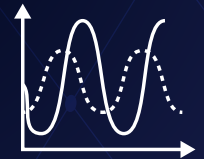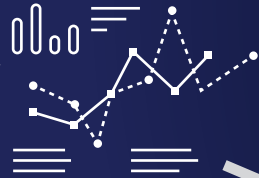# Empowering engineers with answers—now

WHY...

- Did equipment fail?

- Is yield lower than expected?

- Aren't products meeting quality standards?

**To protect revenue & boost productivity, you need answers—now**

On your own, it's been nearly impossible to manually search through years of sensor-generated production data to learn why products are off-spec.

It makes you dependent on data scientists to build complex data models, and that takes months! It's a dependency that prevents your production lines from running at their best. You need to make smarter decisions faster, right here, right now—right where production takes place.
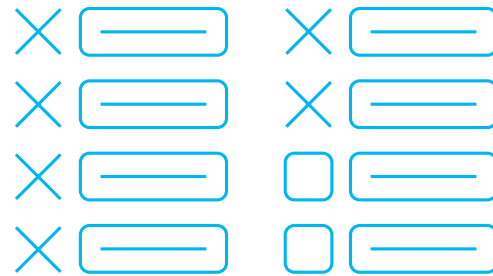
It's time for immediate answers. It's time for industrial analytics at your fingertips. It's time for TrendMiner.

Break free from the data modeling dilemma

You know the drill. Getting insights from big data has been really painful:
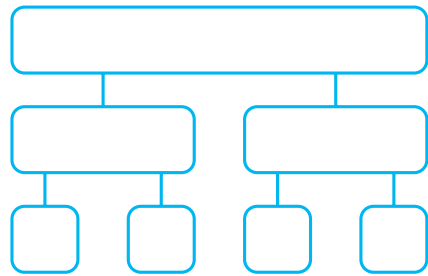
Modeling data can take months. It's a **massive project** with limited ROI and often new infrastructure costs.

You need to take the **same steps for every data model and every change**—from data gathering, preparation and modeling to model validation, training and go-live.
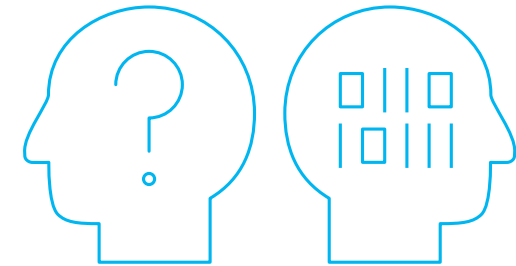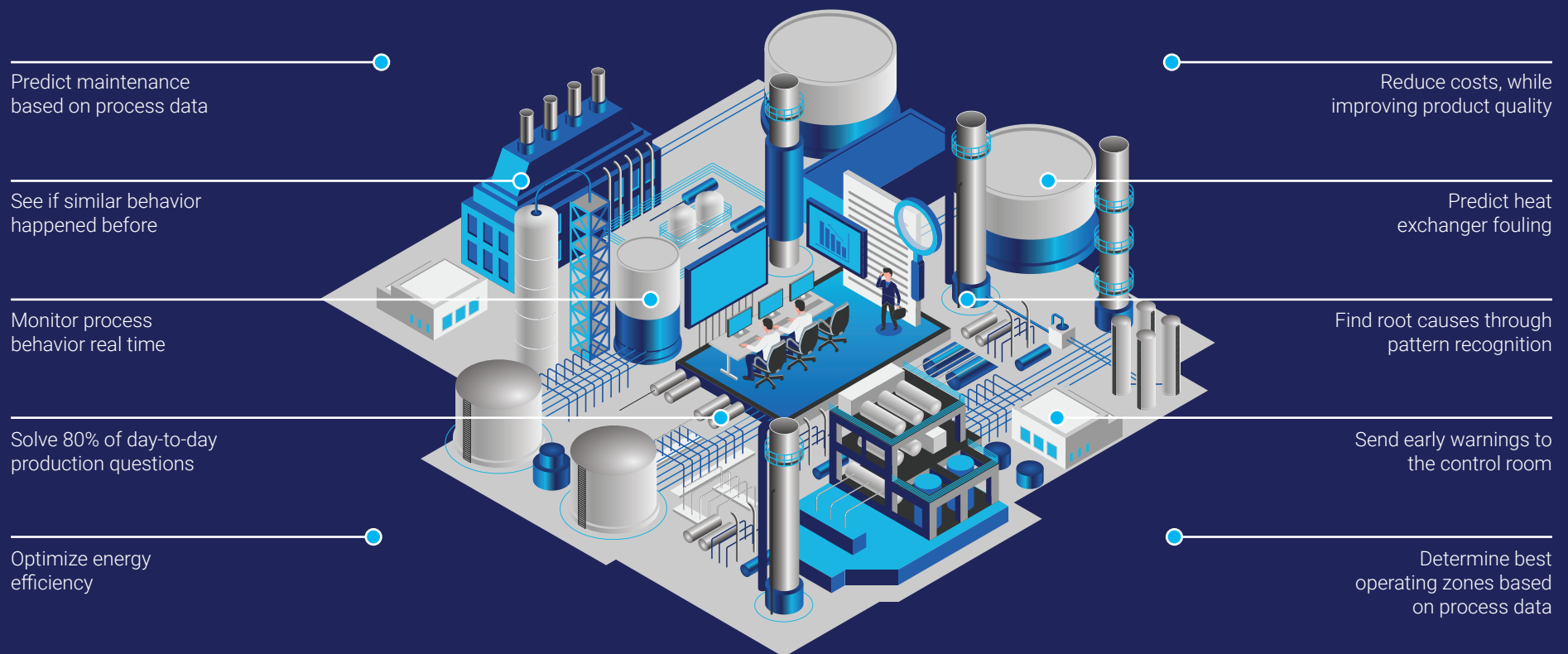
There's been a **knowledge gap** since data scientists can't possibly understand your processes like the people who use them every day.

