

How can auto OEMs leverage  
**Smart tires** to create strong  
brand differentiation?

---

**Co-innovation strategies** enabling auto OEMs to develop  
smart, sustainable tires that enhance driving experience.



# Contents

## Executive snapshot

How OEMs and commercial fleets must leverage tire partnerships to reduce costs and enhance performance.

## Innovation vs. Commercialization gap

Why tire manufacturers' strong R&D often fails to scale, and how auto can drive smart tire solutions with right partnerships.

## Emerging technology priorities

Battery-less sensors, edge computing, and AI monitoring boost fleet safety, efficiency, and ROI

## Market opportunity zones

Smart tire adoption in EVs and autonomous, connected accelerates measurable ROI and long-term operational advantages.

## New business model shifts

'Tire-as-a-Service', subscription pricing, and performance-based contracts slash lifecycle costs and raise Customer Lifetime Value (CLV) by 40–60%.

## Strategic partnerships & ecosystem

How OEM–tire partnerships accelerate ESG goals, and circular economy frameworks to future-proof operations.

## FutureBridge POV

To stay compliant, cost efficient, and competitive, OEMs and fleets must turn tire makers into innovation partners.

# Executive snapshot

---

Auto OEMs and fleet operators face mounting pressures to cut Total cost of ownership, meet ESG mandates, and deliver superior driving experiences making tire innovation and partnerships more critical than ever.



## Competitive Benchmarking

Despite tire manufacturers' strong innovation capabilities, inconsistent commercialization of smart tire solutions exposes OEMs and commercial fleets to underperformance risks. Securing tire partners that deliver differentiated models such as 'Tire-as-a-Service' and 'AI-driven solutions' is essential for reliability and competitiveness.



## Technology Readiness

'Battery-less sensors', 'edge computing', and 'AI-enabled monitoring' represent the most promising near-term technologies, enabling predictive maintenance, improved safety, and extended tire lifecycles, directly impacting fleet ROI and OEM performance benchmarks.



## Market Opportunity

The global smart tire market is projected to reach \$5.6B by 2030, with commercial fleets as the highest-value early adopters, driven by high operational mileage, downtime reduction, and cost optimization needs.



## Business Model Evaluation

Service-based approaches such as 'Tire-as-a-Service', 'pay-per-use', and 'data monetization models' offer OEMs and fleets significant cost savings and up to 40–60% higher lifetime value.



## Strategic Imperative

OEMs and commercial fleets must forge deeper, innovation-driven partnerships with tire manufacturers, embedding sustainability, AI, and circular economy frameworks into procurement strategies. This will help reduce costs and strengthen long-term competitive edge.

# Why It Matters – Market Shift Toward Intelligent Tire Ecosystems



## Digitalization of Fleets

Commercial fleets implementing IoT-based management systems (89% of large fleets by 2027) require tire integration for comprehensive asset monitoring



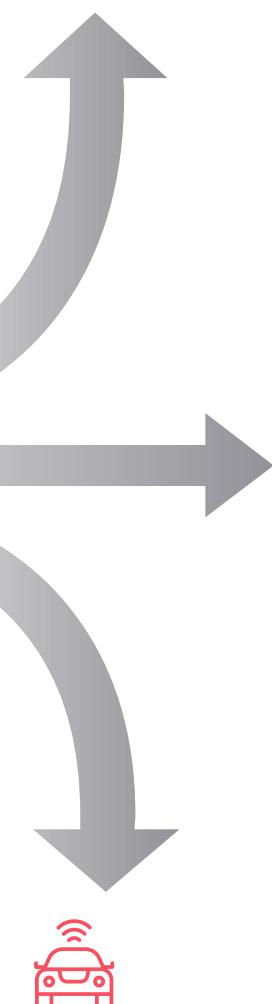
## Predictive Maintenance Evolution

Shift from reactive to predictive maintenance reducing downtime by up to 45% and extending tire life by 20-30%, creating a compelling ROI for fleet operators.



