AI in the Global Automotive Aftermarket



BUILDING CONNECTED, DATA-DRIVEN ECOSYSTEMS FOR REPAIR AND PARTS DISTRIBUTION

By Benson Augustine, Research Manager, with inputs from Suriya Narayanan, Research Analyst, Aftermarket & Digital Retail – Mobility

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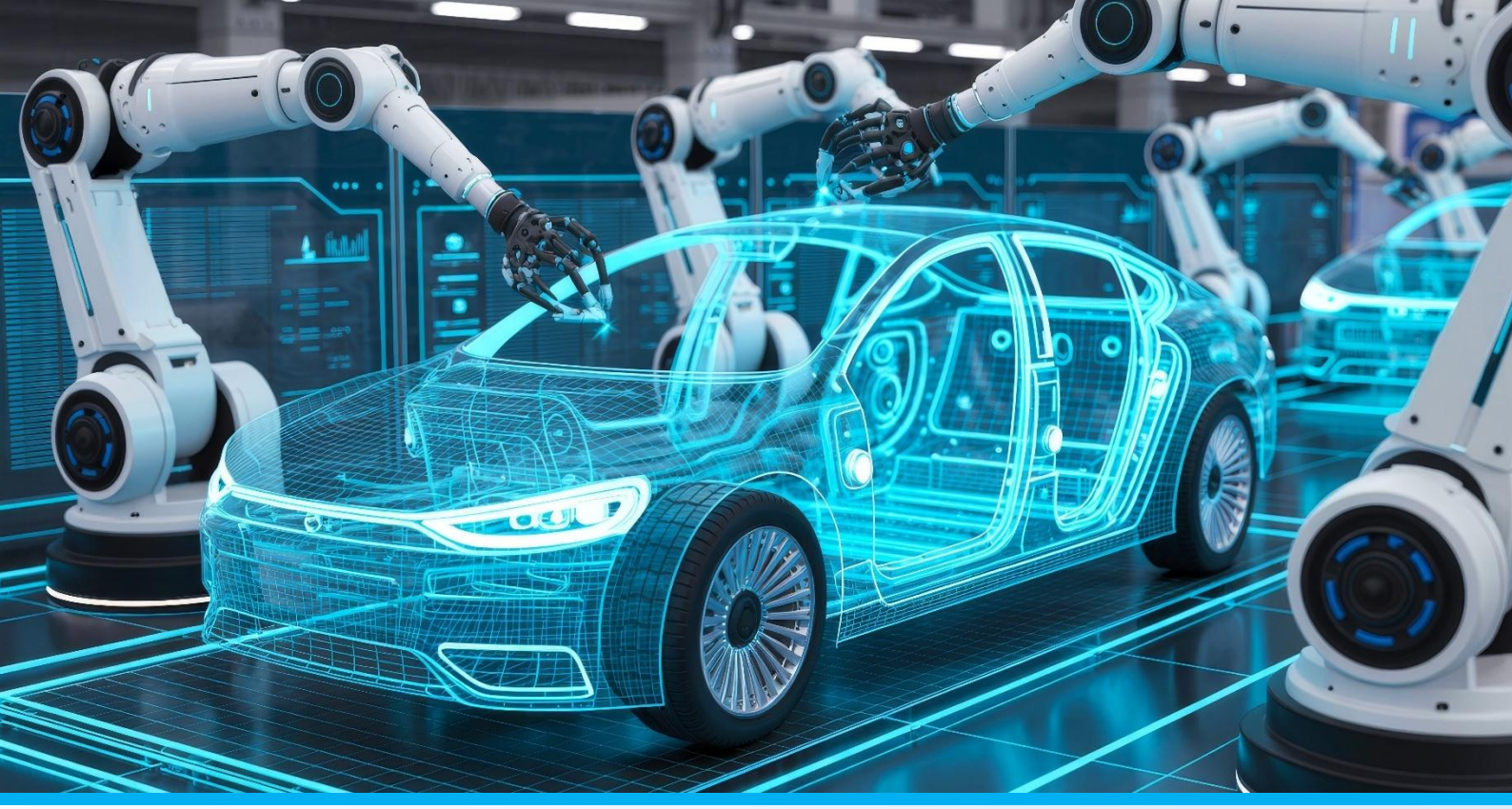
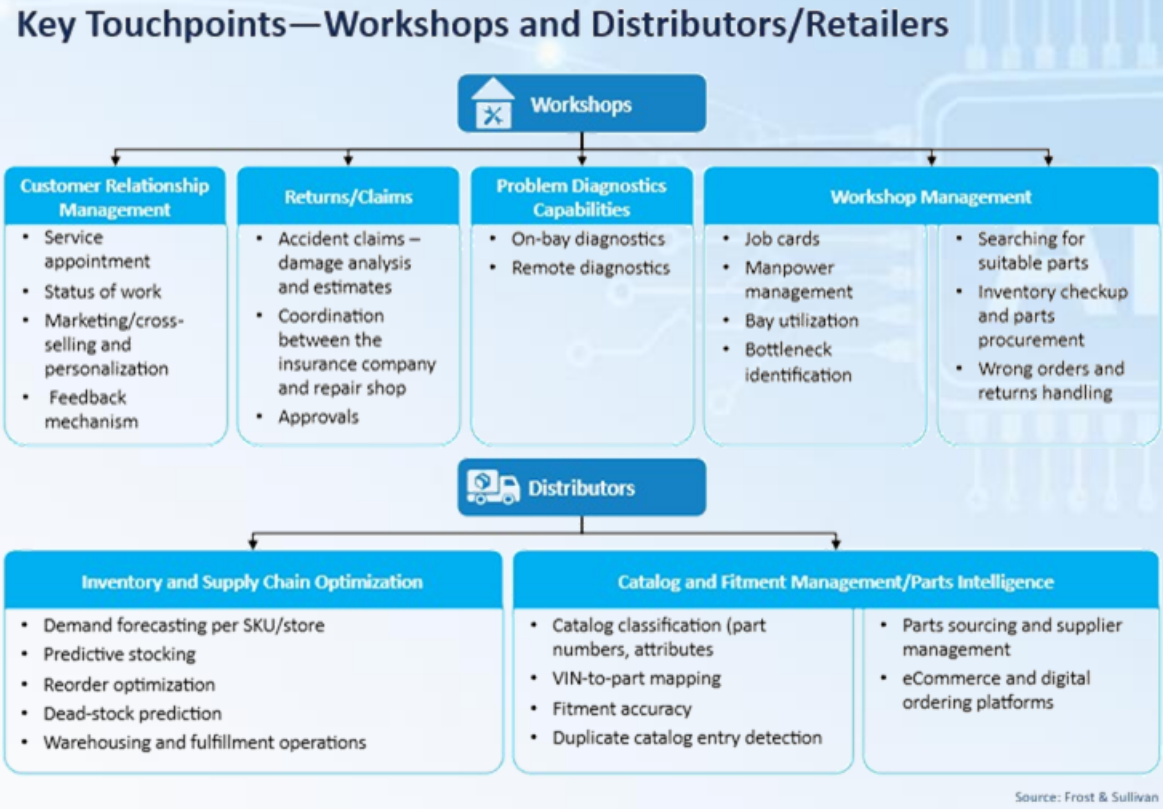


