

# Blaise 5 Improvements for Large CAPI Surveys

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# Overview

- Going from Blaise 4 to 5 for long-running and very complex CAPI surveys
  - Risk for continuity
  - Budget and timing
  - Screen redesign needed?
- Also: Performance
  - Blaise 5 can do much more, but Blaise 4 is fast

# Overview

We specifically want to test:

- Performance from page to page
  - Compare going from screen 1 to screen 2 for small, mid-size and huge metadata size
- Performance on page with many elements
  - Compare tables/grids with different number of lines on one screen

# Performance from one screen to the next

One approach to programming: just reprogram all sections in Blaise 5 , put them together, hope that it is fast enough in the end

Obvious risks:

- Finding out that the time it takes from screen to screen is much slower than expected/desired/demanded by client, at what is supposed to be the tail end of the conversion process.

Very little time left to

- Rethink or redo instrument programming
- Requesting improvements in an upcoming Blaise 5 version

# Performance from one screen to the next

Our alternative: use relatively simple prototypes

- Create simple datamodel with nested arrays
  - Only change array limits to go from small to enormous number of screens
  - Great way to see if metadata size changes CAPI performance
- Also: Create a prototype to test feasibility and approach for each specific complex feature
  - Test programming and screen design, performance

# Performance from one screen to the next - results

In Blaise version 5.13 the metadata size mattered greatly.

Going from screen one to screen two was fast in small datamodels, but quickly became very slow when we increased the array limits.

| Data model size | Average page loading time |       |       |
|-----------------|---------------------------|-------|-------|
|                 | 5.13                      | 5.14  | 5.15  |
| 1 (25 + 500)    | 0.162                     | 0.265 | 0.149 |
| 2 (50 + 25K)    | 2.086                     | 0.382 | 0.419 |
| 3 (50 x 500)    | 2.721                     | 0.459 | 0.749 |

- The Blaise team at SN found what made this slow and made quick and major improvements in version 5.14

# Grids and performance

Our other area of concern for Blaise 5 performance: grids

- Grids are very common, especially in CAPI interviews
- Very fast in Blaise 4.8, due to 'graphical simplicity' – just one active element
- Slower in Blaise 5, due to the possibility of having different elements on the screen, moving positions of lines and cells, ...
- We want to learn the best way to program grids for acceptable performance
- So: we created prototypes with different numbers of rows and columns, and different complexity

# Grids and performance - results

In Blaise version 5.14 grids were not very fast – either in page load time or in moving from one cell to another.

| Version     | # of rows | Avg. field loading time, in seconds | Avg. page loading Time, in seconds |
|-------------|-----------|-------------------------------------|------------------------------------|
| 5.14 / 5.15 | 1         | 0.004 / 0.003                       | 0.955 / 0.486                      |
| 5.14 / 5.15 | 5         | 0.006 / 0.002                       | 1.207 / 0.642                      |
| 5.14 / 5.15 | 10        | 0.007 / 0.002                       | 1.545 / 0.961                      |
| 5.14 / 5.15 | 15        | 0.006 / 0.002                       | 1.822 / 1.287                      |
| 5.14 / 5.15 | 20        | 0.008 / 0.002                       | 2.209 / 1.611                      |
| 5.14 / 5.15 | 25        | 0.008 / 0.002                       | 2.476 / 1.915                      |

- The Blaise team at SN was able to make pretty drastic improvements in version 5.15

# Conclusions

- Creating small prototypes is a good way to gauge the Blaise 5 performance on different crucial elements
  - And also a great way to communicate with the Blaise team at Statistics Netherlands
- We saw very meaningful improvements in Blaise version 5.14 and 5.15 in the areas where we had concerns
- The noted improvements are not just for CAPI, they were made to benefit all interviewing modes
- A big thank you to the Blaise team at SN for their responsiveness, and improving the Blaise system for all users!