## Data Value Emergence

Tire performance data increasingly recognized as valuable input for fleet optimization, vehicle design, and road infrastructure planning will help create new revenue opportunities.



Environmental regulation and corporate ESG targets driving optimization of tire usage, with predictive systems potentially reducing carbon footprint by 4-7% through optimal pressure management and extended lifecycles.

## Sustainability Imperatives & Safety Compliance Requirements

Regulatory mandates (e.g., EU's TPMS requirements) and insurance incentives will accelerate adoption of tire monitoring technologies



## Connected Vehicle Ecosystem

Tires becoming part of broader vehicle data systems, with OEMs demand integration with vehicle telematics platforms.



These convergent trends are transforming tires from passive components to active, intelligent systems within the transportation ecosystem, fundamentally altering the competitive landscape.

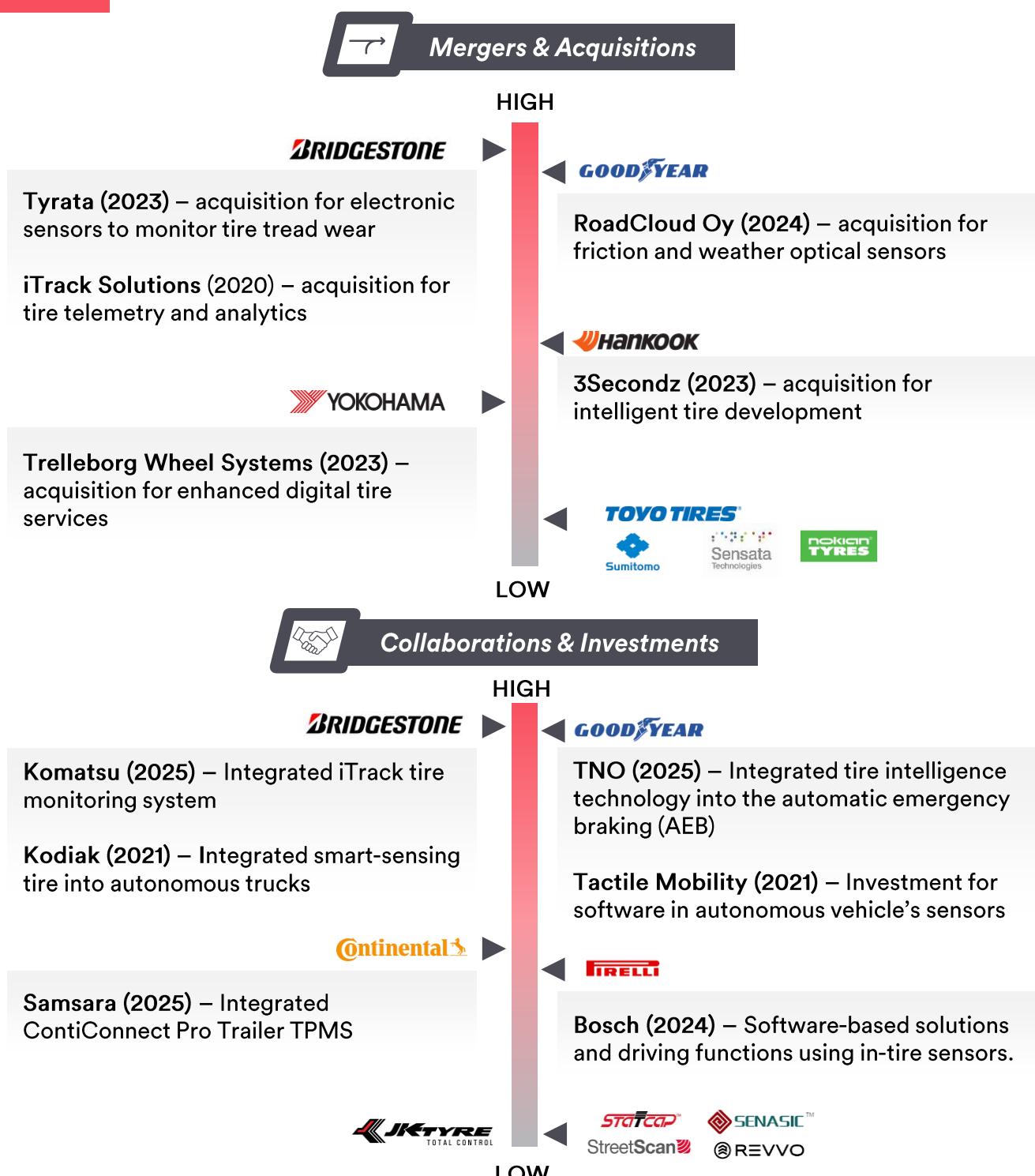
# Competitive Landscape – Global Benchmarking

