

IDC TECHBRIEF

IDC TechBrief: Process Mining Software

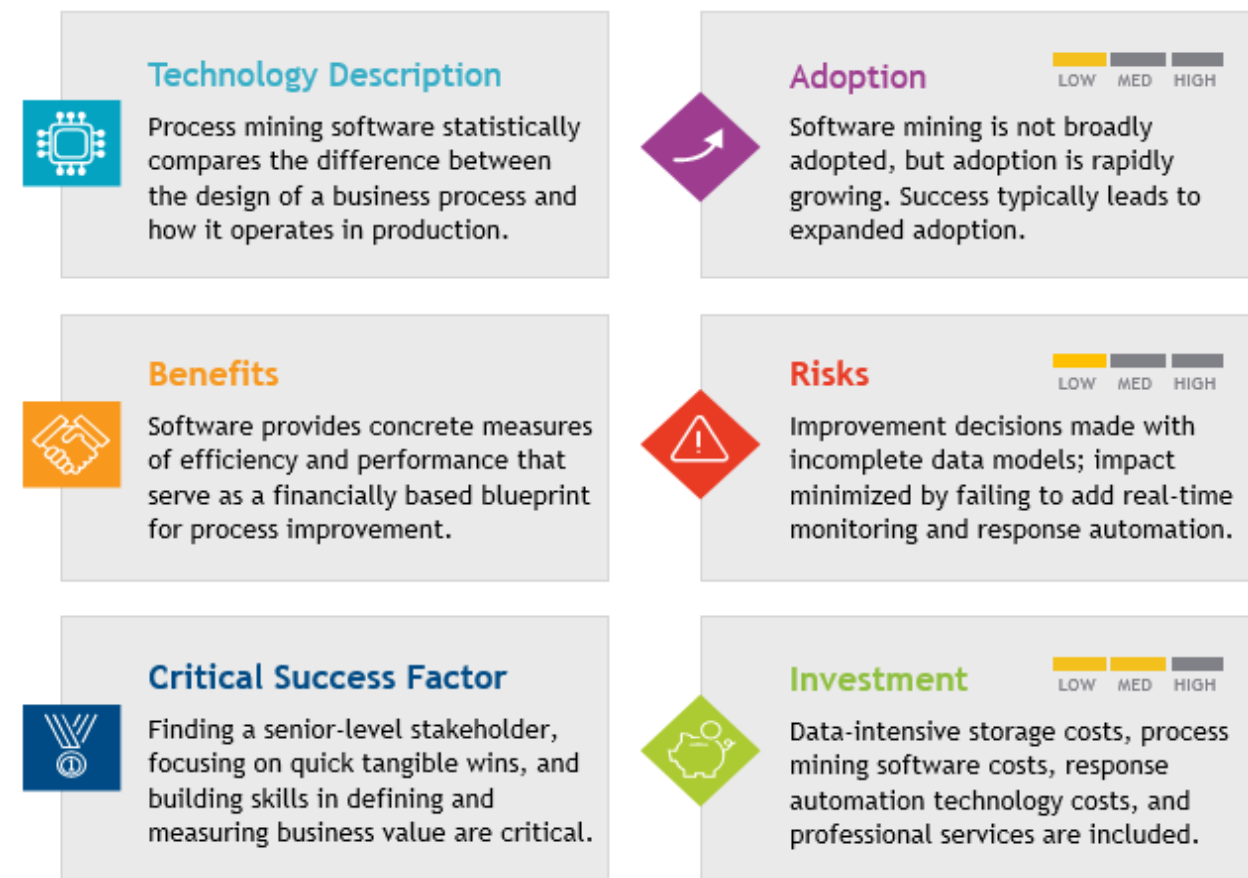
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THIS IDC TECHBRIEF EXCERPT FEATURES ABBYY

