



TRANSITION
TECHNOLOGIES

Industry 4.0 Use Cases Catalog

Practical Guide to Industry 4.0

Proven Use Cases & Results
for Manufacturing

Discover the potential
of digital manufacturing with
Transition Technologies PSC

Voice of the Ekspert



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“

Digitalization is a key enabler and element of the strategy to ensure efficient industrial operations.

Based on the Deloitte Smart Manufacturing Survey (2025, 600 manufacturing executives):



92% of manufacturers see smart manufacturing as the primary driver of competitiveness over the next three years.



80% plan to invest over a fifth of their improvement budgets in smart manufacturing – focusing on automation, data analytics, and cloud technologies.



Yet **65%** cite operational risk as their top concern. Nearly half struggle to fill critical production and planning roles. Workforce readiness remains the least mature area of digital transformation.

We know that the area of Industry 4.0 is full of buzzwords and complex technologies.

Our goal is simple – to show you how these solutions optimize and improve your everyday work.

Let's sort out this chaos and **focus on the benefits.**



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Production Challenges Map

A summary of the most common production challenges, along with dedicated solutions that effectively tackle them. Find out how we can help you to **produce more for less**.

1**Challenge**

- Low capacity.
- Unplanned downtimes.
- Inflexible operations.

Solution

Production Monitoring with OEE

2**Challenge**

- Inability to predict failures.
- High maintenance cost.

Solution

Predictive Maintenance

3**Challenge**

- Reactive root cause analysis.
- high cost of poor quality.

Solution

Predictive Quality

4**Challenge**

- Paper-based reporting.
- Delayed data flow between teams.

Solution

Paperless manufacturing

5**Challenge**

- Frequent changes to paper instructions.
- Hard to track.

Solution

Digital Work Instructions

6**Challenge**

- Low field service efficiency.
- Poor post-sale visibility.

Solution

Remote monitoring and service

7

Challenge

- High energy costs.
- Hard to optimize.
- Need to reduce CO₂.

Solution

Energy monitoring system

8

Challenge

- Process instability.
- Raw material waste.
- High energy cost.

Solution

Process optimization with AI

9

Challenge

- Siloed data.
- Costly integrations.
- No real-time context.

Solution

Unified Namespace (UNS)

10

Challenge

- Fragmented tool tracking.
- No quality traceability.

Solution

Tool management and utilization

11

Challenge

- No off-the-shelf solution fits changing needs.

Solution

Tailor-made industrial applications



Industry index

Find use cases and success stories relevant to your industry:



Automotive

Predictive Quality (automotive), Tailor-made Apps, UNS (automotive supplier), Tool Management, Process Optimization.



Food & Beverage

Energy Monitoring, Paperless Manufacturing, Process Optimization with AI, UNS (recipe management).



Electronics

Production Monitoring with OEE (Lacroix).



Aerospace & Defense

Predictive Maintenance (global manufacturer).



Wind Energy

Digital Work Instructions (Vestas).



Electric Buses / Mobility

Digital Work Instructions (Solaris).



Pharmaceutical / Life Sciences

Tailor-made Apps (global drug manufacturer), Remote Monitoring (Planet Innovation).



Tobacco

Tailor-made Apps (Philip Morris), Process Optimization with AI.



Welding & Cutting Equipment

Remote Monitoring (ESAB).



Food Processing Equipment

Remote Monitoring (Haarslev).



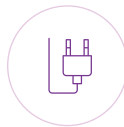
Building Materials

Production Monitoring with OEE.



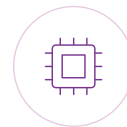
Glass Packaging

Paperless Manufacturing.



Cable Manufacturing

Energy Monitoring (Mexican cable manufacturer).



Semiconductor

Predictive Quality.



Mining / Drilling Equipment

Tailor-made Apps.

Production Monitoring with OEE

Monitor and improve OEE

Addressed to: operators, maintenance and quality control teams, production managers, plant managers

Thanks to direct integration of machines and controllers, it is possible to report production status and production statistics (e.g., OEE) in real time.

This is usually the first step towards digitalization, because the OEE indicator is used as a benchmark for all other initiatives optimizing production, also using artificial intelligence and machine learning (AI/ML). OEE is mainly great because it is an overall KPI taking efficiency, quality and availability on one KPI and therefore allows drill down into the specific area of problems.

Challenges

- Increasing production capacity without investing in new lines.
- Unplanned and prolonged downtimes.
- Lack of operational flexibility and low ability to adapt to changes.
- Ensuring full line performance transparency



_Solution



Automatic data acquisition

Automate real-time acquisition of data and signals from production machines and systems.



Real-time KPI monitoring

Display data in the form of easy-to-read dashboards and screens, allowing for comparison between plants or production lines.



Downtime reporting

Automated reporting of downtime, quality, and output with root cause categorization and Pareto analysis.



Bottleneck identification

Troubleshoot the issues with all relevant data (actual, historical, trends).



Alerts and notifications

Alerts and SMS/e-mail notifications to improve information flow and reaction time.

_Results



OEE improvement – up to **15% in the first year**

Increase production efficiency and better resource utilization.



Unplanned downtimes reduction – up to **25%**

Elimination of unexpected disruptions in the production process.



Increase employee efficiency and productivity

Improve staff efficiency and time management.