Low  High

Competitors	RFID / IoT Integration	Predictive Capabilities	Data Monetization Strategy	Partnerships & Platforms
<b>GOODRIDGE</b>	■■■■■ Goodyear SightLine™ with embedded sensors; still in pilot phase	■■■■■ Basic predictive models; focusing on temperature and pressure anomalies	■■■■■ Developing TaaS model; pilot with Penske Truck Leasing	■■■■■ Gatik autonomous vehicle partnership; Starship Technologies for last-mile delivery
<b>BRIDGESTONE</b>	■■■■■ Tiremetrics™ system with embedded sensors; 75% of commercial lineup IoT-ready	■■■■■ Advanced wear prediction algorithms; 85% accuracy in remaining mileage estimates	■■■■■ Integration with Webfleet telematics platform; subscription-based insights	■■■■■ Microsoft Azure partnership; Webfleet Solutions acquisition; Azuga fleet partnership
<b>PIRELLI</b>	■■■■■ Pirelli Cyber Tire™ system; luxury vehicle focus; limited commercial applications	■■■■■ Real-time grip estimation; road surface detection	■■■■■ Limited; primarily offering data to OEMs as value-add	■■■■■ Ferrari and Lamborghini exclusive partnerships; limited ecosystem play
<b>Continental</b>	■■■■■ ContiConnect™ with advanced strain gauges; 90% commercial lineup with sensor capability	■■■■■ Industry-leading load detection and road condition sensing	■■■■■ Established data marketplace; 3-tier subscription model with proven ROI	■■■■■ Vodafone IoT partnership; Deutsche Telekom integration; open API ecosystem
<b>HANKOOK</b> driving emotion	■■■■■ iON system in development; currently RFID-only; planned sensor integration by 2026	■■■■■ Basic pressure and temperature monitoring	■■■■■ No clear monetization strategy yet	■■■■■ SK Telecom partnership; experimental V2X communication
<b>MICHELIN</b>	■■■■■ RFID in 100% of truck tires; Michelin Track Connect for passenger; limited sensor integration	■■■■■ Mid-tier predictive capabilities; strong in wear prediction; lacking in road condition sensing	■■■■■ Emerging subscription model; early-stage pilots with limited penetration	■■■■■ Enviro integration; Accenture digital partnership; lacks comprehensive platform strategy
<b>YOKOHAMA</b>	<b>SUMITOMO RUBBER INDUSTRIES</b>	<b>NOKIAN TYRES</b>	<p><b>EMERGING MOMENTUM:</b> Various other global and regional tire makers are actively advancing <b>Smart Tire</b> technologies. Embedding sensors, IoT, and predictive analytics deliver safer, more connected, and data-driven mobility solutions.</p>	
<b>TOYO TIRES</b>	<b>apollo TYRES</b>			