IDC TECHBRIEF FIGURE

FIGURE 1

Process Mining Software: Snapshot



Source: IDC, 2021

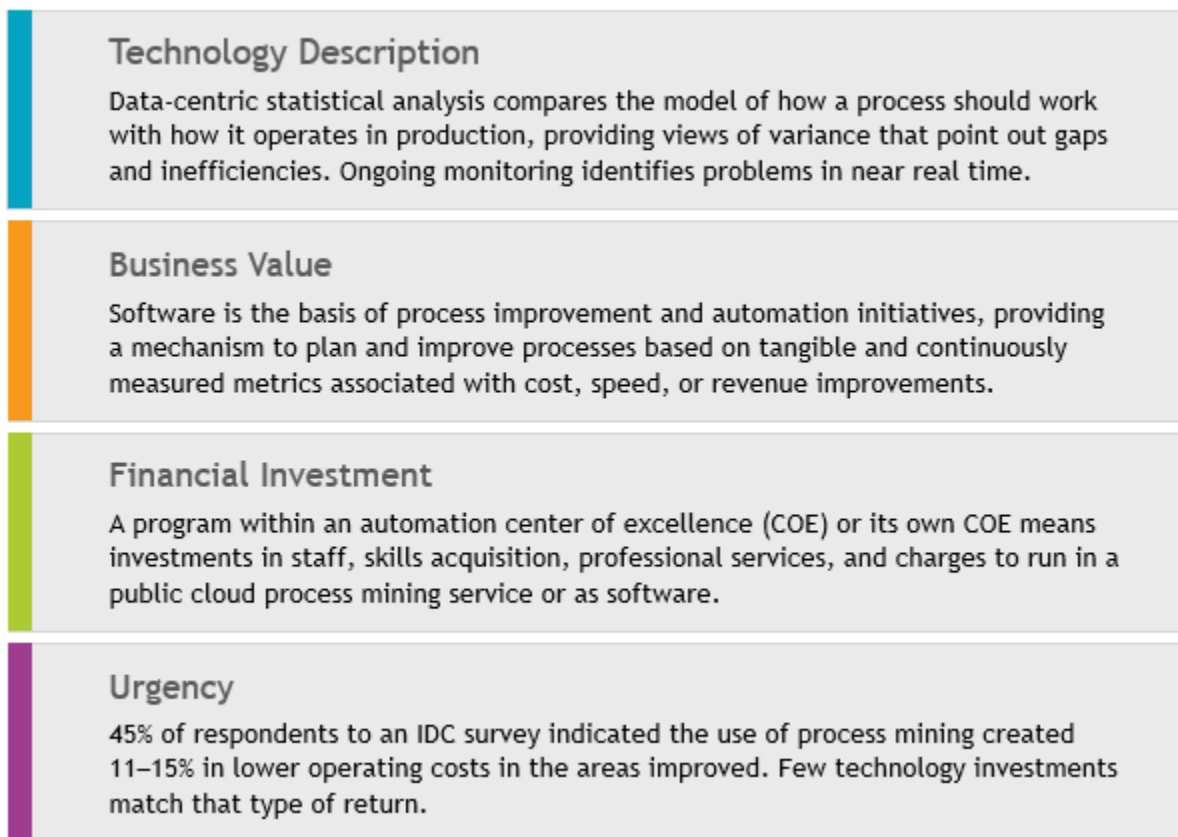
IN THIS EXCERPT

The content for this excerpt was taken directly from IDC TechBrief: Process Mining Software (Doc #US47987821). All or parts of the following sections are included in this excerpt: Executive Business Description, Adoption Viewpoints, Metrics That Matter, Risk Profile, Critical Success Factors, Select Product List, and Learn More.

EXECUTIVE BUSINESS DESCRIPTION

FIGURE 2

Process Mining Software: Executive Description



Source: IDC, 2021

Process mining is data-driven statistical analysis of how a business process performs to identify areas of variance and inefficiency. The purpose of process mining is to gain a fact-based understanding of process variance and inefficiency to systematically improve the process to maximize performance while aligning with the overall goals of a business.

The data required for process mining is collected from the log data of applications and databases used to execute the process. The data is fed into an analytical engine that mines the data to produce a map of how the process operates in production, typically compared with a model of how the process is designed to operate.

The output of process mining prompts a discovery process where variance and inefficiency are investigated, which include identifying:

- Business practices that are inefficient
- Out-of-compliance processes
- Nonstandard ways of performing and routing tasks
- Overly complex user interfaces
- Legacy and inefficiently used technology that causes the process to be unnecessarily slow

When the findings of process mining and discovery determine there is business value in improving the process, it is common to produce an automation plan and to establish ongoing monitoring to track progress in the improvement and to identify new areas of inefficiency. Monitoring identifies both technology-based inefficiency and business problems.

Increasingly, the monitoring portion of process mining is built on event streaming or near-real-time data collection. The goal in this case is to proactively detect problems with transactions as they are processed to correct as quickly as possible.

Process mining platform software is used to execute process mining and monitoring. Log data collection often uses third-party software, such as Apache Kafka or ETL tools, to collect the data. As the market shifts to continuous, near-real-time collection, event streaming technology such as Kafka or Apache Pulsar and commercial variants are increasingly used.

