iGrafx®

The Essentials of Business Process Mining

What to Look for When Selecting a Solution

Introduction

In any business, one of the keys to long-term success is making the right decisions, at the right time, to improve how the business operates and what it can offer. Some of these decisions can have a widespread impact, determining the long-term direction and strategy of the business. Others are smaller: the countless individual choices and plans implemented across all the offices and locations that make up the whole.

Whatever their nature, most of these decisions aren't made arbitrarily. They are made using the best data available at the time – the clearest outline the business, department, or individual has of how, where, and why things are happening. In many cases, however, that data is incomplete, based on erroneous assumptions, or simply lacking.

As a result, many businesses have been turning to data or process mining tools to understand the specifics of their internal processes. The aim is to gain insight into how those processes drive, or fail to drive, business value.

Process-mining-based analysis gives business leadership a new set of tools: one that can be used to decide how to navigate their current context and make the decisions that will improve business outcomes over the long term.

A series of recent reports by Forrester and Gartner highlights some of these trends and the growing value of process mining solutions.

Gartner notes, for example, in their global forecast (1) that the process mining market is set to grow to $2.3 billion by 2025, with a CAGR of 33% over that period. In another report, Gartner (2) adds that "accelerated digital transformation efforts, growing process visibility requirements and increasing demands for operational resilience" are the core drivers underlying the ongoing adoption of process mining software solutions.

Another key point is that these transformative trends are about more than just streamlining processes to benefit the businesses themselves internally. As Forrester points out in a recent process intelligence report (3), many businesses are actually also "shifting from an efficiency model where improvements focus on optimizing internal functions to an effectiveness model that looks at customer outcomes holistically."

In other words, process mining tools are valuable both for clarifying the businesses' internal processes and for their role in streamlining customer experiences and journeys.
This is the value that process mining brings to the table, and it's significant.

---

1 - Forecast Analysis: Process Mining, Worldwide
2 - Gartner, "Competitive Landscape: Process Mining Software," December 16, 2021, by Varsha Mehta, Marc Kerremans, Cathy Tornbohm, Fabrizio Biscotti.
3 -Forrester Research, Inc., "The Forrester WaveTM: Process Intelligence Software, Q3 2023 - The 14 Providers That Matter Most And How They Stack Up," August 2, 2023, by Bernhard Schaffrik with Glenn O'Donnell, Renee Taylor-Huot, Min Say, Rachel Birrell.
Introduction

iGrafx®

The Advantages of Process Mining

Using process mining, modern businesses can understand exactly how their processes are unfolding. They can also identify any bottlenecks or inefficiencies hampering their ability to operate at peak performance.

The answers gleaned from process mining can also help businesses decide which processes to automate and how to do things faster. They can then reduce errors and streamline their offerings and thereby boost the value they bring to their customers. In short, it can help them gain a much-needed edge in an increasingly competitive business environment.

It's not surprising then that current projections suggest that by 2025, around 80% of organizations will use process mining as part of their daily operations. There's also no doubt that most of those businesses will see improvements to their core business outcomes. Improvements that will prove invaluable in the short term. But this is where the usefulness of traditional process mining solutions begins to waver.

The 5 Critical Process Mining Capabilities

To get a 360° view encompassing the past, present, and future of mined processes, businesses need a process mining solution that delivers on five critical capabilities:

Connectivity to Process Design

Simulation

Real-time Monitoring

Predictive Analytics

Customer Journey Analytics

Connectivity to Process Design

To understand the value of process design, it's necessary to first touch on a common error in process optimization.

When businesses first mine their processes, they tend to look for two things: areas that cause problems and areas where they can speed up their operations. In some cases, those businesses are also looking to identify processes, or sections of processes, that can be automated. The idea is that the whole system should run more efficiently once those processes are automated and sped up.

In principle, that makes perfect sense. This coupling of process mining and automation seems to be a dream team for productivity. And yet, the reality is a little more nuanced.

The problem is that, like mining on its own, this combination offers a static view of the company's processes. Any changes based on that view are, at best, stopgap solutions. Over time, the processes that have been identified and automated, will evolve. They will change, but the solution will fail to change with them.

What's missing in this picture are the continuous improvements needed to keep processes on track. The ability to enact those improvements comes from a third, connecting piece – called process design.

Process design sits between mining and automation. It provides a storehouse and repository of process information and the capability to monitor, tweak, or redesign processes as needed.

The result is that the snapshot changes into a dynamic view. Processes are monitored to ensure they operate efficiently, and new processes can be designed as needed.

Using process design, the company moves away from its rear-view mirror. It starts planning a strategy that is both forward-looking and adaptive. In short, the business, and the processes underlying its success, become agile.

It is worth noting that the process design piece doesn't achieve these changes independently. Instead, it needs to tap into other essential optimization capabilities. Specifically, it needs to leverage the process intelligence capabilities of simulation, real-time monitoring, and predictive analytics.

