



VIPER INNOVATIONS

From Disruption to Direction: What CP7 Tells Us About the Future of Rail Innovation

Earlier this year, industry leaders, technologists, strategists and stakeholders gathered together to explore how CP7 can maximise opportunities for innovation and performance.

The conversations reflected the pressing issues facing UK rail today – from operational pain points to the promise of digital transformation – and provided a valuable snapshot of where the industry is heading next.

Viper Innovations was part of those discussions, with Divisional Manager (Rail UK) Peter Alexander contributing to a panel on how innovation can drive performance and revenue growth.

Operational Challenges and Technical Solutions

Supported by the Rail Forum, the Chartered Institute of Rail Operators (CIRO), the Rail Delivery Group and the Institution of Engineering and Technology (IET), these discussions brought together voices from across the rail ecosystem, underscoring their significance. Some of the most notable contributions included:

- Albert Porter (Network Rail) highlighted how poor train performance disrupts infrastructure operations, increasing wear and tear and limiting access for maintenance.
- Gareth Evans (Network Rail) laid out CP7's RD&I roadmap – over £250m in funding, targeting

emissions cuts, delay reductions and freight growth.

- James Connolly (eviFile) made the case for digital transformation, citing siloed data, poor visibility and manual processes as barriers to efficiency.
- Jason Wade (Northern) shared sobering stats on delay impacts – emotional, financial and reputational – with over half of surveyed passengers reporting effects beyond just lost time.
- Luisa Moio (RSSB) introduced the Rail Technical Strategy (RTS), a framework for system-wide innovation, from low-emission operations to freight-friendly infrastructure.

Together, these perspectives painted a consistent picture: the UK rail industry faces structural challenges, but it also has clear opportunities to address them through coordinated, technically driven approaches.

As Peter Alexander noted: “Operational problems are driving the need for smarter, more resilient technical solutions.”

Innovation as a Revenue Strategy

A key shift in mindset is emerging: operations are increasingly being seen not just as a cost centre, but as a significant and reliable revenue enabler. However, unlocking that potential depends on addressing new and sometimes unexpected failure modes.

Peter explains: “We’re seeing issues we hadn’t considered before. Like freight damage from vegetation on diversion routes, or the cost of lift failures requiring

disabled passengers to be rerouted and bussed back – all of which add up.”

This strengthens the case for technologies such as CableGuardian, which helps prevent outages in 650V signalling power supplies. Viper’s ongoing investment in AI and machine learning aims to extract even more actionable insights from data captured across rail infrastructure.

But innovation requires consistency. As Peter observed: *“Rail spending has been inconsistent, and SMEs are feeling the strain. For innovation to thrive, we need continuity – not fits and starts.”*

Looking Ahead: What Comes Next

With the emergence of Great British Railways (GBR) and GBRX, operators are gaining more influence over technical solutions. This could be a turning point if the industry establishes the right framework. The next phase should focus on:

- Creating innovation pathways that reduce cost and risk

- Building business cases that link operational improvements to revenue
- Ensuring funding consistency, especially for SMEs
- Leveraging data for predictive maintenance and smarter decision-making

Peter summarises: “Improving operations and reducing failures means more passengers and freight, which means more revenue, more investment and fewer failures – a virtuous circle.”

CP7 offers the chance to fundamentally rethink how the rail industry innovates, funds and measures success. Viper Innovations is committed to being part of that journey – not only through the delivery of advanced technologies, but also by providing thought leadership that challenges the status quo and helps the industry build a more resilient, efficient and future-focused network.

Because when the trains run reliably, everyone wins – passengers, freight, operators and the planet.

For more information visit our website www.viperinnovations.com.



Helping passengers arrive on time.

Viper's CableGuardian portal and monitoring unit delivering real-time cable condition insights

 **VIPER INNOVATIONS®**

MAXIMISE YOUR CP7

BUDGET WHILST IMPROVING RELIABILITY

Proven Tier 1
monitoring technology
supporting rail
operators since 2018

Looking for smarter ways to stretch your CP7 budget and boost network reliability? Discover how **CableGuardian** can help you do both.

Our comprehensive business case outlines the full operational, financial, and safety impacts of implementing **CableGuardian** across systems. Supporting Asset Managers, Maintenance and Project Teams in making the case for smarter, safer, and more sustainable rail power management.

CableGuardian's Network Rail-approved monitoring system empowers you to make smarter investment decisions by enabling targeted replacement based on real-time asset condition. Through continuous, proactive diagnostics, it not only detects sudden faults in live signalling systems, but also provides early warning of gradual degradation, helping to minimise unplanned disruptions.

Inside the business case, you'll learn how CableGuardian can:

- Cut unnecessary CAPEX ✓
- Reduce maintenance by up to 80% ✓
- Boost safety & lower intervention risk ✓
- Support CP7 KPIs ✓
- Plan smarter with real-time data ✓



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