1. Introduction

The global automotive aftermarket is moving from reactive operations to more predictive, data-informed planning and service delivery. Artificial intelligence (AI) is helping workshops, distributors, retailers, insurers, and parts suppliers improve decisions across the repair and distribution cycle. By connecting information held in separate systems, AI is strengthening diagnostics and claims assessment. It is also improving inventory planning and workshop productivity, besides driving more meaningful customer engagement. Overall, AI is creating new revenue opportunities, while supporting long-term competitiveness.

Three key developments are shaping this transition. First, remote diagnostics, computer vision, and claims automation are among the major areas attracting AI investments because they address costly problems in the aftermarket. Second, adoption remains variable. Authorized dealerships lead AI implementation, with independent aftermarket (IAM) workshops more likely to adopt affordable third-party tools. Regionally, North America is more advanced in operational use, Asia-Pacific is expanding through platforms, and Europe emphasizes compliance-led use cases. Third, partnerships will be important because no single participant has all the data and workflow access needed for an end-to-end solution.

2. Adoption Trends



Adoption reflects uneven maturity but a large and ever-expanding opportunity.

2.1. Dealerships Lead, but IAM Offers Opportunity

Authorized dealers are at the forefront of AI adoption, supported by greater capital availability, established technology infrastructure, and formal processes. However, budgets exceed current use, with commitments that Frost & Sullivan estimates are 20–25 percentage points above implementation across segments. This gap suggests that deployment could accelerate in the near term.

Smaller IAM distributors, retailers, and workshops face funding constraints, skills shortages, and lower organizational maturity. These challenges widen the distance between them and more organized players, creating an opportunity for suppliers that offer affordable tools requiring little IT integration. Over the next three to five years, IAM may experience the fastest relative growth in AI adoption as third-party providers introduce solutions designed for smaller operators.

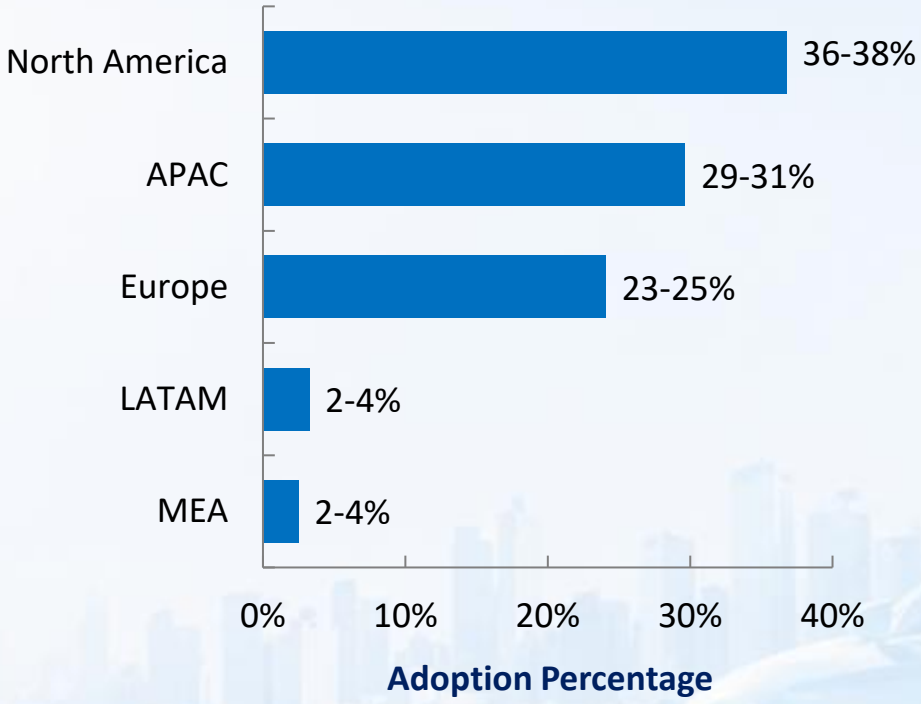
Near-term priorities differ by business type. For instance, authorized dealers are focusing on remote diagnostics, orchestration, and on-bay test equipment.

IAM distributors and retailers are looking at AI-supported inventory planning, forecasting, catalog and fitment management. IAM workshops are likely to prioritize workshop management and customer relationship management (CRM) systems.

