NEAT EVALUATION FOR SOFTWARE AG:

Process Discovery & Mining

Market Segment: Process Mining Focus

Introduction

This is a custom report for Software AG presenting the findings of the NelsonHall NEAT vendor evaluation for *Process Discovery & Mining* in the *Process Mining Focus* market segment. It contains the NEAT graph of vendor performance, a summary vendor analysis of Software AG for process discovery & mining, and the latest market analysis summary.

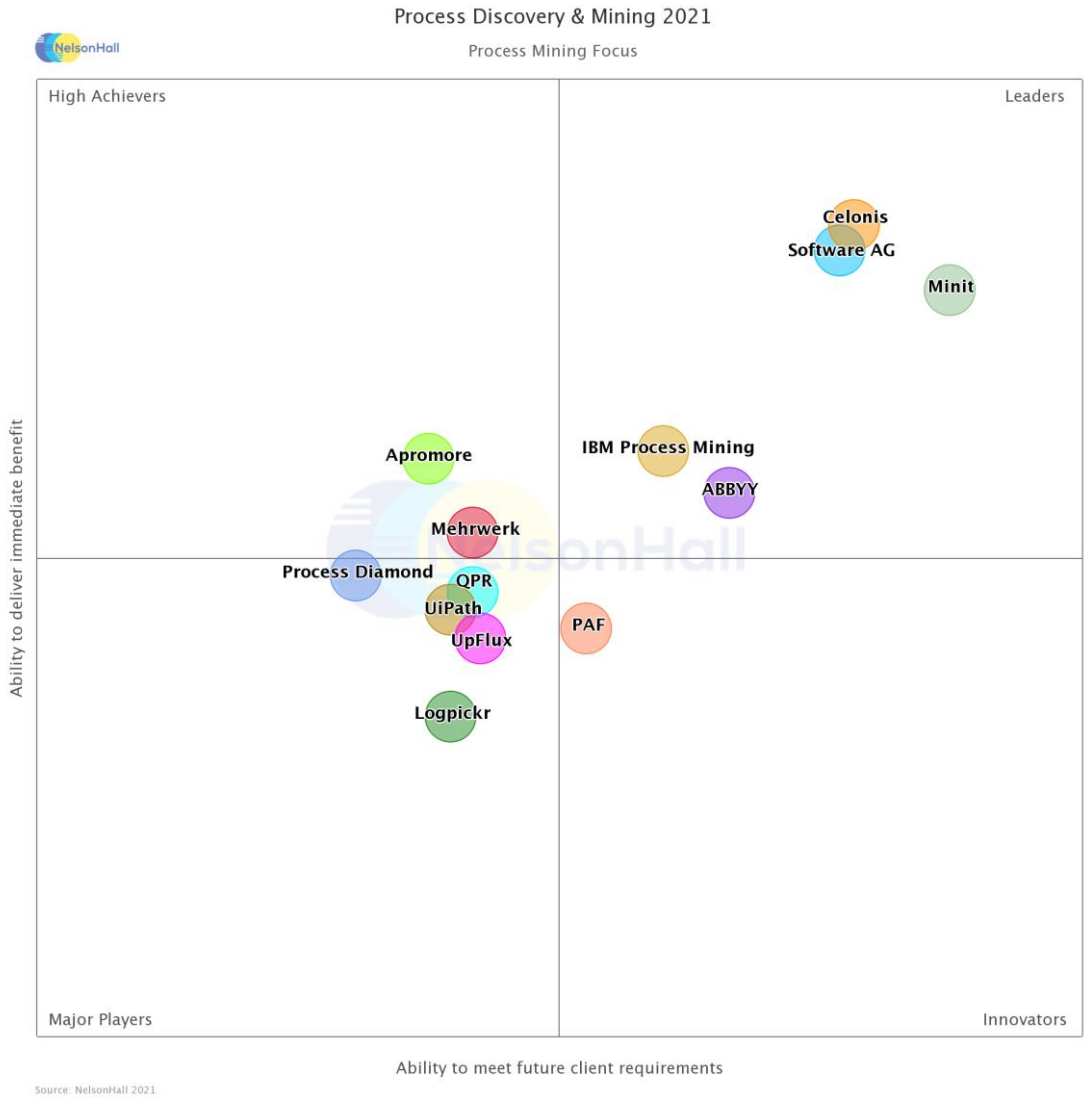
This NelsonHall Vendor Evaluation & Assessment Tool (NEAT) analyzes the performance of vendors offering process discovery & mining technology. The NEAT tool allows strategic sourcing managers to assess the capability of vendors across a range of criteria and business situations and identify the best 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, Mehrwerk+NICE, Minit, Minit+EdgeVerve, PAF, Process Diamond, QPR, Skan, Software AG, Software AG+Kryon, Soroco, StereoLOGIC, UiPath, and UpFlux. *N.B. where two vendors have a go-to-market technology partnership, this is indicated by '+' between the vendor names*.

