

Cartech Annual Report

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Strategic Overview and Year in Review

Cartech advanced a focused strategy. The portfolio was actively streamlined. Premium segments received greater emphasis. Leverage reduction remained a priority. Execution discipline guided major actions.

Revenue mix improved through tiers. Pricing discipline offset volatility. Cost programs delivered baseline savings. Working capital cycles improved materially. Cash conversion strengthened versus prior year.

Macro conditions remained uneven. Replacement demand stayed subdued. Original equipment volumes recovered gradually. Freight costs softened late year. Energy costs remained elevated regionally.

Supply chain resilience improved steadily. Dual sourcing expanded for inputs. Safety stock policies were recalibrated. Plant maintenance windows were optimized. Supplier performance scores improved.

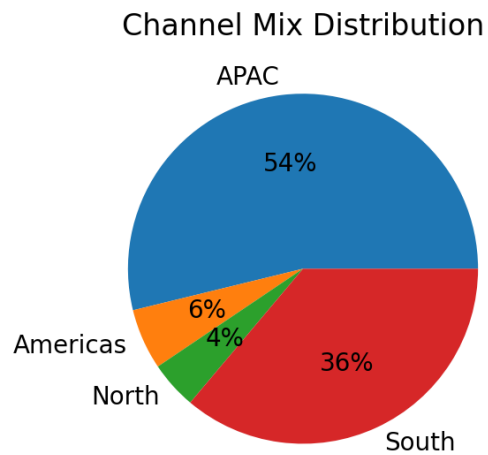
Leadership refreshed governance cadence. Operating reviews became more frequent. Scenario planning deepened for risks. Regional accountability sharpened materially. Transparency increased with stakeholders.

Innovation programs stayed on track. Electric mobility tires progressed well. Connected product pilots expanded globally. Materials science milestones were achieved. Digital analytics matured in factories.

Capital allocation favored productivity. Capacity shifted to premium lines. Non-core assets entered review. Sale processes advanced thoughtfully. Balance sheet flexibility increased.

ESG commitments guided operations. Emissions plans remained on target. Safety performance improved across sites. Inclusion programs maintained strong participation. Community engagement delivered measurable impact.

Channel Mix Distribution



Portfolio Optimization Program

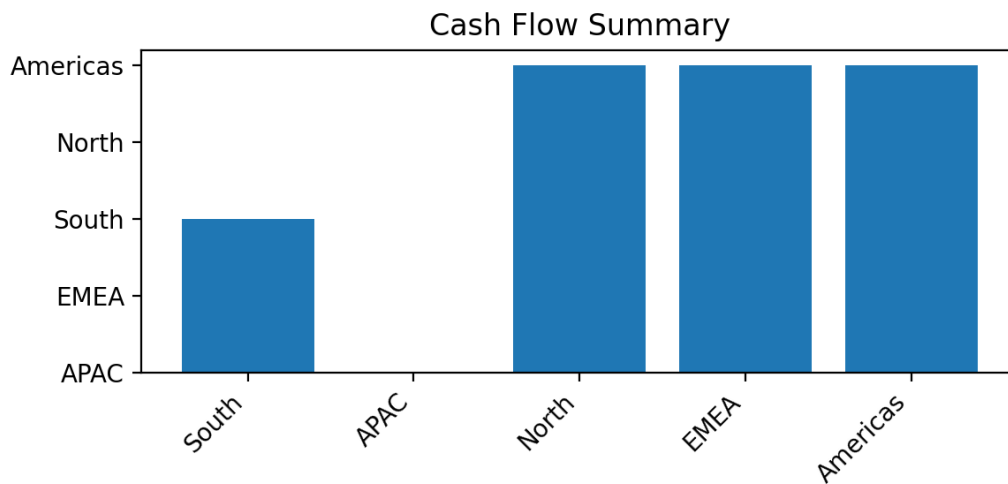
The program targeted non-core activities. Asset reviews followed strict criteria. Market interest remained constructive. Data rooms were actively utilized. Timelines balanced value and certainty.