2.2. Regional Priorities Reflect Different Market Needs

Regional maturity varies. North America has relatively advanced operational deployment, with an emphasis on optimizing efficiency and margins through AI-driven diagnostics, parts intelligence, and procurement. Asia-Pacific, led by China, Japan, South Korea, and India, is accelerating through platform and ecosystem expansion. The focus here is on leveraging AI for inventory planning and forecasting, and claims automation. Europe follows a more structured path to AI deployment, anchored in compliance and advanced driver assistance systems (ADAS) requirements. Accordingly, priorities in the European automotive aftermarket include claims automation, computer vision, diagnostics, parts intelligence, and procurement.

AI Adoption in the Automotive Aftermarket: Regional Perspective, 2025



Source: Frost & Sullivan

Note: The graph represents the percentage of indicative overall AI adoption in the regional aftermarket. The values are based on a weighted constraints model anchored on regional automobile AI adoption trends. The constraints considered are digital infrastructure, investment intensity, scalability and data availability, and required professional skills.

AI adoption in the automotive aftermarkets of Latin America and the Middle East and Africa (MEA) remains at a nascent stage. In these regions, workshop management, CRM, and catalog and fitment systems offer opportunities to build a stronger digital foundation.

Hence, solutions and partnerships will need to adapt to varying levels of regional readiness and business capabilities, while addressing different regulations.

2.3. Investment Favors High-Impact Use Cases

Investment favors technically demanding applications with measurable returns. Diagnostic AI is undergoing a lengthy transformation and is currently in a scaling phase. Complex data, integration needs, and operational change can extend implementation timelines. Claims and returns automation offers a more immediate business case. It can reduce manual assessment, warranty leakage, fraud, and processing delays while delivering near-term financial benefits and improving visibility across the value chain.

Frost & Sullivan estimates that inventory and supply chain optimization account for only about 15% of AI investment and use cases, despite expanding stock-keeping unit (SKU) ranges, working-capital pressure, and volatile demand. Continued reliance on legacy enterprise resource planning (ERP) systems and inconsistent data standards may constrain progress. At the same time, investments in parts intelligence and catalog management remain strategic in a fragmented market. Workshop management and CRM are mature categories that attract less new investment, but they are increasingly becoming baseline capabilities.

3. Competitive Landscape

As competition intensifies, data and integration capabilities are increasingly defining advantage.

3.1. AI Supplier Activity Across the Ecosystem

As AI applications become more widespread in the aftermarket, suppliers with broad data access, embedded workflows, and sustained AI investment are positioned to build lasting competitive advantages. Ecosystem platform leaders include Bosch, Solera through Audatex and Identifix, Mitchell (Enlyte), and CCC Intelligent Solutions. Diagnostics and remote intelligence providers include Repairify, Snap-on, and Hella Gutmann. RELEX Solutions and Blue Yonder focus on inventory and supply chain optimization, while Tractable and Claim Genius apply AI to claims and computer vision. TecAlliance/TecDoc, OEConnection (OEC), and PartsTech provide catalog, data, and fitment intelligence.

These groups serve different aftermarket needs, but their boundaries may blur as platforms expand. Diagnostics providers may add remote support, while claims companies could connect assessment tools with repair and parts workflows. The competitive test will lie in whether specialized capabilities can be integrated into broader operating systems.

3.2. Three Possible Market Scenarios, 2025–2030

In the first scenario, platform consolidation and ecosystem orchestration could bring diagnostics, claims, inventory, and CRM into integrated environments. A small number of global and regional platforms could then serve multiple aftermarket functions, supported by subscription revenue and high switching costs. Providers like CCC and Solera, along with enterprise software companies that have deep industry knowledge, could benefit.

