The SECRETS Banking Expert System 
from Phase 1 to Phase 2 

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Abstract. “SECRETS” is an expert system used by several Italian banks to 
support the analysis of client specific data. SECRETS performs a monitoring 
task, observing a well-defined data flow that takes place on a monthly basis 
between each bank and the Bank of Italy. As is typical in monitoring expert 
systems, SECRETS' main task is that of identifying the occurrence of meaningful 
situations, and in such cases to produce a detailed report to a user. SECRETS is 
implemented in Prolog, and is built around a meta-interpreter. To interact with the 
user, SECRETS employs a HyperText-like graphic user interface. A brand new 
SECRETS architecture is currently under implementation, that incorporates the 
original architecture in a Computer Supported Cooperative Workgroup framework. 

1 Introduction 

“SECRETS” is an expert system used by several Italian banks to support the analysis of 
client specific data. Unlike most banking expert systems, which are Mycin-like consulting 
and diagnostic systems that gather input data mainly from the user, SECRETS performs a 
monitoring task, observing a well-defined data flow that takes place between each bank and 
the Bank of Italy. As is typical of monitoring expert systems, SECRETS' main task is 
that of identifying the occurrence of specific situations, and in such case to produce a 
detailed report to a user. SECRETS is implemented in Prolog, and is built around a meta-interpreter. To interact with the user, SECRETS employs a HyperText-like graphic user interface. 

We found it rather easy to design and implement a system capable of performing smartly 
and efficiently. It was much more difficult to move it into the main stream of a user's 
everyday operations. We also found that monitoring tools should be given a wider 
independence of initiative and should be deeply integrated in the working of the user. For 
example, an expert system might decide when to employ e-mail to send a report to a user 
signalling a specific event about a client, and then remain pending for an answer before 
forwarding another message to a different user. 

For this reason we are now extending the SECRETS architecture in order to incorporate it 
into a GroupWare environment. Instead of dealing with a single user that uses a specific
(though well-integrated) system for a single task, we now deal with a network of "Actors" that cooperate on a much larger set of inter-related tasks. Actors are both the human users of the system and the so called Artificial Actors: Knowledge Based Systems with varying capabilities, from pure DB querying to typical expert system tasks.

Actors can be created to detect the occurrence of specific events, for sending alarms to other responsible actors, for decision support or for the coordination of complex tasks.

2 SECRETS Phase 1

SECRETS is an expert system originally developed by ICON srl with the participation of the "Banca Popolare di Sondrio" (BPS), an Italian credit institute. It later became a product sold on the Italian market.

2.1 The Specific Problem

Every month, each Italian banking institute is asked to send information about client loans to a section of the Bank of Italy named "Centrale dei Rischi" (Risk Centre, in the following "CR"). The bank must specify the loan granted and the effective usage of the client on different credit types. A month later, the Bank of Italy sends this data back, integrating it with loan data on every single client of the whole banking system (that is: all other Italian banks).

While the main goal of the CR is to monitor risk, it is possible to use CR data in a marketing-oriented manner, as one can guess clients' behaviour with competing banks and then decide appropriate marketing actions. The availability of this information becomes an important opportunity for the banks.

The typical user of CR data is the branch manager, who is expected to look at CR data every month. Central Offices are other possible users, as they may need to inspect the data on a much higher level of abstraction in order to identify general market trends so that they can take strategic decisions.

The main problem here is the amount of data involved. Each client is described monthly by about 70 numbers, and a reliable analysis should take into consideration a history of at least 6 months. All this amounts to hundreds of numbers every month for each client. Because of the problem size, CR data is often underused.

The typical solution provided by the DP Centre is to implement filter programs that for each client compute a given set of indicators. The resulting output is printed in a tabular form and lists those clients whose indicators suggest an anomalous situation.

While this solution is helpful in reducing the number of clients to inspect, it is not of much help in performing the real analysis that must take into consideration the effective data, and not just the computed indicators. It takes at least ten minutes to access and read the CR data of a client, and much longer to produce a written comment on it.