Success Stories

Lacroix – electronic manufacturer from France

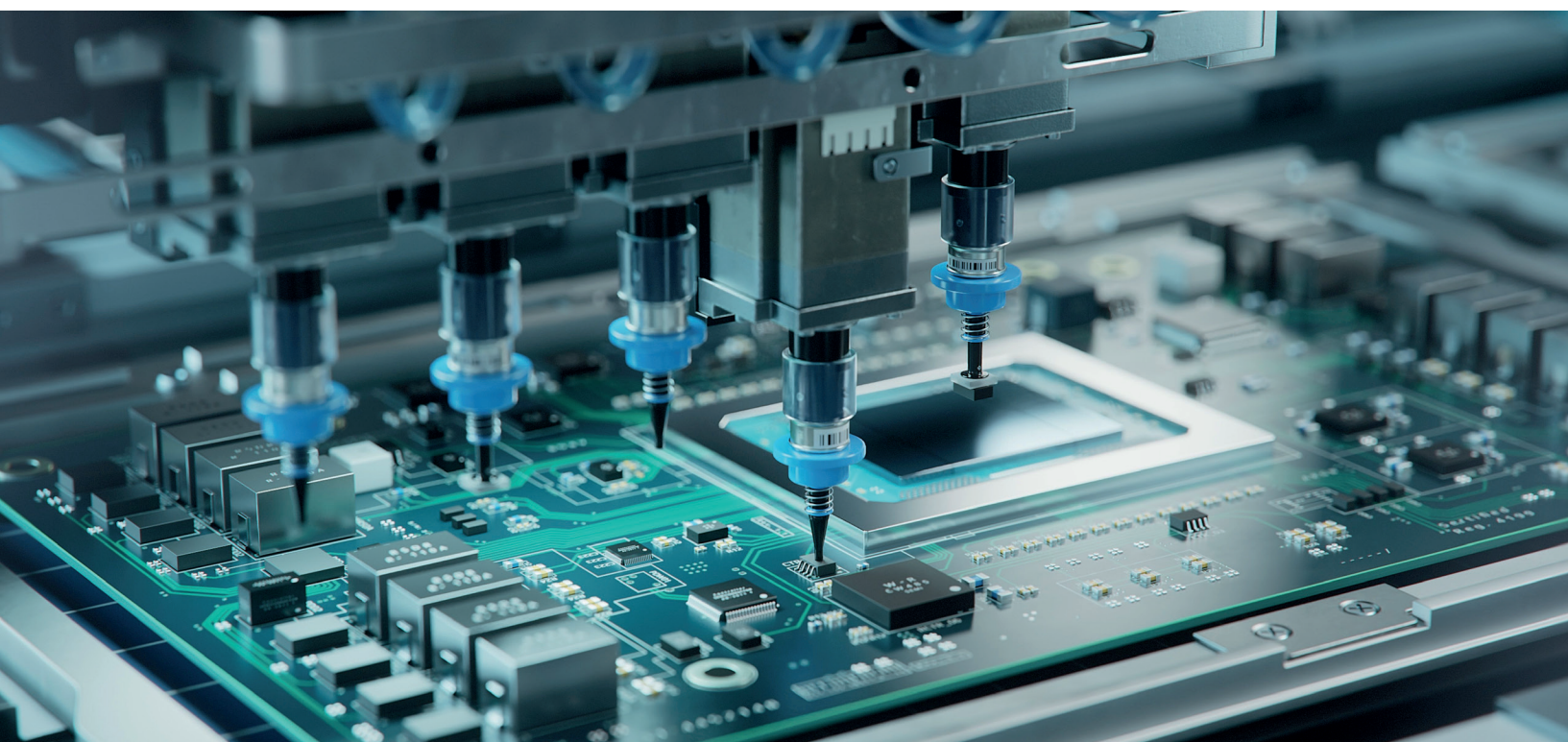


Challenges

- The need to ingest data from 1000+ machines.
- No possibility to monitor production KPIs in real-time.
- Insufficient control of the production process.

Results

- Reduction of product quality defects.
- Minimizing non-automated tasks and manual inputs.
- Improvement of OEE.



Medical products manufacturer



Challenges

- Difficult OEE tracking and process optimization.
- The need to automate processes.
- Manual and time-consuming integration of data from multiple sources.

Results

- Unplanned downtimes decrease.
- Increased line efficiency.
- Better identify and resolve bottlenecks.

Building materials manufacturer



Challenges

- Too many unplanned downtimes.
- The need to improve efficiency and enable data-driven decision-making.

Results

- Unplanned downtimes reduction.
- Increase operational efficiency.
- Accelerating decision-making processes.

Predictive Maintenance

Reduce the number of failures and their duration

Addressed to: maintenance engineers, operators, plant managers

Prevention is the most effective maintenance strategy to reduce the number and duration of breakdowns, save money and increase productivity.

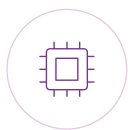
Use real-time data and predictive algorithms powered by AI (artificial intelligence) to move from traditional maintenance to a forecast-based approach.

Challenges

- Inability to predict failures and a high cost of unplanned downtime.
- High maintenance cost (labor costs, spare parts).
- Lack of understanding of the impact of production process parameters on machine life.



_Solution



Seamless integration

Integration with any existing systems enabling automatic monitoring and pattern detection to ensure maximum equipment uptime.



Trends and correlations

Identification of relationships between process parameters and machine condition using AI/ML engines.



More effective maintenance decisions

Advanced machine learning algorithms analyze data from all sources, detect anomalies and predict failures in advance.



Real-time monitoring and alerts

Information about the expected time until the next machine failure, based on ongoing monitoring and AI technology.



Hardware failure prediction

Defining and identifying critical areas on the production line and receiving real-time warnings well in advance.

_Results



Reduction of maintenance costs by up to 15%

Machine maintenance cost reduction, more effective budget management.

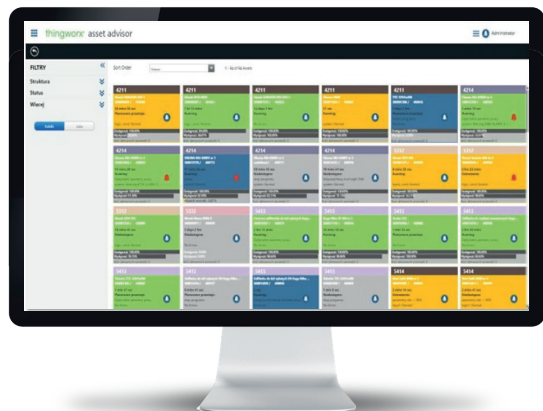


Reducing machine failure rate by up to 15%

Machine downtime reduction, increased process reliability and stability.

Success Stories

Global manufacturer of aerospace and defense components

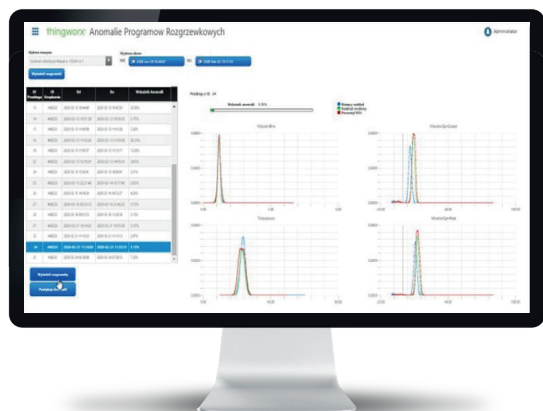


Challenges

- Low machine uptime and high maintenance complexity.
- Inability to understand and predict failures.
- Inflexible scheduling of maintenance work.

Results

- Awareness of the condition of machines and their statistics – better control over the production process.
- Fast and targeted maintenance resulting in a reduction of unplanned downtimes.



Predictive Quality

A new generation of quality control processes using AI

Addressed to: quality managers and engineers, production operators, production managers

An innovative solution aimed at improving production quality. By analyzing process parameters in real time, it identifies and diagnoses quality problems before they appear in the finished product.

Our AI-based solution uses predictive analytics, analyzing incoming data, and identifying problem areas, which allows us to minimize the number of defects.

Challenges

- Current root cause analysis doesn't allow proactive response to quality problems.
- High costs related to ineffective quality assurance and control.
- Unsatisfactory first pass yields due to quality issues.



_Solution



Analysis of the production process

To extract valuable trends and construct an appropriate machine learning model.



Identification of quality problems

Constant monitoring of the production process, including its parameters and factors influencing it.



Dynamic quality control limits

Applied in real time to specific signals instead of classic SPC (Statistical Process Control).



Quality prediction

For a specific production batch based on historical data.



Recommendations

Concerning process optimization to ensure the highest possible quality.

