NEAT EVALUATION FOR CELONIS:

Process Discovery & Mining

Market Segments:
Overall, Process Mining Focus, Workforce Optimization Focus

Introduction

This is a custom report for Celonis presenting the findings of the NelsonHall NEAT vendor evaluation for *Process Discovery & Mining* in the *Overall, Process Mining Focus,* and *Workforce Optimization Focus* market segments. It contains the NEAT graphs of vendor performance, a summary vendor analysis of Celonis for process discovery & mining, and the latest market analysis summary for process discovery & mining.

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 overall, and with specific capability in process discovery, process mining, automation, and workforce optimization.

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, BusinessOptix, Celonis, EdgeVerve, Kryon, Lana Labs, myInvenio, NICE Systems, Process Diamond, QPR Software, Signavio, Skan, Software AG, UiPath, and UpFlux.

Further explanation of the NEAT methodology is included at the end of the report.
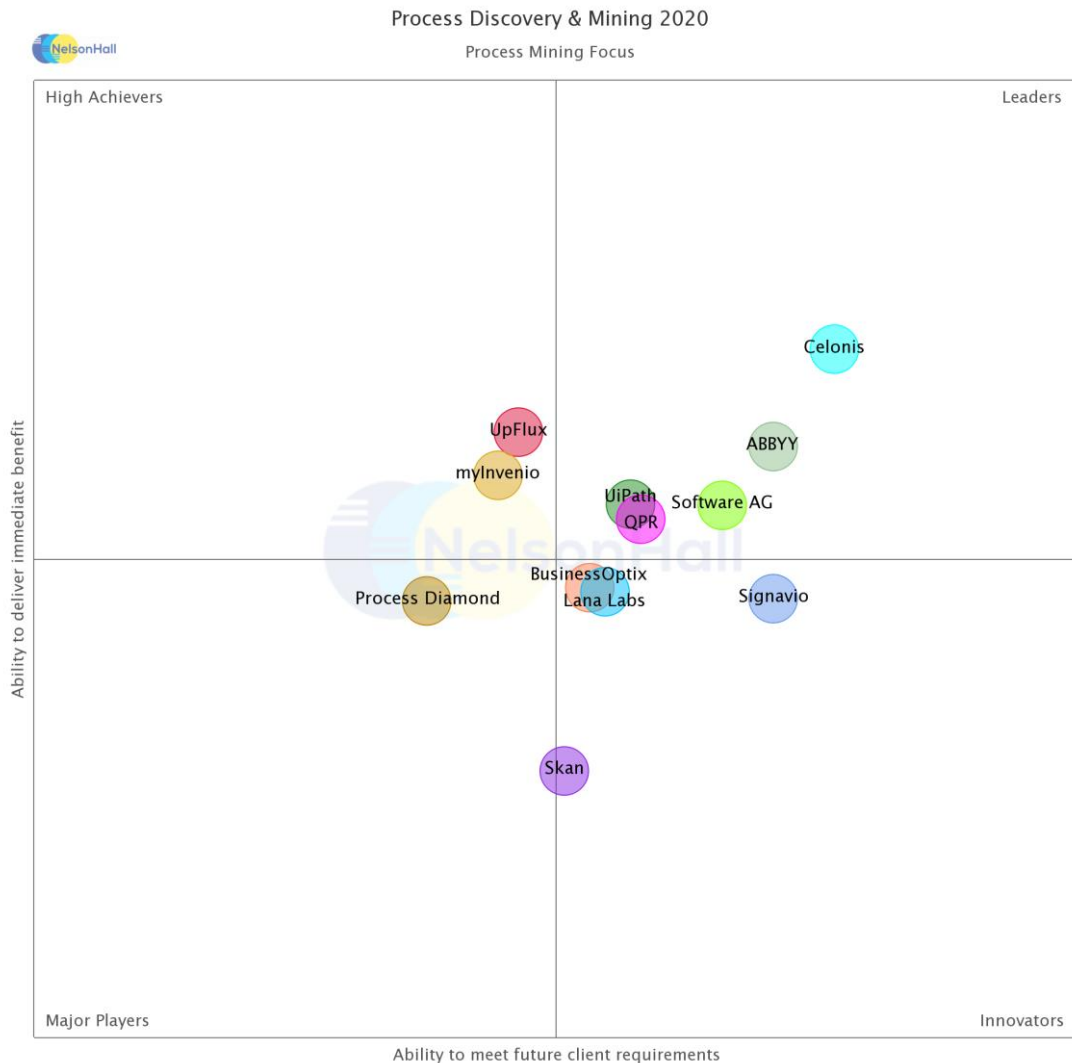
NEAT Evaluation: Process Discovery & Mining (Overall)
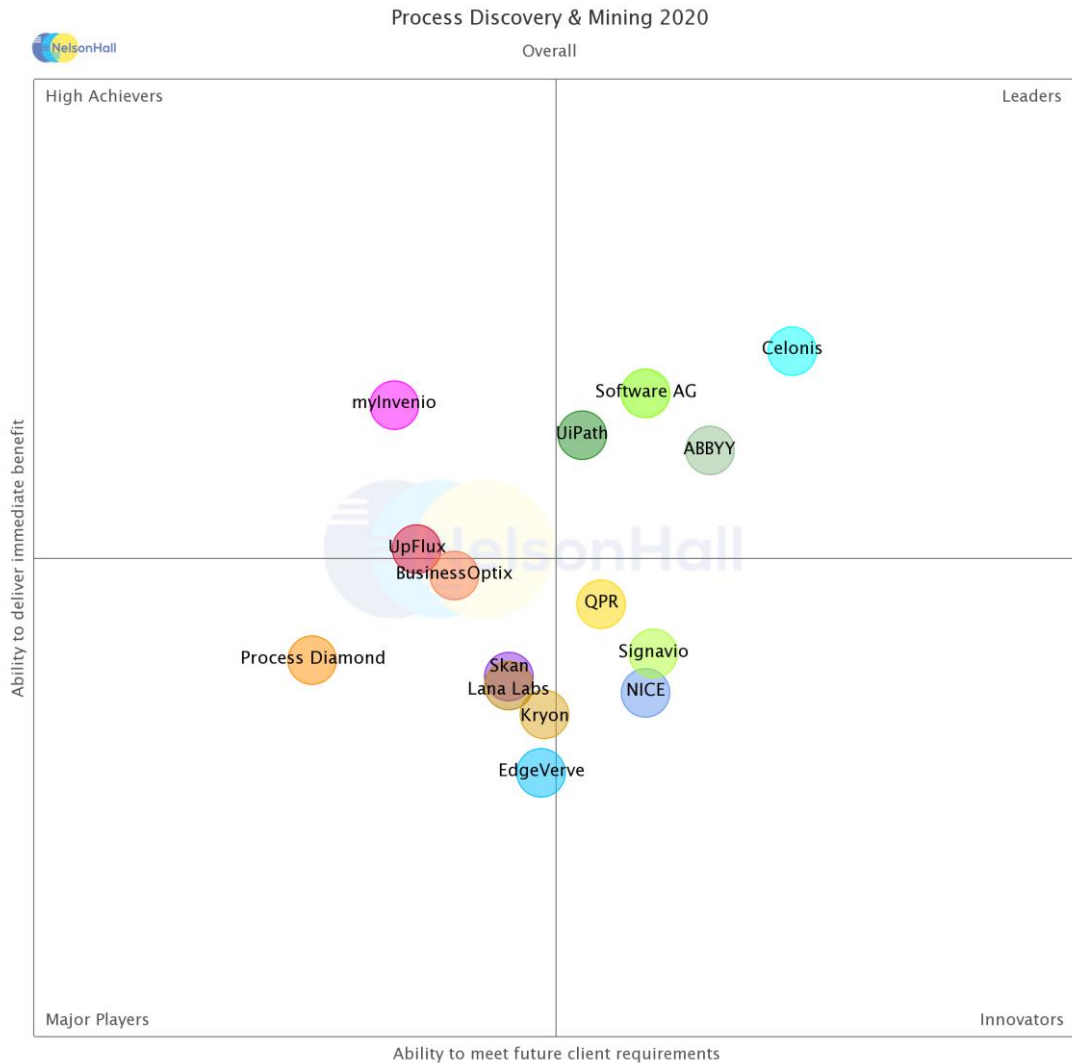
NelsonHall has identified Celonis as a Leader in the *Overall* market segment, as shown in the NEAT graph. This market segment reflects Celonis' overall ability to meet future client requirements as well as delivering immediate benefits to its process discovery & mining clients.

