

# Railway Telematics Market by Solution (Fleet Management, Automatic Stock Control, Shock Detection, Reefer Wagon Management, ETA), Railcar (Hoppers, Tank Cars, Well Cars, Boxcars, Reefer Cars), Component & Region - Global Forecast to 2026

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# **Abstracts**

The railway telematics market is estimated to be USD 5.1 billion in 2021 and is projected to grow at a CAGR of 7.5% during the forecast period, to reach USD 7.3 billion by 2026. Railway telematics is defined as the use of telecommunications and informatics across freight railways. The railway telematics market comprises solutions and services which enable communication and data transfer over long distances through wireless mediums. These solutions and services leverage the embedded technology and mobile and telematics systems and offer control over railcars on the move. The various solutions offered by telematics companies include automatic stock control, estimated time of arrival, fleet management, railcar tracking & tracing, refrigerated wagon management, remote data access, shock detection, and others which are used across various railcars such as hoppers, tank cars, boxcars, well cars, refrigerated boxcars, and others.

North America accounted for the largest share of the market in 2021. The presence of OEMs such as Siemens (Germany), Bosch (Germany), Knorr-Bremse (Germany), Amsted Digital (US) and their investments in rail telematics is one of the major factors fueling the growth of this market in North America and Europe regions. For instance, in 2020, major US rail companies such as GATX corporation, Norfolk Southern, Genesee & Wyoming, Watco, and Trinity Rail announced a joint venture Rail Pulse, which is expected to accelerate the adoption of GPS and other telematics technologies in the near future across the North American railcar fleet. This is expected to enable competitiveness in the rail sector between freight transportation companies due to



improvements in the location monitoring and condition monitoring of railcars. As technology evolves, the safety of railcars and other solutions are expected to be adopted by railcar fleet owners. Due to the new telematics technologies, railcar owners are expected to be able to capture data such as whether a railcar is partially or fully loaded, its onboard bearing temperature, whether doors or hatches are closed or open, wheel impact detection data, and other possible solutions to enable running railcar fleets efficiently, manage data generated through the use of technology and improvise on idle rail cars, maintenance, reduce turnaround time of railcars, control stock, and others. The rising adoption of telematics solutions by rail car leasing operators is expected to drive the rail telematics market in future.

The future of the freight rail industry is expected to rely on smart digital transportation systems that leverage technologies over larger railcar networks. New technologies such as integrated service management, asset management, and predictive analytics, shock detection, and automatic stock control are expected to help rail management companies manage optimal routes, schedules, capacities, and idle railcars in near real-time. Due to the increasing presence of smart technologies in rail transportation, the associated solutions and services markets are also expected to grow at high rates, globally. Emerging technologies such as refrigerated wagon management, estimated time of arrival of railcars are expected to enable efficient and better freight rail transportation. This is also expected to improve timely decision-making for issues such as asset deployment, utilization, and railcar maintenance.

The railway telematics market is dominated by players such as Hitachi Ltd. (Japan), Siemens (Germany), Bosch (Germany), Knorr-Bremse (Germany), and Alstom (France). These companies offer an extensive range of products & solutions and have strong distribution networks worldwide. The key strategies adopted by these companies to sustain their market positions are new product developments, collaborations, and contracts & agreements. The railway telematics market in different regions is dominated by the regional OEMs.

"Wide adoption of fleet management solutions expected to lead to market growth"

Fleet management software supports demand-driven planning and provisioning of railcars for businesses. Features such as short maintenance times and optimized dispatch provide the higher availability of wagons computes as the features of fleet management solutions. This can be achieved by the utilization of train tracking systems. Train tracking systems basically work as real-time rail location and detection systems. They track the location of the rail and provide details about the location, rail speed, and



next station details to the train operator, and all those who want the information. The monitoring solutions are systems which are capable of monitoring rail system health, rail tension, temperature, and engine health.

The companies that supply these systems support operators in all the aspects related to fleet management. The services provided include a package of programs for rail vehicle tracking, statistical report elaboration based on analyses concerning the activities performed by every vehicle (rail car, train). These programs also keep track of all the mechanical and technical malfunctions and provide information about leasing and subleasing, commercial information, and necessary repairs, including information about the repairs undertaken until that specific time. This information is safe, fast, flexible, and constantly updated in order to improve the services provided to customers. This helps create competition between suppliers and increases competition between leasing companies and railway operators who need support in order to provide safe and efficient transport services.

The freight management system manages a wide range of rail freight transportation processes and delivers real-time information on freight traffic. The system assists rail operators in monitoring freight transportation movements and planning future logistics. Solutions such as freight operation management solutions for enhancing the capacities and operations management of freight and freight tracking solutions for tracking real-time location of cargo containers are included in fleet management solutions. They help freight operators in planning decisions based on robust, reliable, and consistent data. They also improve labor utilization and productivity. The solution is widely adopted by logistics companies for better customer support and loyalty.

