

NEAT EVALUATION FOR IBM:

# Process Discovery & Mining

Market Segment: Ability to Accelerate Process Change

## Introduction

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This is a custom report for IBM presenting the findings of the NelsonHall NEAT vendor evaluation for *Process Discovery & Mining* in the *Ability to Accelerate Process Change* market segment. It contains the NEAT graph of vendor performance, a summary analysis of IBM's process discovery & mining platform (IBM Process Mining), and the latest market analysis summary.

This NelsonHall Vendor Evaluation & Assessment Tool (NEAT) analyzes the performance of vendors offering process discovery & mining technology. The NEAT tool allows strategic sourcing managers to assess the capability of vendors across a range of criteria and business situations and identify the best performing vendors with dual focus on process discovery & mining, specific focus on process mining, focus on desktop process discovery, as well as the ability to plan and accelerate process change.

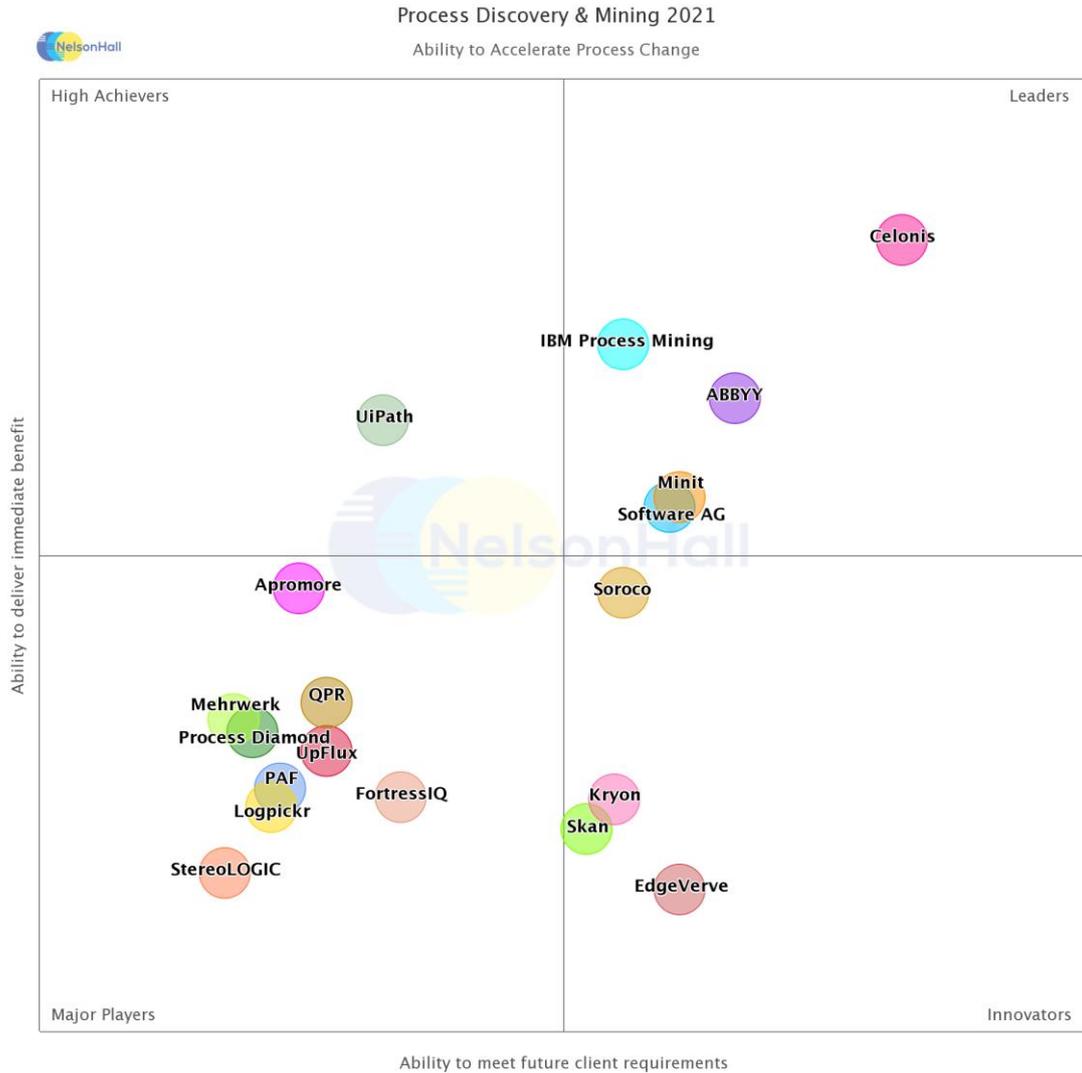
Evaluating vendors on both their 'ability to deliver immediate benefit' and their 'ability to meet client future requirements', vendors are identified in one of four categories: Leaders, High Achievers, Innovators, and Major Players.

