

*University of Tartu – Institute of Computer Science*  
**Project – Insurance Claims Handling in Peak Demand Periods**

**Due date:** Thursday 19 December 2013 (10:00 AM Estonian time)

**Teams:** 4 members

**Worth:** 9 points

Your assignment is to simulate an “as is” and a “to be” business process model for insurance claim handling. A description of a scenario is given below, but this is only given as a source of inspiration for designing your solution. It is not the “ultimate source of truth”. In fact, the description may be ambiguous or inconsistent in some points and it is your task to resolve any ambiguities or inconsistencies.

## **Scenario: Insurance Claims Handling**

Cetera is the largest insurer in the Baltics. The vision of the company is to offer an outstanding level of customer service in a multilingual region.

Cetera is facing the following problem: Whenever there is a major event (e.g. collective acts of vandalism, storms, flooding and major fires), their insurance claim handling process is unable to cope with the ensuing spike in demand. As a result, the call centre agents and the insurance claim handlers start to bypass the process completely. On such occasions, the quality of customer service drops substantially. During the last three major events, the insurance company has observed that many unhappy customers terminated their insurance policies and move to other insurance providers. Some preliminary estimates suggest that as much as 1000 policies (worth on average 500 euro per year) have been lost as a result of poor customer service during periods of peak demand. Also, several claims have been accepted and paid during such periods that should not have been paid. It has been estimated that at least 50 claims have been wrongfully evaluated during peak periods, and the loss is on average 5000 euro per wrongfully paid claim.

The top-management is committed to address this situation by putting in place processes that can deal with sudden spikes in demand.

### **As Is Process**

A few years ago, a BPM consultant was engaged in order to model the claims handling business process in an “as is” manner. The consultant recommended to use the Event-driven Process Chain notation and a license for a commercial tool supporting EPCs was purchased as part of the consultancy deal. At the end of this engagement, the consultant presented the “as is” process to a group of managers, including the call centre managers, the back-office claims handling manager, the head of the claims department and a couple of senior claim handlers. The resulting model is presented in Figure 1.



**Figure 1. “As is” process model captured as an EPC.**

The process is structured into two parts: the “front-end” part deals with incoming calls, where customers lodge claims by giving all relevant details to a call centre operator. There are two call centres: one in Tallinn and one in Vilnius. The call centres have similar structure and call volumes (about 9000 calls per week for each call centre, counting only calls related to lodging a claim). At a high level, the “front-end” process is quite simple: incoming calls are taken by an operator who goes through a questionnaire with the customer, enters all relevant details, checks the completeness of the claim and registers the claim for processing. As indicated by the numeric annotations in the figure, the number of call centre agents in each of the two locations is normally 90.

In the “back-end” part of the process (after the claim has been registered), the claim goes through a two-stage evaluation process. First of all, the liability of the customer is determined. Secondly, the claim is assessed in order to determine if the insurance company has to cover this liability and to what extent. If the claim is accepted, payment is initiated and the customer is advised of the amount to be paid. The back-end activities are performed by claims handlers. There are 150 claims handlers in total. The average duration of each task (in seconds) is also indicated in the figure.

## Tasks

Cetera has hired your team in order to propose a “to-be” process model that can deal with sudden spikes in demand. During these demand spikes the number of calls raises from 9000 per week per call centre to 20.000 per week per call centre.

This initiative is part of a broader effort within Cetera to introduce business process management as a systematic discipline to improve and streamline their operations. Your team has proposed the “to be” process model presented in figure 2.

