

# **Our Blaise 5 Journey: A Case Study of a CAWI/CATI Survey and End-to-End Processes and Systems Used**

**National Centre for Social Research – Angela Belo**

---

---

# Outline of our Blaise 5 Journey

1. Background and Overview
2. Case Study — Technical Education Survey (Tech Ed)
3. Redesign of Sample Management (SCS)
4. What Lies Ahead?

# Background / Overview

Why Blaise 5? What's Important to NatCen?

Overview of Our Business

Overview of Our Technical Environments

Templates Redesign

---

## Why Blaise 5? What's Important to NatCen?

- Operating two survey software platforms for the past 10 years
  - Blaise 4.8 for CAPI and UI (Unicom Dimensions) for CAWI / CATI
  - Inefficient, dual skill sets, limited functionality and nearing end of life
- Vision for 2020's includes web and mobile first, and multimode
  - Flexibility is crucial to expand our services, and support a shift from F2F to other modes and multimode
  - Project was initiated in June 2020 to transform the survey platform, processes and procedures, and upgrade or replace legacy support systems
  - Goal is to provide state-of-the art multimode solutions for data collection and remain competitive

---

## Overview of Our Business

- Registered charity and largest independent, not-for-profit social research organization in UK
- Vision is “Making Life Better: Having impact through social research”
- Reputation built on excellence in research methods and data collection
  - Enabling the gathering, analysis and presentation of high-quality evidence to those with the power and influence to change people’s lives
- Trusted to listen to the public, uncovering and providing insights into the reality of people’s lives and society in the UK, which helps decision-makers make better informed choices.
- Working with many different clients, (government departments, academic institutions and others), responding to tenders to gain project work, conducting a wide variety of in-depth social research studies.

---

# Overview of Our Technical Environment

Server infrastructure (Production) includes:

- 3 web servers, with load balancer
- 2 Blaise application servers
- 1 database server
- 1 session server
- Other environments are similar infrastructure, but with lower capacity.

- **Development/Demo Environment**

- For development, unit testing, proof of concept, test new Blaise releases

- **Pre-Prod Environment**

- To test new releases of the Survey Control System (SCS), along with Blaise 5

- **UAT/Staging Environment**

- Mirror image of Production, for setting up and testing live projects / surveys prior to launch

- **Production Environment**

- For running live surveys, collecting data from respondents/interviewers in all modes.

---

# Templates Redesign

- Initial requirements:
  - should work on small and large screens
  - should work without using a mouse; i.e keyboard or touch screen
  - Include hidden DK\RF feature
  - use concertina\collapsible grids
  - use NatCen corporate brand colors
  - handle soft and hard checks
  - save all data, even if the browser was closed
  - collect paradata
  - easy to program exclusive codes
  - should include a help feature (on some questions)

# Templates Redesign / Categorical Questions

Examples of Single and Multiple Category Selection Question Template, with No Help Information, for Small Screens

example of an enumerated question with no help

- Americano
- Espresso
- Flat White
- Latte
- Cappuccino
- Macchiato
- Mocha
- Don't like coffee

Back

Save and Continue

[Contact us](#)

[Confidentiality](#)

example of an enumerated question with no help

- Americano
- Espresso
- Flat White
- Latte
- Cappuccino
- Macchiato
- Mocha
- Don't like coffee

Back

Save and Continue

[Contact us](#)

[Confidentiality](#)



# Templates Redesign / Categorical Questions

## Example of Categorical Question Template, with Expanded Help

Have you been doing your second year of a T Level over the past academic year since September 2021?

[What's a T Level?](#)

[More Info on T Levels](#)

T Levels are two-year courses that are an alternative to A Levels. They offer technical training and an industry placement in areas such as digital, construction or education and childcare.

[Even more information on T Levels?](#)

Yes

Yes – but I left the course early

No

[Back](#) [Save and Continue](#)

[Contact Us](#) [Confidentiality](#)

# Templates Redesign / Categorical Questions

## Example of Collapsible Grid Question Template

Uses auto answer (auto advance) it stops on the last question on the page

How important are each of the following when deciding to get the vaccine...

