IBM

Procure to pay—overcome the 5 most critical challenges with IBM Process Mining
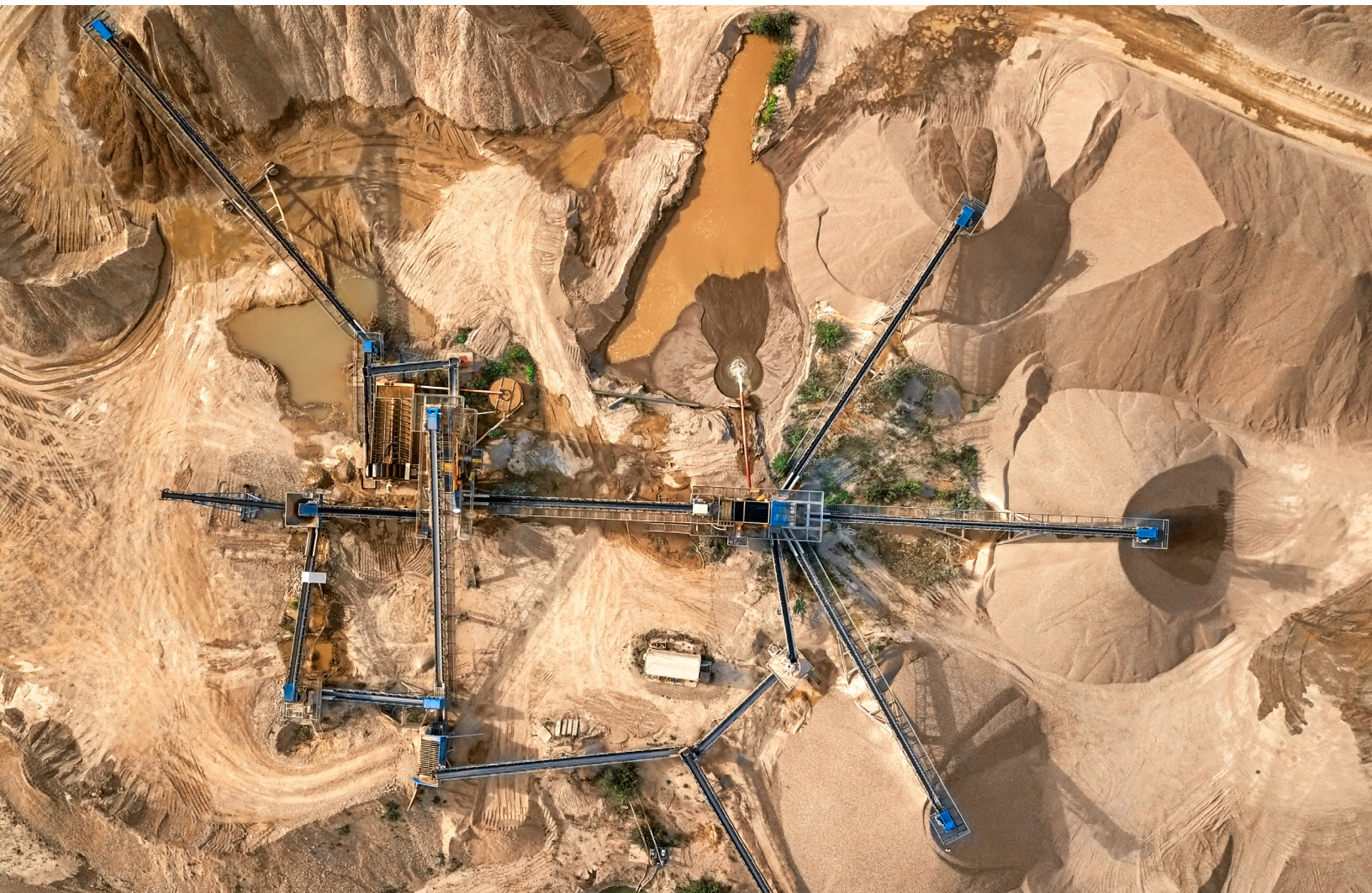
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Executive summary

In many private and public organizations, procurement has become recognized as "the most complex business function," a fundamental enabler for operational excellence, and the favorite target for achieving cost reduction (Ernst & Young, 2020).

