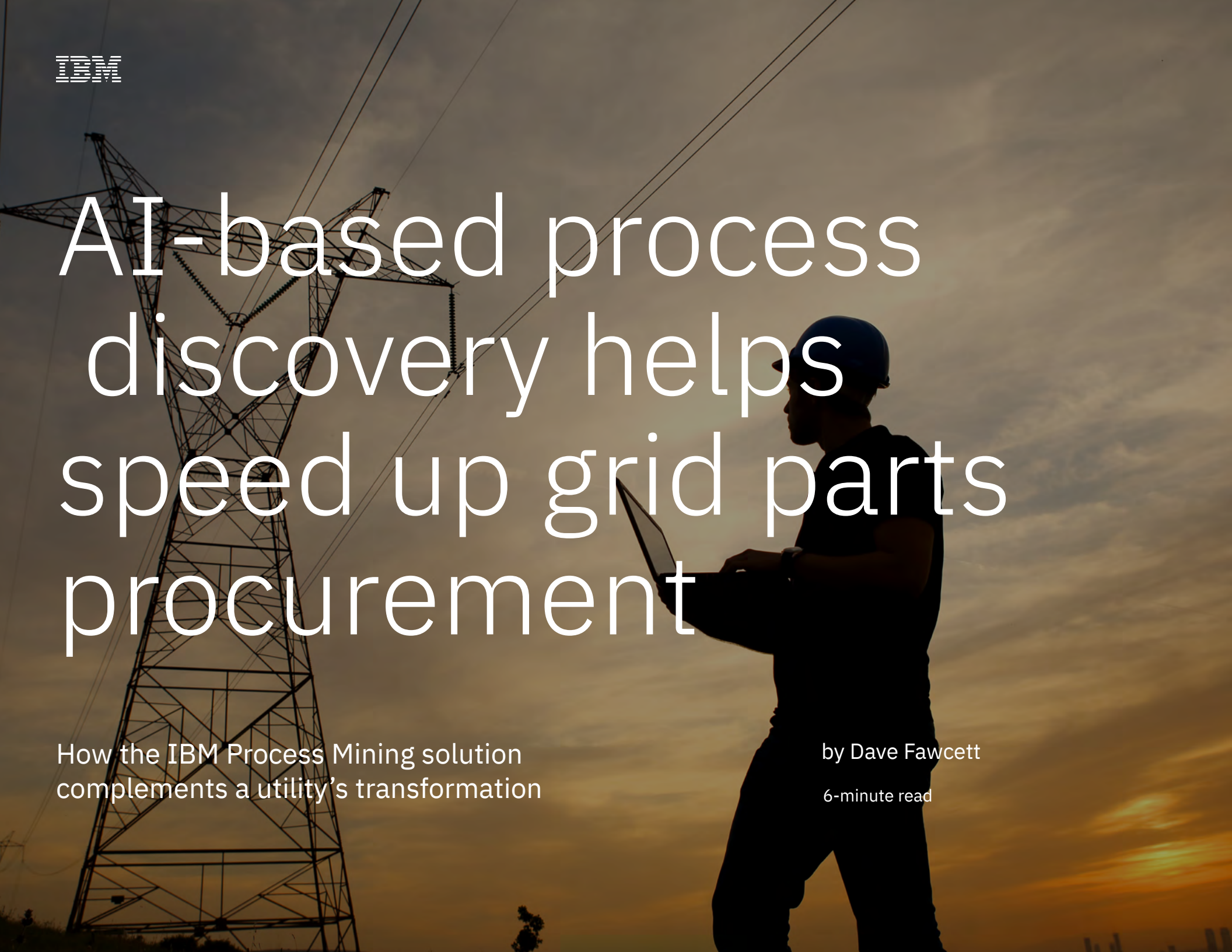


AI-based process discovery helps speed up grid parts procurement

How the IBM Process Mining solution complements a utility's transformation

by Dave Fawcett

6-minute read

For providers of electric power—whether it's generation or distribution—the values of safety and reliability are foundational to their operating model, and thus intrinsic to just about every decision they make. The increasing focus on climate change and sustainability hasn't diluted the importance of these core values to electric utilities. But it has presented a new set of operational challenges to delivering on them. Asset management is at the heart of it.