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

NEAT Evaluation: Process Discovery & Mining (Process Mining Focus)



NelsonHall has identified Software AG as a Leader in the *Process Mining Focus* market segment, as shown in the NEAT graph. This market segment reflects Software AG's ability to meet future client requirements as well as delivering immediate benefits to its clients with specific focus on enabling them to discover business processes from IT systems/transaction logs.

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 (*Process Mining Focus*) here.

Vendor Analysis Summary for Software AG

Overview

Software AG has a long history in the process mining space, with its first commercial software released in 2000. It now offers two versions of its process mining solution: on-premise, and the SaaS version, launched in July 2020. The company's efforts over the past year have focused on developing and launching its SaaS version.

The company announced a new technology partnership with Automation Anywhere in early 2021 for a joint go-to-market that integrates process mining and task mining, and bot orchestration and monitoring with ARIS BPA. The partnership is similar to its existing one with Kryon. And in the last several years, the company has acquired technologies that synergize with or may become integral to its process mining solution (including Zementis in 2016 for AI, ML, and predictive analytics, Cumulocity in 2017 for expansion in the IoT area, and Built.io in 2018 for accelerating the integration of external platforms and services).

Software AG operates over 50 offices worldwide, including a Professional Service unit with 2000 expert consultants. Most of Software AG's clients are from direct engagements (the company estimates that 75% are direct, and 25% are from partners).

The company targets organizations looking for process visibility and management beyond standard back-office processes (especially finance) to production factory processes and supply chain/asset tracking processes, the latter two using IoT/device integration.

Software AG's ARIS Process Mining client base primarily consists of large enterprises ($1bn+ revenue), which makes up 80%, followed by 10% midmarket and 10% SMBs.

In 2020, Software AG saw the greatest growth in EMEA (43% in 2019), followed by North America.

Key Offerings

Software AG offers two versions of ARIS Process Mining, its process mining solution for enterprises: its original version for on-premise deployment and its new cloud-based SaaS version.

ARIS Process Mining SaaS is built from the ground up for a streamlined web experience. The two are not at feature parity, however, the company sees the two versions as serving different client needs and is developing features for each separately rather than as a unified set. Software AG also plans to begin offering ARIS PM SaaS on dedicated clouds starting October 2021. Currently, the SaaS version runs on AWS, but the company plans to support Microsoft Azure for dedicated cloud deployments in the future.

Software AG has also partnered with Kyron to offer a joint solution to clients for collecting and analyzing desktop user interactions.

Conformance checking centers around comparing process executions to a reference ('design') model to identify where cases deviate from the specification (manifesting as skipped/extraneous events or incorrect activity sequence). A new concept introduced in 2020/21 to conformance analysis in ARIS Process Mining is the metric 'process fitness'. Rather than just labeling a process instance as conformant or non-conformant, process fitness measure the degree of conformance.

The Root Cause Miner, built into the Discovery and Conformance Check analyses, is ARIS Process Mining's widget for automated root cause analysis. The miner can be run on all or select cases to help users identify root causes by showing commonalities of the afflicted case data, whether the salient feature is certain activities, case attributes, individual (or a combination of) process variants.

Software AG has integrated technology from its partner Lanner Group to offer process simulation functionality. Simulation variables are adjustable, and the actual simulation is executed through the ARIS environment. The results can be analyzed through all ARIS user interfaces.