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 (*Overall*) here.

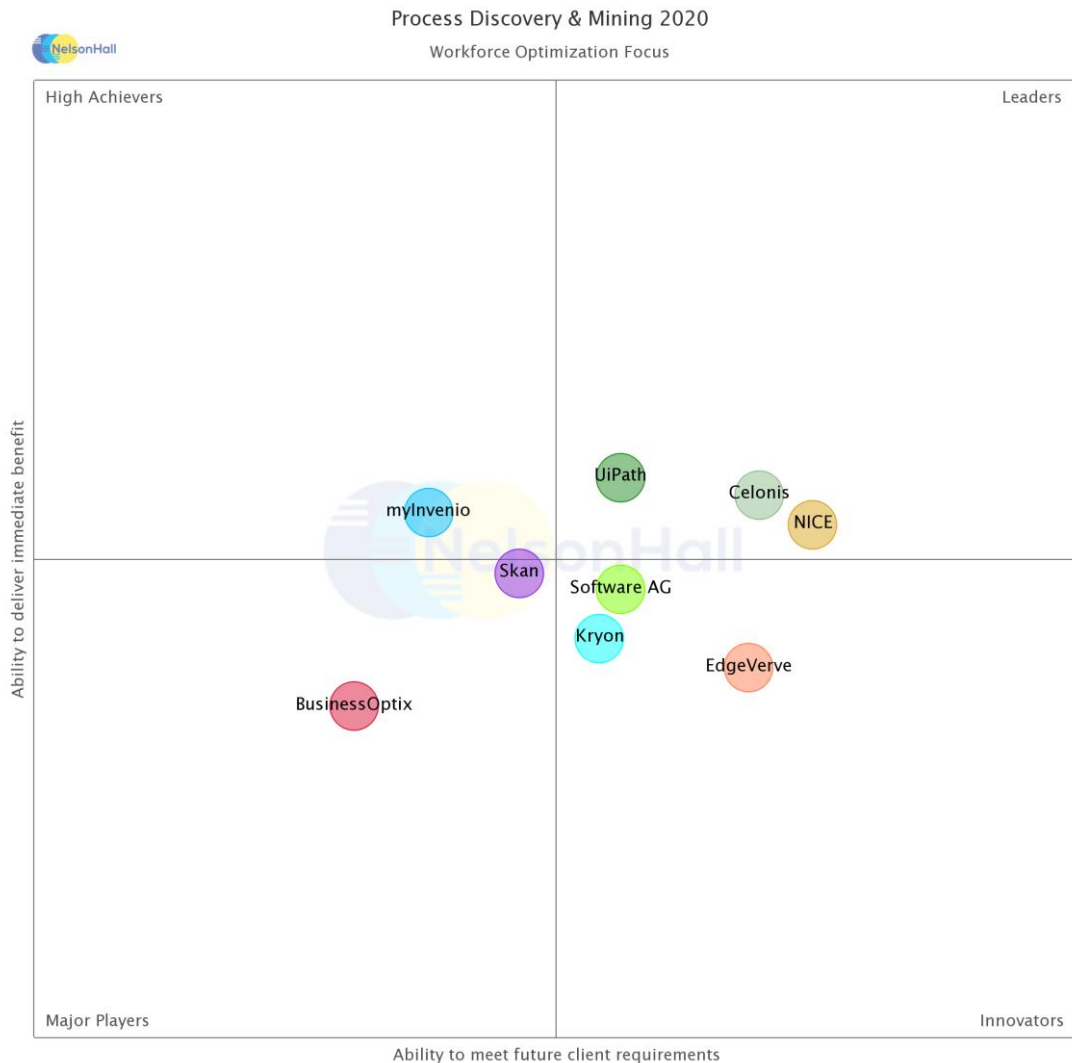## NEAT Evaluation: Process Discovery & Mining (Process Mining Focus)