Process mining solutions also collect and maintain data assets supporting metrics – KPIs, SLAs, and other metrics – to demonstrate fact-based improvement ideally tied to financial performance and increases in business value created by the improvement and ability to rapidly respond to process problems. Some vendors also provide machine learning and AI to assist with the collection and analysis.

The term *digital twin* is increasingly used to provide a digital, metrics-based view of a process, and some vendors have product components to show the digital twin.

Simulation capabilities are also provided by some vendors. Process improvement can create unanticipated negative impacts. Simulation provides analytical support to determine the impacts of different improvement options to determine the optimal improvement.

FIGURE 3

Process Mining Software: IDC's Adoption View

IDC's adoption scenario viewpoints	Adoption	Required technology for automation initiatives in business operations and for some types of IT operations and aligns with automation COE
	User profile	Automation COE working with key process domain executives and subject matter experts to drive down costs, improve speed, and align with customers
What it means for business executives	Use case	Order-to-cash improvement effort that is a popular use case, resulting in improved on-time delivery, accurate invoicing, and on-time payments
	Metrics	KPIs that vary based on the domain being improved (perfect order KPI and increased operating profits financial metric)
	Customer impact	Lowered operating costs, improved speed, and efficiency

Source: IDC, 2021

In a January 2021 IDC survey, 74% of enterprises that use process mining successfully have implemented a process mining program; 49% run this as a program office or as a centralized center of excellence. The worldwide survey had 301 process mining respondents.

Enterprises commonly adopt the combination of process mining for process improvement planning and for performance monitoring. The most common use cases for process mining are:

- For planning to help build custom process (46%)
- In regular meetings to detect problems as early as possible (42%)
- To detect problems as early as possible (40%)
- Ongoing performance monitoring (39%)
- To help migrate enterprise applications (35%)
- One-time use for process improvement planning (31%)

Business areas being impacted by process mining include:

- Processing operations, such as claims processing and payment processing (64%)
- Supply chain operations (52%)
- Financial processes (49%)
- Sales and marketing (44%)
- Customer care (38%)

Only 2.3% of the survey respondents adopted in one business unit or region. The rest adopted process mining across businesses units and regions.

Process mining is not without challenges. Respondents to the survey cited the following as top 3 challenges:

- Finding better ways to execute actions on an ongoing basis as we identify business problems (55%)
- Collecting all the data needed to perform the analysis (50%)
- Determining key metrics and how to measure success (50%)

And the top 3 benefits of process mining are:

- Ability to rapidly identify and communicate business problems through use of monitoring (53%)
- Helping build the business case for process improvement (50%)
- Speeding up development (50%)

Business value of process mining was measured in this survey by the percentage decrease in operating costs for the domains improved through mining. The most common answer (45%) lowered operating costs by 11–15%:

- <1% lower operating costs: 2% of respondents
- 1-5%: 8%
- 6–10%: 27%
- 11–15%: 45%
- >15%: 18%
- Don't know: 1%

Technology Road Map

- **Observability:** Observability is the ability to look at externalized outputs to understand the internal state of a complex system. The more observable a system, the more quickly teams are able to navigate from a performance problem to its root cause. In process mining, a process execution problem can cause cascading problems downstream. As more domains adopt processing mining, the shift to a data infrastructure built around observability means that the metrics of upstream and downstream processes can be linked together in a way that points to the origination – or root cause – of a problem. We expect to see process mining vendors focused on supporting observability more broadly over the next two years.
- **Response automation:** Most process mining vendors stop at monitoring, creating a gap between understanding a problem exists that requires a follow-up and what kind of follow-up to take. Response automation consists of the capabilities that tie monitoring to responses. This is

an immediate gap that requires effort on the part of most process mining vendors to solve; we expect it to be an important part of their road maps.

- **Support for mainframe:** Organizations that depend on mainframes want to adopt process mining to understand the impact of mainframes on their business processes. We don't expect all vendors to adopt mainframe connectivity, but the leaders will have to do this to offer comprehensive process mining solutions.
- **Increasing use of AI:** All vendors are working on improving their existing AI capabilities as well as adopt them to improve accuracy and insights, including the ability to predict performance problems and improve simulation and analytics.
- **Task mining:** As part of process discovery, gaining a better understanding of how exactly tasks are performed by individual workers and how consistently tasks are performed across a pool of workers is critical for automation planning. Vendors already have task mining, are partnering for it, or in the process of building their own capabilities.