To keep the grid up and running, providers need to minimize the impact of worn-down or failed equipment. That's a big reason many are adopting advanced analytics to predict failures and perform proactive maintenance to prevent them. Once a service order is generated, whether planned or unplanned, it's up to procurement to get the parts—think transformers, circuit breakers and insulators—needed to complete the job. The longer the lead time, the bigger the potential risk to grid performance. That's one reason the efficiency of the procure-to-pay (P2P) process has taken on increasing importance for energy providers.

Another is cost. In today's deregulated marketplace, minimizing the total cost of procured goods is a critical goal. When employees engage in "maverick buying"—that is, going outside the established procurement process flow—cost and efficiency are the casualties. For one, such buyers end up paying more because they miss out on the cost advantages built into established vendor contracts.

Other kinds of process deviation—notably buying without a purchase order (PO), or creating a PO without a service order—also raise costs by requiring extra work to sort out. That's because the time spent resolving erroneous or mismatched invoices can add a lot to administrative overhead, in addition to distracting procurement staff from the more strategic aspects of their job.

Identified opportunity for an

80%

reduction in average order lead time

Mapped out an optimized process flow that cuts

67%

of process steps

AI models uncover the real process flow

One large and diversified electric power provider in the US knew it had a problem with maverick buying and was intent on getting to the bottom of it. That meant drilling down into historic purchasing data to get a granular understanding of where the deviations were occurring, and from there, to gauge the true scope of the problem. The company turned to myInvenio, an IBM Company, to put process analytics to work.

Using IBM® Process Mining, a process discovery and modeling tool that's part of the IBM Cloud Pak® for Business

Automation solution, the team worked closely with the company's manager of procurement. In the first part of the project, the team captured roughly a year's worth of data flows from the Purchasing Module of the IBM Maximo® Utilities suite, the company's core asset management platform. The flows mainly involved the company's purchasing and warehouse accounting departments, spanning multiple lines of business (LoB).

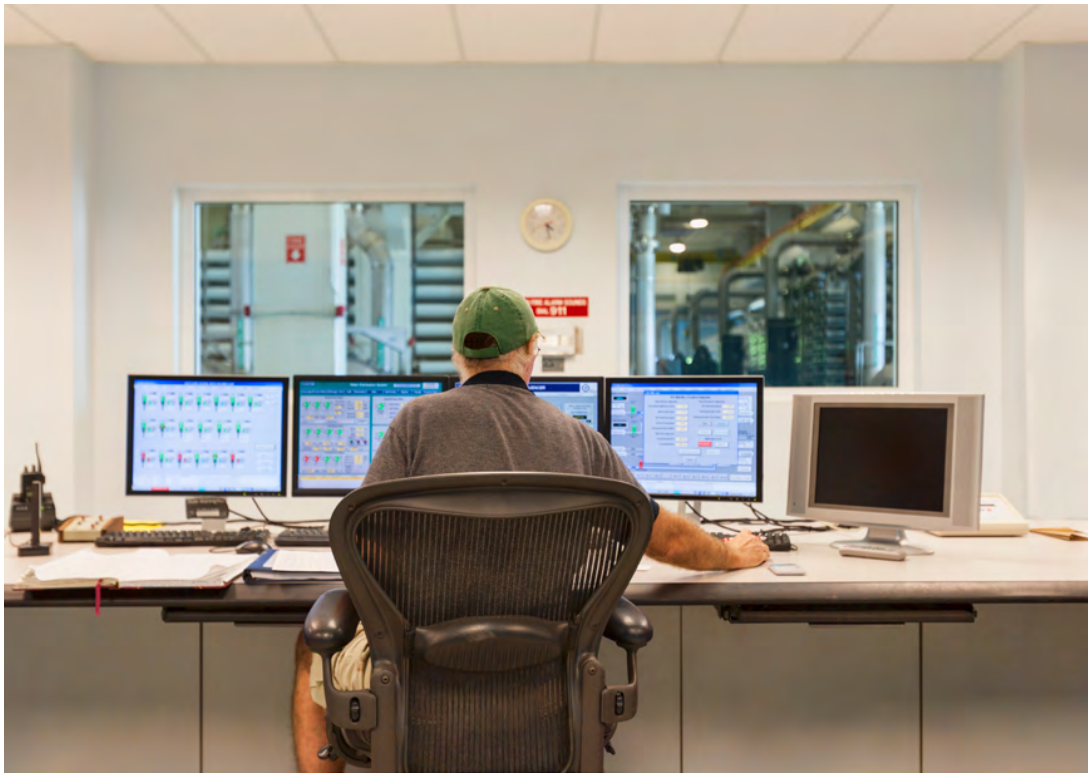
Once the data was fed into IBM Process Mining, its underlying AI-based models broke it all down into telltale maps of each step of the P2P process—from requisitioning and PO to receipt and invoicing—for each LoB. To the Manager of Purchasing, the value of these models wasn't only their ability to pinpoint problems with the prevailing "as-is" flows, but also their ability to take a fresh, data-driven look at what the ideal process could be, often called the happy path. "We gained a view into what was actually happening across our P2P processes that we truly never had before," he explains. "And it also gave us a more objective perspective on what the optimal baseline process looked like, not from process experts, but from the data itself."