▶ Whether or not the vaccine is recommended by my GP/healthcare professional
▼ Whether or not the vaccine is recommended by the NHS
<input checked="" type="radio"/> Completely
<input type="radio"/> A great deal
<input type="radio"/> Somewhat
<input type="radio"/> Very little
<input type="radio"/> Not at all
▶ Whether or not the vaccine has been tested in large trials

# Templates Redesign / Categorical Questions

## Example of Receipt Page (After Appointment)

### Make an appointment (03.1)

Click on the button to start the next case. Close the browser if you have finished with this project and you wish to quit.

99101661

Return to Launcher

Restart case

Enter a serial

Specific  
Case

Next Case

# Case Study: Technical Education Survey (Tech Ed)

Background of Tech Ed

Mixed-Mode Instrument Development

Reasons for Switching to Multi-Topic Solution

CATI Launcher, Handing Multiple Numbers / Call Results

Removing Web-Completes and Freephone Opt-Outs

Monitoring Fieldwork Progress

Conclusions

---

## Background of Tech Ed Survey

- Longitudinal survey of young people enrolled in technical education courses, taking part every year during their courses
- Research into the government's technical education reforms, aiming to provide insights into which young people choose technical education and why, their experience, and short-term outcomes
- Fieldwork has a 'web-first, sequential mixed-mode' design with Web (CAWI) and CATI.
- Participants invited to complete the survey online. Subsequently, cases not completed were released to the Telephone Unit in batches (using DayBatch select filters).
- The sample consisted of named individuals, with email, postal address, and multiple phone numbers. In the call scheduler, sample was managed at the case level (the individual).

---

## Background of Tech Ed Survey

- Multiple waves (up to March 2024)
- Blaise 5 was used for data collection in:
  - 2022
    - Wave 2 (W2) Survey (Pilot and Mainstage), sample of 1,100 cases
    - Wave 1 (W1) Survey (Pilot and Mainstage), sample of 23,000 cases
  - 2023
    - “Post-course” (for those that had just completed the program), sample of 1,300 cases
    - “In-course” (for those that were still in the program), sample of 15,000 cases

---

## Mixed-Mode Instrument Development – 2022

- Initially, we converted the Qre from our UI web platform into Blaise 5.
- We used the Traditional Solution for single-topic projects, i.e data collected in the treatment surveys (Dial and Appointment) were copied to fields in the main data model.
- The Dial instrument was the entry point for the interview.
- One of the Parallel blocks displayed a selection of fields from the sample block (variables had to use labels).
- Appointment instrument was used to record appointments and interviewers remarks, which were copied to the Dial questionnaire. There wasn't a Nonresponse instrument.
- The main instrument held the survey data (and allowed other outcomes, such as NoAnswer — Parallel block) and the CATI Admin data.

---

## Mixed-Mode Instrument Development – 2022

- Using Traditional Solution meant that we did not have a starting page for the CATI interviewer (to select a survey from a list),
  - An HTML page was created to allow interviewers to select a project or a specific serial number within that project.

### **NOTE:**

- CATI Dashboard is currently only used by Telephone Unit (TU) Supervisors and not CATI interviewers, so they don't have another way to start specific cases.



---

## Mixed-Mode Instrument Development – 2023

- Started from the previous 2022 Blaise 5 code, but set up the project using the multi-topic solution.
- Multi-topic approach consists of a series of linked instruments;
  - CATI Launcher
  - Portal (NOTE: we did not use the Multi-Scheduler)
  - Appointment instrument
  - Nonresponse instrument
  - Topic instrument
- The interviewer selects a Topic survey from the Portal and a case is delivered automatically.

---

## Reasons for Switching to Multi-Topic Solution

- Deemed preferable to have the CATI Admin data separated from the Topic instrument
  - Launcher instrument collects the CATI Admin data and includes an array for up to 30 calls (resulting in large file sizes)
- Needed an entry point to allow interviewers to choose a project from a list
  - During fieldwork for Tech Ed, we didn't have other projects in the field simultaneously, so the Portal only listed one project at that time. However, the Portal was deemed an important element for CATI surveys, in general and for the future.
- Longer-term the aim was to use the same Launcher for all CATI projects. However, there were different requirements between waves of Tech Ed.
- The Nonresponse instrument became necessary to ensure that cases coded as nonresponses in the Launcher/Topic parallel block were registered correctly.

