

What is Process Mining?

Process mining is a technique designed to discover, monitor, and improve processes by extracting readily available knowledge from information systems.



It's a process that extracts information from the event logs and audit trails across all information systems in your

In other words, process mining is almost like giving your business processes an X-ray to give you the clearest overall picture of how well your business processes are performing and which processes need improvement, such as problematic bottlenecks or other areas of your business causing considerable lag.

Process mining also helps provide managers with a fully objective, data-driven approach to helping them solve problems and guiding their decision-making based on real time data.

Process mining, data mining, and business process management: what's the difference?

Since process mining is often confused with data mining and business process management (BPM), it will help to know the difference amongst all three and what each actually does.

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For clarity, let's start with data mining.

Data mining is the umbrella term for the practice of analyzing large volumes of data to find patterns, discover trends, and gain insights for future use. Process mining on the other hand is simply a form of data mining that is used specifically to find patterns *inside* an organization's processes.

In process mining, the goal is to find information about business processes to discover, compare, or enhance a certain business process, whereas data mining involves a much broader set of data to do things that include predicting customer behaviors, examining customer churn, detecting fraud, and finding other advantageous personal information about your customers.

In other words, process mining is an *internal* process that improves the business from the inside, while data mining is the broader generic term used for analyzing all data sets but may also include improving *external* opportunities outside of the business, like improving sales or leads.

Business process management (BPM) on the other hand refers to your organization's human efforts to analyze, accelerate, and optimize processes.

In business process management, these processes are usually logged manually in a software tracking system through interviews, workshops, and questionnaires. The data from business process management is usually much more qualitative, since it's input is from actual humans, but process mining provides a much more quantitative approach to that same data.

In other words, business process management is the human operations view of the business processes, while process mining reveals what the actual process is based on objective data.

Another way to understand the difference between the two is this—business process management is what companies believe they are to be, while process mining helps them discover who and what they actually are from an objective standpoint.

Discover process bottlenecks with Power Automate

Simplify workflows, discover bottlenecks, and streamline business processes by using process advisor, the process and task mining capability in Power Automate.

[Learn more >](#)

To learn more about business process management, please read [“What is business process management?”](#)

Types of business process mining models

Process mining comes in three main forms: (1) discovery, (2) conformance, and (3) enhancement.

1. **Discovery:** The most common type of process mining is a discovery process. A discovery process is the use of event log data to create a process model without any external influence from an existing process model. With a discovery process, no information from an existing process model would inform or influence the development of a new process model.
2. **Conformance:** A conformance check process verifies if an intended process model is used in real practice. This type of process evaluates a process description to an existing process model based on its event log data and attempts to identify any deviations from the intended process model.
3. **Enhancement:** An enhancement process (also known as organizational mining, performance mining, or an extension process) involves improving an existing process model based off data from a conformance check process. For example, an enhancement process may use the data from a conformance check process to improve a bottleneck or an unproductive variant it discovered.

Why is process mining important?

Process mining holds many benefits that can serve several industries—from its roots in the halls of academia to the vast depths of the business world.

In the past decade alone, process mining has become one of the most valuable and important new technologies that businesses are using to not only improve their business processes but also to thrive in the next decade.

This is because process mining is so much more than improving your sales—it also helps businesses reduce operational costs that affect their overall return-on-investment (ROI) by quantifying the inefficiencies in their operational models, allowing managers to make objective, data-based decisions on the right resource allocations for better workflows.

To learn more about how process mining can benefit your organization, check out this [guided tour](#) on Microsoft Process advisor in this self-guided demo.

Benefits of process mining

Process mining contains several benefits for every industry. Some of these benefits include:

- **Objective insights:** Process mining provides fact-based insights based on actual data to help your managers audit, analyze, and enhance existing business processes.
- **Cheaper, faster, and more accurate:** Unlike the manual processes often seen with business process management, process mining provides more accurate information much faster and cheaper than process-mapping workshops and other manual input processes.
- **Works with existing systems:** Process mining can work with your existing software systems to help you expand on your existing technological investments without the need to invest in new software technologies.

To learn more about how process mining and robotic process automation (RPA) can increase work productivity, accuracy, speed, and compliance, read: [“What you should know about the benefits of RPA.”](#)

How process mining works with the low-code development movement

As most companies continue pushing to produce work faster, they are beginning to switch to [low-code development models](#) that rely less on code-heavy projects and a team of developers.

Process mining is a process that can help determine which business processes may work best under a low-code development model.

But first, what is low-code development? Low-code development is an alternative software development approach that requires minimal coding expertise or knowledge.

In other words, developers and non-developers can easily produce new applications and products quickly with the use of preset modules, templates, drag-and-drop functionality, and automated processes.

This allows departments with developers and non-developers to produce websites, apps, and other digital products with impressively quick turnarounds.

