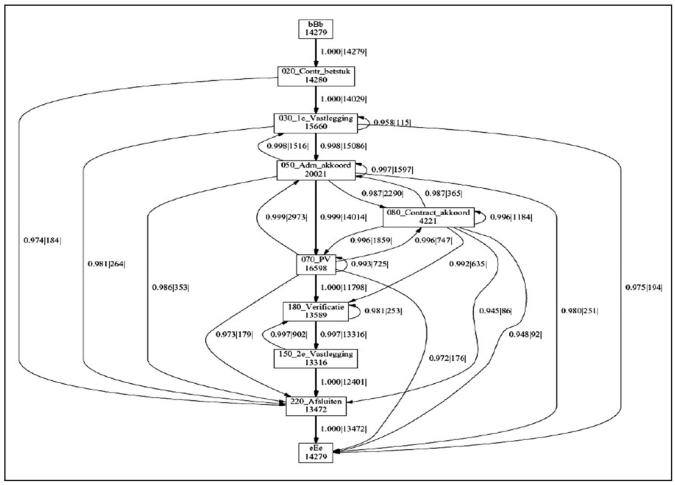
RWS's Problem

ProM process mining workbench

RWS's Problem

Rijkswaterstaat (RWS) is the implementing organization of the Dutch Ministry of Transport, Public Works and Water Management. To perform its functions, the RWS subcontracts work to various parties such as road construction companies, cleaning companies, and environmental bureaus. Also, it purchases services and products to support its construction and maintenance activities. In an effort to unify and improve their invoice processes, RWS developed a proprietary workflow system and was interested in the effect of introducing the system. Before introduction of the system, RWS was faced with many late payments and too many ad-hoc processes. Therefore, process mining was used to analyze the invoice process workflow in one of RWS's offices.



Process Mining

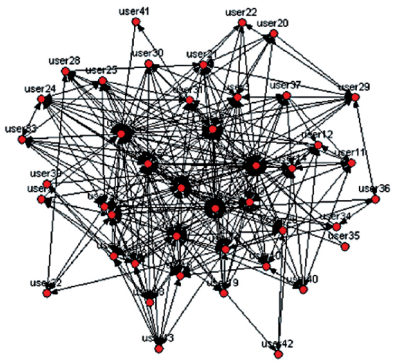
The goal of process mining is to extract information (e.g., process models) from event logs produced by a wide variety of systems ranging from enterprise information systems (e.g., based on WFM, ERP, SOA technologies) to embedded systems (e.g., medical systems, high-end copiers, etc.). Process mining allows for the discovery of processes, e.g., it is possible to automatically generate process models based on event logs expressed in various languages. Moreover, process mining can also be used to discover other aspects such as social networks, organizational structures, decision rules, bottlenecks, etc. without the need for people to model things beforehand. However, if models are present, process mining can be used to check conformance. This way it is possible to see where the actual process deviates from the model and how severe these deviations are.

ProM

ProM is an open source framework for process mining supporting process discovery and conformance checking. It is the leading process mining tool supporting a wide variety of techniques and modeling notations. Using ProMimport it is possible to extract data from different systems. Moreover, ProM interfaces with many other process modeling and analysis tools. In different projects ProM has shown to be able to deal with large event logs and extract meaningful information.

Results

Using the event logs of RWS and ProM, the invoice processing workflow was analyzed in detail. It was possible to discover the actual process. The discovered process was used for performance analysis based on real data. This revealed the bottlenecks in the process. Moreover, service levels were analyzed and compared with the situation before the workflow systems was introduced. Analysis showed that late payments were indeed reduced. In this particular case study there was a lot of emphasis on the organizational perspective. Based on the logs, social networks were constructed showing how people worked together. Interesting facts were revealed, e.g., some people did not play the central role that was expected. Based on these insight RWS took steps to improve the process.

More Information

About process mining: www.processmining.org
About ProM: prom.sf.net