NelsonHall has identified Celonis as a Leader in the *Process Mining Focus* market segment, as shown in the NEAT graph. This market segment reflects Celonis' ability to meet future client requirements as well as delivering immediate benefits to its process discovery & mining clients with specific focus on process mining capability.

Buy-side organizations can access the *Process Discovery & Mining* NEAT tool (*Process Mining Focus*) here.

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

NelsonHall has identified Celonis as a Leader in the *Workforce Optimization Focus* market segment, as shown in the NEAT graph. This market segment reflects Celonis' ability to meet future client requirements as well as delivering immediate benefits to its process discovery & mining clients with specific focus on workforce optimization capability.

Buy-side organizations can access the *Process Discovery & Mining* NEAT tool (*Workforce Optimization Focus*) here.

Vendor Analysis Summary for Celonis

Overview

Celonis offers Intelligent Business Cloud (IBC), an all-in-one platform that delivers:

- Data extraction, transformation, and loading

- Process analysis

- Process monitoring

- Process collaboration

- Corrective action enablement

- Machine Learning (ML) Engine.

Celonis' App Store is a platform aimed at accelerating time to value, featuring point-and-click install of pre-built connectors, analyses, Action Engine skills, and objectives or KPIs. The store includes more than 80 connectors, 400 analyses, and 40 Action Engine skills that have been developed by Celonis.

Data can be loaded into the Celonis IBC through data connections, file uploads, and a push API. Celonis offers pre-built connectors, available in the Celonis App Store, for IT systems that support both extraction and transformation capabilities.

Included with the Celonis IBC is the Process AI app, the company's built-in app for detecting and analyzing deviations from the most common paths (automated root cause analysis).

With a standard BPMN 2.0 reference model loaded, the built-in Conformance app shows an overview screen with summary information, conformance history plot, KPI information, and a list of violations. Automated root cause analysis is not limited to the Process AI app but can be performed on violations in the Conformance app.

While the root cause analysis of the Conformance app specifically looks at the root causes of a process violation, Celonis recently launched a Machine Learning app and Automated Root Cause Analysis app that is promised to determine root causes for a broader scope of problems.

While Celonis' Analytics Apps aims to help analysts discover and enhance processes faster, the recently released Operational Apps are purpose-driven. Once business outcome targets are set, Celonis' AI Engine aligns downstream worker actions to the strategy through "action boards" that combine analytical views with prioritized work and recommendations towards desired outcomes.

Celonis offers both per-user and per-process annual subscription pricing models, with per-user pricing becoming increasingly popular recently. Celonis' pricing through partner channels typically reflects the same pricing.

Celonis has ~900 employees (doubled from the previous year), where ~30% are part of the core product and engineering teams. About 70% of Celonis' sales are direct, and the remaining 30% can be attributed to partners. The company has ~130 partners in its network.

Celonis targets Fortune 5k companies and has ~600 unique clients.

Financials

Celonis does not release its revenue numbers publicly, but NelsonHall estimates its 2019 annual recurring revenues at $125m (130% growth y/y).

Strengths

- A wide array of pre-built analysis tools from partners in App Store

- Process Query Language for no-code custom KPIs

- Action Engine: bringing work to user attention or triggering work to robots

- Operational Apps: outcome-driven persona-specific boards.

Challenges

- Tools to collect user interactions not generally available

- Lack of automated solution suggestions to root causes

- Lack of automated/manual what-if scenario simulation.

