Your First Steps Into the World of Process Mining

There is a reason why we wonder about a lot of things in the world.

It’s not about what we get or don’t get from the world, necessarily—but rather about why. And how.

This is what this e-book is essentially about: the process. And when you think about it, that’s the core of how we all operate and why we claw and reach for something “better” than what we already have.

We once thought we could ride a horse and wondered if we could manufacture something faster and more efficient—like a bike, or a car, or a plane. Progress with processes.

When you think about it, that’s how business flourished. We would dig into our own operations, discovering everything from hidden efficiencies to leverage and bottlenecks to eliminate, and the ultimate result is overall improvement in building something better.

Process mining takes it another step further: we built the plane to replace the horse, and now process mining discovers even better ways to build the plane, resulting in increased productivity.

That’s what this e-book is about: the art of the latest innovation in business transformation. Process mining.

If you’re only starting to read this, you’re well on your way. You might be a master in a vertical, whatever it may be. Automotive supplier, industrial manufacturer, retailer, financial provider, painting the way toward innovation, market footprint, and a competitive advantage.

But chances are good you’re always wondering about the inner workings—the operations—of your business. You’re also wondering if by chance there’s a way to improve on them. The ultimate process and workflow inevitably bring you toward the ROI your business needs to flourish. When processes work, products and services are provided; when products and services are provided, customers are served positively, leading to retention, reputation, revenue, and of course…

Profit.

That’s your goal. That’s the process mining goal: discovering the “golden nuggets” in your operations that will improve overall business, leading to that exact ultimate growth your company strives for.

What makes you successful resides right within your own business from the very beginning. The processes which makes your work flow from start to finish.

You’ll understand your own business more than ever before.

Go ahead and turn the page.
Growth starts here.

The First Question You're Asking:
What is "Process Mining?"

Better yet, how did "process mining" start and why?

A fair question, especially in the business world. The good news is ARIS Process Mining may be considered the latest frontier in process improvement measure and analysis, related to big data and IT, plus bolstered by the advent of innovations like RPA (Robotic Process Automation).

Don't get intimidated, though. Ultimately this is a technology proven to be not only intuitive, but self-sufficient, sound, and simple in thought.

You don't have to be an IT professional or computer guru to understand how this works. Rather process mining, believe it or not, has quite the history, grounded in a long tradition of businesses looking for ways to improve their operations.

Everything from a mining crew discovering that moving a cart closer to an actual dig site might make work easier and faster, to a marketing professional consolidating platforms and working off of one software designed to handle everything from Facebook to Twitter, LinkedIn to Microsoft Advertising, and more.

What process mining does is map out the exact path to an intended destination.

Our ability to analyze and discover possibilities, making work easier to accomplish—it's like a typewriter versus paper and pen. Grounded in history, this isn't far from what the "Founder of Modern Management"—Austrian-American Management Consultant Peter Drucker—once declared…

> "If you cannot measure it, you cannot manage it."

It, therefore, stands to reason that businesses can only consistently improve and evolve through measurement of their operational processes.

This is precisely why there are many process improvement and process intelligence offerings in the market today. However, ARIS, in fact, did launch the very first product employing the actual "process mining" model to perfection, pitched as "process performance measurement," back in the day. It sheds the light on a concept so ingrained in goals to continue business improvement from the most granular of details toward a more holistic big picture of an organization's process landscape.

Process mining, in the same vein, combines the manual or automated discovery of real process data pulled from enterprise systems, such as SAP or Oracle. Root-cause analysis follows, mining for those “golden nuggets” that allow a company to uncover the bottlenecks and enhance processes—everything from the causes to downtime, shortages, loss or waste in a factory, for example. The possibilities could very well be endless.

That’s the core of process mining: the real process data stored in your IT systems. How your business operates results in data that can be observed, realized, analyzed and beyond.

If you were to look at how your operations flow, you’d see “steps”—everything from an order coming in, to a request made to a specific department, steps taken to create the product or send a service, sending confirmation or an invoice, receiving payment—and much more.

The intricacy resembles something as simple as human anatomy—as blood circulates in your body, data circulates throughout an organization in a very similar way.

Process mining resembles that: but it begins with your data.