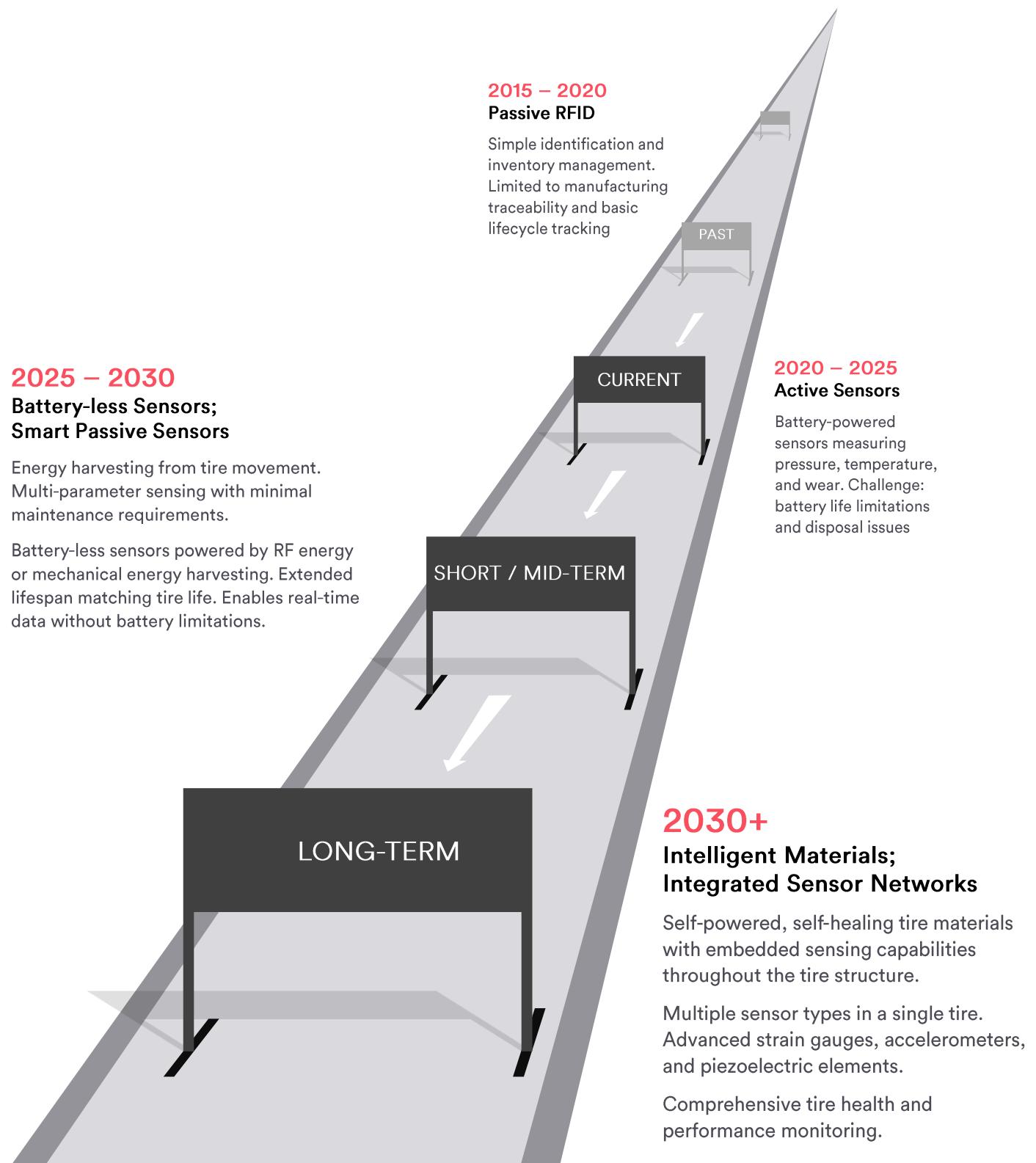
 **Industry-wide gaps exist in comprehensive sensor integration, platform development, and data monetization strategies compared to leading players like Continental and Bridgestone, who have established more mature ecosystems through strategic acquisitions and partnerships.**

# Ecosystem Developments; Strategic Acquisitions & Collaborations



Across the board, targeted acquisitions, strategic tech integrations, and cross-sector collaborations are accelerating the shift toward intelligent, responsive tire ecosystems, with Bridgestone, Continental, and Goodyear emerging as key frontrunners driving market competition.

