

## Scenario: Loan Application Processing (Extended Version)<sup>1</sup>

Among various services, Ribble bank provides loans to its customers. Within the bank, the loan department is the main entity responsible for processing loan applications. The *loan department* of the bank interacts with four parties:

- *The customers*: The loan department interacts with customers for the purpose of processing loan applications.
- *The Bureau of Credit Registration*: The loan department interacts with the Bureau of Credit Registration (BCR), a national entity that maintains information on bank loans. New loans are registered with the BCR by sending a message in a format imposed by BCR.
- *The notary*: The loan department may interact with a notary to draw up a legal statement about the loan. The bank submits loan data to the notary. Based on these data, the notary prepares the legal statements which then need to be signed by the customer and the bank representatives at the notary's office. The notary also allows the bank to schedule appointments for signing loan documents.
- *The payment department*: For the purpose of disbursing a loan, the loan department interacts with the payment department and with the customer.
- *The insurance department*: Some loans are coupled with an offer to insure the loan. For the purpose of selling a loan that is coupled to an insurance offer, the loan department interacts with the insurance department.

The loan department, the payment department and the insurance department are all departments of the bank.

### **Loan Application**

The loan application business process starts with the receipt of a loan application from a customer. It finishes when either the loan department rejects the loan application, or when the customer rejects the loan offer formulated by the bank, or when the loan is disbursed to the customer.

When the loan application is received from the customer, the loan department checks the credit of the customer with the BCR. Afterwards, the loan department either sends an offer or a rejection to the customer. If an offer has been submitted to the customer, the customer may either accept or reject the offer by notifying this to the loan department. If the loan department receives an acceptance notification from the customer, it may start an insurance contract for the loan and it may decide to write a deed and to send it to a notary for signature. In this latter case, the notary sends a copy of the signed deed to the loan department. Finally, the loan department submits a disbursement request to the payment department. When this disbursement request has been handled, the payment department notifies the customer directly.

### **Monthly payment**

The monthly payment process starts with an internal notification that a payment term is due for a given client. It finishes when the client is sent a normal bill or reminder, or when the money is collected directly from the account of the client. The process finishes when the client has paid all the bills or when the loan department establishes a violation of the original deed because of non-payment (i.e. in case the client has not paid his or her bills within the imposed deadline).

---

<sup>1</sup> This exercise is originally authored by Remco Dijkman, and later modified by Marlon Dumas and Marcello La Rosa.

When an internal notification is issued that a payment term for a particular client is due, there is a choice of steps that can be taken. If the client has authorized the loan department to directly debit his or her account, the loan department can do that. Otherwise, the loan department sends the client a bill, and, if the client has outstanding bills, also a reminder. If the client has not paid the bills for a long time, the department calls the client to make an arrangement for the client to pay. The department then writes a credit plan according to these arrangements and sends this to the client. If the client violates the credit plan the loan is cancelled and a “termination invoice” is issued (see below).

### ***Loan termination***

When the client issues a request to terminate the loan, this request is evaluated by the loan department to check if the loan can be terminated and to determine the early termination penalty and other charges that the customer may have to pay (in addition to the loan’s balance and any outstanding payments). The loan department makes up a “termination quote” to the client indicating the amount to be paid. If the client accepts this quote, the loan contract is cancelled and a “termination invoice” is issued to the customer. The customer must pay this invoice by the invoice’s due date.