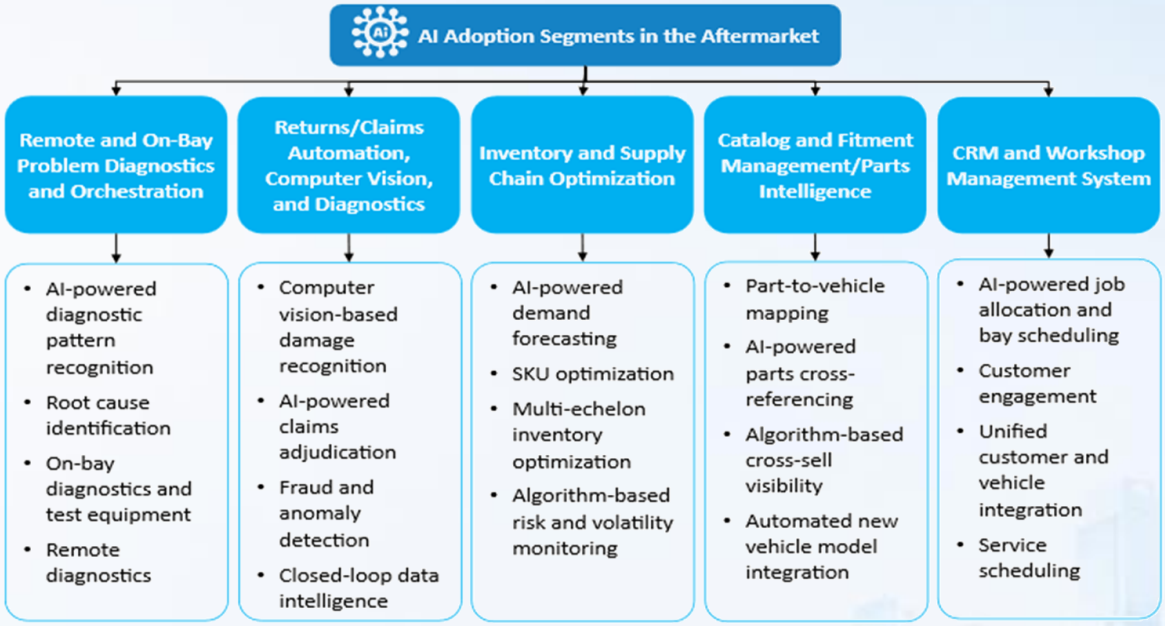
In a second scenario, OEMs could tighten their control over vehicle data, secure gateways, and remote diagnostics. This could reinforce dealer-centered AI deployment and favor OEM-approved vendors. OEM-aligned diagnostic suppliers, such as Bosch and Aumovio, could gain from these relationships, as could dealer management platforms.

A third scenario could involve the development of a modular, API-driven ecosystem. Interoperable application programming interfaces could allow businesses to combine specialist tools for diagnostics, claims, inventory, and

CRM. Standardized data could accelerate innovation and reduce vendor lock-in, although competition would intensify. Segment-focused AI providers could benefit, while companies like TecAlliance and ALLDATA could serve as data backbones.

Across all three scenarios, advantage will hinge on data access, integration, and the ability to embed AI in daily workflows. Platform consolidation or tighter OEM control could reduce the autonomy of independent workshops and distributors if critical data becomes harder to access. These businesses can respond by building data and integration capabilities through partnerships, adopting modular tools, and joining data-sharing ecosystems or buying groups. They can further bolster their competitive position by focusing on differentiated services such as inventory intelligence and predictive insights, while maintaining access to OEM and vehicle data.

4. AI Across the Aftermarket Value Chain



Source: Frost & Sullivan

4.1. Remote and On-Bay Diagnostics

AI-enabled diagnostic tools analyze live vehicle data, prioritize likely root causes, and support remote troubleshooting. They can accelerate fault identification and improve first-time fix rates, while reducing dependence on individual technician experience. Bosch and Aumovio remain important hardware-integrated suppliers, while other platforms add remote assistance and orchestration. Here, the value of AI lies in helping technicians act on a diagnosis, not simply identify a fault.