# Technology Landscape – RFID, Sensors & Data: Evolution of Embedded Tire Sensors



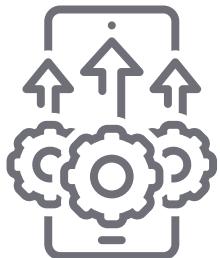
# Key Use-cases Enablement – Current Capabilities vs. Future



## Key Use-cases Enabled

(Current Capabilities)

- Dynamic load monitoring ( $\pm 5\%$  precision)
- Pressure monitoring ( $\pm 2\%$  accuracy)
- Load estimation ( $\pm 10\%$  accuracy)
- Pressure anomaly detection (response within 30 seconds)
- Temperature sensing ( $\pm 1^\circ\text{C}$ )



## Emerging Capabilities

(2025+)

- Road condition assessment (wet/dry/ice detection)
- Real-time tread wear detection ( $\pm 0.5\text{mm}$  accuracy)
- Dynamic load monitoring ( $\pm 5\%$  precision)
- Heat distribution mapping (preventing failures)
- Driving behaviour analysis (cornering, braking patterns)



**Battery-less sensor innovations** represent the critical technology breakthrough, with piezoelectric and energy harvesting solutions eliminating the primary barrier to widespread adoption.

Industry investments in RFID provide a solid foundation, but rapid advancements in sensor technology are essential to sustain and strengthen competitive positioning in the smart tire ecosystem.



# Smart Tire System Architecture

## TIRE SENSORS

Embedded sensors collect raw data on pressure, temperature, wear, and road conditions. Data capture frequency ranges from continuous to interval-based depending on use case.



**Industry Integration:** RFID foundation exists with the opportunity to integrate third-party sensors with proprietary algorithms.



## EDGE PROCESSING

In-vehicle or on-rim units collect sensor data, perform initial processing, and transmit via cellular / Bluetooth / LoRaWAN. Edge computing reduces data transmission needs by 60-80%.

**Industry Integration:** Collaborate with telematics providers; develop proprietary edge computing algorithms.

## CLOUD PLATFORM

Scalable data storage, advanced analytics, machine learning, and API management. Processes 1000+ data points per tire per day for large fleets.



**Industry Integration:** Leverage connected fleet platforms; expand API ecosystem.



## USER INTERFACE

Fleet management dashboards, mobile apps, OEM integration, and third-party system connectors. Real-time alerts and predictive recommendations.

**Industry Integration:** Enhance platform capabilities; develop OEM-specific interfaces; open API for third-party integration.

## ACTION LAYER

Automated service scheduling, predictive replacement, inventory management, and route optimization. Closed-loop system that converts insights to value.



**Industry Integration:** Connect with dealer networks; integrate with fleet maintenance systems.



# Customer Segment Insights

## COMMERCIAL FLEETS

### KEY NEEDS & VALUE DRIVERS

---



#### Downtime Reduction

Every day of vehicle downtime costs fleets \$800-\$1,200. Smart tire systems can reduce unplanned tire-related downtime by up to 71% through preventive alerts.



#### Predictive Maintenance

Fleet managers require 3–5-day advance warning of potential tire issues to optimize maintenance scheduling and parts inventory.



#### Fuel Efficiency

Improper tire pressure accounts for 1-3.3% of fuel consumption. Smart tire systems optimize pressure maintenance, potentially saving \$1,200-\$3,600 per truck annually.



