



AI in Rail 2024-2026

Survey Insights and Strategic Implications

Survey Dates

Spring 2024, 2025, 2026

Respondents

Senior Rail Industry Leaders

Focus

AI Strategy & Implementation

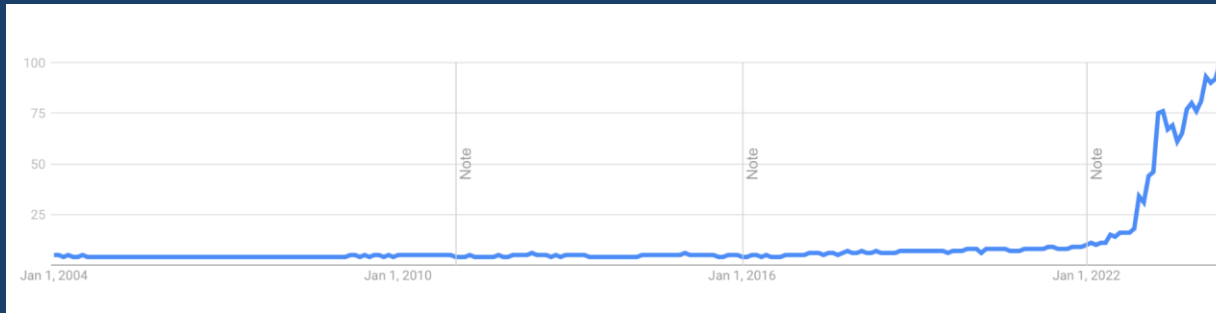
Analysis

In-depth examination of
AI adoption and readiness

AI in Rail Survey

Over the last 10 years, Princeton Consultants has conducted surveys focused on **Disruptions through new products, new business model & emerging technologies.**

In 2024, we initiated a new survey, partnering with the Northwestern University Transportation Center, focused on one mode– Rail, and one technology– AI.



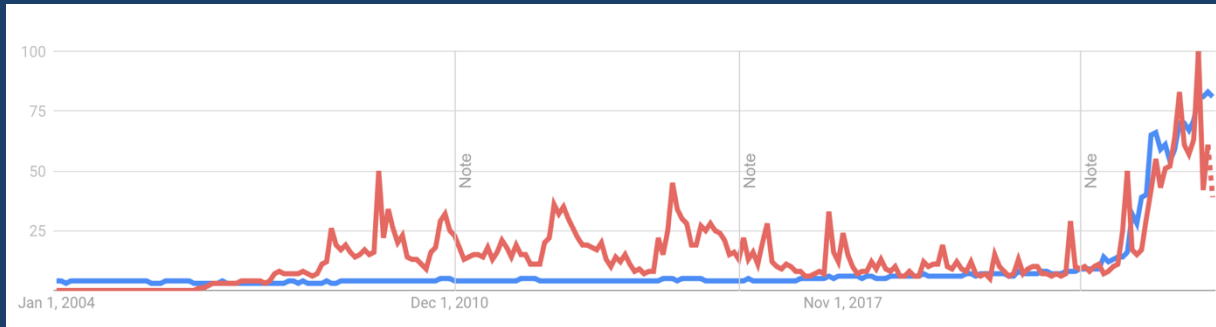
AI

AI Search Google Trends

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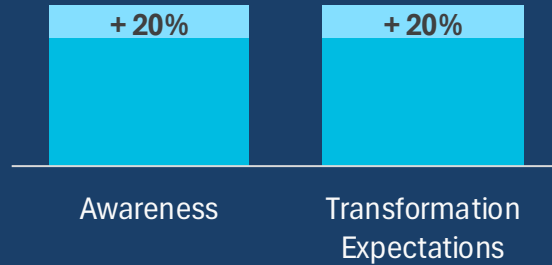


Taylor Swift

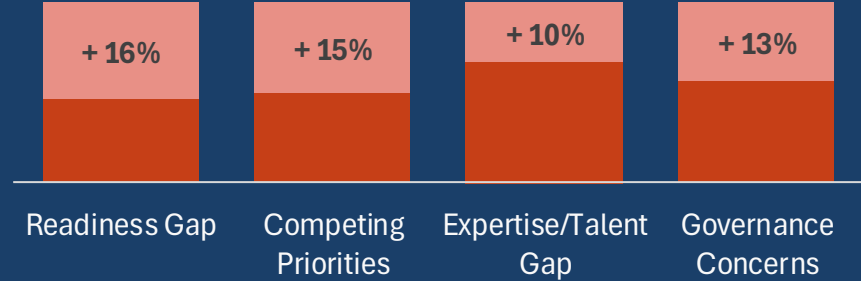
According to Google Search Metrics, AI has overtaken Taylor Swift