A railway operator and a leasing company represents the key to fleet management optimization, enabling a company benefit from the advantages offered by rail transport. To ensure business efficiency and profitability for the services provided by railway operators, it is necessary to elaborate and implement projects for improvements in fleet management. Fleet management systems maintain inventories of vehicles and provide forecasts on the costs of operations and enable the intelligent use of financing methods. The liberalization of rail freight transport generates increasing pressure on the financial results of railway companies. In this context, fleet management becomes a vital instrument for the measurement of the performance of rolling stock.

Rail companies are increasing asset utilization and making significant investments in IT infrastructure to meet the capacity challenges. The market for telematics fleet management solutions offered for the railways is expected to grow during the forecast



period as the solutions enable customers optimize in order to have more wagons at their disposal.

"Significant fleet of hoppers in freight rail to ensure dominant position of the segment"

Hoppers are a form of railroad freight car used for the transportation of loose bulk commodities. Open and closed hoppers are available in market depending upon their required usage and the type of service provided. Open hoppers are majorly used for the transportation of commodities which are unaffected by the atmosphere whereas closed hoppers are used for the transportation of goods that can be spoilt due to exposure to environmental factors. Telematics solutions are installed in these hoppers for tracking and tracing goods.

Solutions such as motion detectors, GPS sensors, and shock detectors are also installed for such hoppers in order to facilitate the transportation of goods at their optimal quality. OEMs such as Trinity Rails and Wascosa, among others have offerings in this segment. The types of hoppers installed with telematics solutions offered by various OEMs include aluminum hoppers, open hoppers, hybrid open hoppers, pressure differential covered hoppers, pneumatic discharge covered hoppers, and others. Due to the adoption of telematics technologies in freight logistics, the market for hoppers telematics is expected to grow.

"TCUs enable fleet managers provide real-time data to railcar lease operators"

The telematics control unit (TCU) is an embedded system used for controlling diagnostics and communication to/from railcars, wireless tracking, and diagnostics tracking. The TCU optimizes antenna power providing significant diagnostics, sensing current, and low disturbance. This results in efficient, faster, and reliable data transmission. Manufacturers are majorly focusing on designing TCUs with features such as size/weight optimization, extremely compact design, thermal simulation/optimization, and efficiency in challenging environmental conditions.

TCUs help fleet managers provide real-time location to customers about the location of their goods and wagons with an accuracy of within two meters. Digitalization enables providing new generation information access to technicians, transport planners, and current and future customers. This information can be provided regardless of the country and on which railroad the goods are shipped. TCU enables further monitoring through accelerometers to gain valuable insights on how railcars are being handled. These factors are driving the growth of the market for the TCU component. Due to the



increase in the demand for freight transportation, spending on digitization is on rise for rail telematics solutions. Thus, railcar lease operators are provided with rail logistics data, helping optimize the utilization of railcars and increasing the efficiency of rail logistics. Thus, the rising demand for TCUs is expected to lead to the growth of segment.

The study contains insights from various industry experts, ranging from component suppliers to tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Company Type: Tier 1 - 52%, Tier 2 - 34%, Others - 26%

By Designation: C level - 47%, D level - 37%, Others - 16%

By Region: Asia Pacific- 32%, North America - 28%, Europe - 24%, RoW-16%

Major players profiled in the report are Hitachi Ltd. (Japan), Siemens (Germany), Bosch (Germany), Knorr-Bremse (Germany), and Alstom (France).

# Research Coverage

The report segments the railway wiring harness market and forecasts its size, by value, on the basis of solution (fleet management, automatic stock control, shock detection, reefer wagon management, eta & others), railcar (hoppers, tank cars, well cars, boxcars, reefer cars & others), component & region. It also covers the competitive landscape and company profiles of the major players in the railway wiring harness market ecosystem.

# Key Benefits of Buying the Report:

The report will help market leaders/new entrants in this market with information on the closest approximations of revenue and value for the railway wiring harness market and its sub segments.

This report will help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies.

The report will also help the market players understand the impact of COVID-19



on railway wiring harness market.

The report also helps stakeholders understand the pulse of the market and provides them information on key market drivers, restraints, challenges, and opportunities.



