This documents “Trends In Business Process Analysis From Verification To Process Mining" by Wil M.P. van der Aalst from the Department of Mathematics and Computer Science, Eindhoven University of Technology, provides an in-depth analysis of business process analysis, focusing on the transition from model verification to process mining. The author highlights the progress made in process verification, with the ability to verify complex models like SAP's reference model. Additionally, the author discusses the increasing use of event logs, which provide valuable data for process mining, revealing discrepancies between idealized models and real-world processes. The paper emphasizes the importance of models in information systems, especially in ERP systems like SAP, and their role in specifying, analyzing, and controlling business processes. It also discusses the benefits of using models for process mining to discover real-world process discrepancies and improve process understanding and optimization.

Wil M.P van starts by discussing the role of models in information systems and how their importance is expected to increase. Models are used to specify systems and processes and can be used for their analysis. Some information systems are even driven by models, such as workflow management systems. However, the general vision of a "Model Driven Architecture" (MDA) is not yet practical for many applications, except in specific niches like workflow technology. In the context of Enterprise Resource Planning (ERP) systems like SAP, models play a less prominent role, with most of their functionality still hard-coded. For example, the well-known reference model of SAP contains 604 Event-driven Process Chains (EPCs) modeling different business processes but are not used for enactment and serve more as background information. The paper suggests that ERP systems like SAP should start using models as a starting point rather than just to document things afterwards. Configurable process models are proposed as a starting point, allowing for models to be configured to fit a certain business context.

Secondly, focuses on the analysis of business processes, providing an overview of recent developments in this area. It discusses two types of analysis: analysis at design-time and analysis at run-time. At design time, the only basis for analysis is a model, such as a workflow (re)design. At run-time, one can also observe the actual behavior and use this as input for analysis. He gave an overview of different types of analysis techniques, including validation, verification, and performance analysis. It discusses the importance of analyzing processes before they are put into production to avoid errors and inefficiencies. He explained the importance of event logs in process mining and how they can be used to analyze systems and their actual use. Process mining describes a family of a-posteriori analysis techniques exploiting the information recorded in the event logs. He gave us examples of process mining techniques, such as process discovery, conformance checking. He presents the different types of discovery techniques, such as the α-algorithm, which constructs a Petri net model describing the behavior observed in the event log. Conformance checking is used to check if reality conforms to the model, while extension involves extending a given process model with additional perspectives based on event logs. He concludes by discussing the need for mature business process analysis tools and the potential of process mining tools like ProM to address these needs.