

Summary : Data Analytics in Indian Railway

Introduction:

This examines the adoption of Data Analytics with in INDIAN RAILWAY (IR), outlining strategic challenges and providing actionable recommendations for large-scale implementation in the transportation sector.

Objective:

IR is one of the world's largest networks, ranking second in passenger transport and fourth in freight output globally.

Scale: Operates over 13,000 passenger and 8,000 freight trains daily.

Infrastructure: Covers 68,043 route kilometres and employs more than 1.3million personnel.

Strategic Goals: Focuses on increasing revenue, improving operational efficiency, and enhancing safety through digitalization and AI.

Data Details:

Implementing large scale analytics in a complex environment like IR presents seven primary hurdles are Undocumented Business Areas like Relying on unwritten experiential knowledge makes compiling systematic use cases difficult. Also Strategic Alignment like Ensuring analytics efforts directly impact Key Performance Indicators (KPI) and return on investment. And Real world complexity as single models are often insufficient, a systems approach is needed to integrate multifaceted transport problems. Decision making uncertainty with accuracy diminishes as the decision horizon extends, particularly in long term infrastructure planning. Data Ecosystem needs approximately 80% of project time to spent on data acquisition and cleaning, requiring robust governance.

Analysis:

For successful Analytics progress there are few tips in policy like Strategic and product orientation in enterprise road map to develop a foundation that connects related use cases and identify data gaps. Action boards that provide perspective, actionable insights to prevent information overload. Operational and resource strategy in integrated make-or-buy policy with use in-house talent for core challenges, while leveraging vendors for generic problems and universities for research.

And updating formal business manuals and policies to reflect

new data-driven workflows and outcomes. Human capital and culture in leadership training with provided top management on analytics application to help vision into specific programs and organization in wide literacy implementing those programs to help employees interpret results and reduce apprehension toward change.

Conclusion:

Successful analytics adoption is a multidimensional change management program. It requires synchronous management of data, strategy and skills with specific sequence of interventions depending on the organization's current maturity level. This case study concludes that while IR successfully utilized data to drive significant revenue growth and operational efficiency, the journey is ongoing.

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