Data to Decision: Improving Every Passenger Journey

Jens Herfort Pedersen

Have you ever stepped onto a train not knowing whether you would find a seat, or whether you'd be pressed shoulder-to-shoulder with other commuters? For passengers, that uncertainty is more than an inconvenience—it's a reminder that, in many places, rail travel has not yet caught up with the digital expectations of the modern traveler.

In an age where people can track their flights to the minute, follow their food delivery rider on a map, and know how busy the gym is before leaving home, rail must offer the same clarity. The good news is, we already have the tools. The challenge is learning how to use them—and how to share their benefits across the entire railway ecosystem.

The Power of Data in Rail

At its core, rail is about trust, predictability, and safety. Data transforms those ideals into everyday reality. Through video analytics, passenger counting, and seat occupancy monitoring, operators gain more than raw numbers—they gain actionable insight.

When data flows seamlessly, it improves four critical dimensions of rail:

1. **Passenger Experience**
   Imagine stepping onto a platform and seeing, in real time, which carriages are full and which still have space. Passengers can choose comfort and dignity instead of chance. Families, elderly travelers, or those with reduced mobility can board with confidence, knowing they will find a seat.

2. **Safety and Trust**
   Occupancy data is not just about convenience; it's about security. Real-time alerts can prevent dangerous overcrowding. In emergencies, knowing exactly how many people are on board—and where—saves precious time. Passengers travel reassured that their wellbeing is actively monitored.

3. **Operations and Maintenance**
   For operators, the same information becomes a management tool. Predictive maintenance can be planned based on actual usage: heavily used doors, seats, or carriages receive attention before failure. Cleaning schedules can match demand. Even energy consumption can be optimized—why heat or light empty coaches?

4. **Planning and Policy**
   Aggregated, anonymized data is a goldmine for long-term strategy. Authorities and planners can invest based on real demand, not assumptions. Rail can

integrate more seamlessly with buses, metros, and micro-mobility services, creating truly interconnected networks.

From Data to Decision

The real question is not *whether* we have enough data. It's *how we use it*. Data locked away in silos is wasted potential. Data applied creatively can change everything.

For passengers, it means journeys that are predictable, safe, and sustainable. For operators, it means lower costs and smarter operations. For policymakers, it means better investment and stronger mobility strategies.

But it all begins with a decision: to treat data not as a by-product, but as a shared asset. To ask:

- *How am I using the data I already have?*

- *What new data could make the biggest difference for my passengers, my staff, or my network?*

- *And how can this information be shared responsibly to benefit everyone—from the traveler to the policymaker?*

The Future is Within Reach

Railways are more than infrastructure. They are lifelines of modern society. If rail is the backbone of sustainable mobility, then data is the nervous system that keeps it responsive, resilient, and alive.

The next time a passenger steps onto a train, they shouldn't be guessing. They should be informed, reassured, and empowered.

From data to decision—that is how we improve every passenger journey.