# **Contents**

### 1 INTRODUCTION

- 1.1 OBJECTIVES OF THE STUDY
- 1.2 MARKET DEFINITION
  - 1.2.1 INCLUSIONS & EXCLUSIONS

TABLE 1 INCLUSIONS & EXCLUSIONS FOR RAILWAY TELEMATICS MARKET

- 1.3 MARKET SCOPE
  - 1.3.1 YEARS CONSIDERED FOR THE STUDY
- 1.4 CURRENCY

TABLE 2 CURRENCY EXCHANGE RATES (USD)

- 1.5 PACKAGE SIZE
- 1.6 LIMITATIONS
- 1.7 STAKEHOLDERS

### 2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

FIGURE 1 RAILWAY TELEMATICS MARKET: RESEARCH DESIGN

FIGURE 2 RESEARCH METHODOLOGY MODEL

- 2.2 SECONDARY DATA
  - 2.2.1 KEY SECONDARY SOURCES
- 2.2.2 KEY DATA FROM SECONDARY SOURCES
- 2.3 PRIMARY DATA

FIGURE 3 BREAKDOWN OF PRIMARY INTERVIEWS

- 2.3.1 SAMPLING TECHNIQUES AND DATA COLLECTION METHODS
- 2.3.2 PRIMARY PARTICIPANTS
- 2.4 MARKET ESTIMATION METHODOLOGY

FIGURE 4 RESEARCH METHODOLOGY: HYPOTHESIS BUILDING

- 2.5 MARKET SIZE ESTIMATION
  - 2.5.1 TOP-DOWN APPROACH

FIGURE 5 MARKET SIZE ESTIMATION METHODOLOGY FOR THE RAILWAY

TELEMATICS MARKET: TOP-DOWN APPROACH

FIGURE 6 MARKET SIZE ESTIMATION METHODOLOGY FOR THE RAILWAY

TELEMATICS MARKET: TOP-DOWN APPROACH

2.5.2 DEMAND-SIDE APPROACH

FIGURE 7 RAILWAY TELEMATICS MARKET: RESEARCH METHODOLOGY

ILLUSTRATION OF KNORR-BREMSE REVENUE ESTIMATION



2.5.3 FACTOR ANALYSIS FOR MARKET SIZING: DEMAND AND SUPPLY SIDES 2.6 MARKET BREAKDOWN AND DATA TRIANGULATION

FIGURE 8 DATA TRIANGULATION

2.7 FACTOR ANALYSIS

2.8 ASSUMPTIONS

2.9 RESEARCH LIMITATIONS

# **3 EXECUTIVE SUMMARY**

FIGURE 9 RAILWAY TELEMATICS MARKET: MARKET DYNAMICS
FIGURE 10 RAILWAY TELEMATICS MARKET, BY REGION, 2021–2026
FIGURE 11 RAILCAR TRACKING & TRACING SEGMENT PROJECTED TO LEAD
THE

RAILWAY TELEMATICS MARKET FROM 2021 TO 2026
FIGURE 12 NORTH AMERICA PROJECTED TO LEAD THE RAILWAY TELEMATICS
MARKET DURING THE FORECAST PERIOD

### **4 PREMIUM INSIGHTS**

4.1 ATTRACTIVE OPPORTUNITIES IN THE RAILWAY TELEMATICS MARKET FIGURE 13 INCREASING FREIGHT RAIL TRANSPORTATION IS EXPECTED TO BOOST THE GROWTH OF THE RAILWAY TELEMATICS MARKET 4.2 RAILWAY TELEMATICS MARKET, REGIONAL SNAPSHOT FIGURE 14 ASIA PACIFIC IS PROJECTED TO GROW AT HIGHEST CAGR DURING THE FORECAST PERIOD

4.3 RAILWAY TELEMATICS MARKET, BY SOLUTION
FIGURE 15 RAILCAR TRACKING & TRACING SEGMENT PROJECTED TO LEAD
THE MARKET, 2021 VS. 2026 (USD MILLION)

4.4 RAILWAY TELEMATICS MARKET, BY RAILCAR TYPE FIGURE 16 THE HOPPERS SEGMENT IS PROJECTED TO BE THE LARGEST IN THE MARKET FROM 2021 TO 2026

4.5 RAILWAY TELEMATICS MARKET, BY COMPONENT FIGURE 17 THE TCU SEGMENT IS PROJECTED TO DOMINATE THE MARKET DURING THE FORECAST PERIOD

4.6 RAILWAY TELEMATICS MARKET, BY REGION FIGURE 18 NORTH AMERICA IS EXPECTED TO BE THE LARGEST MARKET FOR RAILWAY TELEMATICS DURING THE FORECAST PERIOD