4.2. Claims Automation and Computer Vision

Claims automation aims to reduce the time and costs associated with manual assessment, warranty leakage, and fraud. Computer vision can verify damage and part condition, while automated validation shortens adjudication. As a result, claims handling can shift from reactive cost control to data-led margin protection. Insurers and repair networks can reduce repetitive reviews, improve consistency, and gain clearer visibility across the value chain. Similar tools can support returns that require condition checks and evidence-based decisions.

4.3. Inventory and Supply Chain Optimization

AI can improve demand forecasting, SKU rationalization, and stock optimization across distribution tiers. Models can combine sales history, seasonality, vehicle parc changes, the shift from internal combustion engines to electric vehicles, and regional demand to reduce the risk of overstocking and obsolescence. Enterprise planning platforms can also improve supply chain visibility across distributors and retailers, although adoption depends on reliable data and integration with existing systems. Better forecasting can ease working-capital pressures while maintaining availability where demand is strongest.

4.4. Catalog, Fitment, and Parts Intelligence

AI-enabled parts intelligence can improve cross-referencing, application mapping, and fitment accuracy as the number of vehicle variants increases. VIN-based validation and reliable catalog data help technicians and customers identify the right component, reducing incorrect orders and returns. Accurate parts information supports e-commerce, marketplace integration, and omnichannel sales by building customer confidence. Linking catalog

intelligence with workshop and distribution systems turns data quality into both a service advantage and a source of revenue assurance.

4.5. CRM and Workshop Management

AI-enabled workshop systems optimize job allocation, bay scheduling, workloads, and repair-cycle times. Matching repair complexity to technician skills and capacity can improve throughput and asset utilization, especially amid labor shortages and rising costs. CRM systems can use service histories and vehicle information to improve customer communication and predictive service recommendations. Although these categories are established, AI-based workflow optimization is likely to become a key differentiator.

4.6. The Shift to Connected Value

AI creates opportunities in diagnostics, claims, predictive maintenance, and digital service platforms, while helping aftermarket companies move beyond transactional repairs and parts sales. Claims automation, diagnostic intelligence, and inventory optimization are underinvested but growing, with CRM and workshop management becoming essential operating capabilities.

Over the next five to seven years, adoption is expected to progress from isolated efficiency tools toward integrated platforms that link diagnostics, supply chains, claims, and workshop operations.

Value creation will depend on connecting fragmented data. Shared information will support tailored services, deeper performance analysis, and new commercial opportunities. The caveat here will be that data will need to be reliable and solutions must work for small operators as well as large organizations.

5. Priorities for Successful Adoption

5.1. Treat AI as a Productivity Capability

AI-led decision support can accelerate diagnosis, improve job prioritization, and help workshops allocate labor and bays more effectively. The direct operational benefits include shorter repair times and higher technician productivity.

5.2. Build on Standardized, Shareable Data

Common data sharing protocols can improve access to OEM, vehicle, and repair information. Interoperability among manufacturers, distributors, workshops, and platforms will be essential. Clear governance covering data ownership, permitted use, privacy, accountability, and liability will help build trust and enable wider deployment.

5.3. Prioritize Use Cases with Clear Value

Use cases that deliver high value should be prioritized. Claims management, ADAS calibration, remote diagnostics, and rectification are gaining traction because they address identifiable needs. AI in CRM, workflow management, cataloging, and fitment is also becoming a baseline requirement for companies seeking to remain competitive.

5.4. Make IAM Digitization Accessible

The fragmented independent aftermarket remains a significant opportunity. Training can help technicians use AI tools effectively, while affordable, customizable products can lower barriers for small and mid-sized workshops. Tiered pricing and modular functionality will also be important for workshops that often struggle with limited capital and IT resources.