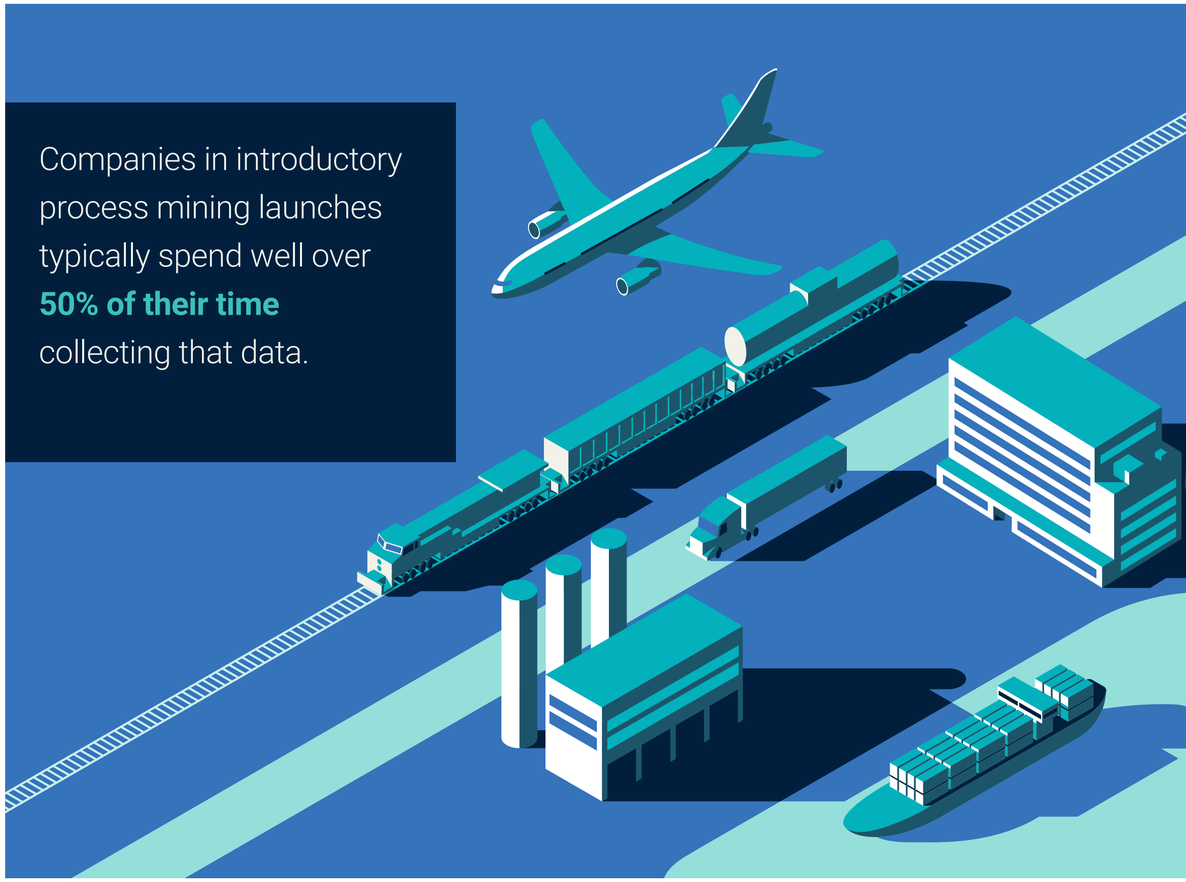
What process mining data looks like, what to do with it, and who benefits from it

Here's the challenge a lot of companies face: how do I get the data?—I don't have a lot of useful data, will that be a problem?—how do I read the data?

Truthfully, having the data isn't the problem. It doesn't matter how simple your business is. There's always data to analyze, running on an ERP system and other databases with enough information to reconstruct and visualize real operations—the true strength of process mining at its core. Many organizations even face not a single challenge in collecting the data thanks to prebuilt connectors and APIs, but here's the new issue:

Do these organizations know the true worth and value of their data? Most don't, claiming it's not a great investment of resources to analyze all of it.

Those same companies will devote a much smaller fraction of their valuable time determining the actual value of that data. Process mining works in discovering that value immediately. Companies won't need to waste their time. The time taken is then put to vital use toward the future.



For example:

Take a workshop where all the nails, screws and screwdrivers are kept. Imagine all the different nails and screws and screwdrivers all in one box and how much time it would take for mechanics to find what they need.

What if process mining discovered a better way to organize all of those materials? Through data analysis and continuous monitoring, revealing that separating the nails from the screws and the screws from the screwdrivers, mechanics would find what they need a lot quicker, resulting in happier buyers, better customer retention, increased recurring revenue, and continually growing profit. That's exactly how businesses improve—they start from the very beginning: the internal operations.

Process mining excels best when applied at scale, collecting large volumes of data from various processes already in place. The more data, the more accuracy in determining what to make actionable, what changes to make to your internal operations. You can start small for testing purposes, however; but it's crucial to understand what your data actually looks like via what are called "time-stamped event logs."

Time-stamped event logs.

Unique identifier

Event

Time stamps

Case ID	Activity	Start	Complete
Incident 1	Incident logging	2021-01-04 11:26:44:000 +0000	2021-01-04 11:35:44:000 +
Incident 1	Incident classification	2021-01-04 11:35:44:000 +0000	2021-01-04 11:37:44:000 +
Incident 1	Initial diagnosis	2021-01-04 11:41:44:000 +0000	2021-01-04 12:03:44:000 +
Incident 1	Resolution and recovery	2021-01-04 11:51:44:000 +0000	2021-01-04 16:50:44:000 +
Incident 1	Incident closure	2021-01-04 16:09:44:000 +0000	2021-01-04 17:13:44:000 +
Incident 2	Incident logging	2021-01-04 16:26:44:000 +0000	2021-01-04 18:15:44:000 +
Incident 2	Incident classification	2021-01-04 16:48:44:000 +0000	2021-01-04 19:11:44:000 +
Incident 2	Incident logging	2021-01-04 17:04:44:000 +0000	2021-01-04 19:45:44:000 +

These pieces of data are the lifeblood of your process mining system for obvious reasons: you'll see this data whenever customers actually purchase product at a point of sale, for instance; or in logistics, when trucks arrive or depart at warehouses; or when a customer complains to a manager, and that manager files a report, dictating the time when it occurred, what occurred and why.