Vendors evaluated for this NEAT are: ABBYY, Apromore, Celonis, EdgeVerve, FortressIQ, IBM Process Mining, Kryon, Logpickr, Mehrwerk, Minit, PAF, Process Diamond, QPR, Skan, Software AG, Soroco, StereoLOGIC, UiPath, and UpFlux.

Further explanation of the NEAT methodology is included at the end of the report.



## NEAT Evaluation: Process Discovery & Mining (Ability to Accelerate Process Change)



Source: NelsonHall 2021

NelsonHall has identified IBM Process Mining as a Leader in the *Ability to Accelerate Process Change* market segment, as shown in the NEAT graph. This market segment reflects IBM Process Mining’s ability to meet future client requirements as well as delivering immediate benefits to its clients with specific focus on helping them accelerate digital transformation initiatives.

Leaders are vendors that exhibit both a high ability relative to their peers to deliver immediate benefit and a high capability relative to their peers to meet client future requirements.

Buy-side organizations can access the *Process Discovery & Mining* NEAT tool (*Ability to Accelerate Process Change*) [here](#).

## Vendor Analysis Summary for IBM Process Mining

### Overview

myInvenio was founded in 2013 by its CEO, Massimiliano Delsante, motivated to change how business processes are analyzed. And after two years of R&D, the company launched its platform, myInvenio, at FinovateEurope in 2016.

IBM agreed to acquire the company in May 2021, and this has now been finalized. Since the announcement, the platform has been renamed IBM Process Mining, offered as a standalone solution or bundled as part of Cloud Paks for Business Automation and IBM RPA.

### Key Offerings

IBM Process Mining supports both business data (process mining) and user interaction data (task mining). The company announced the launch of myInvenio Task Mining (as was) in December 2019, with general availability in January 2020.

To collect user interaction data, IBM Process Mining uses a desktop recorder that the company has developed in-house and released in early 2021. Previously the company used Teramind's desktop observer. Discovered tasks can be grouped in business activities retrieved by an existing process hosted in IBM Process Mining or, in the case of a standalone analysis, directly defined in the IBM Task Mining solution.

IBM Process Mining supports IT system data (e.g., Oracle, Salesforce, SAP) through pre-built connectors, a REST API, and files. Its connectors and API can connect directly to source systems using scripts to avoid manually exporting the data and then loading it back in.

IBM Process Mining can automatically link desktop data (task mining) to process activities in the business data (process mining) for end-to-end analysis if a discovered desktop field is the case ID. Alternatively, the two data types can be linked by manually tagging tasks to process activities.

Conformance checking centers around comparing process executions to a reference model; however, it also shows overall comparison statistics between conformant and non-conformant cases.

IBM Process Mining includes a feature to help users identify root causes of process violations by finding the conditions (i.e., specific combinations of relevant data) that most likely brought the process into that particular violation.

The platform includes a BPMN diagram simulator that can generate data which is parameterized in two areas: activities and gateways. The parameters are pre-populated using rules discovered with the built-in decision rule mining. In addition to generating data, the diagram simulator can estimate lead time and cost based on the simulation settings.

IBM Process Mining suggests activities for automation based on the target automation level and maximum activity complexity set by a user. Activity complexity is based on the number of process variations rather than being derived from the task mining data.

The platform includes built-in dashboards that are configurable. It also includes custom dashboarding (analytics), which can be used for monitoring or analysis.

IBM Process Mining's predictive analytics enables users to act on open cases. For a selected open case, predictive analytics will provide users with a list of recommendations that aim to



minimize lead time along with the impact (expected remaining time and cost) of the recommendation.

IBM Process Mining uses a subscription-based pricing model for both its cloud and on-premise solutions, either per-process or per-event volume. The platform is offered as a standalone product and bundled as part of Cloud Pak for Automation.

IBM Process Mining can leverage the network of 5000 IBM Partners and the Management Consulting enablement provided by IBM Global Business Services.

