Case Study

Exam Call 09.07.2025 – Volvo IT Incident Management

Description

In today's highly digitised world, IT support is a critical function for any large organisation. Efficient management of IT incidents, from initial reporting to resolution, has a direct impact on employee productivity, operational continuity and overall business performance. At Volvo IT Belgium, a key IT service provider for the wider Volvo Group, IT incident management is handled through a dedicated system called VINST (Volvo IT Service Now Ticketing).

The VINST system meticulously records every change in an incident's status and sub-status, as well as the individuals and teams responsible for handling it. This creates a comprehensive event log detailing the entire lifecycle of thousands of IT incidents. However, Volvo IT Belgium's process owner has identified several areas of concern. They suspect inefficiencies and variations in how incidents are handled, particularly with regard to:

- The frequency with which incidents are escalated to more specialised (second- and third-line) support teams.
- 'Ping-pong' behaviour, whereby incidents are repeatedly transferred between different support teams or individuals.
- Delays introduced by waiting for user feedback or actions.
- Inconsistent process execution across various IT departments within Volvo IT Belgium.

Gaining clear, data-driven insights into these areas is crucial for optimising the incident management process, reducing resolution times and ultimately improving IT service delivery.

The data is available to download here: BPI Challenge 2013 (Incidents) Log (available as part of a collection from the 4TU Centre for Research Data: https://doi.org/10.4121/uuid:500573e6-accc-4b0c-9576-aa5468b10cee).

Assignment

Describe the Knowledge Uplift Trail that enables you to answer the analytical questions relating to Volvo IT Belgium's incident management process.

In particular, define and perform the following analytical steps using process mining:

- Filtering and preparation: Propose and justify any filtering steps to remove irrelevant or noisy data from the event log that could hinder a meaningful analysis (e.g. cases that are very short, outlier durations or specific activity transitions). Identify how to segment the log to distinguish cases handled by different support lines or departments.
- 'Ping-pong' behaviour detection: Analyse whether "ping-pong" behaviour (repeated transfers back and forth) occurs between different teams or support groups. Identify the most common pairs of teams/groups involved in such 'ping-pong' behaviour and quantify the frequency and duration of these handovers.

- Cross-Department Conformance: Assess whether process instances conform across different departments. Perform process discovery for at least two significantly distinct departments/support groups identified in your filtering step.
- Identify potential improvements. Based on your findings from the above analyses (ping-pong, and cross-department conformance), suggest concrete improvements to enhance the efficiency and effectiveness of Volvo IT Belgium's incident management process. These could include suggestions for automation, reordering steps, training or clearer handover procedures.