It's time for independence. It's time to get proactive with your data. It's time for TrendMiner.

Put the power of data in the hands of many

Process engineers, plant managers and other non-data scientists are empowered to optimize operations all the time, anytime, using TrendMiner self-service industrial analytics. **No data science expertise required!**

Predict maintenance based on process data

See if similar behavior happened before

Monitor process behavior real time

Solve 80% of day-to-day production questions

Optimize energy efficiency

Reduce costs, while improving product quality

Predict heat exchanger fouling

Find root causes through pattern recognition

Send early warnings to the control room

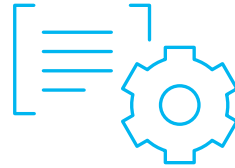Determine best operating zones based on process data

It's time to empower your engineers. It's time to unlock opportunities hidden in data. It's time for TrendMiner.

Gone are the months of waiting—get answers now!

Search process data as easily you do a Google® search.

Analyze operational performance without data modeling.

Find root causes, fast, and create early warnings.

Made by engineers for engineers, TrendMiner self-service industrial analytics is an intuitive, web-based application that provides immediate insights into decades of time-series data.

"The search capabilities of TrendMiner are top notch. It's like working with our existing trending client on steroids."
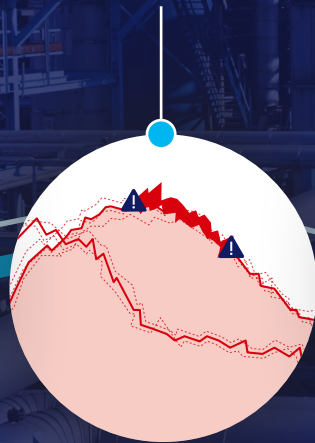
Process Data Analyst, DSM Dyneema

What you can do with TrendMiner:
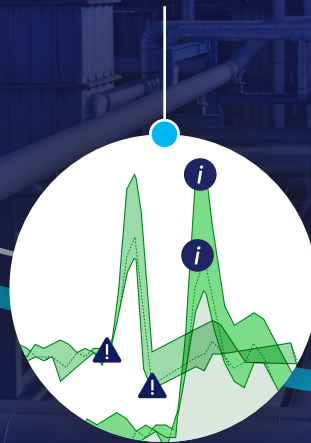
Visualize

for operational story telling

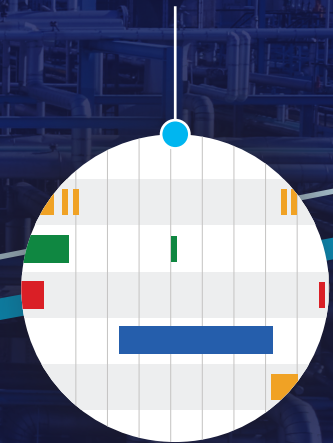**Analyze**

to find root causes fast

Monitor

to get early warnings

Predict

what's likely to happen

Contextualize

to continuously improve performance

It's time for immediate answers. It's time for industrial analytics at your fingertips. It's time for TrendMiner.