As detailed in a review from MIT Sloan Management Review, the aim of analysis on the procure-to-pay (P2P) value chain is so that "an organization's supply chain is able to 'pivot' based on real-time analytics and flexible decision-making, and execution of processes."

Mastering data governance is a great strategy to improve the alignment of procurement with key business goals, enable new technologies such as robotic process automation (RPA), and give competitive advantage through enhanced decision-making and execution of processes. This white paper outlines procurement challenges and offers a strategy to help achieve operational excellence using IBM® Process Mining.

Introduction

Many chief procurement officers (CPOs) are concerned about managing risk and compliance, increasing productivity and optimizing purchasing spend. This white paper outlines how to tackle the 5 most critical procurement challenges—maverick buying, deviations, reworks, automation enablement and cash discount losses—by using enterprise data and information.

IBM Process Mining is an intelligent process mining and digital twin of an organization (DTO) solution. This white paper explains how to use the tool-agnostic solution to improve your core value chain and resources, drive digital transformation and turn risks in complex business scenarios into opportunities that create sustainable value.

Procure-to-pay value chain

The analysis of an organization's P2P value chain describes the full range of activities and challenges involved in each step of the P2P process (Figure 1).
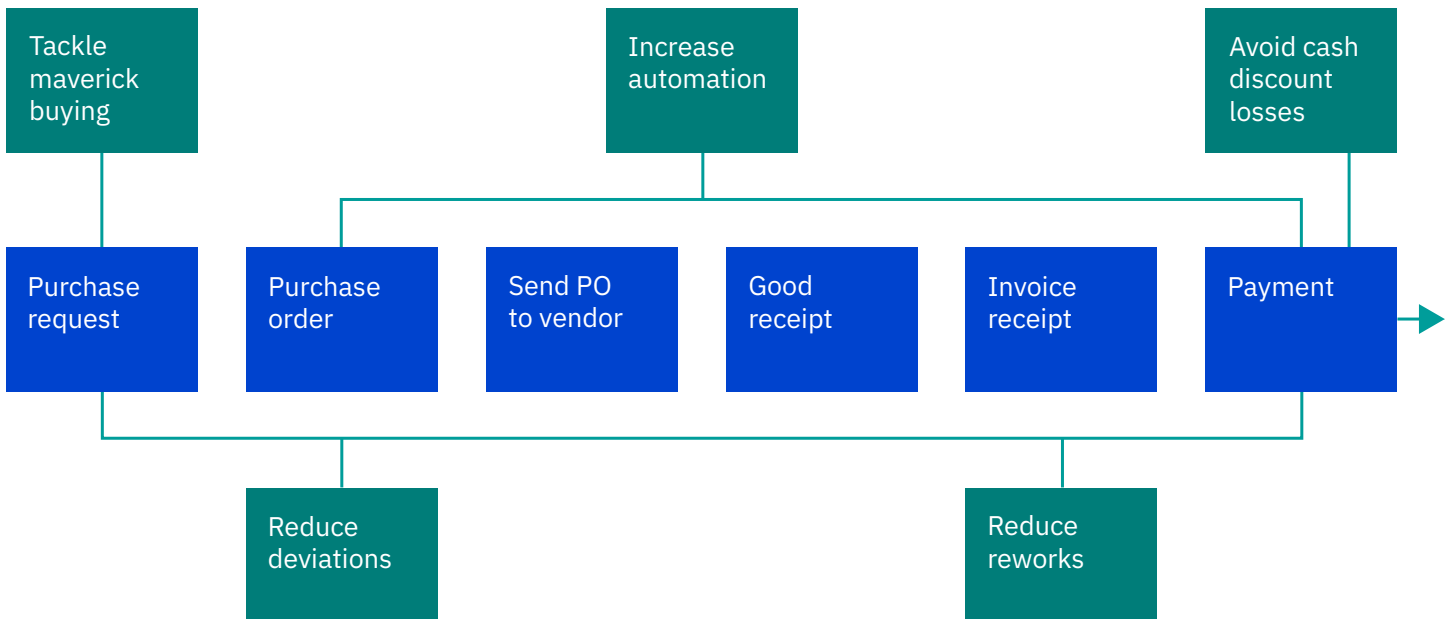