# **5 MARKET OVERVIEW**



### 5.1 INTRODUCTION

TABLE 3 IMPACT OF MARKET DYNAMICS

**5.2 MARKET DYNAMICS** 

FIGURE 19 RAILWAY TELEMATICS MARKET: MARKET DYNAMICS

5.2.1 DRIVERS

5.2.1.1 Government initiatives for smart railways

TABLE 4 TOP GROWING SMART CITIES/COUNTRIES

5.2.1.2 Digitalization of railways

TABLE 5 ADVANTAGES OF DIGITALIZATION OF RAILS

5.2.1.3 Technological shift towards railway telematics

FIGURE 20 TELEMATICS OPERABILITY FOR CARGO

5.2.2 RESTRAINTS

5.2.2.1 High development cost

5.2.2.2 Lack of component and production standardization

5.2.3 OPPORTUNITIES

5.2.3.1 Increasing need for railway telematics

TABLE 6 GOVERNMENT AGENCIES EQUIPPING FREIGHT TRANSPORT WITH TELEMATICS SOLUTIONS

5.2.3.2 Growing freight railway market to impact telematics market

TABLE 7 DEMAND FOR FREIGHT TRANSPORTATION PROJECTED TO RISE IN THE FUTURE

5.2.4 CHALLENGES

5.2.4.1 Data privacy and security concerns

5.2.4.2 Lack of infrastructure for railway telematics

5.3 PORTER'S FIVE FORCES

FIGURE 21 PORTER'S FIVE FORCES: RAILWAY TELEMATICS MARKET

TABLE 8 RAILWAY TELEMATICS MARKET: IMPACT OF PORTERS FIVE FORCES

5.3.1 THREAT OF SUBSTITUTES

5.3.1.1 Telematics solutions do not have alternatives and therefore the threat of substitutes is low

5.3.2 THREAT OF NEW ENTRANTS

5.3.2.1 Lack of standardization leads to high threat of new entrants

5.3.3 BARGAINING POWER OF BUYERS

5.3.3.1 Increasing demand for railway telematics leads to moderate bargaining power for buyers

5.3.4 BARGAINING POWER OF SUPPLIERS

5.3.4.1 Lack of standardization leads to moderate demand for telematics in the long run



# 5.3.5 INTENSITY OF COMPETITIVE RIVALRY

5.3.5.1 Large number of players and high switching costs lead to high competition in the railway telematics market

5.4 EXISTING AND UPCOMING RAILWAY TELEMATICS MODELS

TABLE 9 EXISTING AND UPCOMING RAILWAY TELEMATICS MODELS

5.5 RAILWAY TELEMATICS MARKET ECOSYSTEM

FIGURE 22 RAILWAY TELEMATICS MARKET: ECOSYSTEM ANALYSIS

TABLE 10 RAILWAY TELEMATICS MARKET: ROLE OF COMPANIES IN THE

**ECOSYSTEM** 

5.6 VALUE CHAIN ANALYSIS

FIGURE 23 VALUE CHAIN ANALYSIS: RAILWAY TELEMATICS

5.7 PATENT ANALYSIS

5.8 REGULATORY OVERVIEW

5.9 CASE STUDY

5.9.1 RAILNOVA'S TIE-UP WITH POD GROUP INCREASED FLEET CONNECTIVITY

5.9.2 HOYER RELIES ON RAILWAY TELEMATICS SOLUTIONS OFFERED BY IMT FOR THE TRANSPORT OF THEIR CONTAINERS

5.10 TRADE/REGISTRATION DATA

TABLE 11 TOP IMPORTERS OF RAILWAY FREIGHT CARS - 2019

FIGURE 24 IMPORT DATA IN TERMS OF PERCENTAGE FOR 2019

TABLE 12 TOP EXPORTERS OF RAILWAY FREIGHT CARS - 2019

FIGURE 25 EXPORT DATA IN TERMS OF PERCENTAGE FOR 2019

5.11 REVENUE SHIFT FOR RAILWAY TELEMATICS MANUFACTURERS

5.12 COVID-19 IMPACT ANALYSIS

5.12.1 INTRODUCTION TO COVID-19

5.12.2 COVID-19 HEALTH ASSESSMENT

TABLE 13 SELECTED MEASURES BY RAILWAYS IN VARIOUS COUNTRIES DURING THE COVID-19 PANDEMIC

5.13 RAILWAY TELEMATICS MARKET, SCENARIOS (2021–2026)

FIGURE 26 IMPACT OF COVID-19 ON THE RAILWAY TELEMATICS MARKET, 2021–2026

5.13.1 RAILWAY TELEMATICS MARKET, MOST LIKELY SCENARIO

TABLE 14 RAILWAY TELEMATICS (MOST LIKELY), BY REGION, 2021–2026 (USD MILLION)

5.13.2 RAILWAY TELEMATICS, OPTIMISTIC SCENARIO

TABLE 15 RAILWAY TELEMATICS (OPTIMISTIC), BY REGION, 2021–2026 (USD MILLION)