Visualize data for fast decision making

Because control room monitors can't tell the full story

Data-driven decision making was never easier:

- Visualize operational KPIs for instant insights on a dashboard

- Personalize dashboards based on trends or context

- See which parts of the process require extra attention or analysis

- Start investigating process anomalies, production losses or equipment inefficiencies

"With TrendMiner, we solved a chemical wash-out problem in only two hours, saving over €1.8 million per year."

Principal Process Control Engineer, Sitech Services
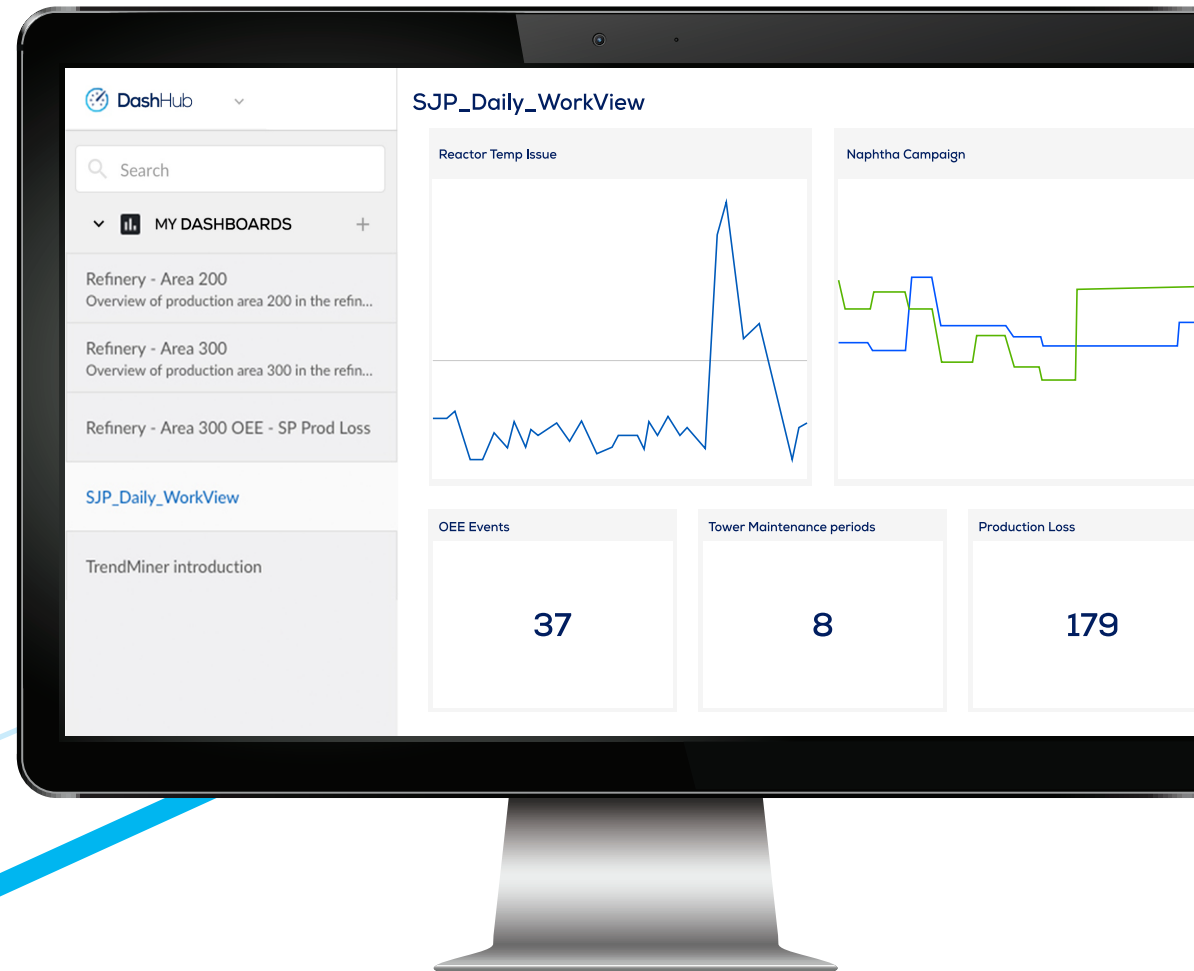
Analyze data to find root causes fast