IBM Process Mining saw a 44% increase in the number of clients in the past 12 months; clients comprise mostly of large enterprises (92%). The company mentioned it would start targeting medium enterprises last year; however, this segment remains a small percentage. Europe (particularly Italy) continues to be the strongest geography for the platform. However, it saw the fastest growth in the U.S. region, which has doubled from 10% to 20% in the past 12 months.

## Financials

NelsonHall estimates the 2020 annual recurring revenue from IBM Process Mining to be \$6m.

## Strengths

- 360-degree process view with capabilities of both Process Mining and Task Mining through a seamless and unified interface
- Automated root cause analysis
- Support from IBM: accelerated development with IBM contributing developers and integration with IBM's portfolio brings immediate availability to new capabilities.

## Challenges

- Many capabilities not democratized to business users: ETL integration requires IT support, lack of UI-based capability for building custom KPIs
- Automated root cause analysis is limited to process violations
- Decision rules cannot be used in conformance checking
- Task mining capability changed directions from the previous version based on Teramind; rather than record only user actions and inputs, it collects information related to the applications involved. As a result of this pivot, there is now more UX friction due to requiring users to start/stop recording.

## Strategic Direction

In the short-term through the end of 2021, IBM Process Mining is developing functionalities that enable clients to leverage their existing data further:

- Business rules for simulation: IBM Process Mining is looking to build an Organizational Data Mining repo to identify and match previously discovered business rules for simulation



- Cloud Pak for integration: expanding its Cloud Pak integration to Business Automation Insights and data streaming. It is also developing capabilities for event orchestration that are driven by business rules and KPIs
- Near real-time process mining and monitoring integrated with IBM IAF (IBM BAI, AppConnect) to boost the number of predefined applications connectors to monitor and to call when moving from insight to action
- Concept drift/stochastic conformance checking: going beyond models and business rules for conformance checking to detect when real behavior begins differing from expected change (concept drift) and identifying changes in the distribution of work execution, e.g., how often paths are used, known as stochastic conformance checking
- RPA bot generation (as part of IBM RPA): with its recently released native Task Mining capability, the company wants to go beyond identifying RPA candidates and leverage the technology to accelerate bot development.

In the medium-term for 2022, the company will look to develop capabilities that accelerate adoption:

- Migration tools from Process Mining and RPA competitors
- Smart ETL using Query by Example: reducing effort to connect with existing systems and democratize ETL capabilities to business users
- Third-party accelerators: expanding existing accelerators from, e.g., SAP and Oracle ERP to Salesforce
- AI to Identify Automation Opportunities: going beyond task mining and RPA to DTO for other automation opportunities using IDP, RPA, and workflows
- Integration with other Cloud Paks and Watson Orchestrate
- Process repository: finding links between different processes within the same organization to have a bigger picture and better understanding of how changes on a single process impact other processes.

## Outlook

myInvenio was one of the first platforms to integrate business and desktop data for a detailed end-to-end process analysis for client organizations. The biggest change over the past year has focused on product consolidation and integration with the IBM stack and the pivot in task mining strategy from using Teramind to in-house technology. The company has streamlined certain process mining aspects of the platform, and the impactful and value delivering capabilities remain unchanged from last year. NelsonHall believes this is due to the acquisition by IBM that was announced in April 2021.

The company continues to be forward-thinking and has accomplished much in the past eight years, and it now has the financial and development backing of a large established firm. NelsonHall expects faster growth in product and business development going forward.

## Process Discovery & Mining Market Summary

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### Overview

The convergence of process discovery and process mining accelerated in 2020/21 as the market recognized the need to combine their strengths to overcome their challenges – not all work is done within IT systems and not all work is done on desktops.

Both segments aim to help organizations to gain process understanding but from different perspectives:

- *Process discovery* (end-to-end task mining) provides an understanding of work execution through the lens of workers on desktops. It captures all work performed on desktops, including that done outside of IT systems, e.g., Excel, Outlook, Notepad, etc. The segment is traditionally driven by desktop automation and workforce optimization
- *Process mining* provides an understanding of work from an end-to-end perspective through to the final business outcome. Process mining started from a narrow definition of visualization and analysis of event logs from IT systems using algorithms and mathematical procedures. The sole reliance on IT system logs means work performed outside of them is not captured.

Process discovery vendors are integrating process mining technologies to help clients quantify the impact on work to give recommendations that will lead to more significant overall business impact. Similarly, process mining vendors are integrating process discovery technologies to fill in the gaps in IT system logs to provide more reliable and actionable insights with quantification of the potential business impact.