What Changed From the 2024 Survey

Optimism



Concern

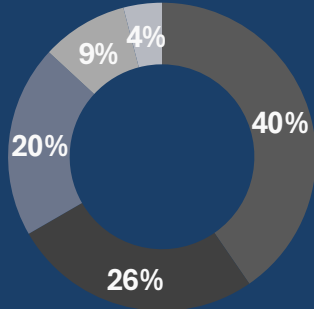


The 2025 Survey was expanded to include more questions focused on AI talent and upskilling.



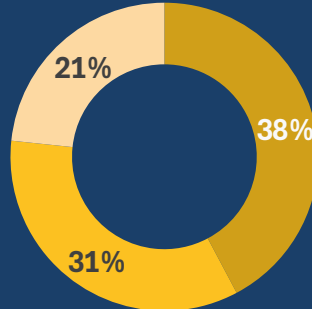
Voice of Rail: Senior Leaders with Deep Institutional Knowledge

Organization Type



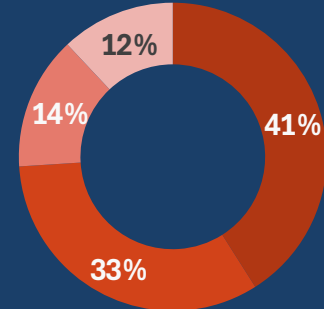
- Class I Railroad
- Short Line / Regional
- Transit
- Rail IT Systems Supplier
- Rail OT Supplier

Job Seniority



- AVP or Director
- C-Level or EVP
- SVP or VP

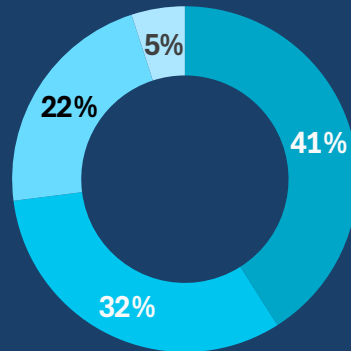
Tenure at Organization



- 3-10 years
- 11-20 years
- 21+ years

Rail Leaders are Adopting AI Tools

Personal AI Experience



- Very Familiar
Have sponsored or actively led AI initiatives
- Increasingly Familiar
Exploring opportunities in their organization
- Slightly Familiar
Aware of external initiatives, no first-hand experience
- Not Interested
Do not plan to explore AI opportunities

Active Engagement Rate (Very Familiar + Increasingly Familiar)



Top 3 AI-Enabled Applications that are Creating Value Today



Automated Inspection & Monitoring



Customer Service & Experience



Administration

Question 8: Expected Great/Transformational Impact by 2028

The Future Focus: AI's Transformational Impact on Operations

The rail industry expects AI to have the greatest transformational impact on core operational areas that directly improve efficiency, safety, and asset utilization.



48%

Automated Inspection & Monitoring



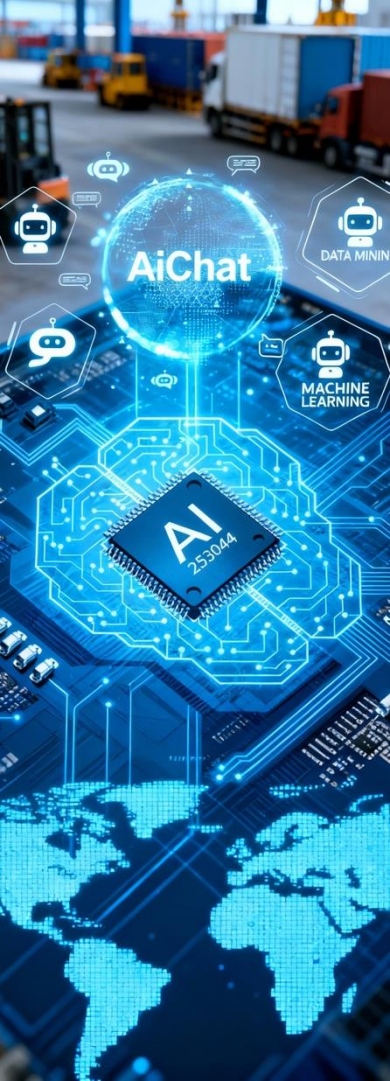
45%

Predictive Maintenance



38%

Optimized Scheduling & Routing



Most Popular AI Technologies (Spring 2025)

Gen AI and LLMs lead adoption, reflecting the rapid integration of ChatGPT-style tools. ML Platforms and Conversational AI demonstrate success in production environments across the rail industry.