---

## CATI Launcher for Handing Multiple Numbers and Call Results

- Launcher is used by the interviewer to make initial contact with respondent.
  - Contains sample block, call history and contact history.
- Blaise gives you a call per case vs Launcher has a dial outcome per phone number called
  - At the end of the dial loop, the call result is passed back to Blaise based on rules in the Launcher, resulting in one call.
  - Our Launcher handles a series of up to 30 dials, which will result in one call.
- The Launcher was adapted to meet these specific requirements:
  - Dial outcomes per phone number tried within a case. Telephone number status is based on dial outcomes.
  - Prioritized call outcome is computed based on dial outcomes/questions to interviewer. Used for interaction with the call scheduler.
  - Case-level status and outcomes are derived from call outcomes.

---

## Removing Web-Completes and Freephone Opt-Outs from CATI DayBatch

- TU Supervisors needed a way to create DayBatches and remove completed cases during the day
  - NOTE:** This was a bug reported to Blaise, fixed in a later build, but not able to upgrade before fieldwork
- Workaround:
  - Scheduled a task, which invoked Manipula to create the DayBatch each morning and remove the completed cases. Could also be run at other times during the day.
  - Created a custom “report” on the Dashboard (i.e to run Manipula script above).
  - There were a large number of cases, so we used SETRECORDFILTER to speed up the processing.
  - Had to invoke Manipula from an intermediary script, as the script was timing out after two minutes.

---

## Monitoring Fieldwork Progress

- Exported and merged data in Manipula, including key information from the Topic (sample + outcomes) and Launcher (call history) data.
- Longer term we are aiming to use a data mart for reporting.
- The exported '\*.csv' file was read in as a datamodel in Excel with a number of pivot tables showing the outcomes by telephone batches.

## Dashboard

- TU used Case Info tab, to see number of calls, call results, inclusion in a day batch, appointment details, etc.
- Issue was that it sorted by number of calls, but TU wanted to filter all cases that met a specific number of calls
- Also used Appointment Overview custom report (latest version includes the Primary key)

---

## Conclusions

- Tech Ed was our first Blaise 5 project. There was a lot of work to set up the first one.
- Further work is required to standardize the sample block and make the CATI Launcher project-agnostic.
  - This will be challenging due to the complex and varied requirements of our projects.
- There is continual development.
  - What was done so far is not set in stone. We may revisit the multi-topic approach.
- Separation of CATI Admin data from the Topic data works fine for longitudinal studies.
- We are exploring an “all-in-one approach”; simpler / more streamlined / less detail tracking
  - This could work better for simpler, cross-sectional surveys, that don’t need a complex Dial questionnaire.

---

## Conclusions

- New releases of Blaise have included some of our important requirements for TU.
  - Ability to identify hard appointments on Dashboard
  - Ability to filter cases by number of calls
  - Display the Primary Key on the Appointment Overview report, on the Dashboard

# Redesign of Sample Management (SCS)

Integration with Blaise 5 Using APIs

Other Functionality

Challenges



---

## Redesign of Sample Management (SCS)

- Current 10-year old Sample Management System (SMS)
  - Evolved over many years to handle a variety of changing business requirements
- Blaise 5 journey and new platform
  - Deemed critical to replace SMS system with an improved Survey Control System (SCS)
  - Provide the needed functionality of today
  - Extend that functionality for greater efficiencies and streamlined and automated business processes
- Key architectural and design decision
  - Tighter integration between SCS and Blaise 5, and to synchronize data between them
  - System is developed in C# and uses the Blaise API for integration

---

## Integration with Blaise 5 Using APIs

- Analysing Sample definition in Blaise questionnaire and setting up corresponding data definitions in SCS
- Loading sample data in SCS and synchronizing this to Blaise questionnaire
  - Data quality checks are performed on data when it is loaded
  - The system checks for sample updates and synchronizes to Blaise on an hourly basis
  - It is possible to specify the Login Questionnaire, CATI Launcher, and main Topic questionnaire, and all of these will be synchronized from SCS to Blaise