6. The Next Phase

6.1. Products Tailored for IAM Will Lower the Entry Barrier

Suppliers will develop AI tools targeting independent workshops and distributors. These tools will support diagnostics, parts matching, and workshop operations and will require minimal technical know-how. Cloud- and mobile-based plug-and-play platforms will simplify deployment and reduce the need for extensive IT integration. Cost-effective, scalable products tailored to small and mid-sized workshops will encourage adoption.

6.2. Common Data Rules Will Gain Importance

Standardized data sharing frameworks will facilitate fair access to OEM vehicle and diagnostic information. Clear rules on AI accountability, privacy, and liability will reduce regulatory uncertainty. Deeper collaboration among OEMs, regulators, and IAM participants will lay the groundwork for interoperable, compliant AI ecosystems.

6.3. Owners Will Use AI for Basic Diagnostics and Repairs

AI-powered mobile apps will give car and fleet owners access to self-diagnostics, maintenance alerts, and repair guidance. Connected vehicle data will provide real-time insights into service needs, while expanded AI support for do-it-yourself (DIY) and light repair will also lower reliance on workshops for basic services.

7. Emerging Growth Opportunities

7.1. Vehicle-Aging Simulation and Digital Memory

AI-powered digital twins can create a digital record for each vehicle by combining its repair history, diagnostics, ownership patterns, telematics, accident records, and parts replacements. Paired with vehicle-aging simulations, these models could estimate how components degrade under different external conditions, driving styles, and maintenance practices. This could improve predictive maintenance and provide a clearer view of replacement demand at the vehicle level.

Companies with strong diagnostic and workshop management capabilities could develop digital twin platforms for critical components. Others could aggregate millions of vehicle records from authorized dealers and independent service networks to build lifecycle intelligence. These platforms could forecast component replacement demand, track failure rates, monitor driving behavior, and identify regional variations. The resulting analytics suite could be commercialized for manufacturers, wholesale distributors, and large aftermarket retailers.

7.2. Connected Data Ecosystems

AI-powered infrastructure could unite repair histories, usage patterns, warranty claims, vehicles in operation (VIO) data, and component failure rates across OE and IAM channels. This could support usage-based replacement forecasts, dynamic pricing, and predictive maintenance. Businesses could pool dispersed data and offer subscription analytics to distributors, workshops, fleets, and suppliers drawing on aggregated repair, telematics, and parts consumption data. Partnerships will be essential because no single participant has a complete view of vehicle use, repair, and component performance.

7.3. Counterfeit Detection, Traceability, and Circular Parts Flows

Counterfeit and low-quality parts cause financial losses to the automotive aftermarket and undermine customer confidence. AI-based validation and digital traceability can help authenticate components throughout the supply chain. QR codes, RFID tags, serialized tracking, and blockchain can give each part a verifiable digital identity from manufacturing to installation.

These tools can also support the shift from a linear make-sell-dispose model to one centered on reuse, remanufacturing, and recycling. AI-enabled routing could direct valuable used components, including electric vehicle batteries and

motors, toward suitable next uses. A digital network connecting OEMs, independent dismantlers, and recyclers could improve reverse logistics and increase material recovery from end-of-life vehicles.

8. Conclusion

As AI gathers momentum in the automotive aftermarket, integration will define the winners. AI's larger contribution will be to connect data, decisions, and workflows that are fragmented across workshops, distributors, retailers, insurers, and manufacturers. In the near term, diagnostics, claims automation, inventory planning, and parts intelligence will offer growth opportunities, even as CRM and workshop management become entrenched as core capabilities.

Wider adoption will require interoperable data and practical IAM products, supported by workforce training and clear rules on access and accountability. Digital twins, connected data services, and traceable circular parts networks could open new revenue streams. Aftermarket participants that combine useful AI with trusted data and integrate it into everyday operations will gain a competitive edge.