No more waiting—search and analyze results on your own

TrendMiner indexes all tags from your historian, making the data instantly available to:

- Quickly find and overlay behaviors of interest

- Easily assess problem impact and validate or invalidate hypotheses in a matter of minutes

- Share analysis with the click of a button

- Create a rich knowledge base, and leverage results from analyses of historically similar events

- Know the root cause of deviating behaviors to help avoid them in the future

"TrendMiner helps predict fouling of heat exchangers 2-3 weeks in advance. This gives us enough time to schedule preventive maintenance and avoid unnecessary waste or energy increases.

Principal Process Control Engineer, Sitech

Search dimensions

Similarity
Search for periods visually similar to an example
Saved searches (1)

Value based
Search for periods satisfying boolean conditions
Saved searches (1)

Digital step
Search for periods of transition between states
Saved searches (1)

Event frame
Search for periods concerning predefined events
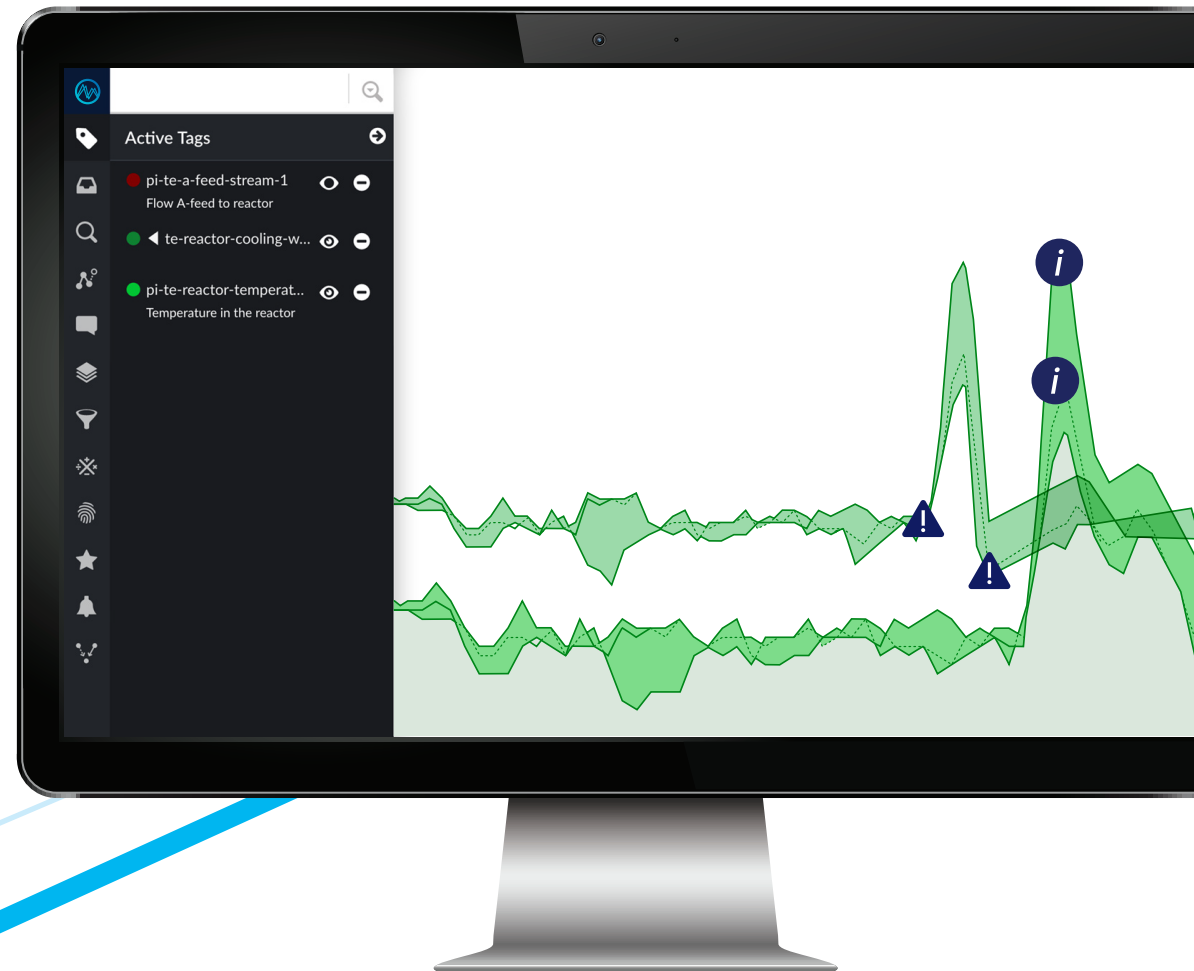
Monitor
to optimize performance 24/7