Process discovery & mining solutions typically feature:

- *Connector capabilities* – to extract, transform, and load transactional data from IT systems for analysis and integration to third-party platforms for enabling automation and proactive interventions
- *Desktop capabilities* – to collect streams of desktop work that includes application data, environmental variables, and user interactions, and uses AI/ML to parse work from streams of recordings
- *Conformance checking* – to understand how work is performed against organizational policies and best practices
- *Root cause analysis* – to find factors that are contributing to certain process behaviors and outcomes
- *Data simulation* – to simulate scenarios of process transformation and to understand potential impacts before making changes
- *Proactive intervention* – leveraging ML and heuristics to trigger automations (workflows and RPA bots) and real-time process guidance on desktops.

## Buy-Side Dynamics

Benefits sought (ordered by importance) by buyers for engaging a vendor for process discovery & mining are:

- Improve overall visibility and transparency of process flows
- Reduce average process cycle times
- Reduce effort to identify process steps and variations
- Improve identification of root causes in process variations, outcomes, non-compliance
- Improve identification of KPI impact in process variations, outcomes, non-compliance
- Improve identification of processes to be automated
- Improve upskilling or retraining efforts with precision training for individuals or teams
- Improve business agility.

Key inhibitors for buyers looking to adopt process discovery & mining solutions relate to stakeholder buy-in, data, and privacy.

## Market Size & Growth

The current global PDM market size is estimated by NelsonHall at ~\$670m and will grow to ~\$4.3bn by 2025, a growth of 45% CAAGR.

Europe accounts for 43.3% of the PDM market, followed by North America at 42.5% and APAC at 9.7%. Strong growth in North America will cause it to overtake Europe by 2025.

BFSI is the largest sector, accounting for 28.7% of the market. The ongoing impact of the pandemic on global supply chains has boosted adoption in transport/logistics and manufacturing that will continue through 2025. Similarly, healthcare (having been a top growing sector in 2020) will continue to grow due to continued rising costs and deficiencies exacerbated by the pandemic.

## Success Factors

The key success factors for process discovery & mining vendors include:

- *Actionable insights*: providing insights that drive impactful changes with just enough information without overwhelming users. This is also not limited to historical data but ongoing data using predictive analytics to intervene in open cases
- *Adaptive and transparent pricing*: offering flexible pricing for organizations to adjust to current and changing needs. At the same time, pricing is transparent so clients can predict how costs will change to budget accordingly
- *Balancing flexibility and ease of use*: some vendors have designed UI/UX with customizability and flexibility in mind. However, during that process, it has become overwhelming and less intuitive to use. Successful vendors are using design thinking to build their platform with the right balance to improve user-friendliness
- *Data governance at scale*: architecting their platforms with organization and process data governance in mind. When scaling adoption from a single business unit to multiple ones



in the same company, platforms need to be designed to handle the increased complexities of data and process ownership

- *Empowering partners*: recognizing they are first and foremost software companies rather than domain experts, these vendors are frequently going hand-in-hand with partners into client engagements so they can speak the same language. They also develop programs to work with partners across geographies and industry verticals
- *Enabling transformations*: going beyond the immediate mapping and assessment needs of clients and enabling them to plan, execute, and monitor process transformations. Provide capabilities to support building business cases with insights on the impact of process changes, standardizing work by templating best practices, generating bots to accelerate their rollout, and knowledge sharing for cooperation and collaboration.

## Outlook

Over the next few years:

- Drivers for continued deployment will include continuous or iterative improvement efforts and to improve outcomes of connected processes that support the initial key processes
- Solutions will fully integrate not only business and desktop data but increasingly include additional data modalities like IoT to enable planning process changes with more actionable and impactful insights and to accelerate implementations of process changes
- Machine learning will play a more significant role in enabling the planning of process changes in addition to the current trend of enabling implementation efforts with predictive and prescriptive analytics
- Healthcare will continue being one of the strongest growing sectors, outpaced only by the adoption rate of the transportation and logistics sector
- Process discovery & mining deployments will become 80% cloud-based, with an increasing number of vendors offering PDM-as-a-Service and freemium options to build their client base as part of a land-and-expand strategy.