All the reports we file, the transactions we complete, the phone calls we make—this is all data that can be accumulated and then analyzed through process mining.

Everyone benefits from it: customers, managers, employees, the industry.

The big benefit of process mining

There was a time when simply collecting the data was easy—you log the information, file it away, it's there when you need it, you can verify it, you can then discover possible ways to improve upon the processes that resulted in those time logs.

Things are different now. For the most part businesses have been digitized, automated, computerized. The same processes that were so simple suddenly see an influx of complexities too difficult to compile and analyze by hand. Not even a simple Google spreadsheet—and definitely not white-boards or Post-Its—could manage to outline or map out an entire process and all sub-processes from start to finish, so you could visualize it all.

Process mining makes it possible to take any digital system gathering all that data for you and literally “paint” an image for you to observe. You’d not only be able to see real operational data—all those time-stamped logs—but you’ll also understand the bigger picture behind all of it.

This is crucial to understand as old methodologies for a time served the purpose well, but not so much in this current landscape. Believe it or not, but many process excellence teams for businesses would sit in a room with whiteboards and Post-Its to lay out a design of how a process works

The old way of working – “rolling the dice”

With mass production, layouts, merchandising, product positioning, customer trends and more, the process you’d normally see on a whiteboard wouldn’t look so easy to understand without leveraging real operational data and real data-based automatic process reconstruction.

What used to be cut and dry has turned into the typical process improvement model of “rolling the dice.” Trial and error. Documenting results. Adjusting parameters. And then trying again.

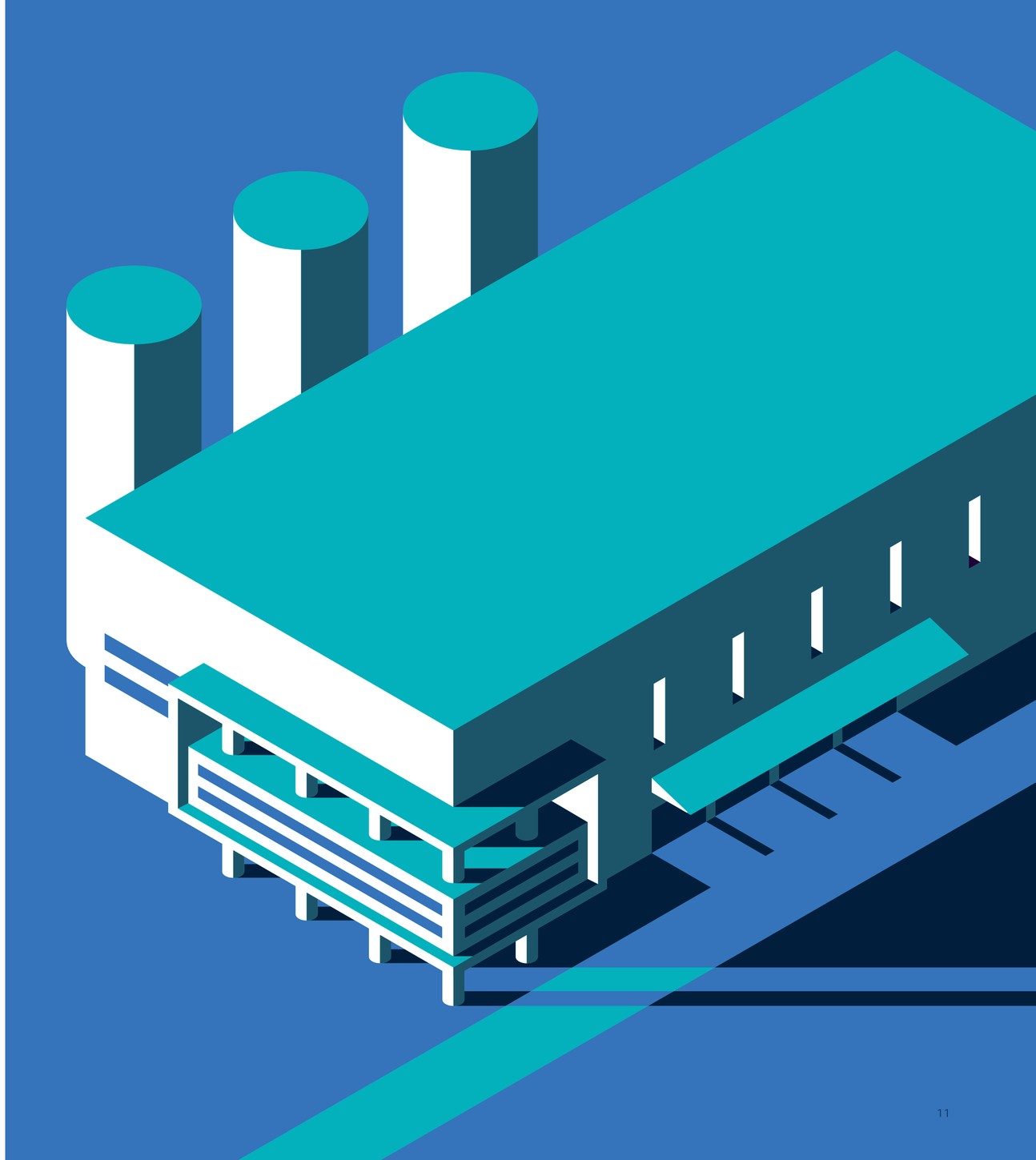
Process mapping provided the “instructions” on how to roll the dice effectively. Then came the trial and error, testing and experimenting with those “processes” in real time except with one imperative aspect missing: the analytics. You didn’t know why it was working (or not). Then the combination of process mapping and process mining skyrocketed the industry, providing standard procedures while at the same time measuring their adoption in reality.