Adjacent Technology Impact

Process mining is increasingly used by organizations as the starting point of process improvement, particularly for organizations focused on becoming effective at automation. Because an important output of process mining is the ability to make a business case for improvement, the use of this technology often leads to investments in technologies that support the automation or improvement effort. The improvement may involve modernizing a custom application or updating to a new version of a commercial enterprise application. It also can be used to help make the case for new technology investments, such as robotic process automation (RPA). This is also true as process mining moves outside its primary domain of business operations into IT operations and manufacturing.

Because of its role in planning, process mining can accelerate the adoption of additional technology, or it can obviate the need, instead, finding a way to improve existing technology. For that reason, this technology can slow down the adoption of technology, cancel the need for new technology, or significantly increase and broaden the adoption.

FIGURE 4

Process Mining Software: Metrics That Matter



Note: IDC believes the metrics listed in Figure 4 are the best fit metrics to communicate value for this technology.

Source: IDC, 2021

Process mining's purpose is to use metrics to explain process problems as well as demonstrate improvements in a process. The metrics that matter in choosing and deploying process mining software are shown in Figure 4, but metrics change as different domains are improved.

Process improvement aimed at optimizing customer impacts as they interact with a process will have metrics tied to improvements in the customer journey. Process improvement aimed at meeting compliance requirements will have an entirely different set of metrics. Metrics also change as adjacent processes come onstream with process mining, where the KPIs may involve specific metrics tied to the domain as well as end-to-end metrics.

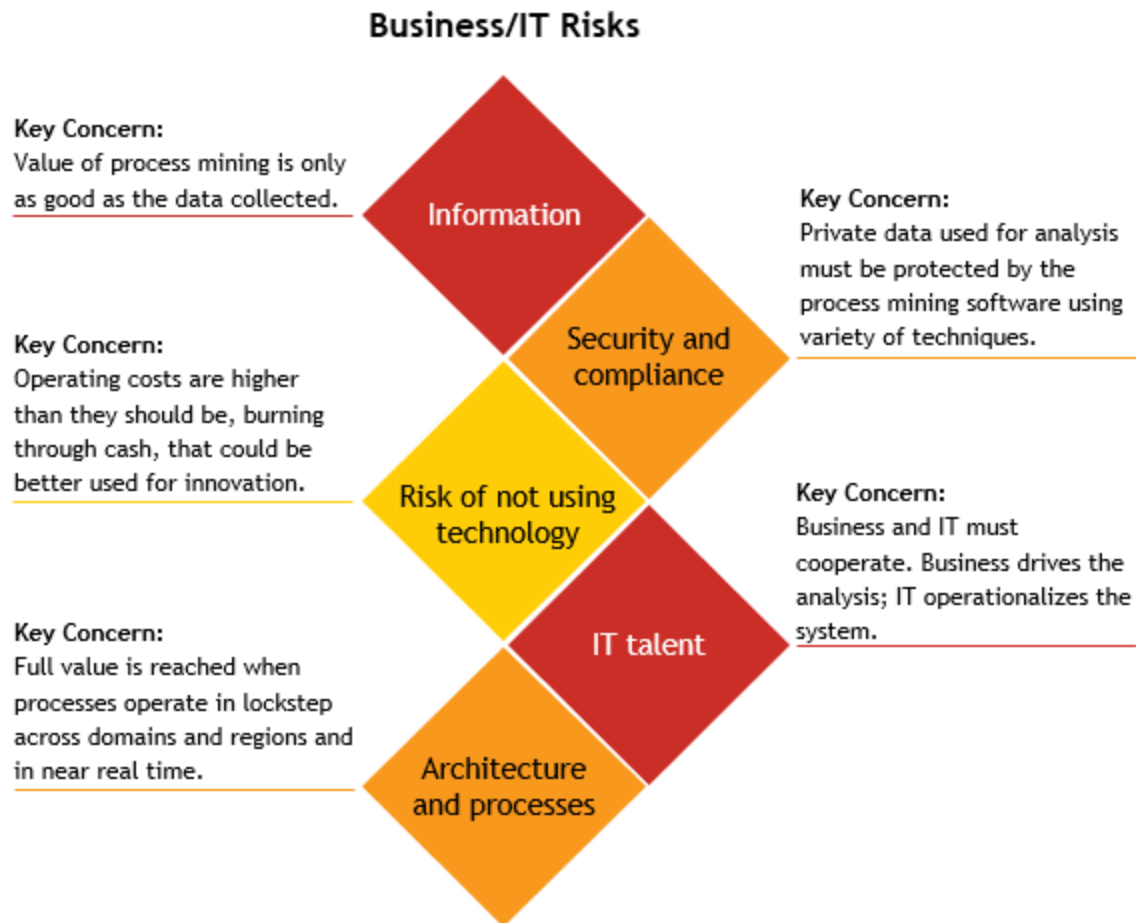
Communicate Using Metrics That Matter

To get the most out of process mining, identifying the best set of metrics to identify problems and show success must be a core competency. Ideally, the metrics will tie into financial performance.