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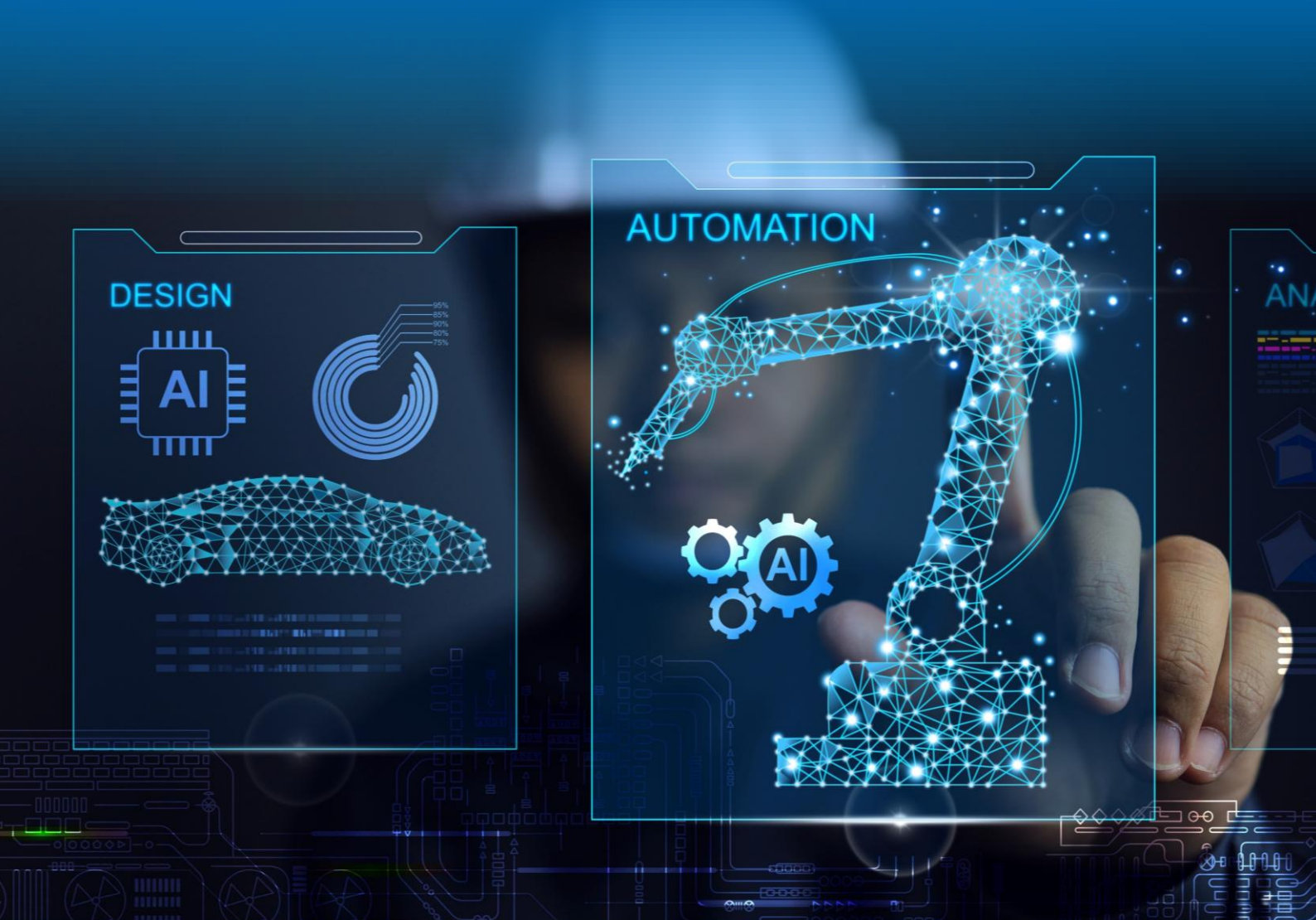

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