

KNOWLEDGE PILLS

Transform Your Plant with Real-Time Industrial Analytics



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Introduction

Modern industry faces a paradox: it has more data than ever before, but it still suffers millions in losses due to undetected inefficiencies, quality defects, and unplanned downtime. In this context, the ability to transform raw data into actionable knowledge is the new competitive differentiator.

AppliediT responds to this need with **RTM Pro**, its real-time analytics solution specifically designed for industrial environments. Beyond simple dashboards, **RTM Pro** allows you to identify root causes, anticipate failures and optimize processes continuously.

This ebook lays out the top current challenges in the industry, shows how **RTM Pro** solves them using advanced analytics, and provides clear guidance on how to implement these types of tools in production environments.

1. Industry 4.0 needs smarter decisions

1.1 Too much data, too little analysis

In many industrial plants, **thousands of variables are collected per second** from production lines, PLCs, IoT sensors, SCADAs or MES.

However, in most cases these data:

- They are not centralized.
- They are not exploited in a contextual way.
- They are not available to real-time process equipment.

This causes critical decisions to be made with incomplete, late, or intuition-based information.

As a result, competitiveness is lost to plants that are already integrating advanced analysis tools.



1.2 Typical consequences of poor laboratory analysis

Q Low traceability of quality incidents

Many plants are unable to accurately reconstruct the context of a defective part or rejected batch. Without cross-traceability between process, operational and environmental variables, it is difficult to find patterns or cause-effect relationships, prolonging resolution times and repeating uncorrected errors.

C Loss of operational efficiency due to undetected bottlenecks

Without real-time visibility into the performance of each station or process stage, it is common for accumulations, instabilities or hidden waiting times to occur. These inefficiencies erode OEE (Overall Equipment Effectiveness) and generate false perceptions about the actual performance of the plant.

Energy and maintenance cost overruns

The lack of detailed control over equipment consumption and conditions prevents the detection of energy inefficiencies or early deviations in the behaviour of machines. This translates into out-of-specification consumption, reactive maintenance and costly shutdowns that could have been avoided.

Failure to correlate causes and effects between upstream and downstream processes

In complex processes or in plants with several interconnected lines, defects often have hidden causes in previous stages. Without a cross-sectional, synchronized view of the entire process, it is impossible to build reliable root cause models, making continuous improvement difficult and perpetuating variability.

2. RTM Pro: Advanced Analytics at the Service of Productivity

2.1 What is RTM Pro?

RTM Pro is a platform developed by AppliediT that allows you to integrate, analyze and visualize plant data in real time. Its modular and scalable design adapts to different industrial realities, allowing from small pilots to multi-site deployments.

RTM Pro's approach is based on a clear premise: data is only useful if it generates value. For this reason, the platform combines data engineering techniques, multivariate statistical analysis and interpretable machine learning models to offer a tool that is technically usable but accessible to plant teams.



2.2 Main functionalities

Advanced Real-Time Monitoring

Immediate visualization of critical variables with the possibility of setting thresholds, intelligent alarms and personalized views according to user profiles (production, quality, maintenance).

Automated anomaly detection

Using unsupervised detection algorithms, RTM Pro identifies relevant deviations without the need for predefined rules. This makes it possible to anticipate defects or downtime without overloading personnel with false positives.

Multivariate root cause analysis

The system facilitates the identification of complex relationships between variables, allowing the origin of quality problems, machine failures or changes in performance to be explained with a quantitative approach.

Knowledge management based on historical data

RTM Pro not only analyzes the present, it also allows you to build a history of process behavior that serves as a reference for audits, continuous improvement and technical training.

3. Real Use Cases

RTM Pro has been successfully implemented in different industrial sectors, especially in highly demanding environments such as the automotive and aerospace industries. Below are three real cases where the application of advanced analytics in real time has made it possible to solve critical problems, avoid millions in losses and optimize operations in a sustainable way.

3.1 Case 1 – Aerospace: savings of more than €3.5 million by identifying delaminations

An aerospace manufacturer was suffering from recurring delamination defects whose root cause could not be identified. With RTM Pro we achieved:

- Systematically compare different series of parts with the group comparison tool.
- Detect deviations in real time using SPC Monitoring.
- Activate intelligent alerts to anticipate the appearance of defects.
- Develop a predictive system accessible in real-time from multiple sources.







3.2 Case 2 – Automotive: avoided a recall in the US due to highpressure pump failure

A powertrain division detected a failure in high-pressure pumps after an alert for field returns in the USA. Thanks to RTM Pro, it was possible to:

- Integrate and analyze quality and production data stored in disconnected systems.
- Identify the affected serial numbers using the advanced search functionality.
- Detect the two key factors of failure with confirmation from the engineering team.
- Complete the analysis in just 6 hours, avoiding a costly recall campaign.



The result

Avoided recall & incalculable savings

3.3 Case 3 – Automotive: acceleration of the launch of electric battery system

A manufacturer of batteries for electric vehicles was facing serious delays in starting a new production line. With the support of RTM Pro and associated services, it was possible to:

- Identify key bottlenecks and set clear performance targets.
- Optimize the operating concept by aligning it with OEE goals..
- Execute daily actions with continuous monitoring to maximize progress.
- Support the organizational change needed for new launches.





From 15% to 65% OEE Increased

From 10 to 1,800 Production Increased

3.4 Case 4 – Automotive: Foundry cuts defects and rework in half

A Tier 1 foundry in the automotive industry operated with a complex batch process, with no clear relationships between parameters and with scattered data. Although it was considered a reference plant, it maintained 2% of defective parts. With RTM Pro it was possible to:

- Establish cause-effect relationships between previously unknown variables.
- Functionally model the process to improve its control
- Replace subjective measurement with an automated vision system



-1% scrap rate For casting defects

The result >

+90% Faster defect detection

+75 % (≈€1 million) Reduction in rework costs

4. How to get started with RTM Pro?

Implementing RTM Pro does not require a radical transformation. AppliediT accompanies plants in a phased approach:

1. Initial assessment and data connection

The available data sources are identified and a connection architecture is established with minimal impact on existing systems.

2. Pilot targeted to a specific use case

A real problem is selected (for example: defects, performance, consumption) and a first analysis and visualization model is built.

3. Progressive scaling

Once the first use case is validated, the coverage of the system is expanded.

Conclusion

Advanced real-time analytics is no longer a promise but a strategic necessity. Tools such as RTM Pro not only allow you to visualize data, but also to understand the behavior of the process, anticipate problems and maximize the value of each operation.

If your plant is looking to reduce defects, improve efficiency, or make decisions based on real data, it's time to take the next step.

Request a personalized demo of RTM Pro today and learn how to transform your data into smart industrial decisions.

Contact us in contact@applieditweb.com



AppliediT combines a multidisciplinary team of expert IT engineers, data analysts and software developers to provide operational excellence, data engineering and application development services for data analytics in the industrial environment.

Our goal is to transform data generated in the industrial environment by people, processes, machines and information systems (ERP, CMS...) into knowledge to improve data-driven decision making, increase efficiency, save costs and optimize production times.

For more information, visit applieditweb.com