Figure 1. The P2P value chain

IBM has identified the following 5 critical P2P challenges that today's procurement leaders need to address:

– Maverick buying
– Deviations
– Reworks
– Automation enablement
– Cash discount losses

Process mining technology can help deliver maximum value at the least possible cost. Its value chain analysis helps CPOs overcome these critical challenges and increase operational efficiency.

More advanced still, process mining technology with DTO capabilities such as those of IBM provides deep insights and control of processes and resources with scenario-based predictions of different company strategies, including:

– Automatic discovery, streamlining and analysis of end-to-end business processes from transaction logs of any IT system
– Constant monitoring of process performance and compliance by analyzing variants, bottlenecks and deviations with root cause analyses
– Continuous process optimization through simulations of what-if scenarios with the expected ROI

Analyze complex processes with multilevel process mining
Every organization has raw data in its IT systems that can be used as a source of value. Advanced process mining technology can use that data to instantly provide deep-level insights of processes, resources and possible outcomes.

It's important to note that IBM Process Mining can accurately map complex processes such as P2P with its unique multilevel process mining capability.

Traditional process mining techniques fail to accurately map complex processes that involve steps, events and entities that are linked by many-to-many relationships. As a result, they cannot manage data divergence and convergence issues that characterize these complex business processes, and, therefore,

are unable to treat these as single processes. Statistics would be biased and misleading.

With multilevel process mining, you can map several derived processes such as P2P's different subprocesses—purchasing, ordering, invoicing, payment—within a single comprehensive model, solving the huge limitation faced by traditional methodologies. Automatically discovered multilevel processes are a rich source of ideas and insights.

Overcome challenges with out-of-the-box and custom advanced analytics dashboards
The standard collection of advanced analytics dashboards originated from IBM's observations of the most common pain points in the P2P process. They are ideal for deep diving into each procurement challenge with operational intelligence and analytics.

For each challenge, IBM Process Mining provides an advanced analytics dashboard with maximum visibility and effectiveness to help meet the goals and needs of any business.

A successful strategy is one that is both effective and doable. With out-of-the-box advanced analytics dashboards, CPOs can use preconfigured key performance indicators (KPIs), data visualizations and well-defined insights to address the 5 challenges that have the biggest impact on the value chain.

When aligning procurement with your organization's strategy, you can customize visual dashboards to help save time, improve decision-making and address the value chain's challenges.

Not only do these self-service dashboards help leading CPOs with their objectives and goals, but they also facilitate stakeholder alignment, support the organization's vision and help master complexity.

Challenges

Procurement leaders' immediate challenges today center on the increase in complexity on all fronts involved in driving procurement process success. Although many CPOs may feel overwhelmed by a sea of growing complexity, there are still ways they can tackle this increase in complexity by shifting toward a proactive mode, directly addressing the main challenges that impact the procurement value chain.

"Most CPOs cited poor master data governance as the biggest challenge for mastering digital complexity."

— Deloitte Global CPO Survey 2019

In practice, analyzing the P2P value chain that their organization relies on will help CPOs to manage complexity, reduce risk, improve performance and open new windows of opportunity.

"Most CPOs feel procurement-related risks have increased over the last 12 months."

