

## How SAS® BI May Help You to Optimize Business Processes

Plinio Faria, Sao Paulo, Brazil

### ABSTRACT

This case study shows how SAS® Enterprise Guide and SAS® Enterprise BI made it possible to easily implement reports of fraud prevention in BF Financial Services and also how to help operational areas to increase efficiency through automation of information delivery. The fraud alert report was made using a program developed in SAS Enterprise Guide to detect frauds on loan applications and later published in SAS® Web Report Studio in order to be analyzed by a team. The second example is the automation by SAS BI of a payment report that spent 30% of the time of a six-worker staff.

### INTRODUCTION

Reports may have many purposes like monitoring or helping readers to have insights. This case will focus on reports that support the implementation of small business process that gave important results. Since there is a comprehensive and updated database, it was possible to use SAS Guide and SAS Miner to generate reports to be published using SAS Web Report.

### FRAUD DETECTION

Retail banks analyze a large number of loan applications and the first analysis is often made by credit systems. These systems may automatically approve or refuse the application, but depending on the score they can also forward the proposal to a credit staff in order to be analyzed and like every manual analysis it may contain errors.

If a client has a refused credit request this person may submit a new proposal using different personal information in order to be approved, such as a higher salary.

Firstly, it was developed a program in SAS Enterprise Guide to create a table containing observations where the proposals contained one of following features:

- Income or salary increase in a short time
- Occupation change
- Address or telephone changes
- The vehicle dealer was associated to frauds

The alert report database was generated using an statistical model. Despite the tool used, SAS Guide or SAS Miner, the previous preparation of the data is essential for the success.

It is necessary to create dummy variables (i.e. a binary categorical variable) for each suspicious behavior because a proposal is represented by one observation in the table and a the data must be grouped by client to detect a fraud behaviour. For example, if a client submits an increasing sequence of incomes (like shown in the figure 1), a regression model will not detect this increasing sequence.

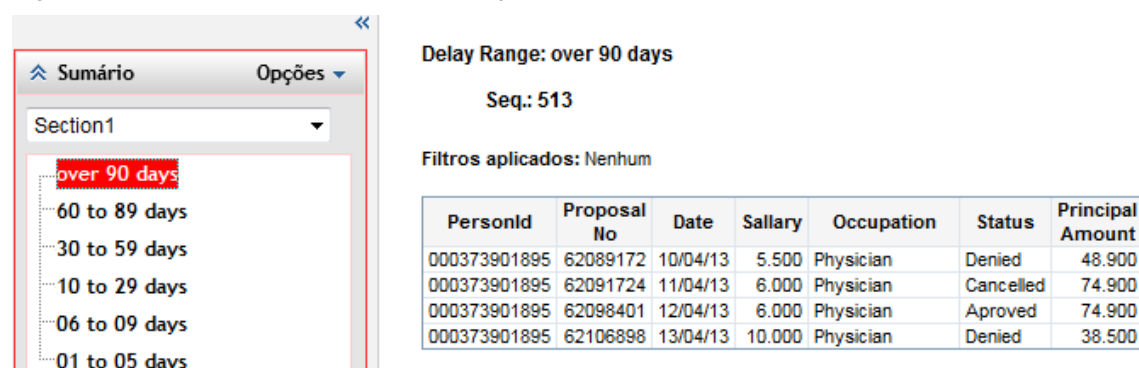
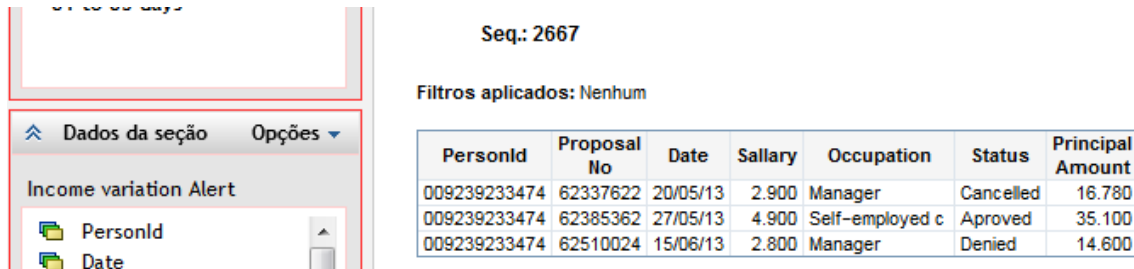


Figure 1. Salary change

The occupation must have a special treatment since the same profession may be described in different ways, e. g. an engineer may also be a manager. But the occupation dummy variable must be updated to TRUE or 1 if the occupation changes from physician to lawyer.



Seq.: 2667

Filtros aplicados: Nenhum

PersonId	Proposal No	Date	Salary	Occupation	Status	Principal Amount
009239233474	62337622	20/05/13	2.900	Manager	Cancelled	16.780
009239233474	62385362	27/05/13	4.900	Self-employed c	Aproved	35.100
009239233474	62510024	15/06/13	2.800	Manager	Denied	14.600

**Figure 2. Occupation change**

This Fraud Alert Report indicated in average 120 proposals a month and 27% where cancelled after the detailed analysis by Fraud Prevention department.

## AUTOMATED REPORT

Before the automation of a payment report, a six-worker staff had to manually gather information from different data sources and 30% of the time was spent answering e-mails and phone calls about payment information requested by sales workforce.

In order to automate the report all payment data were stored in a single SAS database and using additional operations information that was already available it was possible to create a much more comprehensive report in SAS Web Report that was easily accessed by end-users.

The new report had about 3,000 visitors in a month and the staff was set free from that task. The paper “How to Measure the SAS BI Audience and Discover Information Needs” shows how to identify the visitors.

## CONCLUSION

The business area needs are very dynamic and quite often the IT departments are not able to fulfill those needs.

Using a self-service business intelligence tool like SAS BI the end-users are able to develop their own dashboards and reports without direct TI involvement. And moreover, these tools may help quickly implement business process with low cost.

## RECOMMENDED READING

Sarma, Kattamuri, Predictive Modeling With SAS Enterprise Miner: Practical Solutions for Business Applications. SAS Institute, 2007

Faria, Plinio. “How to Measure the SAS BI Audience and Discover Information Needs”; *Proceedings of the SAS Global 2012 Conference*. Available at <http://support.sas.com/resources/papers/proceedings12/101-2012.pdf>

## CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Plinio Faria  
Rua Luis Coelho, 53 apto 1A  
Sao Paulo-SP  
Brazil  
Phone: + 55 11 9808-3632  
E-mail: [plinio.plinio@gmail.com](mailto:plinio.plinio@gmail.com)

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration.

Other brand and product names are trademarks of their respective companies.