## NEAT Methodology for Process Discovery & Mining

NelsonHall's (vendor) Evaluation & Assessment Tool (NEAT) is a method by which strategic sourcing managers can evaluate outsourcing vendors and is part of NelsonHall's *Speed-to-Source* initiative. The NEAT tool sits at the front-end of the vendor screening process and consists of a two-axis model: assessing vendors against their 'ability to deliver immediate benefit' to buy-side organizations and their 'ability to meet client future requirements'. The latter axis is a pragmatic assessment of the vendor's ability to take clients on an innovation journey over the lifetime of their next contract.

The 'ability to deliver immediate benefit' assessment is based on the criteria shown in Exhibit 1, typically reflecting the current maturity of the vendor's offerings, delivery capability, benefits achievement on behalf of clients, and customer presence.

The 'ability to meet client future requirements' assessment is based on the criteria shown in Exhibit 2, and provides a measure of the extent to which the supplier is well-positioned to support the customer journey over the life of a contract. This includes criteria such as the level of partnership established with clients, the mechanisms in place to drive innovation, the level of investment in the service, and the financial stability of the vendor.

The vendors covered in NelsonHall NEAT projects are typically the leaders in their fields. However, within this context, the categorization of vendors within NelsonHall NEAT projects is as follows:

- **Leaders:** vendors that exhibit both a high ability relative to their peers to deliver immediate benefit and a high capability relative to their peers to meet client future requirements
- **High Achievers:** vendors that exhibit a high ability relative to their peers to deliver immediate benefit but have scope to enhance their ability to meet client future requirements
- **Innovators:** vendors that exhibit a high capability relative to their peers to meet client future requirements but have scope to enhance their ability to deliver immediate benefit
- **Major Players:** other significant vendors for this service type.

The scoring of the vendors is based on a combination of analyst assessment, principally around measurements of the ability to deliver immediate benefit; and feedback from interviewing of vendor clients, principally in support of measurements of levels of partnership and ability to meet future client requirements.

Note that, to ensure maximum value to buy-side users (typically strategic sourcing managers), vendor participation in NelsonHall NEAT evaluations is free of charge and all key vendors are invited to participate at the outset of the project.



*Exhibit 1*

**‘Ability to deliver immediate benefit’: Assessment criteria**

Assessment Category	Assessment Criteria
Offerings	<ul style="list-style-type: none"> <li>Ease to aggregate logs into processes</li> <li>Desktop process discovery capability</li> <li>Integration between business and desktop data</li> <li>Process visualization</li> <li>Range of prebuilt/templated process analyses</li> <li>Ease (UI-based) of conformance/compliance checking</li> <li>ML-based root cause analysis</li> <li>Recommendations for process improvement and re-engineering</li> <li>Proactive process intervention</li> <li>Integrated automation capabilities</li> <li>Analytics reporting and insights</li> <li>No/low-code development</li> </ul>
Delivery Capability	<ul style="list-style-type: none"> <li>Maturity of partner base</li> <li>Desktop process discovery pricing model available</li> <li>Process mining pricing model available</li> <li>Training</li> </ul>
Client Presence	<ul style="list-style-type: none"> <li>Overall PDM presence</li> <li>North American presence</li> <li>LATAM presence</li> <li>Europe presence</li> <li>MEA presence</li> <li>APAC presence</li> </ul>
Benefits Achieved	<ul style="list-style-type: none"> <li>Visibility and transparency of process flows</li> <li>Reduced effort to identify process steps and variations</li> <li>Identify root causes of process variations and outcomes</li> <li>Identify KPI impact of process variations and outcomes</li> <li>Reduced average process cycle times</li> <li>Identify process activities to be automated</li> <li>Upskilling or retraining efforts</li> <li>Business agility</li> <li>Overall business impact</li> </ul>



*Exhibit 2*

**‘Ability to meet client future requirements’: Assessment criteria**

Assessment Category	Assessment Criteria
Level of Investments	Level of investment in PDM Level of investment in core desktop process discovery Level of investment in data connectors, integration, and models Level of investment in prebuilt (templated) process analyses Level of investment in analytics, insights, and simulations Level of investment in accelerating automation development Level of investment in proactive process intervention

For more information on other NelsonHall NEAT evaluations, please contact the NelsonHall relationship manager listed below.



[research.nelson-hall.com](http://research.nelson-hall.com)

**Sales Enquiries**

NelsonHall will be pleased to discuss how we can bring benefit to your organization. You can contact us via the following relationship manager:  
Beth Lindquist at [beth.lindquist@nelson-hall.com](mailto:beth.lindquist@nelson-hall.com)

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