#### Tire Lifecycle Management

Commercial fleets expect 30% longer tire life through optimized rotation, retreading timing, and driving behavior modification informed by tire data.



#### Safety Compliance

Automated documentation of tire maintenance for regulatory compliance, will reduce administrative burden and audit risk.

### IMPLEMENTATION CHALLENGES

---



#### Integration Complexity

84% of large fleets already have telematics systems. Smart tire solutions must integrate seamlessly with existing fleet management platforms, requiring extensive API development and partnership strategies.



#### ROI Justification

Fleet managers require demonstrable ROI within 12-18 months. Current solutions struggle to provide transparent cost-benefit analysis, particularly for smaller fleets with fewer than 50 vehicles.



#### Implementation & Training

Resistance from maintenance teams and drivers who perceive new systems as additional complexity or surveillance. Requires comprehensive change management and training programs.



**The commercial fleet segment represents the most immediate opportunity for smart tire adoption, with a clear ROI case and higher willingness to adopt new technologies compared to passenger vehicle applications. Strong existing relationships with fleet operators provide a strategic advantage for early market penetration.**



# Customer Segment Insights

## COMMERCIAL FLEETS

### KEY NEEDS & VALUE DRIVERS

	Plug-and-Play Integration	OEMs require turnkey solutions that integrate with existing vehicle architecture with minimal adaptation. Standardized communication protocols essential.
	Sensor Durability	OEMs demand sensors with 10+ year/150,000+ mile durability matching vehicle lifecycle. Current solutions typically limited to 5-7 years.
	Data Ownership Clarity	Explicit agreements on data rights and usage between tire manufacturer, OEM, and end user required. 78% of OEMs consider data ownership a "critical" negotiation point.
	Value-Add Features	OEMs increasingly seeking tire data for vehicle dynamics optimization, autonomous driving systems, and predictive maintenance packages sold as subscription services.
	Cost Constraints	Passenger vehicle applications have stricter cost constraints than commercial. Target cost per tire below \$15 for mass market, \$30-40 acceptable for premium segments.

### PASSENGER VEHICLE OEM EXPECTATIONS

	Connected Features	Demand for smartphone integration and digital service experiences. 72% of premium vehicle owners expect tire information to be accessible via mobile app.
	Digital Servicing	Streamlined maintenance process with automatic service scheduling and digital maintenance records. 58% of consumers willing to pay premium for "zero hassle" tire management.
	Brand Differentiation	Smart features are increasingly becoming part of premium tire positioning. Enhanced safety messaging resonates strongly with family-oriented buyers (64% higher consideration).

 For passenger applications, pursue a two-tiered strategy: [1] OEM partnerships for integrated solutions in premium vehicles, and [2] aftermarket retrofit options focused on safety and convenience. The most significant barrier remains cost justification for individual consumers, suggesting early focus on premium segments and fleet applications.

# Emerging Business Models: Tire-as-a-Service (TaaS)

## Subscription Models



Fixed monthly fee covering tire supply, maintenance, and replacement based on vehicle usage patterns. Particularly attractive for smaller fleets without dedicated maintenance facilities.

**Market Example:** Bridgestone's Mobox offers complete tire packages from €7/month in European markets with 40% adoption among targeted segments.

## Pay-Per-Use Pricing



Usage-based pricing calculated on mileage, road conditions, and driving behavior. Smart sensors enable accurate measurement and fair allocation of costs.

**Market Example:** Goodyear's fleet pilots showing 18% cost reduction for customers through optimized usage and extended tire life.

## Data-as-a-Service



Monetizing tire performance data for fleet optimization, predictive maintenance, and driver behavior analysis. Tiered access models from basic to premium insights.

**Market Example:** Continental's Connect platform offering 3-tier subscription service with proven 12-month ROI for fleet customers.

## Outcome-Based Contracts



Guaranteeing specific performance metrics (cost per mile, uptime percentage, fuel efficiency) with pricing tied to achievement of these outcomes.