— Deloitte Global CPO Survey 2019

While dealing with and embracing complexity effectively, CPOs will also be able to fuel digital transformation efforts, an imperative for top-performing procurement organizations.

3%   • 0%

19%

34%

42%

■ Increased significantly
■ Declined somewhat
■ Broadly unchanged
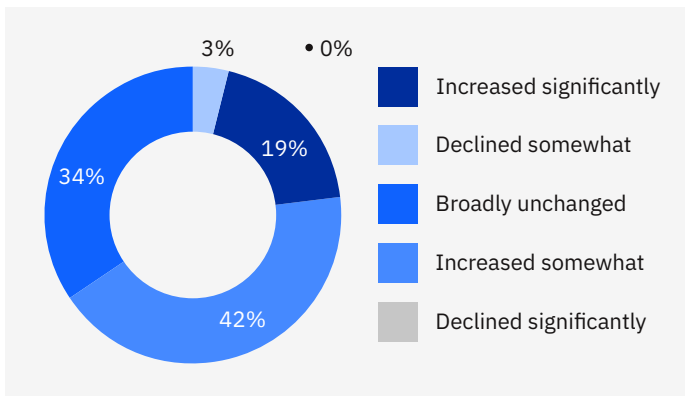■ Increased somewhat
■ Declined significantly

Figure 2. Deloitte Global CPO Survey, 2019, gathered responses from 481 procurement leaders in 38 countries, representing organizations with a combined annual turnover of USD 5 trillion.

CPOs who face their value chain complexity and risks can use disruptive technology such as process mining to go on the offensive, thus overcoming obstacles and seizing opportunities.

Below, CPOs can find the steps to overcoming the main challenges in their value chain using process mining technology.

Challenge 1: Maverick buying

The first challenge for which process mining technology delivers benefits in procurement is maverick buying. Inefficient and complicated P2P processes often result in large volumes of maverick buying behaviors.

Significant value leaks in the P2P process are a persistent problem for many chief information officers (CIOs), especially in indirect purchases that don't meet an organization's purchasing policy. This includes off-contract methods of procurement and unauthorized purchases. Maverick buying makes the agreement with the supplier more expensive because the volume of the framework agreement has decreased or the goods are purchased at too high a price.

How IBM Process Mining can help
Following the broad definition of a maverick, IBM Process Mining offers two standard insight dashboards to help procurement leaders identify this kind of purchasing:

– Order without a Purchase Requisition
– Invoice without an Order

These dashboards give procurement leaders instant insights into numbers and drill down into the most involved suppliers or purchasing groups and any resources that routinely work in this way.

Additionally, IBM Process Mining calculates the expected savings that a company can achieve when managing these orders correctly.

Challenge 2: Deviations

The second challenge is deviations. Deviations are an expected component of business processes—unanticipated fluctuations in economic markets and changes in technology or customer demand all require agility. However, deviations can also indicate a lack of understanding of how a process is carried out.

Because deviations are directly tied to company finances, it is crucial for CIOs to understand which deviations contain variants that are beneficial and which are problematic in order to keep up with variability and volatility, the true enemy of the perfect order and production environment.

How IBM Process Mining can help
Process mining with business process management (BPM) capabilities can locate and analyze deviations and provide additional insights into the most significant deviations for decision-making. This is accomplished by reading existing data and comparing a preferred model or reference model of the process with how activities are actually being carried out.

A frequently recurring deviation could be the result of the department preferring the services of one vendor that is particularly specialized, but it could also indicate a lack of governance. A thorough deviations analysis will bring clarity to the behaviors of the department or entity involved and identify any reworks that may occur during the purchasing process.

Conformance checking is the ideal beginning to identify any deviations and, therefore, highlight the variability and volatility present in one's process. The automatic and data-driven analysis is fast and reliable and doesn't require any time-consuming meetings, which are prone to subjectivity.

