How Process Mining Can Help Manufacturing and Assembly Lines

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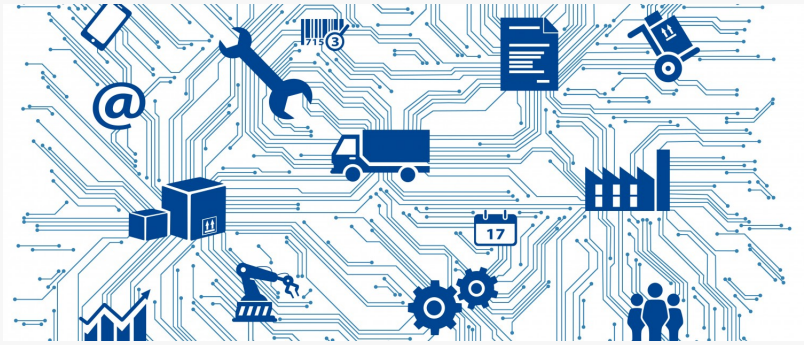

Process Mining

AUSTIN, TX, USA, August 28, 2017 /EINPresswire.com/ -- As industrial manufacturing companies implement a variety of business software tools, each of these systems generates a historical record of data and error reports that are proving to be a boon for manufacturing analytics professionals. Using an approach known as Process Mining, operations analysts can collect and analyze the massive amount of big data in manufacturing systems to gain insight into existing business processes, identify problems such as bottlenecks, and find ways to improve overall operational workflow.

> Most business operations professionals welcome Process Mining as a valuable new addition to their business analysis toolkit."
>
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The emergence of Process Mining as a standalone discipline is a fairly recent development in the business operations management realm. In this article, we'll attempt to answer the frequently asked questions about what process mining is and how it fits into the world of manufacturing and assembly lines. Let's get started!

What is Process Mining and Where Does It Fit Within the Broader Business Management Landscape?

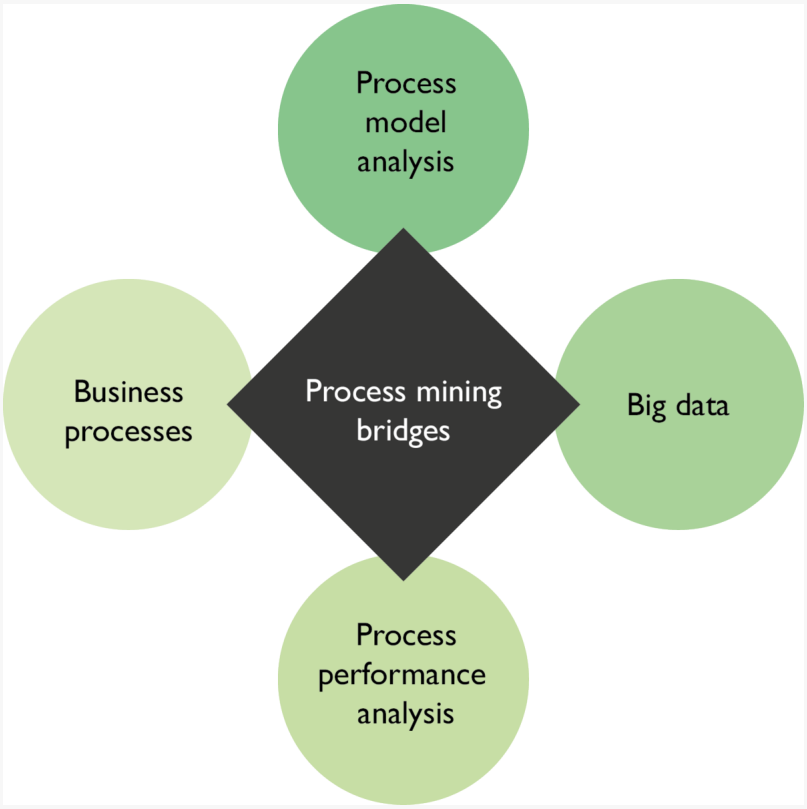
At its most basic level, process mining is a research discipline that scoops up event data logs produced by a variety of heterogeneous enterprise systems in order to find useful information about the current state of actual business processes within the organization.

From this simple definition, it would be easy to come to the conclusion that Process Mining is the same as what's commonly referred to as Big Data analytics. Both disciplines seek to identify cause and effect relationships that affect business performance, but there's a major difference between the two in terms of scope.

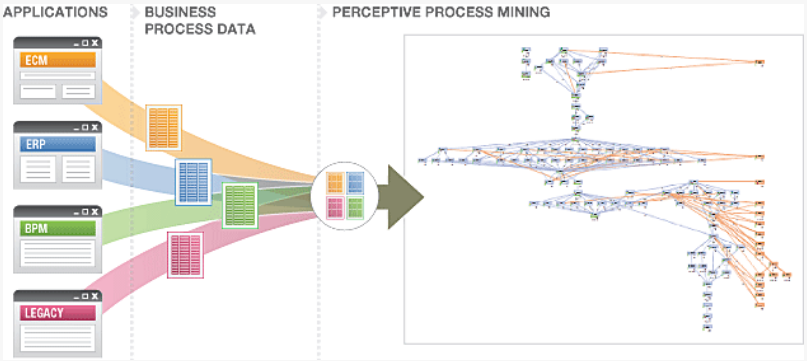
Unlike Big Data analytics, which examines a wide variety of datasets — ranging from customer preferences to economic conditions to weather forecasts, Process Mining is by definition limited to the realm of extracting useful knowledge from event logs and other similar data sources within the organization or its supply chain.