Valuation frameworks were standardized. Scenario ranges were stress-tested. Tax structuring was optimized early. Transitional services were pre-scoped proactively. Stakeholder communications were sequenced carefully.

Net proceeds supported deleveraging plans. Rollover mechanisms were evaluated prudently. Covenants were assessed for flexibility. Regulatory filings proceeded as planned. Employee impacts were mitigated responsibly.

Governance oversaw decision checkpoints. Independent advisors validated assumptions. Board committees reviewed milestones. Ethics protocols guided information barriers. Documentation discipline reduced execution risk.

Cash Flow Summary



Margin Expansion Roadmap

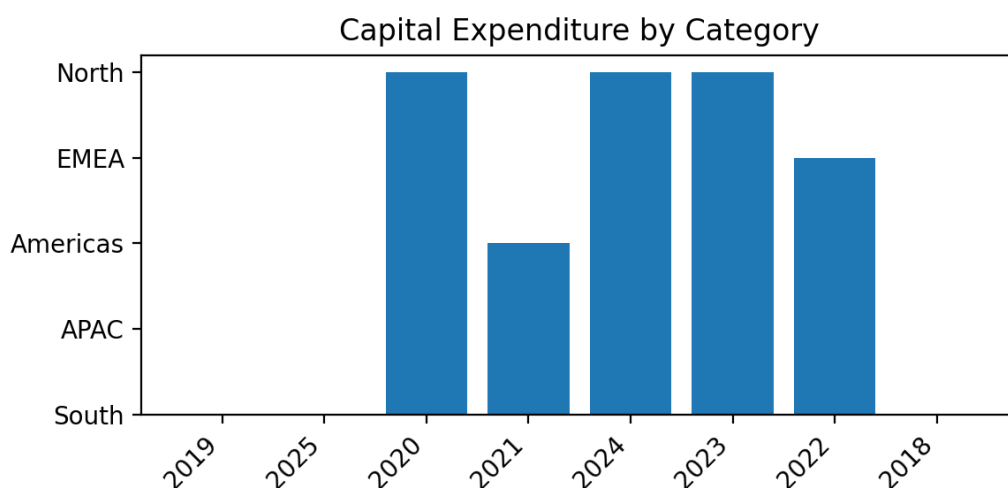
Programs targeted structural cost. Logistics routes were consolidated. Plant staffing models were refined. Procurement categories were rebid. Automation investments were prioritized.

SKU complexity was reduced. Low-velocity sizes were rationalized. Platform commonality increased significantly. Scrap and rework decreased meaningfully. Changeover times improved steadily.

Commercial levers supported margin. Price realization tracked contracts. Mix skewed to larger rims. Fleet solutions expanded attachments. Digital channels improved conversion.

Run-rate targets were staged. Benefits phased by quarter. Governance tracked signoffs rigorously. Savings validation used audits. Reporting cadence ensured accountability.

Capital Expenditure by Category



Company Profile and Business Model

Cartech designs, manufactures, and services tires. Operations span the Americas, EMEA, and Asia Pacific. Products serve passenger, commercial, and specialty segments. Services include retreading and fleet solutions. Digital platforms support omnichannel sales.

The model balances OE and replacement. Replacement drives recurring volume stability. OE drives technology credentials globally. Aftermarket services support lifetime value. Partnerships enhance distribution reach.

Scale advantages underpin procurement. Standardized compounds improve throughput. Shared platforms reduce complexity. Flexible lines handle mixed demand. Predictive maintenance protects uptime.

Capital intensity is actively managed. Growth capex targets premium capacity. Sustaining capex protects reliability. Returns are evaluated rigorously. Hurdle rates reflect risk profiles.

