



Process Mining: What to look out for when collecting process data by machine

Misconceptions About Process Mining

A central question of entrepreneurial action which decides about success or failure is to find the best way to reach the value creation goals, if they are clearly defined.

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This challenge is also taken up by the analytical approach of process mining. The basic idea is impressive. From the machine-driven collection of logged event data, statements are derived for an automated analysis of business processes. Free of any conceptual and subjective transfiguration - as they actually took place. A lifelike image of IT system processes at the push of a button.

This method sounds simple, target-oriented and gives hope to be faster and more efficient than any manual or interview-based inventory of operational workflows (as-is analysis). Not least thanks to this idea, process mining has found a firm place in the analytics of business application systems. This is because process mining helps to discover, reconstruct and monitor real processes close to reality.

Historically, this method is not a new approach, but looks back on many years of development. Opinions differ as to exactly when the idea of process mining emerged, whether it goes back to the 1990s or emerged in the 2000s from research projects that pursued the goal of de-

veloping new meta-models and ontologies for process flows from workflow-based analyses. There are many reasons for conducting such an investigation: existing processes are increasingly inefficient and costly due to gradual changes in requirements over time; process flows and responsibilities are unclear, especially against the background of distributed organizational units; there is heterogeneity within a group of companies, perhaps due to growth; company-specific or vendor best practices are not realized; there is a low degree of standardization, possibly due to unstructured and non-strategic business requirements; the degree of automation to reduce process costs is too low or process costs are not distributed according to their benefits. This is more than enough motivation to strive for complete transparency of business processes.

Event logs and visualization

However, does process mining really do justice to these tasks and the current hype? How meaningful and reliable are the re-

sults of process mining? And is every process mining approach the same? To answer these questions, a basic understanding of how process mining works is required. Event logs, which log the process usage by employees, form the information basis. This allows visualizations to be generated that provide a correct and up-to-date overview. This is exactly the strength of process mining, because by using actual business transaction data, an objective picture of the process can be created. The extraction of this information is usually done either by a full extraction or by a direct connection to the system under investigation. In any case, complete access to all individual document data is required to ensure completeness of the process chains and to be able to process the initial data preparation in an analytically meaningful way. The focus is on the transaction data for which a context is subsequently created (filtered), for example, by means of master data such as customers, materials or organizational units.

An automatic, generic structuring and classification of the data as activities and paths seems rather cumbersome and the

question arises whether the consideration of event logs does not disregard meaningful aspects of an SAP system in particular, such as the parameters of the system configuration. This is exactly where classical process mining reaches its limits - a misunderstanding that will be examined together with some others in the following.

Six misconceptions

Misconception 1: Process mining provides fast problem diagnosis and bottleneck detection. The basic assumption that weak spots in day-to-day business are unknown and must first be identified has been disproved in many projects. An SAP system provides the individual employee with a solid overview of the imbalances in his or her work area, albeit not of structural causes and the full extent of their integration effects. Accordingly, statements made initially often belong to the realm of trivial observations or deliver false positives. Costly investigation iterations are the result. This can be remedied by a comprehensive analysis model that is based on a broad set of key figures and is available right from the start. However, this model must be compatible with both the company's specifics and the target concepts stored in the software's customizing. Otherwise, there is a risk of cost-intensive efforts for subject matter experts and subsequent adjustments of the analytical target parameters.

Misconception 2: Process mining provides a quick overview. Many process mining providers deliver the technical possibility for the analytics but include only simple templates without orientation to the specific customer situation or the differentiated possibilities of the software. This design is also often shifted to the area of costly consulting add-on services. It is advisable to check here exactly how extensive the available analytical content is and which competencies come into play at what cost with corresponding service offerings.

Misconception 3: Process mining helps to assess compliance, risk or other issues. Of course, process mining can also help to assess opportunities and risks of business activities, as well as to investigate compliance. After all, the analysis accesses the totality of process information. But the application of test logic requires sound data transformation, analysis, preparation and evaluation, as well as consideration of the individual characteristics of what company-specific risks or requirements are in the first place. Accord-



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dingly, these statements are also strongly dependent on the underlying reference content or supplementary services. Sometimes, promises made by software manufacturers leave the actual possibilities of this approach unfulfilled.

Misconception 4: Process mining allows process data to be consolidated across multiple systems. The idealistic expectation of a central ERP system is regularly not reality, especially in large companies or organizations. In practice, there are distinctive system landscapes with distributed processes. For their analysis, classical process mining is rather unsuitable, because the reconciliation of cross-system process chains is associated with high effort, especially in the case of variant-rich process logics and heterogeneous technical systems. A direct comparison option at the level of system technology and organizational units could help here and also offer approaches for consolidation and harmonization projects, but this is available in very few cases.

Misconception 5: Process mining provides an end-to-end view for businesses. The desire for a complete view of all business processes and all work steps involved in a corporate process is understandable but requires multiple levels of process analysis. Especially for documentation purposes, test efforts and change discussions, such scalability is useful and desirable, especially for integrated and heterogeneous areas, such as links between logistics and finance. However, building such a representation is very complex and requires a good amount of cross-disciplinary knowledge. For this

reason, process mining rarely uses end-to-end models, but rather fragmented sub-processes.

Misconception 6: Process mining supports the automation of processes. Automation in the sense of the elimination of functions or process steps that are no longer executed by dialog users, but by the software itself, can certainly be measured by process mining approaches. However, the implementation and improvement of these processes ultimately fall into the realm of consultant knowledge, all the more so because clear coordination of the involved company departments and their internal work processes is required here.

Reference models

In summary, rather content-related aspects should be used for the suitability assessment of specific process mining approaches. First, it is the analytical reference models for structuring the process data and deriving business statements that set the quality benchmark. This includes, in particular, the availability of software-based target models as well as correct and comprehensive key figure systems that can look behind the scenes.

In addition, it is the type of extraction, transformation and preparation of the technical database that determines the quality and correctness of the evaluation options. A fully comprehensive database does not always meet the cost/benefit requirements and requires some work and expert knowledge to develop the desired informative value. Enriching the event log information with change histories, benchmarking or configuration information can be extremely helpful here and significantly accelerate the gain of knowledge.

Nevertheless, the necessities of finding good consultants and internal resources remain, and elaborate modeling efforts for customization must be carried out. As a tip for the initial deployment, it is advisable to have a clear focus in your process mining project. First, obtain an overview of process usage. Then examine the existing content in greater depth where there are highly individual processes. However, it is crucial that you keep the purpose you have defined in mind. After all, the ultimate goal is to invest in effective solutions to problems, not in a trend.

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