When organizations use process mining, they can determine which processes can be developed faster under a low-code development model first before revamping the entire business to a low-code development model, or to help determine which processes should be prioritized under a coding-heavy process with developers.

In other words, process mining helps keep things running smoothly while making a transition to a low-code development model without creating an unnecessary backlog of work.

The objective data from process mining will also provide your managers with an accurate map on how to redesign every workflow process from top to bottom for a smooth and seamless transition to a low-code development model.

To learn more about low-code development, please read: "[What is a low-code development platform?](#)"



How process mining software improves workflows: examples and use cases

Process mining tools and techniques can be used to improve process workflows for a wide variety of industries.

Since process mining highlights and quantifies operational inefficiencies, many industries have begun applying process mining tools to find out how they can improve every process in their organization.

Some industry use cases include:

- **Manufacturing:** Process mining can help managers in the manufacturing industry gain insight into production times for a particular product and reallocate resources, such as storage space, machines, or workers, as needed to improve production and meet demand.
- **For example:** the [Coca-Cola Bottling Company United](#) ran into order issues with its popular Freestyle drink dispensers. Their use of robotic process automation (RPA) with [Microsoft Power Automate](#) helped them fulfill orders better and faster without resorting to hiring more full-time employees.
- **Education:** Process mining can monitor and evaluate student performance and behaviors, like how long each student spends viewing class materials. It can also help teachers and administrators identify which processes work best for each curriculum.
- **Healthcare:** Process mining helps reduce the amount of treatment processing time for each patient and even helps provide recommendations for a quicker recovery.
- **Public works:** Process mining can streamline the invoice process for several stakeholders in public works projects for companies in industries, such as construction, the cleaning business, environmental bureaus, IT, and communications.
- **For example:** [Vodafone](#)—a leading telecommunications company in Europe and Africa—streamlined their business processes by making Microsoft Power Platform accessible to all of its employees, providing them with more than 1,000 solutions in automating their daily tasks.
- **Finance:** Process mining can help improve interorganizational processes for financial institutions like auditing accounts, increasing income, and expanding their customer bases.
- **For example:** Illimity, Italy's first cloud-native bank, used process mining and other robotic process automations (RPA) to improve its loan application and approvals processes for its applicants.
- **E-commerce:** Process mining can help examine online buyer behaviors and recommend new strategies to maximize ROI and sales for e-commerce retailers or any kind of online shopping experience.
- **Software development:** Process mining can help software developers and IT administrators reorganize their development processes into a clearly documented visual map, so they can monitor their processes to make sure their development is running as expected.

Digital Transformations with Process Mining

Since organizations all over the world need to keep pace with the digital transformations that occur every year, many organizations are in dire need of auditing their business processes from top to bottom.

With process mining, an organization can improve every facet of their business processes and gain insights into how they are actually operating versus how they believe they are operating with a clear visual map provided by process mining tools.

Process mining is a continuous process that can provide your organization with automated process mapping, discovery processes, and data analytics to improve every process in your business to keep it performing and

producing with its intended outcomes.

When every process in your organization operates with optimal efficiency at all times, it leaves room for your organization to modify and adapt to new technologies quickly and efficiently without hindering production or detracting from your return on investment. It also leaves room for your organization to make new innovations and strengthen customer relationships.

To learn more about process mining and robotic process automation (RPA) tools, see [why businesses are embracing RPA tools](#) and explore for yourself how [Microsoft Power Automate](#) can help improve your business processes.

Frequently asked questions

What is process mining?

Process mining is a technique designed to discover, monitor, and improve processes by extracting readily available knowledge from information systems. It is a process that extracts information from the event logs and audit trails across all information systems in your organization to reveal a clear picture of what's happening in your business. It creates a clear visual map that reveals and quantifies operational inefficiencies, such as bottlenecks, unproductive variants, deviations from intended design, and rework.

What are the types of process mining?

Process mining comes in three main forms: (1) discovery, (2) conformance, and (3) enhancement. A discovery process explores new ways to do a process without the external influence of an existing process model. A conformance check process tests to see if a process is operating as intended. And an enhancement process improves an existing process that a conformance check process flagged as problematic.

Why use process mining?

Process mining helps organizations discover operational inefficiencies that affect overall production like bottlenecks, unproductive variants, deviations from intended design, and rework. These discoveries often help businesses reorganize their work processes to make the right resource allocations for better workflows based on objective data.

What role can process mining play in an organization's digital transformation journey?

Process mining helps organizations determine which processes help or hurt their overall workflows. With a clear visual map based on the collected data from event log entries and audit trails in every information system in the organization, managers can use the data to reallocate resources where needed to improve workflows and production.

How does process mining and low code automation complement each other?

Process mining can help organizations prioritize which tasks can transition to a low-code development model without creating any backlogged tasks. It can also help businesses organize which processes can be done in a low-code development setting and which should be done with a developer.

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