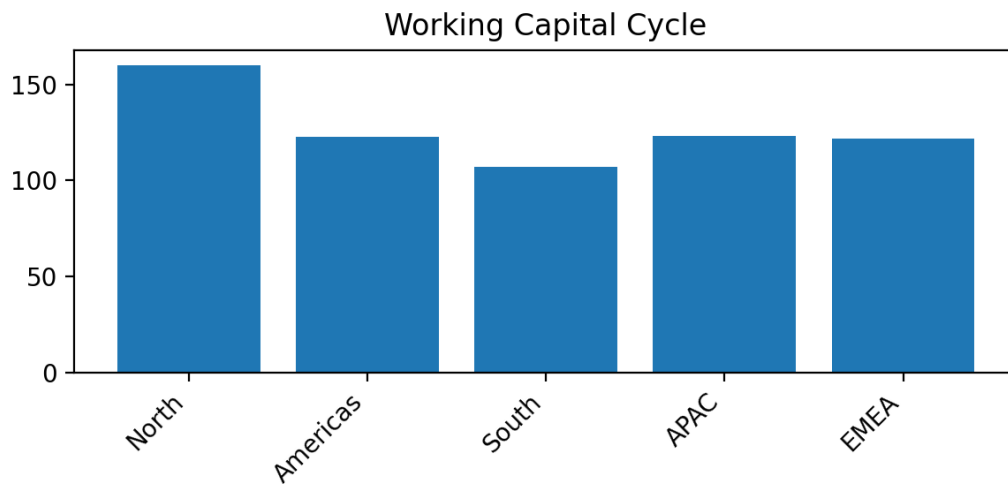
Innovation anchors differentiation. Tread architectures optimize grip. Lightweight casings reduce rolling resistance. Smart sensors enable condition monitoring. Sustainable materials rise each year.

Customer proximity shapes strategy. Regional assortments reflect climates. Fleet offerings address uptime. Retail formats emphasize convenience. OEM programs signal capability.

Risk management is embedded. Commodity exposure is hedged selectively. Currency risk is diversified geographically. Counterparty exposures are monitored centrally. Business continuity is regularly tested.

Governance ensures oversight. Committees review critical matters. Policies guide ethical conduct. Internal controls are regularly evaluated. Culture supports long-term resilience.

Working Capital Cycle



Revenue Streams and Customer Segments

Revenue is multi-channel and diversified. Replacement retail drives consumer visibility. Wholesale supports multi-brand dealers. Fleet contracts provide recurring services. OE anchors technology credibility.

Consumer tiers balance affordability. Premium lines target safety needs. Mid tiers emphasize value positioning. Entry tiers remain disciplined. Seasonal lines support regional demand.

Commercial segments prioritize uptime. Retreading reduces lifecycle costs. Telematics enable predictive scheduling. Service networks ensure coverage. Financing options support adoption.

Specialty niches add resilience. Aviation programs follow strict standards. Off-road products serve rugged use. Agricultural lines balance soil impact. Industrial tires support heavy cycles.

Cybersecurity Key Metrics

month	patch_sla_percent	phish_fail_percent	mttr_hours
South	0.37	0.51	87.69
North	0.01	0.54	115.98
Americas	0.61	0.75	108.63
Americas	0.41	0.61	155.34
Americas	0.37	0.69	124.04
North	0.54	0.78	82.67
Americas	0.52	0.78	95.29
EMEA	0.78	0.32	85.8
EMEA	0.46	0.93	133.23
North	0.41	0.19	95.35
South	0.44	0.12	72.72

EMEA	0.74	0.73	132.66
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Operating Model and Value Chain

The value chain is integrated. Sourcing covers synthetic and natural rubber. Compounding plants feed tire factories. Regional distribution serves local markets. Retail and partners handle last mile.

Planning uses demand signals. Forecasts integrate macro indicators. Inventory targets are risk-based. Production schedules remain dynamic. Service levels track strict thresholds.

Quality systems enforce standards. Process controls reduce variability. Labs certify compound performance. Traceability systems ensure compliance. Audits verify supplier practices.

KPIs govern execution. OTIF improved against plan. Scrap rates trended downward. Yield variance narrowed meaningfully. Labor productivity advanced year-on-year.

