

# Business Process Simulation and Analysis

In today's dynamic business environment, organizations must continually adapt and improve their processes to maintain a competitive edge and drive innovation. However, such changes come with inherent risks that can affect process outcomes in unpredictable ways.

Business process simulation has emerged as a valuable discipline in business process management to mitigate these risks. By representing business processes as computer simulation models, various redesign scenarios can be tested and analyzed prior to actual implementation. This approach allows organizations to anticipate the potential impact of changes without disrupting ongoing operations.

Using process mining techniques, the results of these simulations can be thoroughly analyzed to identify potential bottlenecks, resource constraints, and inefficiencies that may result from proposed changes. By comparing the performance and efficiency metrics of potential redesigns to existing processes, experts can make informed decisions to optimize business processes.

While business process simulation techniques provide valuable insight into the potential impact of process changes, existing tool support is often cumbersome, error-prone, or poorly integrated. To address this, the BPT Chair is developing OpenBPT, a platform for the international business process management community to foster the development of new tools and support education. The platform aims to facilitate the integration and use of new tools by providing a flexible architecture and a unified user interface.

Your task in this master project is to explore business process simulation and extend OpenBPT with simulation capabilities. Possible topics include:

- Facilitating process simulation model creation
- Integrating a simulation engine
- Implementing outcome analysis techniques
- Automatically suggesting changes

If you have any questions about the project, feel free to contact Tom Lichtenstein or Rana Hussain.

## Contact

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