is agreed by all involved that the advantages of the WebCATI approach outweigh the disadvantages. One of the main benefits of the WebCATI approach is the cost effectiveness of the tool. It allows respondents who are able and willing to complete the survey online to do so, thus saving the cost of telephone interviewing. In addition, respondents to the surveys benefited from having the choice of mode. Quite a few respondents preferred filling in the surveys online, having the flexibility to stop and continue at their convenience, while others expressed preference to complete the survey over the phone. We also believe it is likely that the provision of this choice of mode increased overall response rates. Finally using BlaiseIS in WebCATI surveys mean that there was a need to develop only one tool, rather than two (one for each mode) and that the data was collected in just one dataset, so there was not need to edit or reconcile data between modes.

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