Software AG uses a subscription model for ARIS Process Mining that is tiered (higher discount for a larger volume of licenses). It offers three product editions of its ARIS Process Mining SaaS solution: Basic, Advanced, and Enterprise. The company only offers the Enterprise edition for the on-premise version.

Financials

Software AG's ARIS Process Mining solution is part of its Digital Business Platform segment, which had a recognized revenue of €448.5m (ARR of €358.8m) in 2020. For comparison, the company had a recognized revenue of €474.5m (ARR of €340m) in 2019 and €464.7m (ARR of €305.4m) in 2018. The company does not release figures for each of its solutions in this segment.

Strengths

- Designed for business users: no-code ETL data transformations and no-code custom metric/KPI builder
- Process fitness in conformance checking: a unique metric for measuring the degree of process conformance
- Many complementary products in its portfolio, e.g., ARIS BPA, ARIS Process Mining, webMethods.io
- Integration of partner technologies for unified solution: Automation Anywhere and Kryon (task mining, automation), Lanner Group (data simulation).

Challenges

- Two versions of ARIS Process Mining: as the company continues to invest more into the SaaS version, the on-premise clients may suffer in the future from feature inconsistency
- Lack of ML-based proactive actions to intervene in ongoing cases to improve business outcomes
- Lack of ability to suggest solutions to root causes (coming Q3 2021 for SaaS version).

Strategic Direction

Software AG's roadmap over the next 12+ months is structured around four strategic themes:

- *Process Mining Platform*: deploy a scalable, enterprise-proven, and cloud-based SaaS environment with broad system connectivity and process adaptability
- *Process Visibility*: offer strong analytical capabilities and a smooth user experience for users to enjoy working on their tasks in a process mining project. Under this theme, the company is adding new analysis apps and components (e.g., new chart types), as well as continuing to streamline the UX
- *Process Transformation*: deliver the transformation of processes and business operations with seamless process change documentation, structured rollouts, and leveraging process mining to ensure sustainable transformation initiatives. Included in this theme is enhancing conformance checking for additional use cases but also deeper technology integration with partners, e.g., Kryon and Automation Anywhere
- *Process Excellence & AI*: provide automated insight into process executions (individual process cases) and trigger intelligent actions to ensure process excellence in business operations. The functionality here includes the soon-to-be-released automated root cause analysis.

Outlook

Software AG's comprehensive portfolio of products for process mining, BPM, and integration through webMethods.io is an attractive prospect for clients looking to get everything from a single vendor. And the launch of ARIS Process Mining SaaS sweetens things further with a lower cost of entry for firms looking to just get started with process mining. The Basic and Advanced editions give clients a gradual entry to adopting ARIS Process Mining and using it at the level they need without overspending on unused capacity, which is especially important for SMB and small enterprises. However, one concern with the introduction of the SaaS version is that now the company needs to expend additional developer resources to develop and maintain both, as they are separate codebases.

The company outlined plans last year to bring new ML-based features to its platform. Automated root cause analysis with change recommendation is on the way for the SaaS version, but the ML-based proactive actions feature has been postponed. This is unfortunate, as proactive actions delivers real value to clients by intervening in open and ongoing work – and many competitors already offer the feature. The company needs to continue pushing out such features to deliver added value as expectations continue to increase.

Process Discovery & Mining Market Summary

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	Ease to aggregate logs into processes Desktop process discovery capability Integration between business and desktop data Process visualization Range of prebuilt/templated process analyses Ease (UI-based) of conformance/compliance checking ML-based root cause analysis Recommendations for process improvement and re-engineering Proactive process intervention Integrated automation capabilities Analytics reporting and insights No/low-code development
Delivery Capability	Maturity of partner base Desktop process discovery pricing model available Process mining pricing model available Training
Client Presence	Overall PDM presence North American presence LATAM presence Europe presence MEA presence APAC presence
Benefits Achieved	Visibility and transparency of process flows Reduced effort to identify process steps and variations Identify root causes of process variations and outcomes Identify KPI impact of process variations and outcomes Reduced average process cycle times Identify process activities to be automated Upskilling or retraining efforts Business agility Overall business impact

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.

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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:

Guy Saunders at guy.saunders@nelson-hall.com