Core business outcome:

Continuous process improvements make the company more agile and more responsive to its changing process landscape.

Process Intelligence → Process Design → Process Automation

Simulation

Process mining gives businesses the information they need to understand existing processes and identify where changes would be valuable. Design gives them the tools to make those changes. Simulation, on the other hand, provides the much-needed answer to the question: What's the best approach?

Using simulation, businesses can visualize many potential solutions. They can tweak and refine variables to reach optimal outcomes. Consider the case of a company trying to improve waiting times for clients phoning into its call center. Many clients wait five minutes before reaching a consultant. Many more hang up the phone before speaking to one.

To solve this problem, the company takes its mined data on call waiting times and customer disconnections. The data is run through several simulated scenarios. It is discovered that if call answering times are reduced to under a minute, customers stay connected. However, the cost of staffing the call center becomes untenable. Tweaking the model slightly, fewer new staff can be hired if the company accepts two minutes as a reasonable time for a call to be attended to.

The company's mined data indicates that most clients are willing to wait that amount of time. Better still, the number of clients the company can serve increases. The company can now take this new model live, knowing what the outcome will be. Without simulation, the company may have to resort to trial and error and potentially running untested processes live - a strategy that risks customer dissatisfaction. Done correctly, simulation dramatically reduces these risks.

To ensure simulation accuracy, companies should look for two extra capabilities. Firstly, the tool must be able to replicate what happens in the process "as is." In other words, the company needs to already know how the process works from mining it, and then it needs to use that data to design a version of the process in simulation.

What's essential is that the designed version must match what happens in real life. If it doesn't, the model needs to be tweaked and adjusted until reality and the simulation match. It's only by using simulation in conjunction with mining and design, however, that it becomes possible to ensure this kind of accuracy.

Once the "as is" state of the simulation matches reality the company can start making changes to the simulation, secure in the knowledge that those changes are going to play out as they would in reality. The second consideration is nuance. Real life, and real processes, are complex. To get the most value out of a simulation, the tool used must be able to account for subtle differences.

Consider the case of the call center, where it's important to differentiate between what happens when an experienced consultant takes the call versus when a fresh hire does so. This provides answers to questions like: Is it worth hiring new people? Or is it more valuable to train existing staff up to the level of top performers? Understanding these nuances can be the difference between making costly decisions that don't add up and making the right decision to further process excellence.

Core business outcome:
Process simulations based on accurate data empower leaders to make the best decisions while simultaneously reducing business risk.

Real Time Monitoring

Businesses face another key challenge. Once solutions are implemented, it can take time to understand whether they are working as intended. This is where a third critical capability comes into play: real-time monitoring.

By incorporating real-time monitoring, a process mining solution becomes more than a diagnostic aid. It becomes a tool for keeping track of ongoing performance. The live process now becomes exactly that: a living, breathing model that can be shaped and adjusted based on continuous feedback. This capability ties in closely with the process design component discussed above. It provides the data needed for continuous improvement.

In most scenarios, the feedback from monitoring is tied to specific key performance indicators used to determine whether the process is accomplishing its goal.

For example, a hospital might be interested in shortening the time it takes for each patient to be seen by a medical professional. Likewise, a company trying to improve shipping efficiency might focus on how much time it takes from when an order is placed until it leaves the warehouse.

Having designed and simulated a better process based on their mined data, these two enterprises now want to know how effective their changes have been. Real-time monitoring of the process summarizes this information quickly and easily in a dashboard. This dashboard can be updated according to the frequency that makes the most sense for the company, whether weekly, daily, or to the minute.

The hospital and company now knows whether the changes they've made are working. They can quickly detect any negative trends or bottlenecks as they occur. This gives them the agility to respond to incoming issues and quickly redirect processes that don't have the intended effect.

Core business outcome:
Monitoring processes in real-time ensures the efficiency of process interventions, and helps companies rapidly identify negative trends.

iGrafx®

Predictive Analytics

Until now, the capabilities discussed have all dealt with uncovering past data or using that data to map, design, and track new processes. With the addition of predictive analytics, process mining turns its gaze forward.

Using the artificial intelligence discipline of machine learning, predictive analytics can recognize the patterns that have emerged repeatedly in past transactions. These patterns can then be applied to processes currently in flight.

This allows businesses to determine when processes are likely to finish, and to identify risks and problems before they occur. It also helps them determine the outcome of long-running processes while there's still time to correct potentially negative outcomes.

Will that customer receive their order on time? Will this mortgage application fail to complete before the dependencies underlying it expire? Are there likely to be production bottlenecks, given the amount of time taken to finish certain steps in a manufacturing process?

Predictive analytics can give insight into these issues, and alert business leadership to intervene early when things get off track.

This capability also allows businesses to aim higher by setting timing goals associated with the "best case scenario" or an ideal customer experience. A manufacturer might know, for example, that the key to getting return customers is to produce and deliver a new customer's order within a week.