Likewise, traditional business intelligence (BI) methods didn't make it any easier. Instead of providing the methodology, BI would just predict what the dice would show before you throw them: in other words, "predictive analysis." While essential in its own right, again, BI missed one mark in the imperative why, measuring the result and then replicating or avoiding it for the future.

Process mining essentially combines BI with real process reconstruction through detailed analysis of that operational data. You then understand why your processes work (or don't work… Or both!). The resulting creation is like a beautiful symphony (or just a big operational mess!).

As we break down the nuances of process mining, you'll understand the inner workings even better: from collecting the event log data of your transactional systems, finding certain dissonant notes of disharmony that may slow you down, discovering how to eliminate them, and then testing to monitor future performance.

Let's further examine process mining within 5 different stages

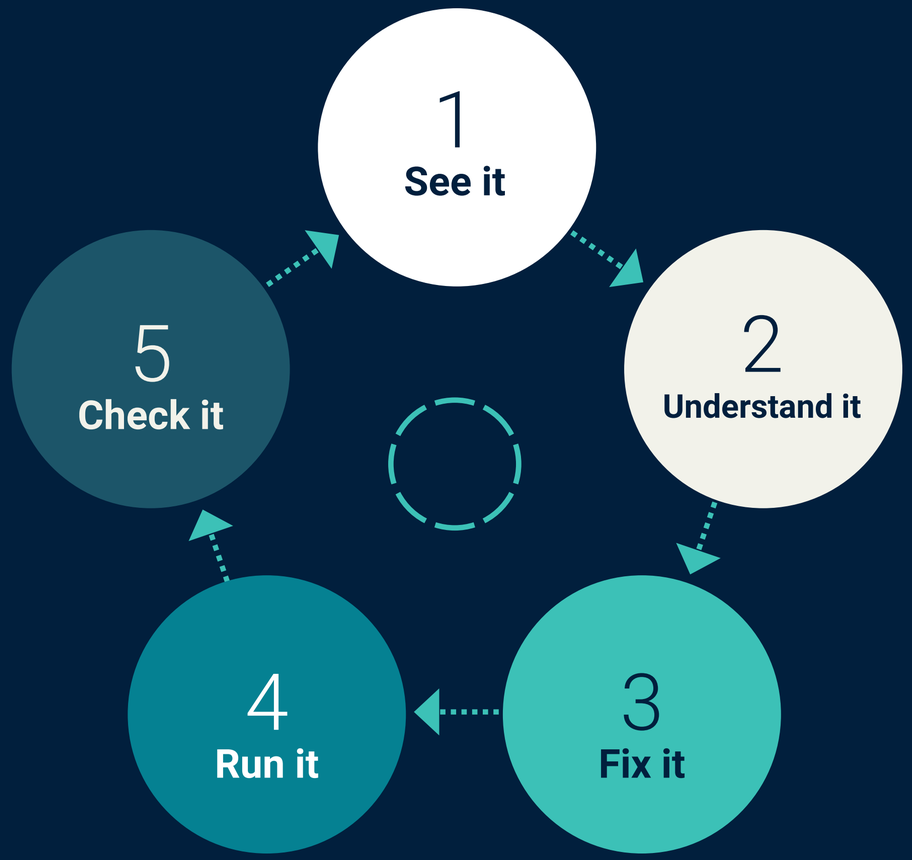


What Are the 5 Keys **to Process Mining?**

ARIS Process Mining focuses on these five aspects as a way to not only understand the collected data, but to also help you understand your business even more. The entire lifecycle you see here starts with simple process discovery, collecting and seeing the data in the form of time-stamped event logs—And then understanding what the data is telling you.

The ability to realize the data and begin to pinpoint areas of improvement to fix will be where the technology truly shines, offering algorithms to reach the outcomes you want within the same matrix of data. You then run it for testing purposes to ensure all moving parts are accomplishing exactly what the process mining has predicted, and then from there—