_Results



Lower defect rate and repair rate (8-12%)

Reduce the number of defects and repair rate, which increase the overall reliability of the system.



Quality index increase (4-15%)

Increase the overall product quality to increase customer satisfaction and market competitiveness.

Success Stories

German automotive supplier



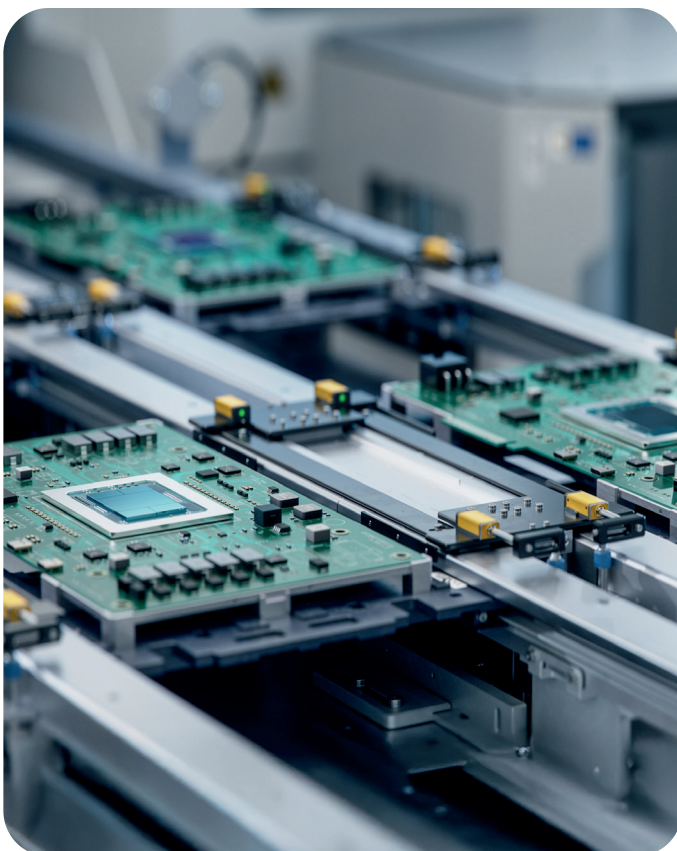
Challenges

- Risk of releasing defective products to the market.
- Expensive warranty returns.
- Inability to holistically analyze qualitative data.

Results

- In-dept analysis of production and quality.
- Identification of key causes of quality errors.
- Risk of quality errors prediction with 85%+ accuracy.

Semiconductor manufacturer



Challenges

- Issues with the product quality.
- Costly losses during chemical filtration process.
- Low end customer satisfaction and frequent warranty returns.

Results

- Optimize batch quality by detecting anomalies.
- Reduce waste by detecting issues before adding expensive materials.
- Understand physical relationships during the process.

Automotive supplier

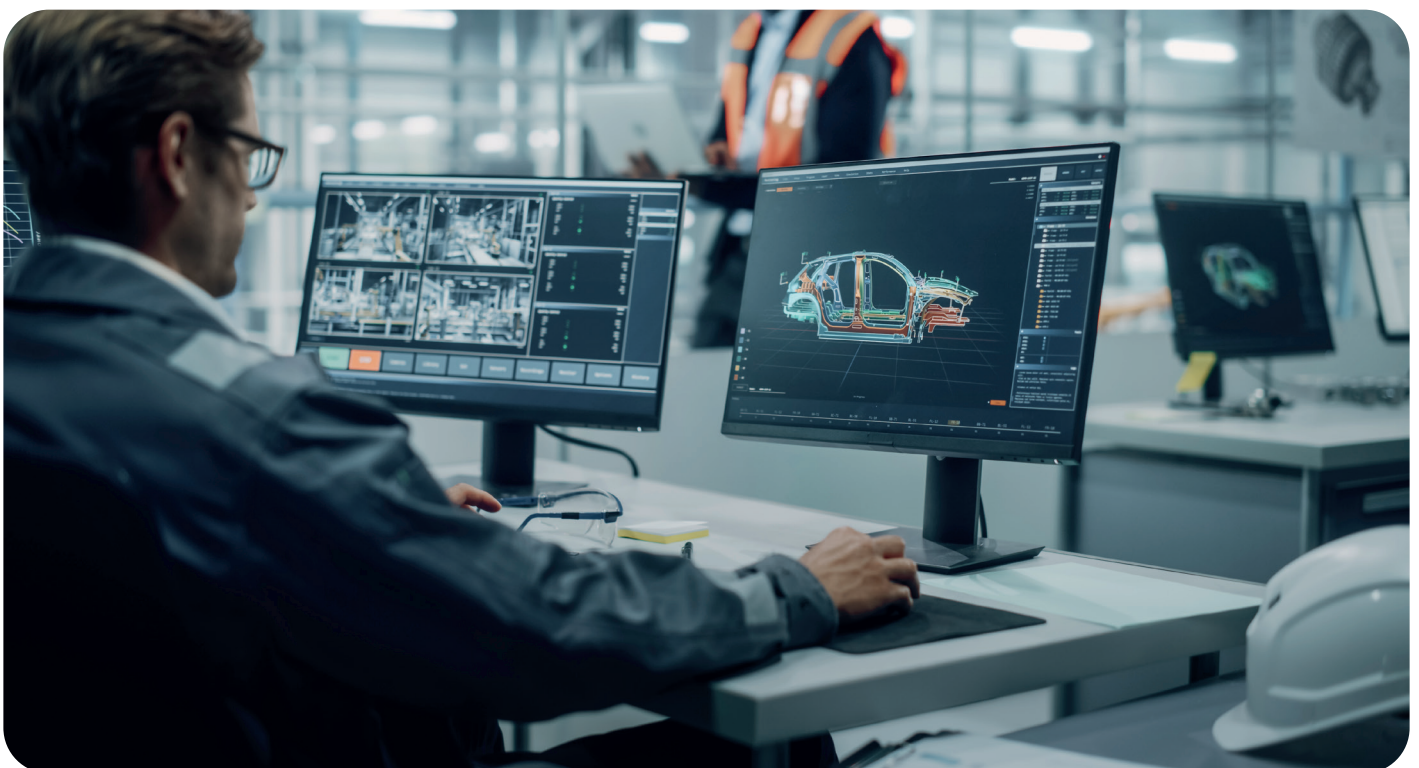


Challenges

- The quality measurement system is not integrated with the MES.
- Quality monitoring differs between production machines and reference measurement equipment.
- Process quality data is not available in real time.
- End-to-end traceability to individual process steps is limited or not possible.

Results

- Early detection of quality deviations and proactive intervention in real time.
- Reduced rework and scrap through faster response.
- Transparent quality monitoring across all production lines.
- Efficient root cause analysis and sustainable process optimization.
- Successfully rolled out across multiple plants and manufacturing lines.