Process Mining's ability to uncover, monitor and analyze business processes across the organization makes it a welcome new tool for professionals working in Operations Research and Business Intelligence (BI) disciplines. Insights from Process Mining analytics can be used to inform a wide variety of Business Process Improvement (BPI) tools and approaches, including:

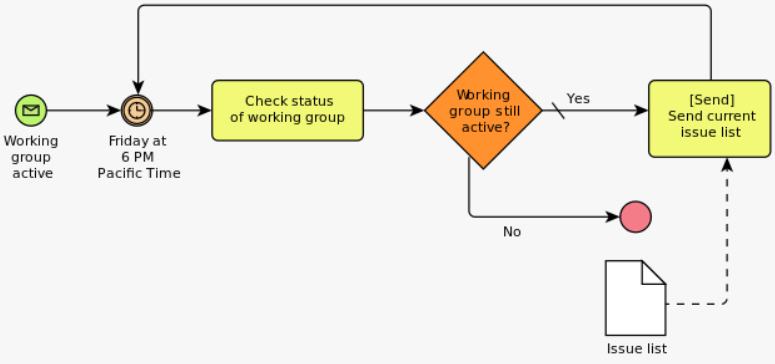
- Business Activity Monitoring (BAM)
- Business Operations Management (BOM)
- Complex Event Processing (BEP)
- Corporate Performance Management (CPM)
- Continuous Process Improvement (CPI)
- Executive "Dashboards"
- Kaizen / Toyota Production System (TPS)
- Key Performance Indicators (KPIs)
- Lean Manufacturing
- Lean Six Sigma
- Total Quality Management (TQM)
- SCOR Business Process Modeling from APICS
- Six Sigma



Process Mining vs. Data Mining, image by All About Requirements



Process Mining Applications, image by Lexmark



BPMN Process, image by Wikipedia

What are the Primary Goals of Process Mining?

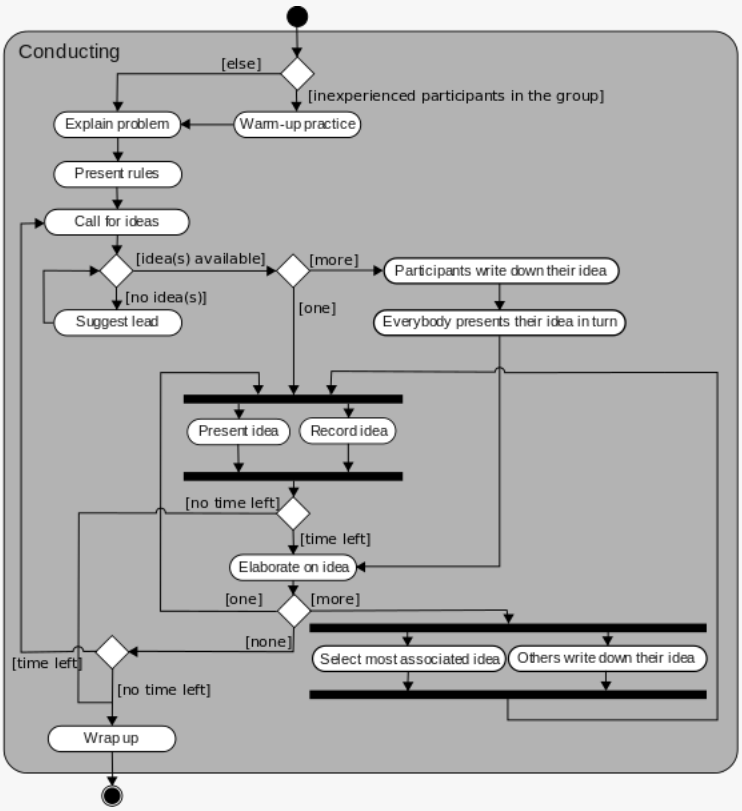
Depending upon the initial state of their business process modeling efforts, businesses can expect to achieve one or more of the following Process Mining goals:

1. Discover Actual Business Processes

By looking at event logs (and taking note of process errors and exceptions), Process Mining can create useful diagrams that document the actual processes taking place within an organization, including the pathways that handle exceptions that fall out of standard processes.

2. Provide Conformance Checking Between Actual Business Processes and Assumptions Made in Process Models

Businesses that have already created business process models of their existing operations (known as the “AS-IS” condition in APICS’ SCOR terminology) can evaluate the accuracy of their models by measuring deviations from the real-world conditions as reported by Process Mining.



UML Activity diagram, image by Wikipedia

3. Make Enhancements and Improvements to Business Processes on an Ongoing Basis

Using Process Mining on an ongoing basis can help identify ways to improve processes across the business, such as repairing production bottlenecks or reducing errors under specific conditions. As new process improvements are introduced, Process Mining can also provide useful feedback on the efficacy of individual process changes by comparing the results to historical data records.

What’s the Relationship between Process Mining and Business Process Modeling (BPM) Frameworks and Approaches, Such as Six Sigma and SCOR?

Rather than viewing Process Mining as a threat that could displace existing process improvement frameworks, most business operations professionals welcome Process Mining as a valuable new addition to their business analysis toolkit.

For example, Process Mining’s ability to derive a current “AS-IS” process model from a wide range of event log data can help frameworks like Six Sigma and SCOR validate their assumptions about process workflow as well as identify areas that need improvement.

Can You Use Process Mining Without First Creating a Business Process Model?

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