---

## Integration with Blaise 5 Using APIs

- Analysing Administrative and Communications blocks in Blaise questionnaires and setting up corresponding data definition for Imported data in SCS
- SCS automatically imports data from Blaise questionnaire (Admin and Communications blocks) into SCS, on an hourly basis.
- SCS also synchronizes CAPI data with our Case Management System (CMS).
  - For this we are using the synchronization component of the Blaise CMA application.
  - Once cases have been allocated to field interviewers and issued to CAPI mode, they are synchronized through the CMA Launcher database to our CMS system and the Blaise questionnaire.
- Respondents opting-out
  - SCS Freephone app is used to track Respondent queries, including requests to opt-out of a survey.
  - When this occurs, it automatically updates the Blaise questionnaire, to avoid any further contact attempts

---

## Other SCS Functionality

- Automating communications (survey invitations, reminders, thank you's)
- Automatically sending incentives (gift vouchers) for completed surveys
- Managing incentives and thresholds and tracking project spend
- Freephone (Help Line) functionality
- Merging contact updates from multiple sources
- Allocation and issuing of cases to Field Interviewers

---

# Challenges

- Managing changes during development of survey questionnaires
  - During the development cycle, we need to program the Blaise questionnaire and begin testing while setting up the SCS system for the new project and load sample data for testing.
  - Often the timetable is very tight and managing the quick turnaround of changes can be challenging.
- Managing Blaise release upgrades
  - As we start migrating more surveys to the new Blaise 5 / SCS platforms it will become increasingly challenging to manage Blaise version upgrades, with live surveys running in Production.
  - Extensive testing will be required as well as a good understanding of compatibility between developer versions used for the questionnaires and the server versions.

---

# Challenges

- Performance Issues

- We have had some issues with the performance of components in SCS that are integrated with Blaise, using the API.
- The Blaise team has provided some additional methods to help improve this.
- Also the SCS development team are optimizing their code for other performance improvements.

- Blaise API's vs Manipula

- There are some challenges with the notion of using Blaise API's vs Manipula, for development of extended systems and integration with Blaise 5.
- NatCen's approach is in favor of using API's and C# for such developments.
- However, for quick turnaround, adhoc tasks, we may still need to use Manipula at times. We are uncertain whether Manipula performs any better than the API, and we may need to do some specific testing around this.

# What Lies Ahead?

Multi-Mode CAPI with CAWI and/or CATI

Multi-level Hierarchy of Sample Data

Migration Planning

---

## What lies ahead?

### Multi-Mode CAPI with CAWI and/or CATI

- CAPI Interviews are done offline while CATI/CAWI surveys are done online.
- Exploring the best approach for keeping them in synch and reconciling any differences afterwards.
- This involves coordinating the assignment of cases to CAPI interviewers while web and/or CATI interviews are being conducted.
- Also need to determine the best means for informing CAPI Interviewers about surveys completed in CAWI or CATI mode after they have been allocated to field interviewers.



---

## What lies ahead?

### **Multi-level Hierarchy of Sample Data (e.g. household and individuals)**

- Working through various options and best approach for handling multi-level hierarchy of sample data for some surveys (e.g., household and individuals) across different modes.
- For web mode, may want each individual to complete their section of the survey simultaneously
  - This implies splitting individuals into separate questionnaire, and possibly merging them back into one combined household and individual survey questionnaire (and one case) later.
- Alternatively, may have to restrict it to one individual completes the survey at a time, and thus keep the household and individual sections of the survey together in one case.
  - For CATI or CAPI mode, we likely would want the interviewer to access the household and all individuals in it, to complete various parts of the survey at once.

---

# What lies ahead?

## Migration Planning

- Planning the timeline and priorities for surveys migrating over to the new platform
- Organising an implementation team to work with project teams
  - Training new project teams
  - Knowledge sharing while working closely with project teams
  - Documenting new operational procedures, guidance documents, checklists, templates etc
  - Hands-on doing some of the project work

**Questions ???**

---