5.13.3 RAILWAY TELEMATICS, PESSIMISTIC SCENARIO



TABLE 16 RAILWAY TELEMATICS (PESSIMISTIC), BY REGION, 2021–2026 (USD MILLION)

# **6 RAILWAY TELEMATICS MARKET, BY SOLUTION**

**6.1 INTRODUCTION** 

FIGURE 27 RAILWAY TELEMATICS MARKET, BY SOLUTION, 2021 VS. 2026 TABLE 17 RAILWAY TELEMATICS MARKET, BY SOLUTION, 2017–2026 (USD MILLION)

**6.2 OPERATIONAL DATA** 

TABLE 18 COMPANIES OFFERING RAILWAY TELEMATICS SOLUTIONS

- 6.2.1 ASSUMPTIONS
- 6.2.2 RESEARCH METHODOLOGY
- **6.3 FLEET MANAGEMENT**
- 6.3.1 WIDE ADOPTION OF FLEET MANAGEMENT SOLUTIONS EXPECTED TO LEAD TO MARKET GROWTH

TABLE 19 FLEET MANAGEMENT: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

- 6.4 SHOCK DETECTION
- 6.4.1 SHOCK DETECTORS DETECT SPEEDS BEYOND THE REGISTERED THRESHOLD LIMITS HENCE SECURE CARGO TRANSPORTATION THROUGH RAIL

TABLE 20 SHOCK DETECTION: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

- 6.5 AUTOMATIC STOCK CONTROL
- 6.5.1 AUTOMATIC STOCK HELPS OPERATORS UNDERSTAND HOW MANY RAILCARS ARE ACTUALLY NEEDED

TABLE 21 AUTOMATIC STOCK CONTROL: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

- 6.6 REMOTE DATA ACCESS
- 6.6.1 REMOTE DATA ACCESS SOLUTION EXPECTED TO ENABLE TRANSPARENT RAIL TRANSPORTATION IN FUTURE

TABLE 22 REMOTE DATA ACCESS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

- 6.7 ESTIMATED TIME OF ARRIVAL
- 6.7.1 MARKET FOR THE ESTIMATED TIME OF ARRIVAL SEGMENT IS DRIVEN BY THE DEMAND TO IMPROVE TRACEABILITY OF THE LOAD

TABLE 23 ESTIMATED TIME OF ARRIVAL: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)



# 6.8 RAILCAR TRACKING & TRACING

6.8.1 RAILCAR TRACKING & TRACING SOLUTION EXPECTED TO IMPROVE FLEET OPTIMIZATION

TABLE 24 RAILCAR TRACKING & TRACING: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

6.9 REFRIGERATED WAGON MANAGEMENT

6.9.1 REFRIGERATED WAGON MANAGEMENT SOLUTIONS ARE EXPECTED TO HAVE HIGHER ADOPTION DUE TO THE INCREASING DEMAND FOR REFRIGERATED GOODS

TABLE 25 REFRIGERATED WAGON MANAGEMENT, RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

**6.10 OTHERS** 

6.10.1 CONSTANT UPDATION OF TELEMATICS TECHNOLOGY EXPECTED TO DRIVE GROWTH OF THE MARKET

TABLE 26 OTHERS, RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

6.11 KEY PRIMARY INSIGHTS

FIGURE 28 KEY PRIMARY INSIGHTS

# 7 RAILWAY TELEMATICS MARKET, BY RAILCAR TYPE

# 7.1 INTRODUCTION

FIGURE 29 RAILWAY TELEMATICS MARKET, BY RAILCAR TYPE, 2021 VS. 2026 TABLE 27 RAILWAY TELEMATICS MARKET, BY RAILCAR TYPE, 2017–2026 (USD MILLION)

7.2 OPERATIONAL DATA

TABLE 28 RAILCAR TYPES LEASED BY COMPANIES

7.2.1 ASSUMPTIONS

7.2.2 RESEARCH METHODOLOGY

7.3 HOPPERS

7.3.1 SIGNIFICANT FLEET OF HOPPERS IN FREIGHT RAIL TO ENSURE DOMINANT POSITION OF THE SEGMENT

TABLE 29 HOPPERS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

7.4 TANK CARS

7.4.1 MAINTENANCE OF TEMPERATURE AND PRESSURE IS REQUIRED IN TANK CARS

TABLE 30 TANK CARS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)



### 7.5 BOXCARS

7.5.1 TELEMATICS INSTALLED BOXCARS ARE THE HIGHEST USED FOR LOGISTICS FLEET OPERATORS DUE TO THEIR VERSATILITY AND COST-EFFICIENCY