Conformance checking automatically finds nonconformant cases in the process and shows the activities that are out of line with the reference model along with the frequency of each of those variants. Additionally, it shows other significant information, such as the most relevant entity and supplier involved in nonconformant activities within a deviation.

An equally important feature in the IBM Process Mining solution's conformance checking is automatic root cause analysis. Whereas business intelligence tools can't provide a root cause analysis, process mining can because it starts by mapping a real, as-is process model from event logs to compare with the reference model.

The root cause analysis discovers unexpected activities, who is involved, why the nonconformance is happening and where it is causing bottlenecks and reworks and impacting other activities in the process.

The IBM Process Mining solution's custom process intelligence dashboards extend the analysis of nonconformant activities and can be used as a reporting and monitoring tool.

Custom dashboards provide a granular level of detail on a specific subset of variants. IBM Process Mining can identify and highlight nonconformant cases including average lead time, average cost and any other relevant KPIs, either analyzed per case or by the total number of cases. The dashboard also indicates the expected savings after minimizing these deviations, making it easier for CPOs to drive impactful decision-making.

These intelligent features enable CPOs to target critical deviations immediately.

Challenge 3: Reworks

Many organizations still rely on repetitive, manual activities. These low-value activities require time and can impact every part of a business by increasing the overall cost and duration of the process.

Reworks are often present when not enough of the P2P process is automated and manual activities are either not carried out properly the first time or information was missing that was necessary to complete a case.

How IBM Process Mining can help
Process mining technology such as IBM Process Mining can help procurement leaders identify reworks, anticipate how they affect complex processes and drive improvement activities.

IBM Process Mining is more than just a reporting and monitoring tool—it's an analysis tool that detects reworks at a whole new level with root causes, performance insights and automation recommendations.

Thanks to these intelligent capabilities, organizations can locate the reworks they want to automate for increased efficiency and productivity as well as to free workers to spend more time on creative or complex activities.

The Reworks View and Activity Reworks widgets show the most reworked activities of a company's P2P process and measure its performance.

Challenge 4: Automation enablement

According to the Institute for Robotic Process Automation & Artificial Intelligence, an RPA software robot costs about one third the price of an offshore full-time employee (FTE) and one fifth the price of an onshore worker. Thus, it's not surprising that in recent years, there has been an intensifying interest by procurement leaders to automate repetitive and labor-intensive activities.

There are many immediate benefits from adopting RPA, such as optimized productivity, improved analysis and insights, and increased ROI. Not only does RPA deliver immediate value to operations, it also enables employees to get back to activities that require emotional intelligence, which increases innovation and improves the customer experience.

How IBM Process Mining can help
Process mining such as IBM Process Mining complements RPA by eliminating the two most common RPA pain points, as shown earlier in Figure 2.

"78% of process mining customers say process mining is key to enabling their RPA efforts."

— Process Mining Sector Scan, January 2020

IBM Process Mining approaches RPA from a business process improvement perspective. Starting from a clear and holistic view of end-to-end processes, it identifies the best tasks to automate based on the impact they'll bring to the overall process.

"The global robotic process automation market size is expected to reach $11 billion by 2027."

— Grand View Research, April 2021

"Only 4% of automation initiatives reach a 50-robot scale. 70% of automation resources are spent on pre-automation effort."

— Deloitte Third Annual Global RPA Survey, 2018

Automation monitoring dashboard
Fact-based recommendations paired with real-time process insights help procurement leaders implement and govern RPA in their complete end-to-end process.

In the IBM Process Mining solution's prebuild plug-and-play automation dashboard, both manual and robotic activities are monitored, providing detailed KPI insights, cost analyses and automation trends. This information helps simplify the CIO's task of identifying the most expensive activities that haven't been automated yet.

The dashboard is a configurable reporting solution that provides the exact status of an organization's RPA implementation and execution. IBM Process Mining is a tool-agnostic solution designed so that users can easily integrate with any planned or existing RPA solutions.

