University of Tartu – Institute of Computer Science

MTAT.03.231 – Business Process Management

Bonus Task

Simulation of an Insurance Claims Handling Process in Peak Demand Periods

Due date: Tuesday 5 March (during the lecture slot)

Team size: between 2 and 5 members

Worth: up to 10 bonus points

The task consists in simulating a business process model for insurance claims handling. The business process in question is shown in Figure 1 using the EPC notation.
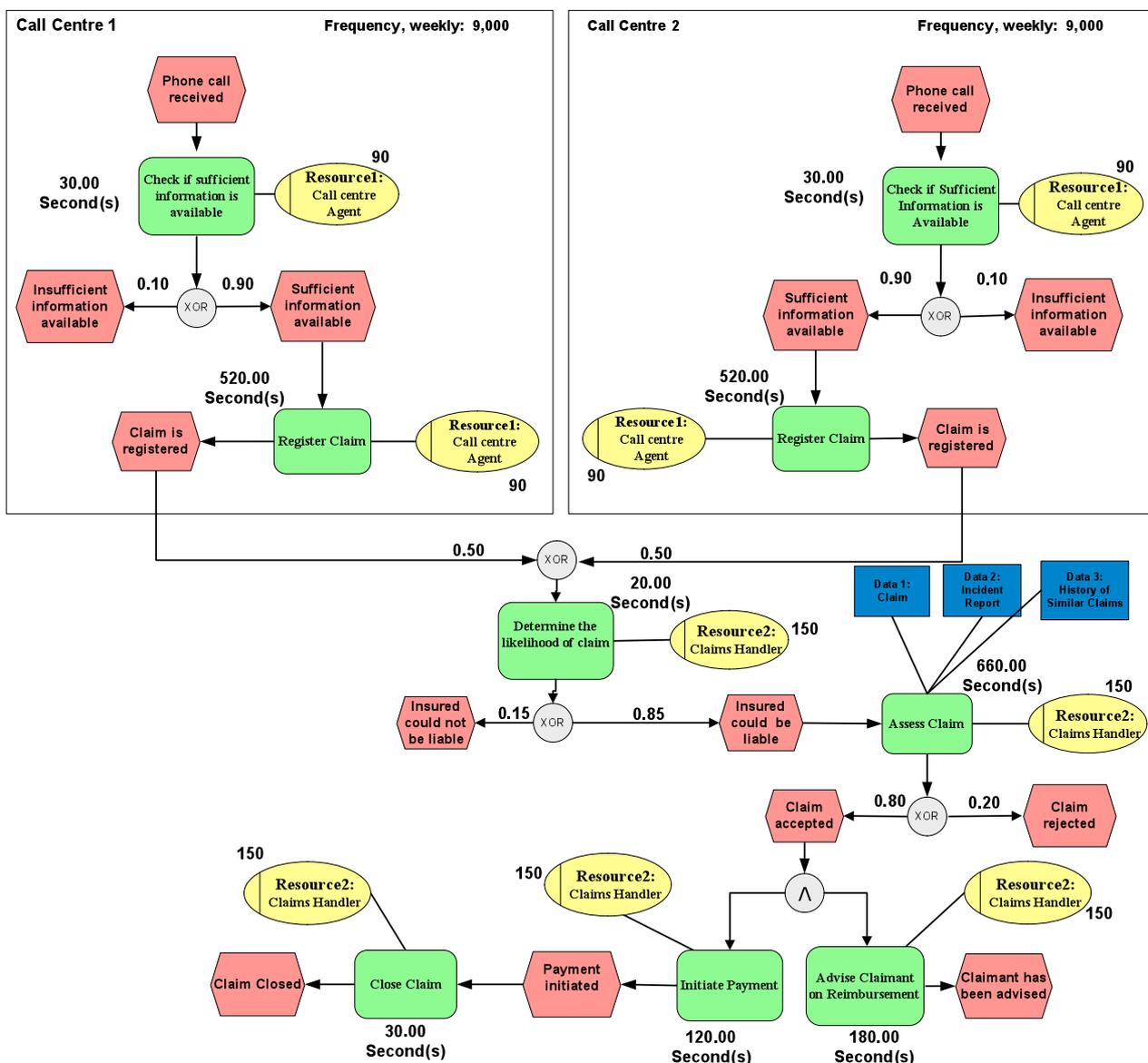

Figure 1. "As is" process model captured as an EPC.

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 center agents in each of the two locations is normally 90. The call centre works 8 hours per day.

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. Claim handlers work 8 hours per day. The average duration (service time) of each task (in seconds) is also indicated in the figure. You can assume that the service time follows a negative exponential distribution.

You can assume that the total salary cost of a call centre agent is EUR 2000, while total salary cost of a claim handler is EUR 2500 per month.

To prepare this simulation, you must use one of the following tools:

- ITP Commerce Process Modeler for Visio

- Business Process Visual Architect ("Simulacian" edition)

- Savvion Process Modeler

- IBM Websphere Business Modeler (available on CD from the lecturer thanks to IBM Academic Alliance)

- Oracle BPA

- CPN Tools (recommended only if you are familiar with Colored Petri Nets previously)

If you wish to use another tool not listed above, please ask the lecturer first.

Deliverable

- An oral presentation (5 to 10 minutes) of your simulation model and simulation results covering the following points: (i) How did you created the simulation model? and (ii) What were the main results you obtained from the simulation. Your presentation should include a short demo showing how the simulation model was created. In your presentation, you should also compare your simulation results with those reported in the following paper:

  - http://is.tm.tue.nl/staff/wvdaalst/publications/p362.pdf