Paperless manufacturing

Give up paper and gain process efficiency

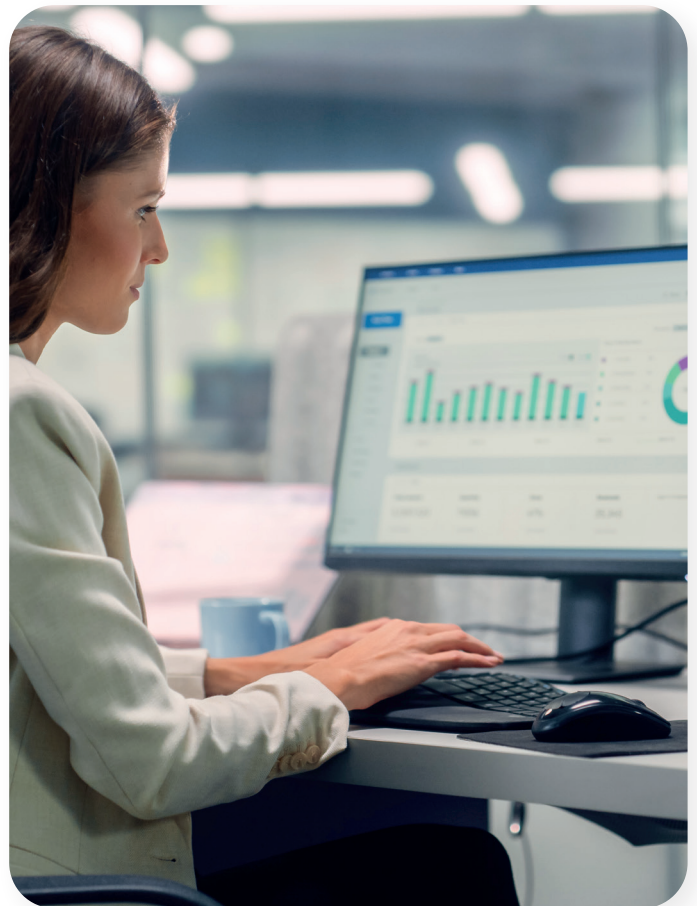
Addressed to: production managers, process improvement teams, production plant and enterprise managers

Digitizing the acquisition and flow of data in the factory between different areas and teams allows for improved communication, faster response times and making better decisions based on data analysis. It is based on dedicated software that replaces paper documents used in production and in areas such as planning, purchasing and quality control.

The application collects data and monitors production processes to speed up and facilitate the flow of data and work between teams.

Challenges

- Paper-based production event reporting.
- Complex and delayed flow of information and the process of cooperation between different teams.
- A multitude of standards, document templates and data used.



_Solution



Industrial communications

Ensuring automatic data collection in the enterprise (from machines, processes, systems) allows them to be displayed in the context of a given step in the process.



Document change management

Tools for managing changes to documents or plans with the option of version control and immediate distribution after approval.



Reports and summaries

Automation of generating reports, both in real time and summary reports.



Lists of tasks to complete

Lists of tasks and instructions that guide the user step by step in a specific process.



One source of truth

A central system for storing data, documents and feedback allowing for faster access, control and analysis.

_Results



Better communication and work efficiency

Improve information flow to reduce time and increase efficiency.



Reducing errors in documentation

Minimize inaccuracies and mistakes in documents.



Improving the management competences

Efficient employee training processes.

Success Stories

One of the world's largest producers of glass packaging



Challenges

- Ineffective data collection in an outdated system.
- High labor and maintenance costs of the technological process.
- Difficult to introduce innovations into processes based on paper documentation.

Results

- Digitization and standardization of the work of all departments.
- Faster implementation of new processes and their monitoring in real time.

Global company in the food industry



Challenges

- Difficult work flow and team cooperation.
- Inefficient processes based on paper documentation.
- Problems with visibility of process progress and control of ongoing tasks.

Results

- Reducing labor costs through digitization and automation of processes.
- Higher competitiveness and faster adaptation to changes.
- Current view of work progress.

Automotive supplier

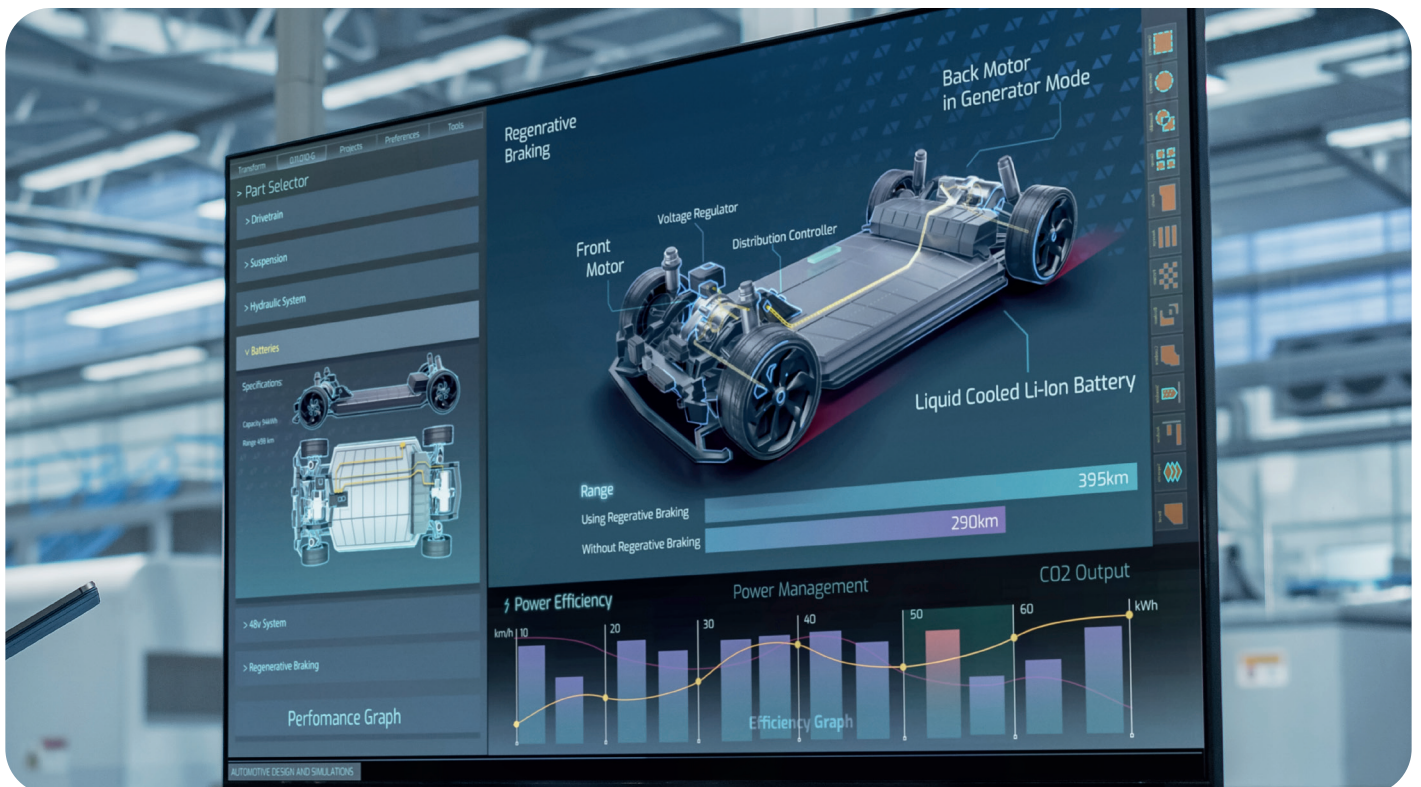


Challenges

- If interventions during manufacturing happen, parts need to be manually marked for discharge.
- A paper marker needs to be created and put on the part.
- Manual information must be filled in and put back into the system.
- Worst case: marker is lost or discharge step cannot be properly mapped to process step..