Fast development and high involvement of stakeholders are essential for RPA implementations. Therefore, it's important to take a holistic approach that focuses on closely aligning people, processes and structure through the intelligent monitoring of KPI and service level agreement (SLA) metrics.

Data visualization widgets let procurement leaders interact with data to find key business insights. IBM Process Mining lets you choose from a list of available widgets, add custom widgets and select from an ever-expanding gallery.

Decision Rules Miner
Business rules translate the logic necessary to convert raw data from enterprise systems into information, and ultimately, knowledge that facilitates fact-based decisions.

Traditional process mining tools only identify the probability of cases following a specific path after a decision point; however, the contextual information of business rules is essential to increase the reliability and quality of process models and analysis, contributing to a more precise DTO for effective decision-making.

Decision Rules Miner is a unique feature of the solution to automatically discover correlations in the business data already available in the process to identify the decision rules that determine why the process is following a specific path. In essence, starting from the existing business data, Decision Rules Miner extracts the business rules on each

decision point of the process and adds them to the Business Process Modeling Notation (BPMN) model that was already discovered at the beginning of the process analysis.

With the discovery of decision rules, procurement leaders can reach a new level of comprehension of the process from a business perspective, which increases accuracy and reliability when selecting areas for improvement and strategic decision-making.

Combining the probability and logic behind cases following specific paths, IBM Process Mining can generate an advanced process model that can be used to simulate what-if scenarios to test improvement strategies.

Sophisticated simulation and diff comparisons
Simulation technology combined with process mining plays an essential role in the improvement of complex business processes. It provides a noninvasive, no-risk, low-cost methodology to identify and analyze the underlying factors that contribute to poor process performance while evaluating opportunities for improvement.

At the start of any business process improvement initiative, it's crucial to carefully manage risks associated with it to ensure its sustainability and success. When considering the nature and complexity of procurement operations and the significant impact they have on stakeholders, it can be a difficult task for professionals to guarantee that nothing goes wrong during these improvement initiatives and that everyone is on board with the project.

Simulation can both eliminate uncertainty linked to improving complex processes and help an organization avoid costly mistakes. Simulation engines such as IBM Process Mining provide a risk-free virtual sandbox to test any number of ideas and improve decision-making for process improvement. Simulation is an integral part of process improvement programs of any organization.

The IBM Process Mining solution's holistic simulation combines all data from the actual, as-is process model to calculate the performance and expected ROI of the process model after implementing any improvements being tested. When simulating a what-if scenario such as RPA implementation, you can compare it against the process's actual status in the diff capability for improved, evidence-based decision-making.

Challenge 5: Cash discount losses

With an early payment program, procurement professionals can negotiate significant cash discounts with suppliers to support the organization's supply chain. Although every approved invoice is an opportunity to turn accounts payable into cost savings, if the approach is not managed in a timely manner and deadlines are not being met, organizations miss out on important cash discounts and cost the supplier's confidence.

Giving suppliers the option to be paid early on any invoice as soon as it's approved fosters a stronger supply chain. Early payments can help suppliers avoid costly lending options and therefore improve their bottom line because they can use the additional cash flow to hire, grow and develop their business.

But if you can't commit to early payments, can there really be a way to strengthen supplier relationships while saving millions? The answer is yes. Let's explore how it's possible.

How IBM Process Mining can help
Strong supplier relationships are a great way for procurement professionals to guarantee savings for the organization. Simply meeting suppliers' established deadlines can result in large savings. These are real savings for the entire supply chain and can be monitored with custom spend under management dashboards such as those tailored and provided by IBM Process Mining.

Total expected savings

All procurement professionals have the same objective: finding new ways to create cost savings and increase value in their organization.

Savings has always been a difficult topic for procurement. Reliance on debatable, rarely used data points builds a shaky foundation for CPOs. Even when teams deliver savings the business can verify, the executive management team will expect them to deliver additional savings. So, what's next?

