

# Using AI to provide Real-Time Process Intelligence in Manufacturing Processes

Real-time Process Intelligence, employing advanced analytics and AI, emerges as a game-changer, revolutionising how industries optimise operations through strategic advancements.

## ***The Essence of Real-Time Process Intelligence (RTPI)***

RTPI is the concept of delivering operational intelligence about business production as it occurs. It involves collecting and analysing data in real-time to identify inefficiencies, bottlenecks, causes of mediocre performance and areas for improvement.

## ***How AI contributes to RTPI outcomes***

Manufacturing facilities often lack a complete understanding of issues and struggle to identify all the contributing factors that lead to reduced results.

Additionally, staff face challenges in effectively sharing their needs with relevant stakeholders. Where the objective is to improve rather than fix a specific issue, it becomes even more difficult.

AI provides the opportunity to understand what contributes to an outcome without having process expertise, analytical skills, and time that traditional methods consume.

## ***A simple example: The objective is to reduce the quality variations in production.***

**The traditional method** involves engaging with staff and experts familiar with the process. Once the team is available, they manually analyse events and historical information to identify issues. This team will typically spend time analysing, generating hypotheses and investigating proposed solutions.

There can be significant limitations to their results depending on the issue's complexity, the team's expertise, resources, and approach.

It is often very time-consuming and essential information for optimisation is often overlooked.

**Artificial Intelligence provides the basis for a vastly different approach.** Using machine learning techniques and identifying when quality is acceptable and not acceptable, AI can quickly learn from history and identify from the available data what contributes to acceptable quality.

AI has no preconception of what affects quality and so will cover all possibilities, not limiting it to current knowledge. It can also identify quality issues that are not explained by data, improving focus on other and external effects.

The analysis should not be limited to process variables. It should often include shift information, environmental conditions, production information, and other device inputs such as inspection cameras.

This approach allows the implementation of real-time alerts on quality issues to operational staff, providing a key advantage of warning operations staff before the quality is compromised.

This is just one example. This methodology can be applied to other objectives such as energy usage, output variations, poor utilisation, and process control performance.

For more information visit our website at [www.triplei.com.au/real-time-process-intelligence/](http://www.triplei.com.au/real-time-process-intelligence/).

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