

THE USE OF BLAISE FOR ADMINISTRATIVE PURPOSES

Johan P.M. Lammers

Netherlands Central Bureau of Statistics, Heerlen

In the past years most of the applications built with Blaise were of a statistical nature. This is not surprising regarding the goals for the development of Blaise. Most of the checks and corrections on the collected statistical information had to take place interactively and simultaneously while entering the relevant data. A large number of the checks can actually be executed this way by Blaise.

However, the process of collecting, checking and correcting statistical data comprises more than just processing the collected data. Efficient processing requires some kind of administrative support system. Such a system can improve both the data collection process and the quality of the collected information. Vital for the whole statistical production process is a close and good link between the statistical system (usually implemented in Blaise) and the administrative system.

A link between a statistical system and an administrative system can be realized in several ways. Depending on the information needs of both systems, one can choose between:

1. **Linking based on batch-wise processing:** All data is processed in batch by one system, and then all data is processed in batch by the other system. This way of working offers the possibility of checking the data and printing the errors on error-lists. Like in the past, these lists will then be used to correct the relevant data.
2. **Linking based on both batch-wise and interactive processing:** the data in one of the systems is frozen while the other process can interactively use these frozen data for checking and correcting.

The use of Blaise for administrative purposes

3. Linking based on interactive processing: both systems can interactively use each others information. This approach has the advantage that the information is always up to date.

Blaise 2.x offered the possibility to realize each of the above-mentioned approaches to linking systems. The second approach requires an external data file while for the third approach there is a necessity that both processes make use of Blaise (and can use each other as an external Blaise file). This aspect causes a new problem: is Blaise suitable to implement administrative systems? In order to judge this suitability, an inventory is required of the characteristics of administrative applications, the possibilities of Blaise to support those characteristics and, if possible, the experience in this area. The rest of this paper will deal with these topics.

The administrative system must register for each unit to be observed the source of information, the way the information is collected, and the result(s) of the collection attempt. This general description covers a large variety of collection strategies. Depending on what is possible in a specific survey, use is made face-to-face, telephone or mail interviewing, while it is also not uncommon to use secondary information.

The way of data collection is also reflected in the characteristics of the administration system that is implemented. In the context of this paper I will not discuss these differences, but I will restrict myself to general characteristics of such systems that are required, whatever way of data collection is used. In this respect, administrative systems can be characterized by:

1. A large degree of repetition due to the fact that activities concerning a single unit are carried out at various moments in time. It means that the data concerning a unit will be changed often and in different ways. Statistical systems do not have this characteristics. In principle, a unit in a statistical system will be manipulated only once. The data are checked and corrected and then they are ready. Blaise is developed for this kind of activities. Administrative manipulations are necessary:

The use of Blaise for administrative purposes

- to define the way in which the information is to be collected (how to do it and where to do it);
- to indicate the start of collection phase;
- to indicate the end of the collection phase;
- to manage recalls;
- to make changes in the information required for the collection phase (new addresses, telephone numbers, etc);
- to re-define the way in which the information is to be collected (if a previous method failed);
- the nonresponse administration, etcetera.

Each of these manipulations only concern a limited set of items in the administration, while other items always remain unchanged (they are 'read-only').

2. Manipulations should be carried out in a quick and simple way. The checks on these manipulations are simple but they vary by type of manipulation (see also 1.). Each type of manipulation requires an adequate protection concerning the set of items that has to be changed and to set of data that cannot be changed. Part of the manipulations can be carried out using batch-processes because all the relevant information is already available within the system.

Administrative treatment of information differs from statistical treatment in several respects. The largest problem arising regarding the suitability of Blaise for administrative treatment, is the combination of checks concerning the different types of manipulation and the desired protection of the data. Ideally, every type of manipulation should have its own routing. However, Blaise supports only one route, and that is the route used to get the answers to the questions in the questionnaire.

Another property of Blaise is that answers to questions that are on the route are set to 'empty'. From a statistical view this is correct. In administrative applications there may be different routes for different manipulations, but changing the route structure may not affect the answers to questions not on the route. Therefore, Blaise seems less suitable for this kind of activity.

The use of Blaise for administrative purposes

Still, possibilities exist to solve this problem using a less obvious implementation of Blaise. This implementation contains not one but two sets of related questions. The first set contains questions with the attribute SCREEN and serves the interactive treatment of different types of manipulations. The second set contains the attribute HIDDEN in order to save all the important data, regardless the routing of the "screen"-questions. This second set is part of every possible routing. The check paragraph specifies the relationships between both sets.