**Market Example:** Michelin's EFFITIRES™ program has demonstrated the viability of outcome guarantees, creating foundation for smart tire evolution.

# Strategic Opportunity Zones for Tire Manufacturers



2025 – 2027: **RFID Scaling & Foundation**

ACTION

**A**

## RFID Universal Deployment

Expand RFID implementation to 100% of tire lineup to establish digital identity foundation

**B**

## Commercial Fleet Pilots

Targeted deployments with 10-15 key fleet customers to validate ROI and refine value proposition

**C**

## Sensor Technology Development

Accelerate battery-less sensor R&D through strategic partnerships and acquisitions

**D**

## Data Platform Architecture

Develop scalable cloud infrastructure and standardized APIs for future ecosystem expansion



## EXPECTED OUTCOME

Establish technology foundation and validate business model with early adopters, generating €75-100M in smart tire revenue.



## 2028 – 2030: Predictive Platforms

**A**

### Advanced Sensor Integration

Deploy next-generation sensor technology across premium and commercial lineups

**B**

### Predictive Analytics Platform

Launch comprehensive data analytics offering with tiered subscription model

**C**

### OEM Integration

Secure 3-5 major OEM partnerships for factory-fitted smart tire systems

**D**

### TaaS Business Model Scaling

Expand service-based offerings to represent 25% of smart tire revenue



### EXPECTED OUTCOME

Position as a leading provider of tire intelligence systems, achieving €350–450M in smart tire revenue.



## 2030+: AI Tire Ecosystems

VISION

**A**

### Comprehensive Sensing Network

Full integration of multiple sensor types providing comprehensive tire health and performance data

**B**

### Autonomous Vehicle Integration

Specialized solutions for autonomous fleets with enhanced safety and predictability features

**C**

### Open Platform Ecosystem

Establishment of industry-standard data platform with third-party application marketplace

**D**

### Advanced Materials Integration

Smart materials with self-healing and adaptive performance capabilities



### EXPECTED OUTCOME

Position as the ecosystem orchestrator for the intelligent tire market with €1B+ in smart tire revenue.

# Questions leaders are asking

---

**How can auto OEMs ensure ‘EV driving dynamics’ aren’t compromised by tire limitations?**

---

**Can smart vehicles reach full potential if tire innovation lags in next-gen mobility needs?**

---

**How can OEMs leverage tire innovation to achieve lasting brand differentiation?**

---

**What strategies ensure tire manufacturers meet ESG mandates without adding costs?**

**Talk to our Mobility experts**

# Meet the minds behind the insights



## Ankur Vohra [in](#)

### Practice Head

Mobility Industry, FutureBridge

Business consulting and advisory leader with 25+ years of experience, driving strategy and innovation for global mobility organizations.



## Arvind Sawarkar [in](#)

### Senior Director

Mobility Industry, FutureBridge

19+ years of consulting experience across mobility industry supporting global leaders decode disruption, fast-track innovation, and unlock next-gen growth.



## Chris Guerin [in](#)

### Director

Business Development, FutureBridge

With over 30 years of sales and 20+ years in leadership, Chris brings a rare blend of experience, instinct, and innovation to business development across mobility & energy industry.

[Continue the conversation](#)

# Our addresses

---



## North America

55 Madison Ave, Suite 400,  
Morristown, NJ 07960, USA



## Europe

WTC Utrecht, Stadsplateau 7,  
3521 AZ Utrecht, The Netherlands



## United Kingdom

Holborn Gate, 330 High Holborn  
London, WC1V 7QH, UK



## Asia Pacific

Millennium Business Park, Sector 3,  
Building # 4, Mahape, Navi Mumbai, India



FutureBridge is a techno-commercial consulting and advisory company. We track and advise on the future of industries from a 1-to-25-year perspective.



[www.futurebridge.com](http://www.futurebridge.com)