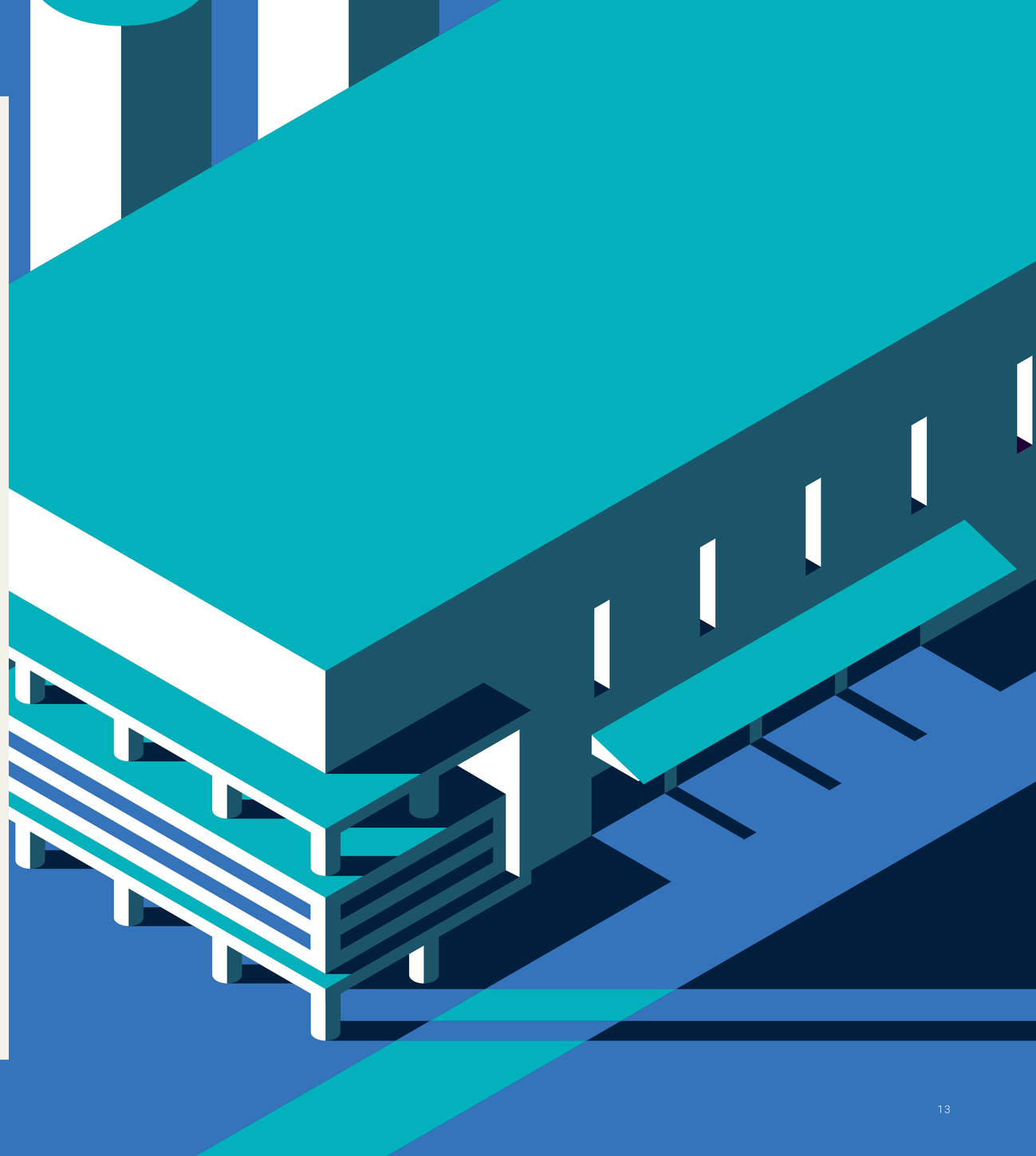
You just continually check it from time to time for process conformance.



1: **But what are we seeing?**

Data is just ‘data’, a string of numbers, and sometimes it can be overwhelming—unless you know why you’re looking at all of it.

For example, a data engineer might see specific time-stamped logs for arrivals and departures at a warehouse, knowing deadlines, and would then need to understand what the goals are. It might even be an analysis of the data and seeing that there are certain “delays” or bottlenecks evident in the data with the obvious question… WHY?



2: **Here's where you will "understand" the data**

Process mining will then determine all possibilities and variations on how to restructure certain processes—like in the example about moving the mine cart closer to the dig site as a possible improvement—with a detailed documentation of the results and mock time-stamped event logs to show the differentiation.

The goal here is to come up with a framework that is more efficient than what was collected in real time from the current processes of your warehouse, distribution center, or office.

3: **Fixing it then allows you to conform to those new processes**

The very best process mining platforms will not only help you identify those new procedures, but will also help you design them, allowing you to implement those new structures efficiently. Once you have them designed, you can then roll them out to be implemented throughout your entire organization.

