Tying Process Model Quality to the Modeling Process: The Impact of Structuring, Movement, and Speed

Jan Claes[1], Irene Vanderfeesten, Hajo A. Reijers, Jakob Pinggera, Matthias Weidlich, Stefan Zugal, Dirk Fahland, Barbara Weber, Jan Mendling and Geert Poels

[1] Ghent University, Belgium
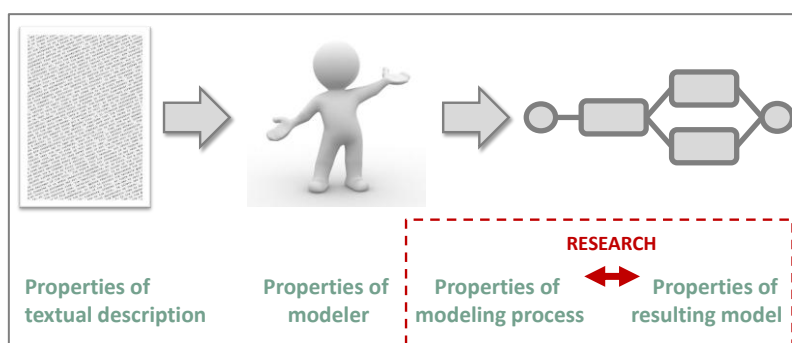`jan.claes@ugent.be`

1   Introduction

Fig. 1. Research into the process of process modeling

In a series of experiments, master students of a Business Process Modeling course at Eindhoven University of Technology were asked to construct a process model of a case from an informal description. The modeling was performed in the Cheetah Experiment Platform [1], that presents a simple modeling environment with a subset of the BPMN notation to the user, and that records every operation on the modeling canvas. The data of all model construction operations was then compared to the properties of the resulting process model to derive hypotheses that form the link between the process of process modeling and the modeling result (i.e., the process model). See Fig. 1.

2   Contributions

The data of the modeling operations of the modeler was visualized in a PPMChart per modeler [2]. Comparing different PPMCharts allowed for graphical discovery of modeling patterns among the participants. Fig. 2 shows an example of a PPMChart. Each line contains one or more colored dots that represent all operations for a specific model element (e.g., create, move, etc.) The position of the dot is according to a horizontal time axis.
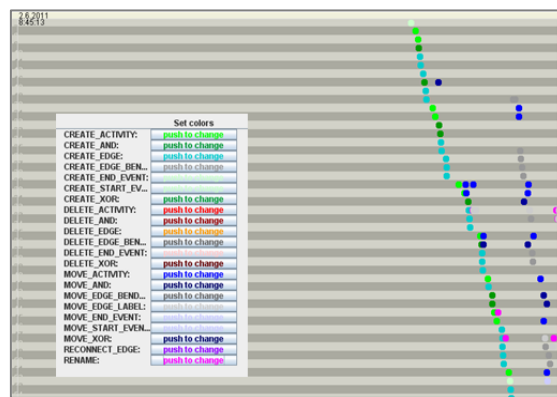

Fig. 2. PPMChart

The visualization was used to discover patterns for which the resulting process model was evaluated according to quality characteristics. Three concrete hypotheses were formulated and presented as contribution of the paper to be corroborated by statistical analysis in future research.

(i)   *Structured modeling is positively related with the understandability of the resulting model.*
(ii)   *A high number of move operations is negatively related to the understandability of the resulting model.*
(iii) *Slow modeling is negatively related to the understandability of the resulting model.*

References

1. Pinggera, J., Zugal, S., Weber, B.: Investigating the process of process modeling with cheetah experimental platform. Proc. ER-POIS '10. pp. 13–18 (2010)
2. Claes, J., Vanderfeesten, I., Pinggera, J., Reijers, H.A., Weber, B., Poels, G.: Visualizing the Process of Process Modeling with PPMCharts. Proc. BPM '12 Workshops. (2012)