Strategic Direction

At Celosphere 2020, the company announced its task mining products are entering open beta with general availability scheduled for November 2020. The company will tie the task mining data with the business data, aiming to automatically link discovered desktop tasks to business case IDs to give a more in-depth picture of a process and for automation potential.

Celonis will continue adding value to its platform by rolling out libraries for KPIs and skills. The aim is to collect best practice metrics and skills across industry verticals and use cases to reduce client time to value.

With the general availability release of Operational Apps at Celosphere 2020, the company will now turn its focus to the framework upon which Operational Apps are developed. Celonis wants to democratize the use of process mining to improve outcomes, so it aims to enable partners and customers to rapidly develop Operational Apps for every process and use case.

Outlook

Celonis offers a mature process mining platform that is well supported by partners. The company made decisions in the past to focus on specific features that are driven by its client feedback, e.g. real-time monitoring, but not others that its competitors have chosen to focus on instead. Task mining is one example of this; some competitors have already developed and deployed task mining products mainly for automation. However, Celonis is hearing from its early adoption clients that they see task mining offering greater value in other areas (e.g. compliance, cash preservation), and it is directions such as these that the company chooses to drive its development while keeping the product in open beta.

The platform's flexibility and customizability can be of great value for large clients who have teams to develop the platform to highlight its organizational goals. The company's recently launched Operational Apps will no doubt bring value to clients who can take advantage of it. Though the scope of use cases is currently limited, the company is working on addressing this by incentivizing partners and clients to share the apps they develop.

Process Discovery & Mining Market Summary

Overview

Process discovery and process mining, previously two complementary segments, are converging as the market is recognizing the need to understand a more complete picture of how work is performed. Both segments aim to help organizations to gain visibility of processes but at different scales:

- *Process discovery* provides an understanding of work through the lens of workers on desktops. Human workers perform work that is rule-based on highly structured data or judgment-based on unstructured data, and the gamut in between. The segment is driven by both RPA and workforce optimization

- *Process mining* provides an understanding of work from an end-to-end perspective based on business outcomes. Process mining started from a narrow definition of visualization and analysis of event logs using algorithms and mathematical procedures. However, in recent years, it has grown to include capabilities for process modeling, process improvement, process monitoring, and corrective action enablement.

Process discovery vendors are integrating process mining technologies to help clients quantify the impact on work to give recommendations that will lead to greater overall business impact. Similarly, process mining vendors are integrating process discovery technologies to give actionable insights and to quantify the potential business impact of the insights reliably.

Process discovery & mining solutions typically feature:

- *ETL capabilities* – to extract, transform, and load transactional data from IT systems for analysis

- *Desktop capabilities* – includes a desktop tool to collect 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 prior to making changes

- *Workflow support* – to scaffold workflows to document work for regulatory compliance, triage work to appropriate workers, and facilitate bot-to-human, human-to-bot, and human-to-human collaborations.

Buy-Side Dynamics

The key capabilities sought by organizations in selecting a vendor for process discovery & mining solutions are:

- Ease of mapping end-to-end processes and improving transparency of operations

- Ability to reduce process cycle times and improve overall business outcomes

- Ability to identify root causes of process exceptions

- Ability to identify KPI impact of process variations

- Ability to identify process activities to be automated and their potential impact

- Increase the standardization of work – and as a consequence, improve the auditability of operations for regulatory compliance, improve employee work quality and efficiency, and increase the impact and ease of deploying automation

- Reduce bot development/roll-out times.

Market Size & Growth

The current global PDM market size is estimated by NelsonHall at ~$566.5m and will grow to ~$5.4bn by 2024, a growth of 57% CAAGR. After slower than initially projected growth in 2020 revenues as the COVID-19 pandemic reduces spending in certain segments, clients are expected to return to higher levels of investment in improving processes in subsequent years.

Europe accounts for 56% of the PDM market, followed by the U.S. at 33% and APAC at 21%. The U.S. is expected to be the fastest-growing region despite the pandemic.