42%

Generative AI & LLMs



35%

ML Platforms



32%

Conversational AI

Question 11: Primary Obstacles to AI Adoption

Talent and Capacity: The Real Bottleneck



57%

Insufficient AI expertise or talent



57%

Competing technical priorities

Other Notable Obstacles:

- Lack of clear business case/ROI
- Data quality or availability issues
- Budget constraints

The Talent Strategy: Prioritizing Upskilling

Organizations are investing in AI Training & Talent Development



83%

Planning upskilling investment over next 4 years

Top 3 Strategic Reasons for Upskilling...



Leverage Railroad-Specific Knowledge



Build Internal AI Expertise



Retain Institutional Knowledge

There Must be a Strategic Focus on Reskilling

“You won’t be replaced by AI...but rather by someone who knows how to use AI.”



Reskilling Over Job
Elimination



Concrete Plans for
AI-Augmented Roles



Accelerated Change
Management Programs

Question 10: Will AI innovation in rail create new Winners and Losers by 2028?

The Disruption is Real!

100% of respondents believe AI will create winners and losers by 2028



49%

Absolutely, and we have a clear strategy



51%

Yes, but we're still figuring out our approach



0%

No, the impact will be minimal



A Paradox of Confidence and Unpreparedness

Confidence

The rail industry demonstrates strong vision and commitment to AI transformation.



100% believe AI will create winners and losers by 2028.



91% expect efficiency gains.



73% actively engaged in AI initiatives.

Unpreparedness

The rail industry lacks execution capacity and workforce readiness.



80% expect job role shifts but only **3%** feel prepared.



57% lack AI expertise.



38% recognize the threat but remain unclear on execution strategy.

The Paradox

The rail industry stands at an inflection point with strong vision and commitment but lacking the execution capacity to realize its AI ambitions.

Paths Forward: Strategic Investments in Operational Transformation



High-Value Operational Areas with Significant ROI Potential



Core Operational Efficiency, Reliability, and Asset Optimization



Transformational Impact

These three priorities represent the next wave of AI deployment, focusing on core operational transformation that will deliver measurable business value and establish competitive differentiation by 2028.



Executive Summary: AI is a Strategic Imperative

1

High-Level Engagement

90%+ of respondents are AVP/Director level or higher, ensuring the findings reflect executive and strategic priorities.

2

Operational Focus

The highest-value AI applications are Automated Inspection, Predictive Maintenance, and Optimized Scheduling.

3

Talent Bottleneck

The primary obstacles are insufficient AI expertise (57%) and competing technical priorities (57%).

4

Upskilling Strategy

83% plan to invest in upskilling existing employees, leveraging railroad-specific knowledge.

5

Disruptive Belief

100% of respondents believe AI will create "new winners and losers" in the industry by 2028, yet 38% are uncertain about how to harness the technology effectively.



What's New in the 2026 Survey

AI, Data & Value Realization in Rail

How effectively are we converting rail and telematics data into measurable business value?

To what extent are we investing in AI capabilities—including agents, tools, and AI-ready data platforms—to unlock scalable insights and sustain competitive advantage?”



Building Confidence Through Quick Wins

1

Target Quick Wins in Automation

Current deployments focus on areas where AI can deliver rapid, visible results. Automated inspection, customer service, and administrative tasks represent low-hanging fruit that demonstrate AI's practical value without requiring extensive organizational change.

2

Deliver Immediate, Measurable Value

These applications provide clear ROI metrics that executives can track and report. Reduced inspection time, improved customer satisfaction scores, and administrative efficiency gains create tangible evidence of AI's business impact.

3

Build Organizational Confidence in AI Capabilities

Success in customer-facing and operational improvements creates momentum for more ambitious AI initiatives. Early wins help overcome skepticism, secure additional funding, and establish internal expertise that will support future transformational projects.

By focusing on quick wins and customer-facing improvements, organizations are building the foundation for larger-scale AI transformation while demonstrating immediate business value.



Questions

<https://www.surveymonkey.com/r/AlinRail>

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