RISK PROFILE

FIGURE 5

Process Mining Software: Risk Profile



Source: IDC, 2021

Critical Risk Assessment

Process mining began to be used more often as data collection technology improved, as cloud process mining services began to be offered, and as process mining tools improved. Still, process mining can be a cultural shock to adopt if the organization is not ready for the transparency that occurs when

monitoring is adopted and as jobs and roles may be adjusted because of the improvements that are warranted after process discovery is completed and moves into process improvement.

Because process mining changes how teams plan for improvement and often changes how processes operate in production, senior leadership is required to support these changes. In an increasing number of cases, leadership begins at the top with a CEO or CFO, while other organizations require leadership from the senior execution responsible for the process being scrutinized.

Skills are also required in interpreting the results of the process mining, during discovery and through the development of KPIs to measure improvement and for monitoring aimed at problem detection. Data science skills may also be required to build predictive capabilities, especially when operating more proactively becomes one of the process goals, which are common when customer impacts are factored in process mining and design.

When roadblocks are encountered, especially with the collection of data, the temptation to treat process mining as a failed project is also a risk when measured against the cost of guessing at change or failing to change. If competitors use process mining successfully to drive down costs related to inefficiency or to improve automation rates, failing in process mining means it is more difficult to compete effectively.

Organizational Readiness Assessment

To be ready means that there is agreement and planning that includes:

- Enough leadership understanding of the potential benefits of process mining to establish urgency in business units and IT
- Alignment with initial business process areas that are well understood to require improvement
- People capable of building measurement systems to align improvements with the business value of those improvements, which are ideally translatable to financial performance metrics (Some organizations begin with a third-party services organization and then begin upskilling teams involved with Six Sigma initiatives or others interested in performance measurement.)
- Data that needs analysis to identify whether data is obtainable in the specified starter business processes (This may not be a critical problem for processes that run on enterprises applications, but custom applications and mainframe-centric processes may require an additional effort.)
- Cooperation during process discovery to fill in gaps that are highlighted through process mining

CRITICAL SUCCESS FACTORS

FIGURE 6

Process Mining Software: Critical Success Factors

Critical Success Factor	Business Success Priority
Business	Business leaders must be strong advocates from the beginning, first in pilots and then as process mining becomes more mature in an individual process domain and as adoption expands to other domains and other regions.
Process	Being good at automation and process optimization is a process. Using process mining for automation planning and ongoing monitoring requires skills in metrics development and the ability to align structural weaknesses in a process with correct enabling technology.
Culture	The biggest change to workers is the shift toward a more sense-and-respond style of working, highlighting business and process problems that need immediate attention. This is a high-value and highly proactive style of working that can be uncomfortably transparent.

Source: IDC, 2021

FIGURE 7

Process Mining Software: Select Products

Product	Why Product Made the List
ABBYY Timeline	Support of different types of process architectures, including case management, and support of task mining

Source: IDC, 2021

LEARN MORE

Related Research

- *Worldwide Intelligent Process Automation Market Shares, 2020: Solid Growth Across Cloud Segments* (IDC #US47469221, June 2021)
- *Worldwide Intelligent Process Automation Software Forecast, 2020-2024* (IDC #US45411620, July 2020)

Synopsis

This IDC TechBrief provides business leaders and IT with an executive snapshot of process mining software, its impact on process improvement, and the value it brings to an enterprise through successful adoption.

"The purpose of process mining is to gain a fact-based understanding of business process variance and inefficiency to systematically improve the process to maximize performance while aligning with the overall goals of a business," according to Maureen Fleming, program vice president for Intelligent Process Automation Research at IDC. "Process mining is growing countercyclically through the COVID-19 pandemic, and as enterprises focus on improving profitability, they are looking for ways to drive cost out of their business processes. Process mining is a go-to software for supporting this."

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