BFSI is the largest sector, accounting for 34% of the market. Prior to the global pandemic, the healthcare sector was expected to be fast-growing; however, that growth will likely be accelerated to become one of the fastest-growing sectors. As the cost of healthcare continues to grow in many countries, identifying processes to improve patient outcomes and reduce treatment waste will open up many opportunities.

Success Factors

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

- *Flexible pricing*: successful vendors have flexible pricing with respect to data volumes, number of users, and platform functionality, to account for clients having differing requirements

- *Ease of ETL capability*: given the broad range of data systems used by clients, successful vendors not only have a broad range of pre-built connectors but will have also democratized their ETL capabilities so clients can tap into their data with ease

- *Transparency into work*: successful vendors have the capability to integrate data from multiple modalities that capture work; e.g. on the desktop, on mobile devices, and using IoT sensors, but also worker inputs; e.g. interviews, surveys, to give organizations a true picture of how work is performed within their operations

- *Ease of understanding processes*: successful vendors provide an array of analysis tools for clients to understand how work is performed quickly and its impact, but have also

democratized these capabilities so even business users can develop tools and custom metrics to suit their organizational needs

- *Outcome-driven insights*: successful vendors provide actionable insights that cater to clients' organizational outcome goals

- *Facilitate transformation*: successful vendors look beyond the immediate assessment needs to enable clients to plan, execute, and track their process transformations, by providing capabilities that include understanding impacts of process changes, templating best practices, facilitating collaboration, and outcome-oriented monitoring.

Outlook

Over the next few years, expect the following developments:

- Integration of other data modalities. Just as user desktop data is giving richer insights, so too will other modalities used when work is performed on non-desktop devices (e.g. mobile, IoT) and non-traditional IT systems (e.g. conversational interfaces)

- Process discovery recorders will become two-way communication devices. Part of realizing the value of mining data is to get actionable insights, not just after the fact but as work is being performed – improving best practice conformance, regulatory compliance, and for prescriptive training

- AI/ML capabilities will be able to give insights that are increasingly tailored to each client, with business policies, resource constraints, and client-specific KPI goals taken into account

- Greater DPA/RPA integration will lead to reduced bot roll-out times and quantifying the impact of bots on overall business outcomes

- Vendors will incentivize partners to share their industry and use case-specific tools across the platform by monetizing content stores

- Larger selection of unified one-stop-shop solutions using a combination of partnerships and M&As. Following activities observed in the past year with process mining vendors partnering with RPA vendors, most recently, Kryon announcing that Software AG will offer its process discovery technology, and ABBYY and UiPath acquiring TimelinePI and ProcessGold respectively.

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
	Range of pre-built connectors and APIs
	User desktop interaction recording capability
	Ability to identify desktop processes
	Ability to delineate agent time usage
	Integration between business data & desktop data
	Ability to filter based on process variation & grouping
	Range of pre-built process analyses
	ML-based root cause analysis
	Ease (UI-based) of conformance/compliance checking
	Proactive process intervention
	Dashboard functionality
	Ability to identify potential for automation
	Ability to automate bot creation
	Workflow support
	Scenario simulation
Delivery	Maturity of partner base
	PD pricing model available
	PM pricing model available
	Training
Client Presence	Overall PDM presence
	U.S. presence
	U.K. presence
	Continental Europe presence
	Rest of EMEA presence
	APAC presence
	LATAM presence
Benefits Achieved	Identification of processes to be automated
	Reduction in bot dev/roll-out times
	Impact on compliance
	Identification of root cause of process exceptions
	Time to identify process steps
	Reduction of variants
	Average cycle time reduced
	Identification of KPI impact of process variations
	Overall business impact

Exhibit 2

'Ability to meet client future requirements': Assessment criteria

Assessment Category	Assessment Criteria
Service Culture	Perceived suitability to meet future client PDM needs Service culture
Level of Investment	Level of investment in PDM Level of investment in core desktop process discovery Level of investment in pre-built process analyses Level of investment in identifying & automating exception processing Level of investment in auto bot creation & proactive process intervention

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

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:

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