4: **Then you run it**

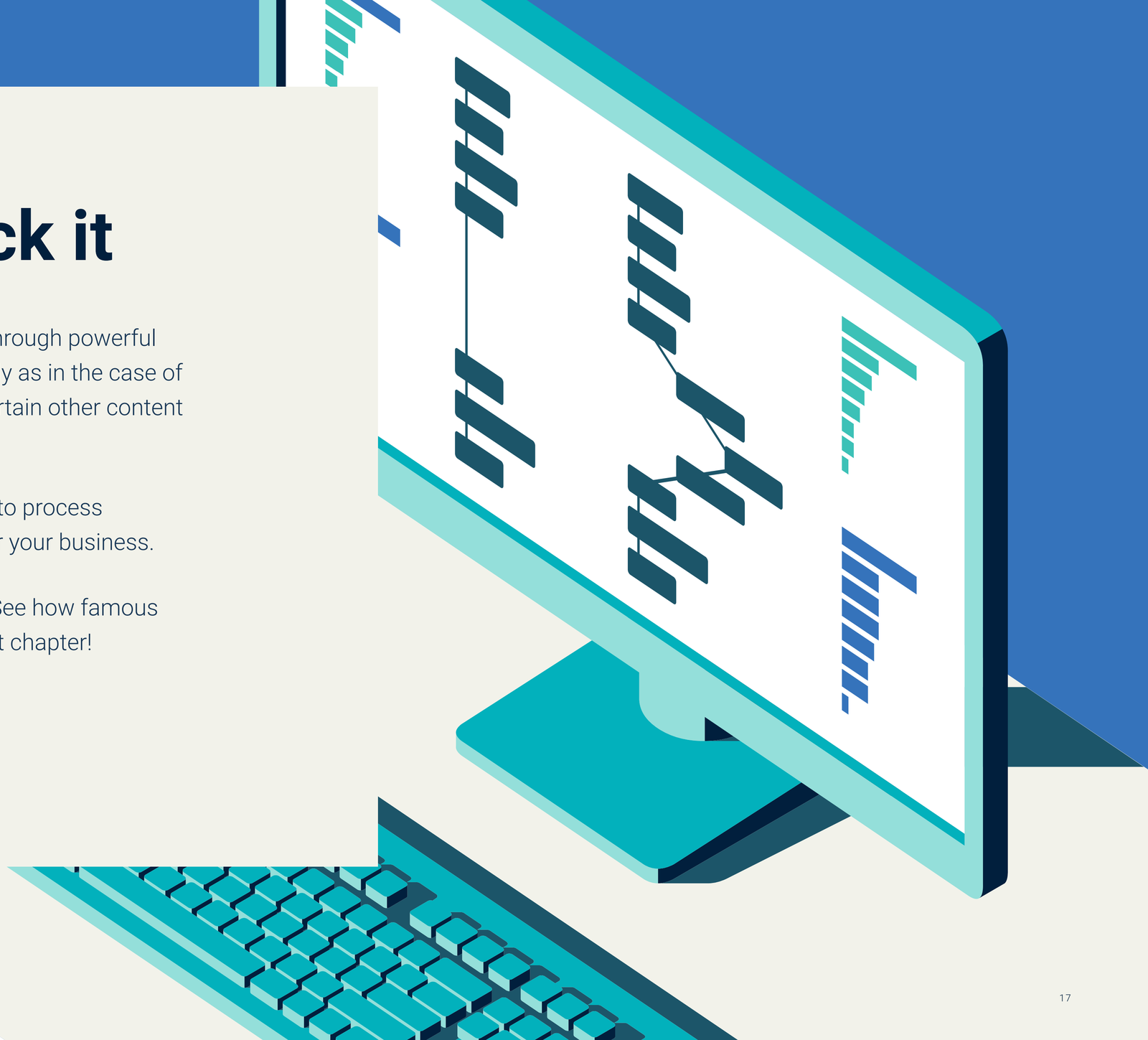
Process mining, however, continues to work for you by monitoring the results, ensuring you’re conforming to your expectations and your users are adopting to the new way of working.

5: **Lastly, you check it**

The platform then also corrects errors as they occur through powerful analytical capability and process automation, especially as in the case of certain industries requiring adherence to deadlines, certain other content specifications, and unforeseen variables.

The best benefit of this entire lifecycle of the five keys to process mining?—sustainable and continuous improvement for your business.

How it works is one thing, though—watching it work? See how famous corporation Blue Whale LTD made it happen in the next chapter!



blue whale ltd.

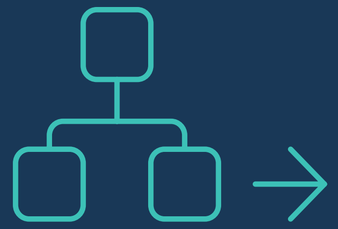
Process Mining in Action:
A Look Into Blue Whale LTD

Practice makes perfect. Literally.

Theoretically, it's always easiest seeing it on paper. Applied in real time? That's on a higher level, but ARIS Process Mining can certainly help you get there.

Understand that there are three steps to starting off with a project:

1
Plan your KPIs



2
Build your team

3
and then... LAUNCH!

While that seems oversimplified, the good news is you can start off small and then scale after seeing results. Process mining often resembles testing. Experimenting. Simulating. So don't fret if there are some hiccups, or you don't understand what's going on. Step by step will certainly get you there!

Think of this as your true-blue guide without grades, tests or homework. Always refer to it, and please welcome our test subject, fictional corporation Blue Whale LTD. and how they rolled out process mining in a way you might, to simply eliminate those notes of disharmony, streamline operations, and create a truly melodious symphony of processes working like a well-oiled machine!

The company's rather linear as they manufacture swimming pool equipment and products for the basic residential and professional markets —everything from filter systems to in-ground pumps. You can only imagine the customer base: broad, high demand, and consistent even throughout the year (indoor pools go far especially on the commercial side!).

Undoubtedly after nailing a few large contracts, it's pretty clear that Blue Whale LTD needs to scale up. The issue with that? Growing pains. We've all had them. What's a big company to do?

The biggest problem Blue Whale LTD would have is the "order-to-cash" process

With an influx of major customers, the "order-to-cash" aspect of business often can be a bottleneck, and this is no exception. What can process mining do? Let's find out:

Step #1: collect the data
Blue Whale LTD will go into their ERP system and collect any time-stamped event logs for a certain period. Think of logistics and delivery of equipment, and that should be relatively easy: over a period of six months, Blue Whale LTD can easily collect all that digital data.