TABLE 31 BOXCARS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

7.6 WELL CARS

7.6.1 COST-EFFICIENT AND INTELLIGENT TELEMATICS-BASED INFORMATION SERVICES ENABLE REAL-TIME TRACKING OF WELL CARS

TABLE 32 WELL CARS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

7.7 REFRIGERATED BOXCARS

7.7.1 THE DEMAND FOR REFRIGERATED BOXCARS IS EXPERIENCING STABLE GROWTH WITH THE INCREASE IN LONG-HAUL PERISHABLE FREIGHT TRANSPORTATION

TABLE 33 REFRIGERATED BOXCARS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

7.8 OTHERS

7.8.1 TELEMATICS SOLUTIONS ENABLE QUICKLY FIND AND DEPLOY IDLE RAILCARS

TABLE 34 OTHERS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

7.9 KEY PRIMARY INSIGHTS

FIGURE 30 KEY PRIMARY INSIGHTS

### **8 RAILWAY TELEMATICS MARKET, BY COMPONENT**

### 8.1 INTRODUCTION

FIGURE 31 RAILWAY TELEMATICS MARKET, BY COMPONENT, 2021 VS. 2026 TABLE 35 RAILWAY TELEMATICS MARKET, BY COMPONENT, 2017–2026 (USD MILLION)

8.2 OPERATIONAL DATA

TABLE 36 RAILWAY TELEMATICS MARKET COMPONENT OFFERING

8.2.1 ASSUMPTIONS

8.2.2 RESEARCH METHODOLOGY

**8.3 TCUS** 

8.3.1 TCUS ENABLE FLEET MANAGERS PROVIDE REAL-TIME DATA TO RAILCAR LEASE OPERATORS

TABLE 37 TCUS: RAILWAY TELEMATICS MARKET, BY REGION, 2017-2026 (USD



MILLION)

8.4 SENSORS

8.4.1 SENSORS ENABLE ADVANCED RAILCAR MANAGEMENT PROVIDING INCREASED PRODUCTIVITY AND DECREASED OPERATING AND MAINTENANCE COSTS

TABLE 38 SENSORS: RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

8.5 KEY PRIMARY INSIGHTS

FIGURE 32 KEY PRIMARY INSIGHTS

# 9 RAILWAY TELEMATICS MARKET, BY REGION

9.1 INTRODUCTION

FIGURE 33 RAILWAY TELEMATICS MARKET, BY REGION, 2021 VS. 2026 (USD MILLION)

TABLE 39 RAILWAY TELEMATICS MARKET, BY REGION, 2017–2026 (USD MILLION)

9.2 ASIA PACIFIC

FIGURE 34 ASIA PACIFIC: RAILWAY TELEMATICS MARKET SNAPSHOT TABLE 40 ASIA PACIFIC: RAILWAY TELEMATICS MARKET, BY COUNTRY, 2017–2026 (USD MILLION)

- 9.2.1 CHINA
- 9.2.1.1 Developments in the expansion of freight corridors is driving the market 9.2.2 INDIA
- 9.2.2.1 Demand for temperature-controlled transportation expected to boost market growth
  - 9.2.3 JAPAN
- 9.2.3.1 Country is experiencing significant strategic rebalancing in the logistics and supply chain industry, driving market growth
  - 9.2.4 REST OF ASIA PACIFIC
- 9.2.4.1 Economic and industrial growth in the region drive the market for efficient freight transportation
- 9.3 EUROPE

TABLE 41 EUROPE: RAILWAY TELEMATICS MARKET, BY COUNTRY, 2017–2026 (USD MILLION)

FIGURE 35 EUROPE: RAILWAY TELEMATICS MARKET, BY COUNTRY, 2021 VS. 2026 (USD MILLION)

- **9.3.1 FRANCE** 
  - 9.3.1.1 New coalition of participants in France's rail freight targeting doubling freight



volumes

9.3.2 GERMANY

9.3.2.1 Presence of major rail freight companies support market growth

9.3.3 UK

9.3.3.1 Initiatives for further enhancements in railway telematics services to drive the market

9.3.4 REST OF EUROPE

9.3.4.1 Adoption of high-speed freight trains in the region projected to drive the market

9.4 NORTH AMERICA

TABLE 42 NORTH AMERICA: RAILWAY TELEMATICS MARKET, BY COUNTRY, 2017–2026 (USD MILLION)

9.4.1 US

9.4.1.1 Healthcare industry is driving the demand for telematics embedded box railcars in the country

9.4.2 CANADA

9.4.2.1 Proximity to the US helping Canada procure and source raw materials

**9.4.3 MEXICO** 

9.4.3.1 Development of trade propelling the demand for full visibility of railcars9.5 ROW

TABLE 43 ROW: RAILWAY TELEMATICS MARKET, BY COUNTRY, 2017–2026 (USD MILLION)