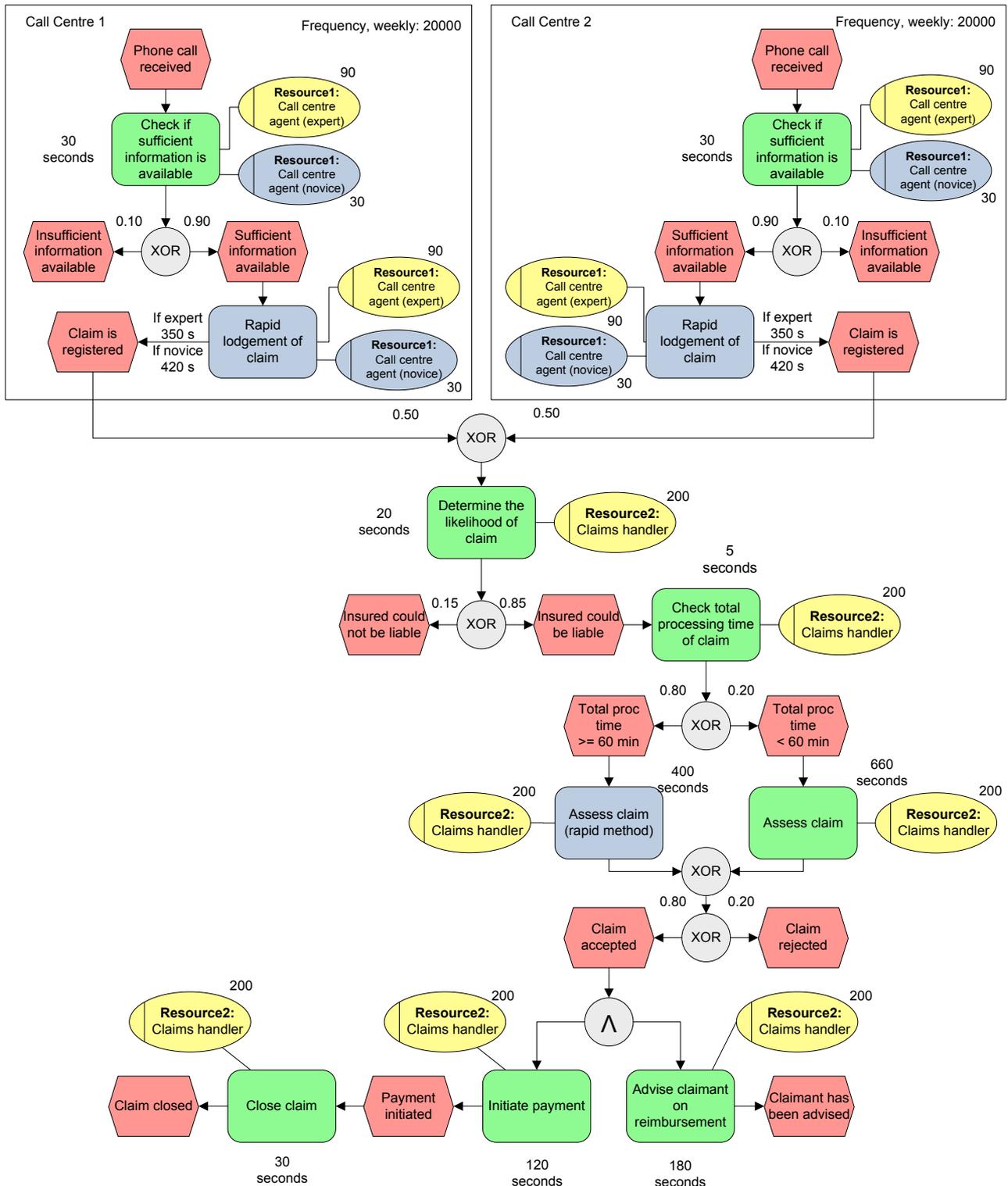


Figure 1. “To be” process model.

Your team has concluded that, in order to deal with demand spikes, Cetera has to redesign parts of the process. “Register claim” is replaced by a new procedure “Rapid lodgement of claim”, and an alternative procedure is performed in cases where the case has taken long time “Assess claim – rapid method”. Furthermore, your team advises Cetera to utilize additional resources (e.g. redeployment of employees from other departments) and to hire additional casual staff. All the enhancements are presented in figure 2, where functions and resources are blue.

Now, you have been instructed to conduct a simulation study in order to demonstrate the benefits of the “to-be” process model.

The deliverables of the project are:

1. An analysis of the costs and benefits of moving from the “as is” to the “to be” process in terms of the ability for the process to handle spikes in demand.
2. A process simulation showing the relative advantages/disadvantages of to-be process model with respect to the “as is” process model when it comes to dealing with spikes in demand.

## What to Submit

You should submit a zip file containing two CPNets (one for “as is” process and the other for “to be” process) and a report in PDF format. The report should contain the following sections, each on a new page:

1. A title page including the full names of all team – a table of contents is not required.
2. A description of your simulation study and the corresponding results.
  - Include the statistics generated with CPN Tools using at least three data collection monitors
3. A description of the simulation model: CP Nets, CPN ML code, etc.

## Additional Notes

- The report must be written in English.
- The report will not be made public.
- You are advised to read the following paper. You are allowed to take ideas from it: <http://eprints.qut.edu.au/6237/>