Step #2: set the goals
Once an entire operational picture worth of six months has been collected, Blue Whale LTD simply needs to get everyone on board on what the goal is—

- Is it about deadline adherence?
- Or maybe it's about decreasing damages and waste?
- Perhaps it's about eliminating data entry error?

These are all factors affecting “order-to-cash” in big ways, and this is what’s great about process mining: upon uploading the data, analysis begins with the goal in mind—whether it’s improving deadlines or reducing loss and waste.

On the platform, Blue Whale LTD’s process excellence team only needs to set the metrics in mind, like in a simulation, run it, and then review the results.

The biggest selling point of process mining: conformance checking, process lifecycle management and optimization

Many companies benefit from just that, like Blue Whale LTD managing high-quantity manufacturing and distribution of swimming pool products, you know? It would make sense that we have a system in place that can measure the process improvements and the entire lifecycle of production…
Enter: process mining!

The optimizations, however—as well as all other facets of the technology—can be key when paired with the right unique human value at specific touch points. So here’s how you ensure you have the best team possible.

Who should own process mining?

We learn of how to improve our processes thanks to the team capable of mining them. The improvements could’ve been anything for Blue Whale LTD:

- Perhaps they discovered lost time to credit checks, slowing order processing and shipments
- Or maybe there were too many stages in their approval process for all customers

What an efficient process mining team for Blue Whale LTD can do with the technology providing the data and analysis is:

- Process discovery
- Process reconstruction
- Root-cause analysis
- Model vs. reality comparisons
- Process harmonization

Even that, however, isn’t the biggest selling point of buying into process mining.

It's seeing the data that will communicate those process improvements to your board. Your senior leadership. Your key decision makers who will make EVERYTHING happen. That's where your process mining team comes in: they collect the data, they see the analysis—They then present that as proof that their company needs these process changes immediately.

Your team roster should consist of:

1. "Cheerleader"

Your spokesperson: this is the person sponsoring the technology, the goal, the one who secures process mining buy-in and budget in the company. The professional in this role presents, displays, communicates and advises senior leadership on your behalf.

2. "Detectives"

Think Sherlock Holmes, for example. These are the guys and gals looking through a "magnifying glass" for the clues as to what processes to discover. They're the ones evaluating the data, finding those "golden nuggets" that will result in major revenue channels. They're the analysts.

3. "Inventors"

"Testers," "innovators," "interviewers," you might call them. They examine the playing field beyond the technology to see what use cases might apply and how much more improvement process mining can bring to the table for many other divisions in your organization.

4. "Miners"

It would only be fitting as we're talking about process "mining." In many ways, the "foundation" of a technological platform and software requires a dedicated crack team of professionals able to authorize, facilitate and manage all integrations with pristine accuracy. They are the IT or process engineers of your team.

Imagine Blue Whale LTD with this kind of team – and you get the picture

Process improvements galore. In fact, many organizations already prolific with process mining often have their own independent dedicated "process mining center of excellence" combined with stakeholders and a culture led by one goal: Process excellence.

Good for the swimming pool industry. Great for Blue Whale LTD.

What about Process Mining **& Beyond?**

Order to Cash

Maximize touchless orders, reduce order to delivery cycle time and ultimately speed up payment collection.

Procure to Pay

Optimize procurement by eliminating payment term discrepancies and maverick buying.

Service Optimization

Provide the best possible customer experience by giving them the right information, leading to the right place.

Supply Chain Management

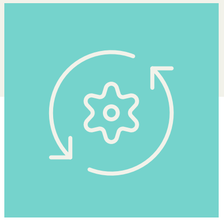
Analyze logistical operations to identify the weak links in your chain, strengthening your entire network.

IoT process improvement

Identify so-called happy paths in your production to increase through-put and efficiency and lower cost.

What about transformation initiatives?

Even more so would ARIS Process Mining benefit these. Perhaps you're thinking more on the technological advancement side, amplifying those transformative measures to improve any of those previous processes? If so, process mining works well as an intelligent orchestration layer for:



Automation

Also referred to as RPA (Robotic Process Automation), this level of advancement connects the business outcome to the cost savings and productivity gains when implementing process mining into the foundation.

Business transformation

Still to this day many businesses are transitioning from traditional to digital. However most businesses still struggle to manage the shift, and that's where process mining helps ease the friction and streamline the flow.

Customer experience

Sometimes the process improvements aren't internal; sometimes they're external, focusing more on the communications, connections and engagements with customers. Process mining ensures faster flow, leading to fewer delays, frustrations and especially broken promises to your valued buyers.

System migration

Sometimes your data has to move from one system to another (especially when older systems get retired). What does a company do when that costs millions to manage? Process mining discovers the easiest paths to managing that with less dissonance.

The question you then have to ask yourself is this: **why do you need process mining?**

It could be just one aspect in your business. It could be all of it. Either way, there's no doubt you'll be on a long journey toward the finish line of process excellence, but rest assured: ARIS Process Mining will get you there fast.

The good news is once you're at the finish line after implementing your first upload of data with analysis to SEE IT, UNDERSTAND IT, FIX IT, RUN IT and CHECK IT, the "race" doesn't actually end there:

You'll see process mining benefiting you, starting with:

Your employees

Then your customers

Then your bottom line

and BEYOND!