IBM aims to identify targets that deliver real business value from a savings perspective, considering all stakeholders and the entire P2P value chain to develop various outputs that deliver innovation and guarantee savings.

Moving toward a continuous business process improvement approach by capitalizing on existing stakeholders such as enterprise IT systems, the right technology provider doesn't just increase procurement agility by removing complexity and delivering operational transparency. It also ensures improvements and innovations that receive savings from data-driven opportunities.

Companies that harness the power of process mining will be able to make informed decisions at a low cost—decisions that make sense for the business and its stakeholders. By understanding where these opportunities are and testing initiatives before implementation, CIOs can guarantee expected savings like never before (Figure 3).
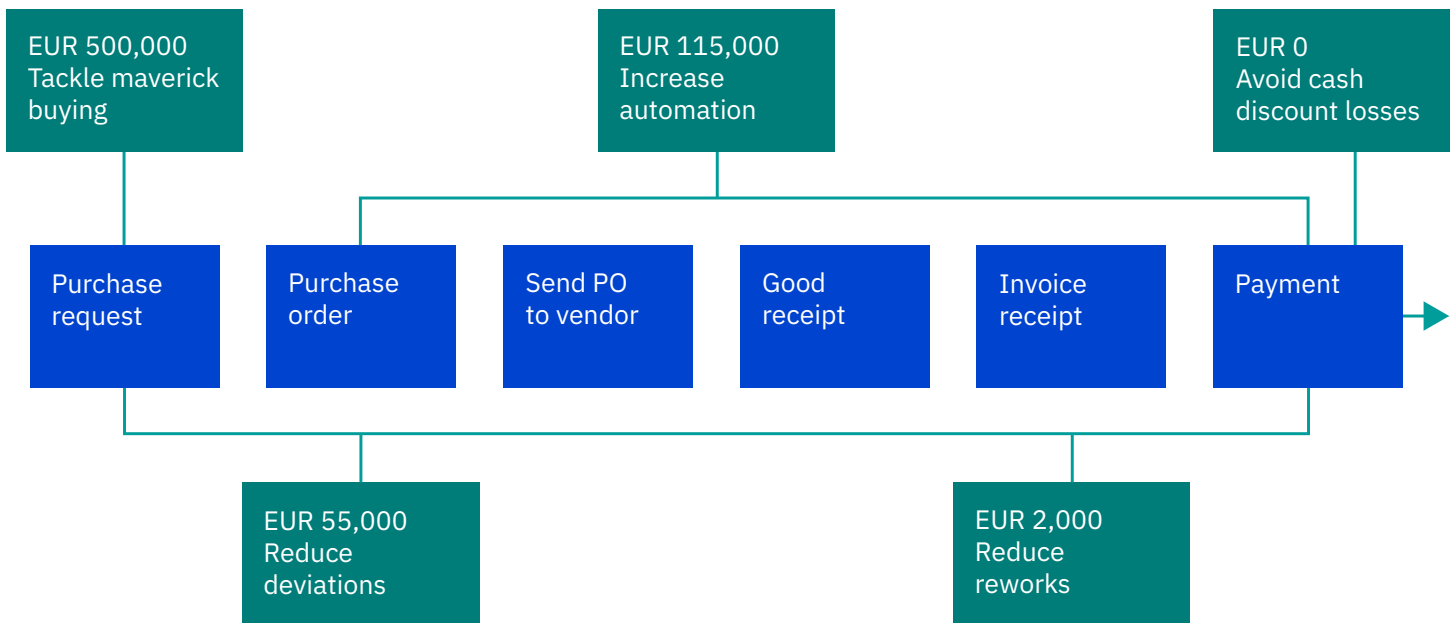

Figure 3. An automotive company's P2P value chain with total expected savings of EUR 672,000

Source: IBM P2P Automotive Total Potential Savings Using IBM Process Mining

Learn more

Download your copy of NelsonHall's NEAT Assessment for Process Discovery & Mining, 2021.

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