Data never sleeps.
Neither does our software

Guard live production data like a watchdog:

- "Fingerprint" best process behavior

- Get automatic alerts when deviations occur

- Leverage analysis results for reporting and future diagnostics—help novice users learn from process experience

- Manage by exception, starting with an inbox of events of interest

- Trigger maintenance action and automate data inspection tasks

"With TrendMiner monitor, preventive maintenance helps us avoid multi-ton product losses."

Chief Digital Officer, Arlanxeo

Active Tags

pi-te-a-feed-stream-1
Flow A-feed to reactor

te-reactor-cooling-w...

pi-te-reactor-temperat...
Temperature in the reactor

Predict
what's likely to happen next

Forecast future process performance

Gain instant access to predictive analytics:

- Compare saved historical patterns with live process data to forecast unwanted events

- See how far the process has evolved and get a prediction on how it will likely continue

- Set up auto alerts to instruct the team on what to do in any given situation

"It's my job to improve our processes and prevent system disruptions. TrendMiner has simplified my job. I can collect information a lot faster, compare it with the past and use it to predict the future."

Operational Expert, Covestro
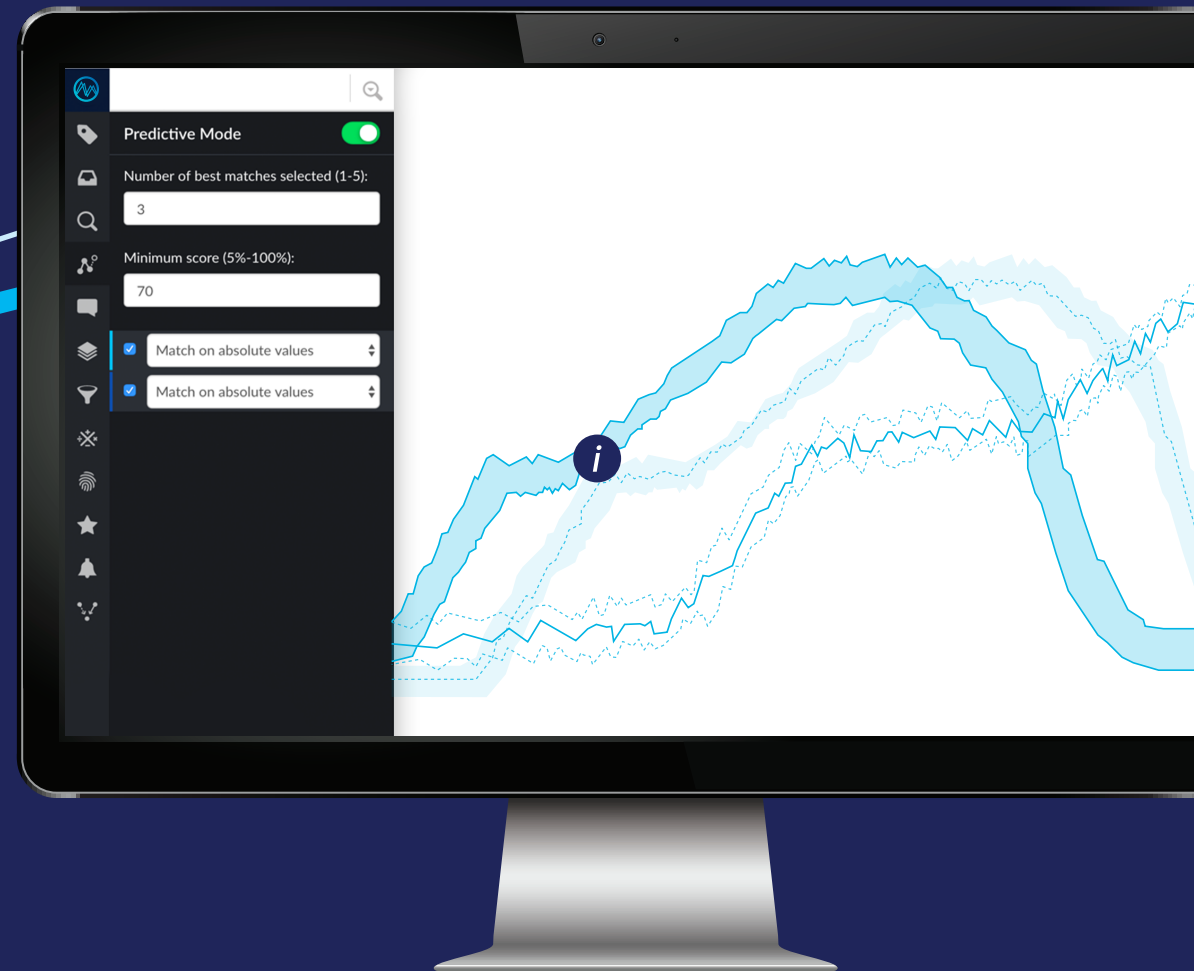
Contextualize operational performance