FIGURE 36 ROW: RAILWAY TELEMATICS MARKET, BY COUNTRY, 2021 VS. 2026 (USD MILLION)

9.5.1 BRAZIL

9.5.1.1 The development of new railway infrastructure is expected to lead to the rapid adoption of smart railway solutions

9.5.2 ARGENTINA

9.5.2.1 Government initiatives are expected to lead to the growth of the overall freight market

**9.5.3 OTHERS** 

9.5.3.1 Untapped markets offer significant opportunities for the growth of railway telematics

# 10 COMPETITIVE LANDSCAPE

10.1 OVERVIEW

FIGURE 37 KEY DEVELOPMENTS BY LEADING PLAYERS, 2017–2021 10.2 MARKET SHARE ANALYSIS FOR THE RAILWAY TELEMATICS MARKET



TABLE 44 MARKET SHARE ANALYSIS, 2020

FIGURE 38 MARKET SHARE ANALYSIS, 2020

10.3 REVENUE ANALYSIS OF TOP LISTED/PUBLIC PLAYERS

FIGURE 39 TOP PUBLIC/LISTED PLAYERS DOMINATING THE RAILWAY

TELEMATICS MARKET DURING THE LAST FIVE YEARS

10.4 COMPETITIVE SCENARIO

10.4.1 NEW PRODUCT LAUNCHES

TABLE 45 PRODUCT LAUNCHES, 2017-2021

10.4.2 DEALS

TABLE 46 DEALS, 2017-2021

10.4.3 OTHERS

TABLE 47 OTHERS, 2017-2021

10.5 COMPETITIVE LEADERSHIP MAPPING

10.5.1 STARS

10.5.2 EMERGING LEADERS

10.5.3 PERVASIVE

10.5.4 PARTICIPANTS

FIGURE 40 RAILWAY TELEMATICS MARKET: COMPETITIVE LEADERSHIP MAPPING, 2021

TABLE 48 RAILWAY TELEMATICS MARKET: COMPANY FOOTPRINT, 2021 TABLE 49 RAILWAY TELEMATICS MARKET: SOLUTION FOOTPRINT, 2021 10.5.5 RAILWAY TELEMATICS MARKET: REGIONAL FOOTPRINT, 2021 TABLE 50 WINNERS VS. TAIL-ENDERS

### 11 COMPANY PROFILES

### 11.1 KEY PLAYERS

(Business overview, Products offered, Products offered, Mnm view)\*

11.1.1 SIEMENS AG

TABLE 51 SIEMENS AG: BUSINESS OVERVIEW FIGURE 41 SIEMENS: REGION WISE REVENUE FIGURE 42 SIEMENS AG: COMPANY SNAPSHOT

TABLE 52 SIEMENS AG: SERVICES OFFERED

TABLE 53 SIEMENS AG: DEALS

11.1.2 ROBERT BOSCH

TABLE 54 ROBERT BOSCH: BUSINESS OVERVIEW FIGURE 43 ROBERT BOSCH: COMPANY SNAPSHOT

TABLE 55 ROBERT BOSCH: DEALS

11.1.3 HITACHI LTD.



TABLE 56 HITACHI LTD.: BUSINESS OVERVIEW FIGURE 44 HITACHI LTD.: MOBILITY SOLUTIONS FIGURE 45 HITACHI LTD.: COMPANY SNAPSHOT

TABLE 57 HITACHI LTD.: NEW PRODUCT DEVELOPMENTS

TABLE 58 HITACHI LTD.: DEALS

11.1.4 ALSTOM

TABLE 59 ALSTOM: BUSINESS OVERVIEW FIGURE 46 ALSTOM: COMPANY SNAPSHOT FIGURE 47 ALSTOM: GEOGRAPHIC PRESENCE

TABLE 60 ALSTOM: NEW PRODUCT DEVELOPMENTS

TABLE 61 ALSTOM: DEALS TABLE 62 ALSTOM: OTHERS

11.1.5 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH TABLE 63 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH: BUSINESS OVERVIEW

FIGURE 48 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH:

RESEARCH & DEVELOPMENT EXPENDITURE

FIGURE 49 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH: SCHEMATIC DIAGRAM OF PRODUCT OFFERINGS

FIGURE 50 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH: COMPANY SNAPSHOT

TABLE 64 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH: PRODUCTS OFFERED

TABLE 65 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH: DEALS

TABLE 66 KNORR- BREMSE SYSTEME FUR SCHIENENFAHRZEUGE GMBH: OTHERS

11.1.6 WABTEC

TABLE 67 WABTEC: BUSINESS OVERVIEW FIGURE 51 WABTEC: FUTURE OUTLOOK FIGURE 52 WABTEC: COMPANY SNAPSHOT TABLE 68 WABTEC: PRODUCTS OFFERED