Among the model's key outputs was the finding that just 20% of materials-related purchasing activities—the buying of spare parts and the like—followed the optimal procurement path. For the 80% of activities that did not conform to the happy path, the average order lead time was more than 30% longer, due largely to the extra time spent on invoice matching and order reworking.

Services procurement fared little better. While the IBM Process Mining model found just 10 steps in the optimal process path, the average nonconforming path was found to have nearly 30. To the Manager of Purchasing, seeing why proved a moment of revelation. "We knew that order re-working was a significant issue," he says. "But the fact that more than 50% of service procurement orders required it was a true surprise, and the data showed it was real."

Insights as a roadmap for process transformation

The project undertaken by the electric power provider achieved its objective: mapping out how procurement was really happening, along with the impacts on its key performance metrics. As the Manager of Purchasing sees it, the project's true significance lies in the guidance it can provide to the company's process transformation efforts. "In using real data and AI to map out our procurement process flows, we've also acquired what amounts to a potential roadmap for transforming them," he says. "It gives us a rigorous framework for understanding where to focus on improving—and, where possible,



automating—different elements of the process flow."

And that brings the subject back to what matters most for electric power providers: providing safe, reliable power to its customers. That is, good procurement practices—those that are efficient, standardized and cost-effective—fit into a utility's broader asset management strategy.

On a practical level, the Manager of Purchasing points out, data-driven process insights help make the case for pursuing transformation initiatives. "With an AI-powered dynamic process modeling framework, we can simulate how reductions in noncompliant processes can reduce the average lead time for ordering parts," he explains. "That's a powerful message in a business case, and it's why the IBM Process Mining solution is such a powerful tool."

"In using real data and AI to map out our procurement process flows, we've also acquired what amounts to a potential roadmap for transforming them. It gives us a rigorous framework for understanding where to focus on improving—and, where possible, automating—different elements of the process flow."

Manager of Procurement, Electric Power Provider

About the electric power provider

Based in the US, this energy company serves millions of residential, commercial and industrial retail customers in several states, including some of the most competitive power markets.

The client featured in this case study initially engaged with myInvenio, which began conducting business as IBM on August 1, 2021. The myInvenio product in this case study, myInvenio Process Mining, is now known as IBM Process Mining.

Solution components

- IBM Cloud Pak® for Business Automation
- IBM® Process Mining