Get clarity into your operations

Make data-driven decisions to shift performance into the next gear:

- Use monitors and soft sensors to capture events of interest

- Leverage captured events and contextual information from various data silos, such as your LIMS, MMS, batch or OEE system

- Captured contextual information can be leveraged for data-driven decisions and can be the starting point to find new opportunities for improvement

"We wouldn't be where we are today in over-achieving our goals without TrendMiner. Industrial analytics is crucial for optimizing our production process and meeting our organizational objectives."

Engineering Manager, Ashland
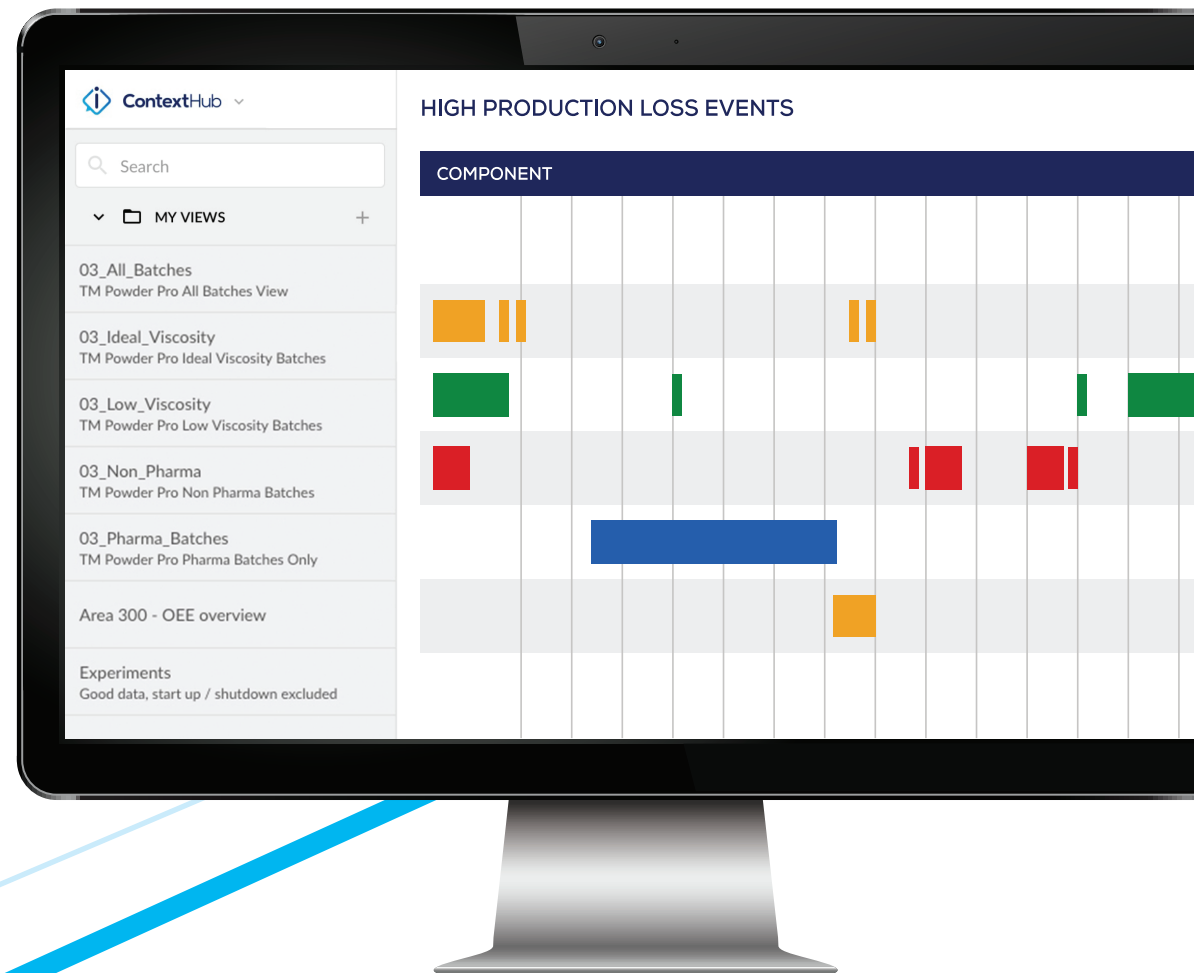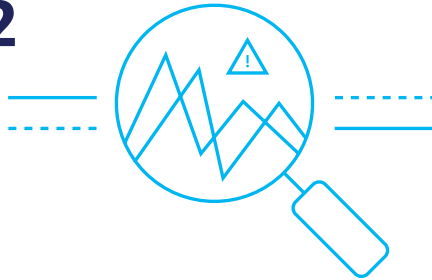
Top 3 reasons you'll love Trend-Miner

1

No hurdles, no delays
Get results immediately when you deploy TrendMiner within your existing infrastructure via rapid-fire visualization of your time-series data from any historian.

2

Instant answers from your data
Search through decades of information right out of the box using TrendMiner pattern-recognition algorithms. In no time, you can increase the value of your process measurement data just by giving it the right context.

3

Easy for everyone
TrendMiner is an HTML5-based solution—as intuitive as the apps you use every day. Opening many searches at the same time or auto-completing your tag searches feels like browsing through Google for answers.

"Process data tells stories. All you need to do is capture them."

Operational Expert, Covestro

If it's time to …

Improve availability by eliminating unplanned downtime

Guarantee **quality** by learning "golden batch" profiles

Limit **maintenance** costs with asset health monitoring

Boost **operations** through situational awareness and resource efficiency

Optimize **performance** with actionable insights into unusual situations

Reduce **energy** costs by optimizing efficiency

Enhance **safety** by eliminating failures

Minimize **waste** by controlling losses

… it's time for TrendMiner!

"Give the power of the data to the people who can interpret that data."

Rotating Machinery Engineer, TOTAL Refining & Chemicals

TrendMiner
brought to you by Software AG

Software AG is the industry's leading independent integration, Internet of Things, analytics, process software and services company. We offer Freedom as a Service, giving you the freedom to connect and integrate any technology, from app to edge. We help you free data from silos so it's shareable, usable and powerful, enabling you to make the best decisions and unlock entirely new possibilities for growth.

TrendMiner, a Software AG company, was built from the ground up to democratize analytics, putting the power of self-service analytics of production data into many hands for better, faster decisions.

Why wait? It's time for TrendMiner today.
Get started: softwareag.com/trendminer
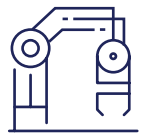
Want to know more?

Visit us at: **softwareag.com/trendminer**

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