TABLE 69 WABTEC: NEW PRODUCT DEVELOPMENTS

TABLE 70 WABTEC: DEALS
TABLE 71 WABTEC: OTHERS
11.1.7 INTREX TELEMATICS

TABLE 72 INTREX TELEMATICS: BUSINESS OVERVIEW TABLE 73 INTREX TELEMATICS: PRODUCTS OFFERED

11.1.8 TRINITY INDUSTRIES



TABLE 74 TRINITY INDUSTRIES: BUSINESS OVERVIEW

FIGURE 53 TRINITY INDUSTRIES: COMPANY SNAPSHOT

TABLE 75 TRINITY INDUSTRIES: NEW PRODUCT DEVELOPMENTS

11.1.9 CANDO RAIL AND TERMINALS

TABLE 76 CANDO RAIL AND TERMINALS: BUSINESS OVERVIEW

TABLE 77 CANDO RAIL & TERMINALS: DEALS

TABLE 78 CANDO RAIL & TERMINALS: OTHERS

11.1.10 ORBCOMM

FIGURE 54 ORBCOMM: CLIENTELE

TABLE 79 ORBCOMM: BUSINESS OVERVIEW FIGURE 55 ORBCOMM: COMPANY SNAPSHOT

TABLE 80 ORBCOMM: PRODUCTS OFFERED

TABLE 81 ORBCOMM: NEW PRODUCT DEVELOPMENTS

TABLE 82 ORBCOMM: DEALS

11.1.11 RAILNOVA

TABLE 83 RAILNOVA: BUSINESS OVERVIEW TABLE 84 RAILNOVA: PRODUCTS OFFERED

**TABLE 85 RAILNOVA: DEALS** 

11.1.12 INTERMODAL TELEMATICS

TABLE 86 INTERMODAL TELEMATICS: BUSINESS OVERVIEW TABLE 87 INTERMODAL TELEMATICS: PRODUCTS OFFERED

TABLE 88 INTERMODAL TELEMATICS: DEALS

11.1.13 SAVVY TELEMATICS

TABLE 89 SAVVY TELEMATICS: BUSINESS OVERVIEW TABLE 90 SAVVY TELEMATICS: PRODUCTS OFFERED

TABLE 91 SAVVY TELEMATICS: DEALS

11.1.14 A1 DIGITAL

TABLE 92 A1 DIGITAL: BUSINESS OVERVIEW TABLE 93 A1 DIGITAL: PRODUCTS OFFERED

TABLE 94 A1 DIGITAL: DEALS

11.1.15 ERMEWA SA

TABLE 95 ERMEWA SA: BUSINESS OVERVIEW TABLE 96 ERMEWA SA: PRODUCTS OFFERED

TABLE 97 ERMEWA SA: DEALS 11.1.16 NORFOLK SOUTHERN

TABLE 98 NORFOLK SOUTHERN: BUSINESS OVERVIEW FIGURE 56 NORFOLK SOUTHERN: COMPANY SNAPSHOT TABLE 99 NORFOLK SOUTHERN: PRODUCTS OFFERED

TABLE 100 NORFOLK SOUTHERN: NEW PRODUCT DEVELOPMENTS



TABLE 101 NORFOLK SOUTHERN: DEALS TABLE 102 NORFOLK SOUTHERN: OTHERS

11.1.17 VTG AG

TABLE 103 VTG AG: BUSINESS OVERVIEW FIGURE 57 VTG AG: COMPANY SNAPSHOT TABLE 104 VTG AG: PRODUCTS OFFERED

TABLE 105 VTG AG: DEALS TABLE 106 VTG AG: OTHERS

\*Details on Business overview, Products offered, Products offered, Mnm view might not be captured in case of unlisted companies.

11.2 OTHER KEY PLAYERS

11.2.1 STARTRAK GPS

11.2.2 AMSTED DIGITAL

**11.2.3 TRAXENS** 

11.2.4 TECH MAHINDRA LTD

11.2.5 SIERRA WIRELESS

11.2.6 CALAMP CORP.

11.2.7 IBM CORPORATION

11.2.8 ATOS CORPORATION

11.2.9 J.M. VOITH

11.2.10 LAT-LON

11.2.11 CISCO

11.2.12 TRIMBLE

11.2.13 SAVI TECHNOLOGY

11.2.14 WASCOSA

# **12 APPENDIX**

- 12.1 KEY INDUSTRY INSIGHTS
- 12.2 DISCUSSION GUIDE
- 12.3 KNOWLEDGE STORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL
- 12.4 AVAILABLE CUSTOMIZATIONS
- 12.5 RELATED REPORTS
- 12.6 AUTHOR DETAILS



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