Results

- App-based flagging of parts for automatic discharge.
- Machines will no longer interact with parts when marked.
- Exact point of failure can be identified.
- Data can be enriched with comments, necessary information and pictures.
- No more paper is needed.



Digital Work Instructions

The path to efficiency and precision at every stage of production

Addressed to: production technicians and engineers, machine operators, quality managers

Replace paper versions of work instructions, quality control or standard operating procedures (SOPs) with electronic versions. Display them on a workstation HMI, tablet or AR glasses.

Extended with additional information, such as recordings, photos or data collected in real time (e.g. from intelligent tools) to allow for even more effective performance of complex procedures.

Challenges

- Frequent changes of paper instructions.
- Difficulty in learning and following paper instructions.
- Inability to efficiently track and report on individual stages of the process.

Exemplary use cases



Operator

Digital and step-by-step standard operator manuals (SOPs).



Maintenance Engineer

Support in carrying out repairs and the ability to document them.



Quality Engineer

Control and automatic reporting of quality control processes.



Training & onboarding

More effective on-the-job training and knowledge sharing.



Field Engineer

Context-sensitive help in performing repairs and recording their progress.



Warehouse logistics

Optimization of warehouse logistics and the order picking process.

Solution



Effective scheduling

Planning and assigning orders to operators, maintenance engineers, and quality engineers in a standardized and efficient way.



Digital instructions with full monitoring

Step-by-step guidance with the ability to collect and display key data and track progress, duration, measurement values and visual parameters.



Integrated process planning

Synchronization of process plans, material lists and linking orders and production paths in a central database.



Flexible display of instructions

Display on various devices: HMI screens, tablets and augmented reality glasses (RealWear) for greater flexibility.

Available on:

Mobile devices



Industrial Glasses (Realwear)



_Results



Work more efficiently with intelligent tips

Increase staff productivity thanks to contextualized suggestions and user guidance.



Fast and automatic distribution of work instructions

Reduce the time needed to create and distribute instructions thanks to automated processes.

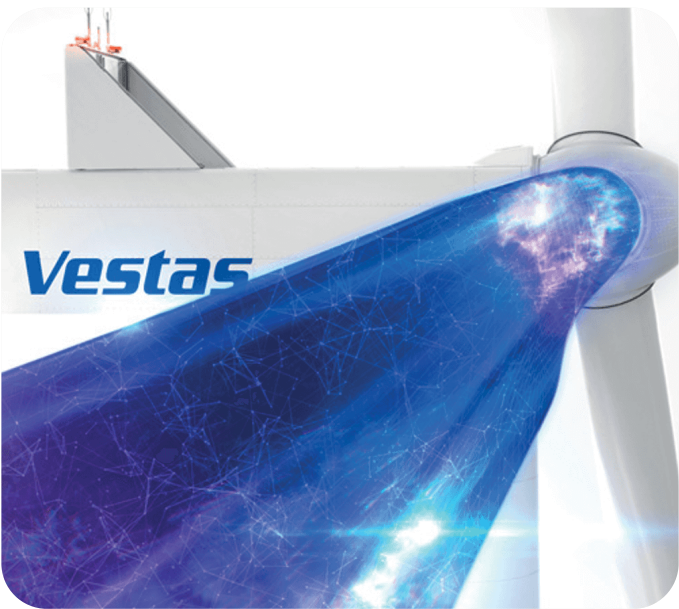


Less paper consumption in production

Reduce paper usage by switching to digital documentation.

_Success Stories

Vestas – Danish wind turbines manufacturer



Challenges

- Work instructions in paper form requiring frequent updating.
- Service work at heights requiring free hands of the employee.
- Aging workforce, lack of people willing to work.

Results

- Faster onboarding of new employees.
- Easy recording and sharing of knowledge.
- Contactless operation of work instructions.

Danish manufacturer of electric actuator systems



Challenges

- The need to optimize production processes.
- Difficult access to real-time data.
- Lack of uniform and centralized monitoring of production statistics.

Results

- Minimization of operator errors.
- Reducing training cost.
- More effective decision-making process.

Solaris – European leader in electric buses manufacturing



Challenges

- The need for effective and quick service and to provide customers with access to expert knowledge.
- Strive to reduce vehicle downtime.

Results

- Quick diagnostics and remote support for service technicians.
- Lower costs of business trips.
- Minimizmg bus downtime.

Automotive supplier



Challenges

- Hundreds of different products on the line make inspection a non-trivial task.
- Hundreds of different measurement points with specific aspects and measurement tools.
- Associating abnormal machine data and events with special test procedures is nearly impossible.

Results

- A platform that guides the operator through different measurement steps.
- Appropriate tests are selected according to quality standards and measurement tools.
- Heatmap of critical tasks to inspect based on deviations in production data.

Automotive Supplier



Challenges

- Handover between multiple shifts per day leads to missing knowledge in machine errors.
- With many different reports and metrics, it's hard to focus on all aspects.
- Non-trivial solutions for rare errors are often lost in information silos.

Results

- Dedicated framework to select automatically generated issues from a list for shift start meetings.
- Issue handling with step-by-step guidance and decision matrix.
- Define key metrics or machine clusters on a per-day basis to focus attention.

Remote monitoring of machines and devices

Remote Service 4.0: innovative monitoring, immediate response

Addressed to: product design engineers, customer service teams, operators, process technicians

For manufacturers of machinery and equipment who provide additional maintenance services, it is most important to create products that are reliable.

Digital solutions allow not only remote product monitoring, but also remote diagnostics and product software updates, as well as analyzing customer usage.

Challenges

- Improve the efficiency and profitability of the field service.
- Reduced visibility of the performance of products after they have been sold.
- High costs of after-sales service related to travel costs of the field team.



_Solution



Device connectivity

Secure, remote connection to collect data in real time and send it to a central system.



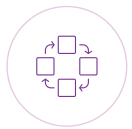
Central data platform

Data safely collected in a central system enabling management and further analysis (including AI algorithms).



Real-time monitoring

Constantly monitor the condition and use of the product and notify all disturbing events.



Integration of data sources

Connect to other after-sales systems to automate your workflow.



Remote service

Safe, remote service and diagnostics as well as remote software update without site visits.

_Results



Improved first-time-fix-rate up to 92%

Increase repair success rate for more effective management.