In order to illustrate the previously mentioned technique, a simple sample Blaise questionnaire will be described in which two different types of administrative treatment can be carried out.

```
QUESTION ADMISYMP "Administrative application, Blaise symposium";
```

```
QUEST
```

```
  Id           : STRING[1] (KEY);
  H_Mail_Out   : DATETYPE (HIDDEN);
  H_Mail_Back  : DATETYPE (HIDDEN);
  Manipul      : " //Mail out date : $H_Mail_Out //Mail back date: $H_Mail_Back////"
                : (Mail_out "Mail out", Mail_back "Mail back") (SCREEN);
  S_Mail_Out   : DATETYPE (SCREEN);
  S_Mail_Back  : DATETYPE (SCREEN);
```

```
ROUTE
```

```
  Id; Manipul;
  IF Manipul = Mail_Out THEN S_Mail_Out ENDIF;
  IF Manipul = Mail_Back THEN S_Mail_Back ENDIF;
  H_Mail_Out; H_Mail_Back;
```

```
CHECK
```

```
  IF S_Mail_Out = EMPTY THEN
    COMPUTE S_Mail_Out:= H_Mail_Out;
  ENDIF;
  IF S_Mail_Back = EMPTY THEN
    COMPUTE S_Mail_Back:= H_Mail_Back;
  ENDIF;
  IF (H_Mail_Out <> S_Mail_Out) AND (S_Mail_Out <> EMPTY) THEN
    COMPUTE H_Mail_Out:= S_Mail_Out;
  ENDIF;
  IF (H_Mail_Back <> S_Mail_Back) AND (S_Mail_Back <> EMPTY) THEN
    COMPUTE H_Mail_Back:= S_Mail_Back;
  ENDIF;
```

```
ENDQUEST.
```

The use of Blaise for administrative purposes

This questionnaire will only be effective if it is turned into a CAPI- or CATI-program, because they apply active routing. A CADI program will always produce routing errors.

The desired functionality may be achieved in this way! For each type of manipulation a specific route is possible, and at the same time the administrative information is saved and is ready to be read whenever it's necessary. The administrative information is available in part of the questionnaire by means of the set of hidden questions.

An elegant way to show this information is to include the hidden questions in the question text of a central question to guide the different routes (in this example the hidden questions are included in the question: Manipul). Each type of manipulation starts with this question and in most of the error situations Blaise will by default jump to this question.

Furthermore, a very important aspect of administration is the use of the registered data. Except for checking and correcting purposes in single cases, the information can also be useful in several other situations, for example reports about the progress of the collection process, lists of units not yet completed, information for recalls, general management information, etc. An administrative application that uses Blaise should also be able to produce these kinds of information. The tools that accompany Blaise, Abacus and Manipula, offer these possibilities, because they operate directly on one or more Blaise data files, index-sequential files and/or ASCII files, and where selection, projection and combination of information is possible.

The department of "Economic Censuses" has experienced with the idea of administrative systems during the last 2 years. The statistical applications were accompanied by two administrative applications (a general registration and a specific registration of interview visits to companies by CBS employees). These applications were linked directly as external Blaise data files. Batch manipulations were implemented in Manipula. This resulted in convertible ASCII files. A subsequent ASCII-Blaise conversion made those transactions complete.

The use of Blaise for administrative purposes

For the surveys of the department, various data collection techniques are used. The department took care of maintenance of all these applications. This maintenance consisted of adjustment of external paragraphs for all the different statistical applications, the adjustment of programs that realised the manipulations in batch, and the adjustment of programs that generate progress reports (a different collection strategy often requires a different progress report). The maintenance could be realised relatively simple and in a short period.

Concerning data security, this approach offered the possibility to separate Blaise-applications, and to let management of the parts be carried out by those organisational units that carry responsibility for the relevant part of the data. All the security demands can be taken care off at the technical level of the operating system (MS-DOS/Novell), by setting the proper rights.

A problem was the sensitivity of Blaise for disturbances on the hardware-level and for incorrect user interrupts. In my opinion, this general problem becomes more serious when more and more Blaise applications are linked in the above mentioned way, because other applications do not work any more when one of the applications involved has a disturbance.

Summarizing one can say that Blaise can be used to implement administrative applications. The high degree of exchangeability of information between administrative and statistical applications offers a range of possibilities to use each others data. The administrative applications can be maintained well although the construction seems a bit artificial. This results in a flexible application. Security aspects on the logic level are no problem when the operating system can handle them. On the physical level however the security has to improve.