It'll become so second nature that you won't spend a whole lot of time checking the processes.
Super fluid. Swift. Simple. Easy. But best of all…. Great results.

Are we ready to go?

Here’s how to start with the only truly integrated process lifecycle tool on the market!

Sign up

Start your process miningjourney today!

For free

Create your free ARIS Process Mining Basic tenant on ARIS-Process-Mining.com

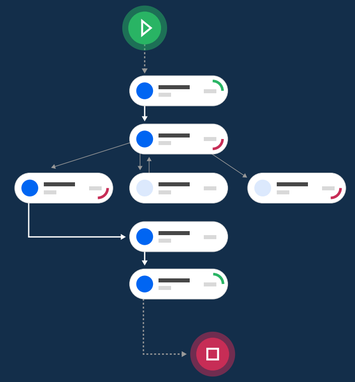
Load

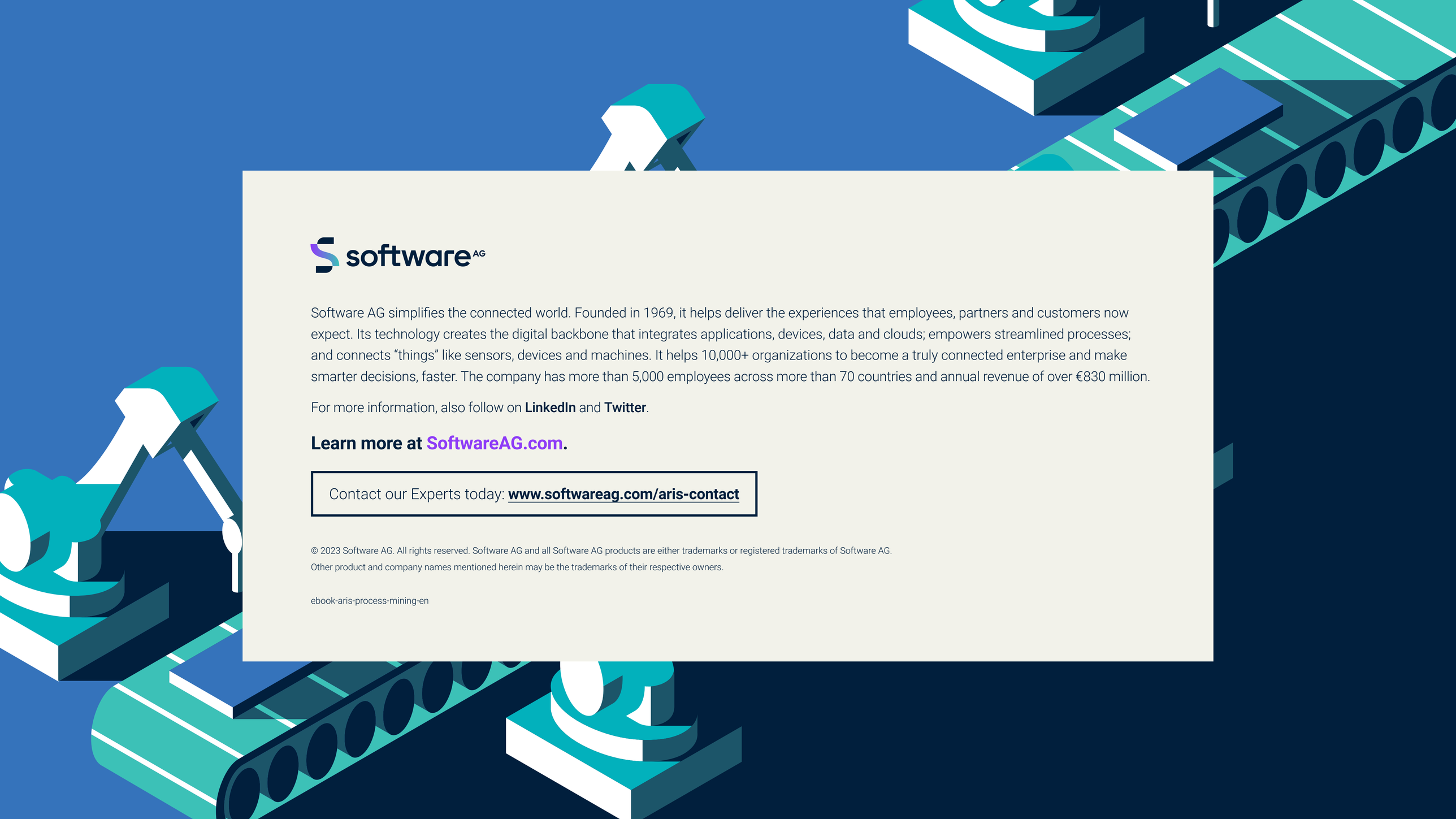
Import your process data

and let the system discover your process reality

Discover

Gain full transparency on your process landscape





Software AG simplifies the connected world. Founded in 1969, it helps deliver the experiences that employees, partners and customers now expect. Its technology creates the digital backbone that integrates applications, devices, data and clouds; empowers streamlined processes; and connects “things” like sensors, devices and machines. It helps 10,000+ organizations to become a truly connected enterprise and make smarter decisions, faster. The company has more than 5,000 employees across more than 70 countries and annual revenue of over €830 million.

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