Reduction in time to resolve a service request (up to 30%)

Faster response to customer problems.

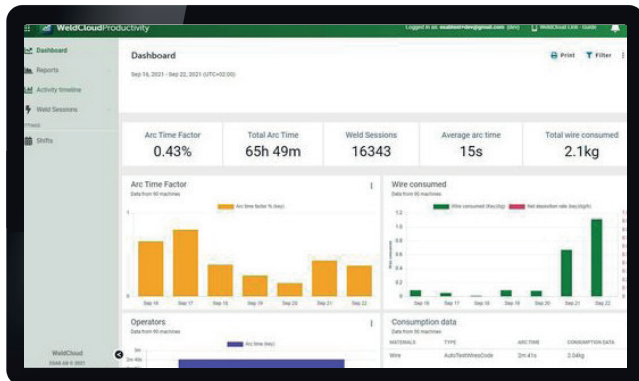
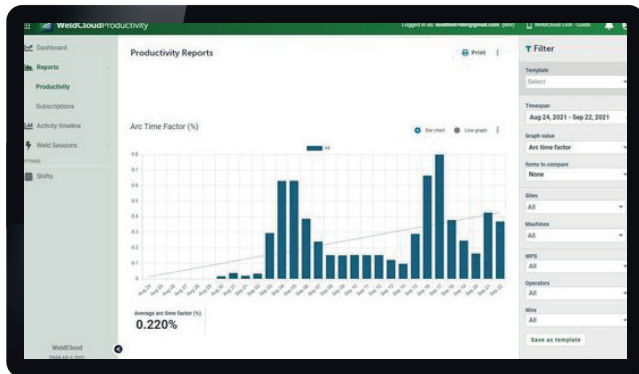


Increase in the number of tickets resolved remotely (up to 63%)

Improved efficiency and travel costs reduction.

Success Stories

ESAB – global manufacturer of welding and cutting equipment



Challenges

- The need to build innovation and competitiveness.
- The desire to improve the quality of services and products.
- Lack of insight into the use of welding equipment and the welding process.
- Difficulties to update equipment firmware.

Results

- A safe and scalable system based on the public cloud.
- Enabling continuous improvement of the welding process and tools.
- Quick detection of problems and anomalies.



Haarslev – leader in the production of food processing equipment



Challenges

- The desire to develop a new offer around monitoring production processes.
- Time-consuming, manual data collection and analysis.

Results

- Full visibility of current machine status and key indicators.
- Minimizing access time to data for analysis.

Planet Innovation – manufacturer of medical equipment



Challenges

- Ensuring the highest possible reliability of devices.
- Improved and accelerated repair times.
- Allowing remote monitoring of the device's status and operation.

Results

- Easier monitoring of devices around the world in a central system.
- Speeding up problem identification and solution.
- Reducing the number and duration of local service visits.

Energy monitoring system

Monitor and control the consumption and costs of energy utilities

Addressed to: production managers, energy engineers, process improvement teams, sustainability teams

Energy Advisor – an award-winning energy management system for manufacturing companies.

Thanks to data available in real time, in a user-friendly interface, it allows you to indicate deviations from the norm, losses and areas where it is possible to optimize utility costs.

Challenges

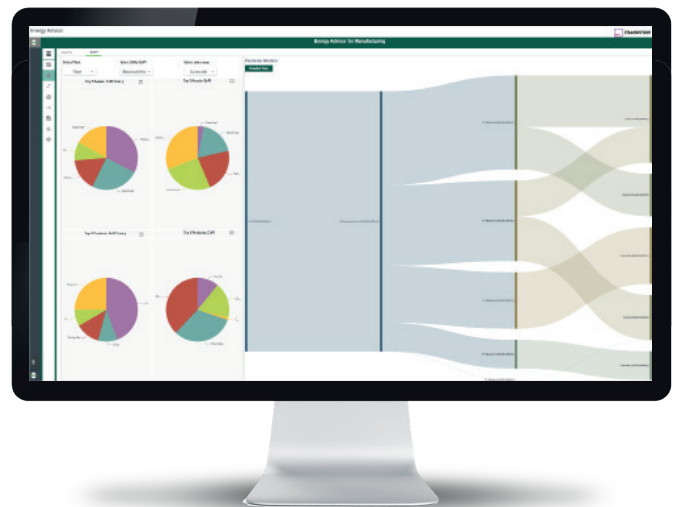
- Excessively high costs of energy and other resources (water, gas, compressed air).
- Difficult to optimize energy efficiency.
- The need to reduce CO₂ emissions.

**Award-winning
EMS system**

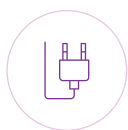
**Innovation
in business**
Technology Innovator
Awards
2022



**The Best
of Industry
4.0**



Solution



Real-time energy consumption monitoring

Real-time monitoring of energy and other resources with energy efficiency metrics.



Cost analysis

Including the energy and utilities component of production, the possibility of optimizing the energy mix.



Power Guardian

Monitoring current consumption of electricity in relation to ordered power, predicting total consumption, alerting on exceedances.



Calculation of future costs

Analyze future costs based on historical data, variable rates and consumption levels.



Alerts and notifications

Monitoring important areas and notifying defined groups via SMS, email or in-app.

Results



Reducing energy bills by up to 30%

Energy costs
reduction to drive
financial savings.



Minimizing energy losses

Process optimization
to reduce energy waste.



Reducing CO₂ emissions and carbon footprint

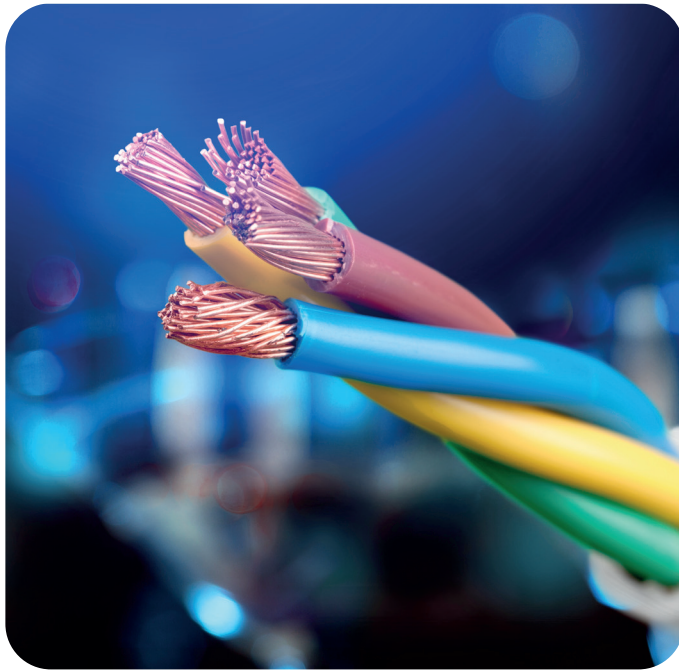
CO₂ emission and
carbon footprint
reduction from
production processes.

Energy costs reduction up to 30%

Discover our system and see how to achieve that.