From mining their processes, they also know that one specific process pathway occasionally slows down the manufacturing process. They can now set up an alert to show if an order is likely to follow that route. Appropriate actions can then be taken to redirect it.

Across all these cases, the key point to bear in mind is that the business doesn't need to wait until the event has already happened. Predictive analytics shifts the focus to be proactive. It boosts efficiency and customer satisfaction. It can also ensure ahead of time that the company remains compliant with relevant laws and regulations.

Core business outcome:
A proactive approach to process management boosts efficiency, compliance, and customer satisfaction, while alerting leadership to problems before they occur.

Customer Journey Analytics

In the previous example, a manufacturer mined its data and found that delivery times were critical in generating repeat business from new customers. Based on that information, the company aimed to complete orders within a week and leveraged predictive analytics to stay on target. Of course, as anyone familiar with day-to-day client interactions knows, this example oversimplifies a more complex truth: Customer journeys don't begin and end at a single point. Customer relationships are also built on multiple interactions (though they can certainly be ended by only one!)

The customer journey is a series of touchpoints and interactions, all of which contribute to the ultimate longevity of a client-business relationship. Getting to the heart of those interactions requires a fifth critical capability: customer journey analytics.

Customer journey analytics is a tool for extracting data from multiple systems and processes and distilling it into a "map." This map is a graphic or dashboard that shows how customers typically move through the business's processes, from start to finish. It also shows the potential pain points they experience along the way. Armed with this information gleaned from thousands, or even tens of thousands, of customer interactions, the business can now shape its processes to optimize both customer experience and business outcomes

The business can view its customer journey through different lenses. It can compare and contrast variables of interest such as cost-to-company associated with each stage of the journey, overall efficiency, or areas of regulatory risk. This is a capability that becomes invaluable when there's an inherent conflict between optimization goals, like balancing costs against risk reduction or customer satisfaction.

Using journey analytics, the business can also easily view the different potential pathways its clients take through its processes. This allows the business to compare, for example, the difference between an online versus an in-person version of a service.

As with process design, customer journey analytics relies on other capabilities to provide these functionalities. Designing and simulating customer journeys, for example, allows the business to experiment without the risk of customer dissatisfaction. Likewise, tapping into real-time monitoring and predictive analytics allows it to keep a close eye on customer experiences as they unfold and to head off potential problems before they occur. This makes it imperative for businesses to seek an integrated solution offering all five critical capabilities.

Core business outcome: A comprehensive customer journey overview allows the company to optimize business outcomes and customer satisfaction.

iGrafx®

A 360° View

With access to the five critical capabilities discussed above, the value process mining brings to the table shifts dramatically. Instead of constantly looking backward, business leadership can combine information from their processes' past, present, and projected future into a holistic view. This approach is geared toward continuous improvements and a proactive approach to meeting critical business outcomes.

What's key in this context is ensuring that these capabilities are delivered in one place – one platform that empowers the business to discover, design, optimize, and execute process excellence in every aspect of its enterprise.

Using an integrated solution, the business no longer needs to wonder whether the changes have the desired effect. Finding out is a matter of pulling up a dashboard. Changing what's not working is as simple as reviewing the data and shaping and simulating a new process flow.

In other words, with the right platform, making the right decisions becomes quicker and easier. It frees leaders to shift their attention to where it's needed – to the opportunities and ideas that will drive value far into the future.
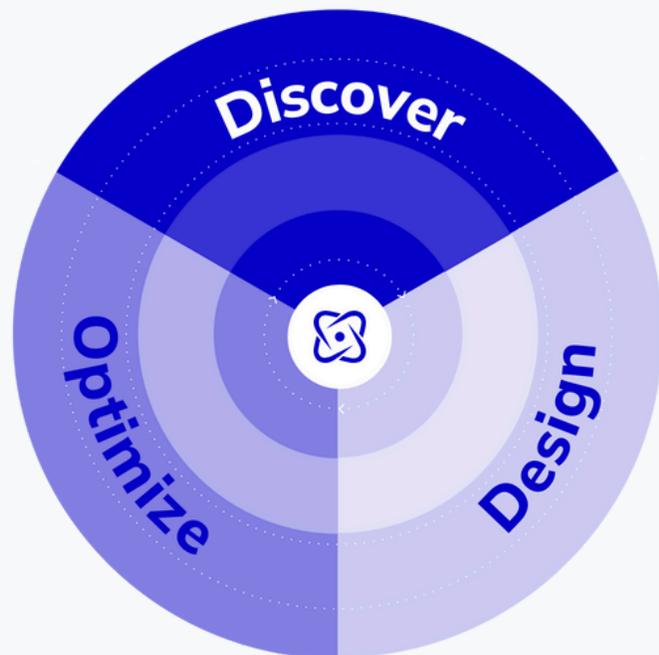
Discover

Discover how your business processes run today

Design

Design the ideal future versions of your processes

Optimize

Optimize processes for maximum performance

iGrafx®