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Rail Transformation: Human Expertise at the Heart of Innovation

The rail industry is undergoing a profound shift. **Data, connectivity, and real-time decision-making are reshaping operations** at every level. Yet the most critical factor in this evolution is neither a platform nor an algorithm it is the people who know how to use them.

"Technology presents opportunities, but people must learn to harness them.", Aleksander Kryzworzeka, Senior Project Manager at ALTEN.

A Sector Under Pressure

Rail operators face a structural challenge: vast volumes of operational data, increasingly interconnected systems, and mounting pressure to act swiftly but data alone does not drive efficiency.

A sensor may flag an anomaly, but only an engineer can determine whether it signals a critical failure or a false alarm. This **gap between information and action** is where most transformations stall.

"Data is everywhere, but its value depends entirely on how we interpret it."

- Aleksander Krzyworzeka.

ALTEN's Response: Technology Guided by Expertise

ALTEN places human expertise at the core of every technological deployment. Predictive maintenance platforms, digital twins, and AI-assisted diagnostics only deliver value if teams can interpret their outputs effectively.

In a recent rail retrofit project, ALTEN managed over 12 months of validation testing, covering systems from lighting to braking. Faced with continuous change requests, process engineers acted as translators, converting technical updates into clear instructions for operators. Thus, we succeeded to get a 30% reduction in implementation time.

"Our role isn't to impose a tool it's to prepare teams to maximise its potential."

- Aleksander Krzyworzeka.

This is what ALTEN calls the **augmented engineer model**: technology enhances human judgement it does not replace it.

Upskilling as a Strategic Priority

Transformation without skills development is doomed to fail. ALTEN structures its support around three pillars:

1. **Training teams** to use AI, analytics, and digital tools as amplifiers of their existing expertise.

2. **Integrating systems** by connecting ERP, maintenance tools, and operational workflows into unified processes.
3. **Guiding change** to ensure teams understand the purpose and methodology behind new technologies before adoption.

"Five years ago, training was static. Today, it is interactive, continuous, and directly linked to real-world challenges."

-Aleksander Krzyworzeka.

This shift is measurable and directly impacts operational performance.

Building Tomorrow's Rail Sector Together

The next frontier for rail is augmented decision-making: operators leveraging AI-driven insights to pre-empt failures, optimise schedules, and address incidents before they escalate.

ALTEN is already building this capability with its clients, combining **multidisciplinary teams, structured change management, and targeted digital integration**. The goal is not to delegate decisions to machines it is to equip teams with the tools and confidence to decide better, and faster.

"The future of rail isn't written by algorithms alone. It is shaped by the people who know how to use them."

-Aleksander Krzyworzeka.

In rail, sustainable transformation rests on one foundation: people who make technology work.

About our expert

Aleksander Krzyworzeka, specialises in blending **technology and human expertise** to drive innovation in the industry. His approach has achieved a **30% reduction in implementation time** for complex projects by empowering teams to interpret data and adopt new tools.

For him, **the future of rail relies as much on human skills as it does on algorithms.**