_Success Stories

Mexican cable manufacturer



Challenges

- High electricity costs.
- Inability to easily identify areas and machines causing consumption exceedances.

Results

- Significant cost reduction by identifying areas and equipment causing the greatest wear and tear.

Global company in the food industry



Challenges

- Difficult utility consumption monitoring.
- Complex process of energy losses identification.
- No central utilities usage source of truth.

Results

- Reduction of media consumption.
- Simplified analysis and loss reduction.
- Central source of information for the organization.

Process optimization with AI

Improvement of process stability and efficiency with AI models

Addressed to: operators, process engineers, plant managers

This use case focuses on optimizing process stability and efficiency with AI engines. It applies directly to manufacturing lines, specifically targeting complex operations like drying, conditioning, or blending processes.

AI models continuously monitor process parameters directly from PLCs. The system provides operators with notifications about process instability and recommends optimal parameter adjustments, reducing raw material waste, and lowering energy costs.

Challenges

- Process instability negatively impacts overall production efficiency and product quality.
- Excessive raw material waste and high energy costs during complex processes (e.g. drying).
- Limited visibility into process parameters with legacy monitoring systems.
- Declining number of experienced process engineers to supervise quality.



Solution



AI-driven parameter recommendations

Implementation of AI models to recommend optimal process parameters based on real-time data ingestion from PLCs.



Hybrid deployment architecture

On-premise or hybrid architecture connecting edge applications with cloud environments via a DMZ database.



Role-based user interfaces

Dedicated interfaces for operators (real-time recommendations), administrators (model management), and audit users (traceability).



Automated instability alerts

Automated system notifications alerting operators about process instability based on AI-detected anomalies.



Closed-loop optimization

Availability to “close the loop” for autonomous process improvement after initial testing period.

Results



Increased process efficiency and stability

Higher product quality through AI-recommended parameter optimization.



Reduced raw material waste and energy consumption

Optimized drying and conditioning processes minimize resource waste.



Scalable foundation for MLOps

Established a scalable foundation for future Machine Learning Operations across facilities.

Success Stories

Global food & beverage manufacturer



Challenges

- Need for drying process parameter optimization on a selected production line.
- Process instability leading to suboptimal operational efficiency.

Results

- Successfully established the first project in the Digital & AI area for the facility.
- Expanded monitoring to all process parameters.
- Improved drying process stability, reducing raw material waste and energy consumption.

Global tobacco manufacturer



Challenges

- Suboptimal tobacco leaves drying process parameters causing lower efficiency.
- Unsatisfactory stability of the process resulting in raw material waste.
- Declining number of experienced process engineers to supervise quality.

Results

- Implemented a process optimization algorithm and transitioned to automated parameter setting.
- Expanded optimization to other primary process steps (slicing, conditioning, cutting, blending, flavoring).
- Rolled out the automated control solution to 9 factories worldwide (Europe, Asia, and Latin America).
- Mapped over events helps identify common problems in advance.

Unified Namespace (UNS)

An operational foundation that transforms fragmented machine data into a shared, real-time language for the entire organization

Addressed to: IT, OT, and management teams

This use case focuses on establishing a Unified Namespace (UNS) to end the data silo era. UNS represents a fundamental operational shift away from rigid, point-to-point connections toward an event-driven, hub-and-spoke architecture.

It acts as a single, centralized broker that radically decouples data producers (e.g., PLCs) from consumers (e.g., MES, AI, dashboards). Operational data is published once to the UNS, enriched with context on the fly and made accessible in real time to any authorized subscriber.

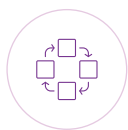
By eliminating the “integration tax” of custom connections, a UNS prevents data traceability loss, accelerates responses to shop-floor events, and creates a highly scalable foundation for enterprise analytics and decision automation.

Challenges

- Production data trapped in closed-box systems (SCADA, MES, Historians) and analyzed only after the fact.
- High “integration tax” caused by complex, costly, and fragile point-to-point connections.
- Lack of tag and context standardization across diverse controllers.
- Inability to effectively scale AI or advanced analytics due to fragmented data.



_Solution



Event-driven UNS architecture

Implementation of an event-driven Unified Namespace to radically decouple data producers from consumers using a hub-and-spoke model.



Unified semantic model

A standardized semantic model with a logical topic hierarchy to provide a shared OT data context for all teams.



Publish-subscribe protocols

Bidirectional communication using MQTT and industrial protocols & drivers (e.g., via Kepware) for seamless data flow.



Scalable data foundation

A clean, contextualized data feed acting as a stable foundation for advanced analytics, prediction, AI, and decision automation.

_Results



From reactive to real-time operations

Shifted from reactive reporting to event-driven responses, preventing lower OEE and increased scrap.



Drastically reduced cost of change

Eliminated point-to-point integrations for new digital initiatives.



Clean data foundation for AI

Contextualized data feed as a stable foundation for advanced analytics and prediction.



Factory deployment in weeks, not months

Reduced new factory integration and deployment time from months to weeks.

Success Stories

International automotive supplier



Challenges

- Legacy MES system functioning as a closed, isolated environment.
- Inability to effectively extract machine data and leverage it in other enterprise processes.

Results

- Successfully “opened” the MES by integrating it with the enterprise data bus.
- Reduced the deployment time for new factories from months to weeks.
- Standardized data structure enabling a global planning model to optimize line loads across 11 factories.

International food & beverage company



Challenges

- Critical need for centralized recipe management across a global, multi-site structure.
- Lack of automated batch reporting capabilities for consistent quality tracking.

Results

- Built a UNS-based central recipe manager, enabling operators to load recipes directly into PLCs.
- Automated recipe management, eliminating human errors and reducing raw material waste.
- Established automated, batch-by-batch process data collection saved to a central Historian.

Automotive supplier



Challenges

- Complex dependencies between machine and production data.
- Long production runs.
- Multiple failure points and hard traceability.

Results

- Deep-linked content (click on everything to get into a dedicated view).
- Complex filtering and multiple different searchable references.
- Complex views to display otherwise non-representable data in real time.



_Tool management and utilization optimization

Subtractive manufacturing: full traceability from tool to finished part

Addressed to: production technicians and engineers, machine operators, quality managers

Different Tool Management Systems don't allow a uniform workflow, and association with manufactured parts is not given. This use case provides a fully integrated platform for tools management, tracking, and quality traceability across the whole manufacturing process.

The solution allows user adjustment for tool lifetimes and automatic exchanges, maps quality to used tools, provides alerting and forecasting, and offers a configuration interface for complex tool setups.

_Challenges

- Different Tool Management Systems don't allow uniform workflow.
- Association with manufactured parts is not given – no traceability.
- Tool Management System does not integrate with any forecasting.
- Complex tools cannot be configured in common 3rd party tools.

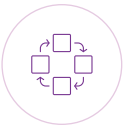


Solution



Integrated tool tracking platform

Fully integrated platform for tools management and tracking across all production lines.



Automatic tool lifecycle management

User adjustment for tool lifetimes with automatic exchanges triggered by wear data.



Quality-to-tool traceability

Map quality to used tools to allow traceability across the whole manufacturing process.



Alerting and forecasting

Proactive alerting when tools approach end-of-life and forecast replacement needs.



Complex tool configuration interface

A dedicated configuration interface for complex tool assemblies that 3rd-party systems cannot handle.

Results



Increased traceability

Significant time saved through automated tool-to-part traceability.



Long-term quality improvements

Quality trends linked to specific tools enable proactive replacements and reduce defects.



Automatic shift planning

Dynamic tool allocation eliminates manual intervention during shift changes.

Tailor-made industrial applications

85% of companies implementing Industrial Internet of Things solutions build them completely or partially “from scratch”

Addressed to: managers of production companies

There are plenty of “out-of-the-box” systems and solutions on the market, but they often do not meet all needs and their customization is difficult and time-consuming.

Ready-made solutions have various limitations, e.g. they have a “closed” code, require adapting company processes to the tool or being vendor-locked.

Challenges

- No ready-made solution that responds to changing needs.
- Inability or difficulty in developing or adapting current systems.



_Solution



Team of experts

Experienced in creating dedicated solutions based on various technologies.



Proven operating methodology

Support throughout the entire process, from defining requirements to implementation and adaptation.



A unique set of Industry 4.0 technologies

Specialization in **IIoT**, **AI**, **ML**, **AR**, **Cloud** and **PLM** enables us to create innovative industrial applications.



Full flexibility of approach

Various variants of cooperation enable flexible adaptation to customer preferences.



Global expertise

TT PSC's international presence and collaboration with various industries translates into successful delivery of advanced industrial solutions.

_Results



A solution 100% tailored to your needs

Fully customize the solution to meet your requirements and expectations.



Possibility to develop the application at any time

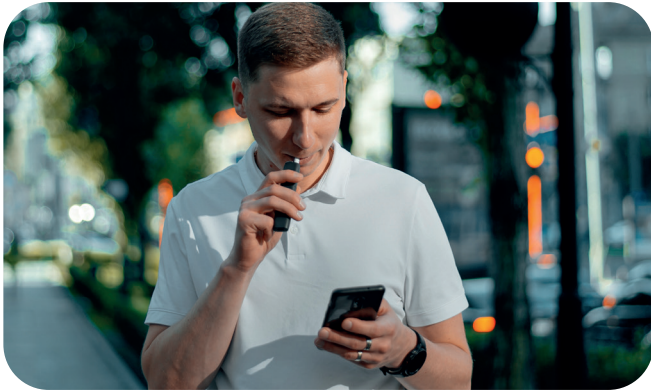
Develop your system according to changing needs at any time.

Success Stories

Philip Morris International – global manufacturer



**PHILIP MORRIS
INTERNATIONAL**



Challenges

- Complex process of identifying production problems and finding solutions.

Results

- Immediate issue recognition by error code and display of recommended solution.

Global drug manufacturer



Challenges

- Lack of a ready-made solution that would address all requirements in the production area.

Results

- Solution implemented and adapted in 3 locations.
- Compliance with industry regulations (GxP and others).

Leading manufacturer of drilling equipment



Challenges

- Inability to report the operating status of machines underground (without internet access).
- Difficult reporting, analysis of work efficiency and profitability.

Results

- Solution for monitoring and reporting working time without Internet access.
- Easy analysis and automatically generated reports.

Automotive supplier



Challenges

- Multiple factories, multiple lines, different configurations.
- 100 different applications and views for in-depth reports.
- Different user focus and permissions to access the data.

Results

- All-in-one data platform with in-depth linking for full manufacturing E2E tracking.
- Layered approach and customizable dashboards for quick user access..
- Tab-based workflows for comparison between multiple views and quick changeover.
- Embedded help/documentation and notification system.

Automotive supplier



Challenges

- The impact of machine events on quality is hard to make visible.
- Identifying bottlenecks is non-trivial in multi-step manufacturing processes.
- Machine problems can affect performance on many different levels.

Results

- Providing trend statistics with active alerting mitigates decreasing quality before it's too late.
- Overview of the whole production and visualizing bottlenecks in real time helps focus attention.
- Dedicated machine analysis, cluster and parts comparison.

Benefits of implementing digital solutions

For production

✓ **Access to information** at various organizational levels.

✓ **Increased efficiency** and productivity by optimizing production processes.

✓ **Cost reduction** thanks to the identification and elimination of losses.

✓ **Improved quality of products and services** by monitoring processes and machines.

✓ **Increased flexibility and speed of response** to production events and market changes.

For the entire organization/business

✓ **Increasing competitiveness** through innovation.

✓ **Reducing the time to market.** New business models built around products and services.

✓ **Improving operational efficiency** and resistance to changes.

✓ Closing the customer feedback loop to ensure **greater customer satisfaction.**

✓ **Inter-departmental integration of data and processes** (purchasing, planning, production, logistics, warehouse).



About Transition Technologies PSC

Transition Technologies PSC is an expert in digital transformation, on a mission to accompany their customers as a trusted Global Premium Solutions Integrator and make their vision a reality together.



Their track record proudly boasts over 1200 successful projects around the globe. They are experienced specialists in **IIoT, Cloud, Augmented Reality, AI, PLM** and more.



TT PSC serves customers in various sectors, including Automotive, Machinery & Heavy Equipment, Energy, Media & Telecom, Consumer Goods, Healthcare & Life Sciences, Software & Technology, Commercial & Prof. Services.



They take pride in their long-term partnerships with industry giants like **AWS, Microsoft, Google, PTC, Velotric, Atlassian, Ansys, BMC** and **RealWear**.

Technology stack

Our solutions are built on a proven set of industrial and enterprise technologies:



Industrial connectivity: Kepware / KEPServerEX, Kepware+, Kepware Edge, OPC UA, MQTT.



IIoT platforms: ThingWorx, AWS IoT, Azure IoT, Ignition by Inductive Automation.



Data & analytics: Canary Labs, InfluxDB, Python/ML stack, TensorFlow, Power BI.



Augmented Reality: Vuforia (PTC), RealWear industrial glasses.



Cloud & DevOps: AWS, Microsoft Azure, Google Cloud, Docker, Kubernetes.



PLM & ALM: Windchill (PTC), Atlassian Jira/Confluence, Ansys simulation.



Integration & middleware: MQTT brokers (HiveMQ, EMQX), Apache Kafka, REST APIs.

Next steps

Your factory, our technology.

Ready to start your digital transformation journey? Here's how:

- 1

Schedule a free consultation

Discuss your production challenges with our Industry 4.0 experts. No commitment, no sales pitch – just an honest assessment of where digital solutions can deliver the most value.
- 2

Request a live demo

See our solutions in action on real production data. We can demo OEE dashboards, predictive maintenance alerts, Energy Advisor, digital work instructions, and more.
- 3

Start with a Proof of Concept

We typically start with a focused PoC on one production line or process, delivering measurable results within 8–12 weeks. These de-risks the investment and builds internal buy-in for scaling.



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