Quality Metrics

platform	first_pass_yield_percent	warranty_rate_percent	audit_score
South	0.87	0.22	94.3
Americas	0.12	0.56	69.44
EMEA	0.24	0.9	99.43
EMEA	0.87	0.53	108.54
North	0.15	0.49	84.91
Americas	0.04	0.53	115.04
EMEA	0.92	0.75	126.5
South	0.82	0.14	87.55
EMEA	0.47	0.97	129.09
EMEA	0.23	0.19	97.67
Americas	0.89	0.42	94.28
APAC	0.78	0.72	68.17
North	0.26	0.52	95.53
North	0.77	0.15	136.8
EMEA	0.03	0.9	92.75

Market Landscape and Competitive Positioning

The market remains highly competitive. Global peers invest aggressively. Regional entrants challenge price points. Customer expectations continue rising. Regulatory standards tighten persistently.

Demand reflects mobility transitions. Electrification alters torque profiles. Heavier EVs shift wear patterns. Connected fleets seek analytics. Sustainability influences purchasing criteria.

Cartech positions for premium segments. Safety and durability lead messaging. EV-optimized lines expand rapidly. All-weather offerings gain relevance. Services complement product value.

Brand equity remains strong. Surveys show high recognition. Warranty terms reinforce trust. Partnerships broaden reach. Marketing spends optimize efficiency.

Price discipline is maintained. Contract mechanisms share costs. Indexation aligns raw materials. Promotions remain targeted narrowly. Channel incentives reward mix.

Capacity footprints affect delivered cost. Proximity reduces logistics emissions. Network optimization reduces lead times. Dual sourcing provides resilience. Regional hubs enhance responsiveness.

Innovation differentiates features. Noise reduction matters for EVs. Low rolling resistance saves energy. Smart sensors enable alerts. Compounds balance grip and longevity.

Benchmarking informs gaps. Time-to-market improved significantly. Digital shelf execution advanced. On-road testing expanded globally. Post-sale service metrics improved.

Tire Units by Segment

year	segment	units_m
2021	South	94.89
2020	North	68.76
2021	APAC	138.8
2023	Americas	63.43
2025	EMEA	71.21
2018	EMEA	117.15
2023	South	93.86
2025	Americas	81.99
2022	Americas	108.51
2019	South	70.5
2018	APAC	106.55
2024	APAC	103.15
2025	South	106.94

2018	Americas	115.62
2022	EMEA	92.4

Competitive Set and Share Dynamics

Global competitors remain formidable. Terraline Mobility Group leads segments. Velocis Rubber Holdings follows closely. NordAxis Tyre Corporation invests heavily. QuantaGrip Industries expands regionally.

Share trends vary by region. Premium share gained in urban hubs. Mid-tier softened in price wars. Commercial share held resiliently. Specialty remained stable overall.

Price gaps narrowed materially. Mix adjustments aided margins. Trade flows influenced availability. Local currencies affected parity. Logistics costs impacted shelves.

Response plans were executed. Product refreshes accelerated timelines. Channel programs tightened targeting. Training improved sell-through rates. Digital content enhanced education.

Cybersecurity Key Metrics

month	patch_sla_percent	phish_fail_percent	mttr_hours
APAC	0.57	0.91	81.71
EMEA	0.22	0.75	84.13
Americas	0.22	0.54	118.44
APAC	0.56	0.23	147.5
APAC	0.26	0.57	80.89
EMEA	0.24	0.89	107.82
South	0.66	0.76	89.68
South	0.09	0.59	103.39
South	0.59	0.78	99.1
South	0.41	0.01	62.33
Americas	0.94	0.2	81.69
Americas	0.83	0.19	72.7

Demand Drivers and Macro Assumptions

Mileage trends remained supportive. Commute patterns stabilized gradually. E-commerce miles stayed elevated. Fleet renewal cycles resumed. Urban driving intensified slowly.

Interest rates moderated late year. Consumer confidence improved unevenly. Freight indices trended sideways. OEM builds normalized sequentially. Utility costs weighed in EMEA.

Policy signals affected planning. Emissions rules tightened further. Labeling regimes expanded coverage. Data privacy standards evolved. Trade rules remained fluid.

Baseline scenarios guided outlook. Upside cases assumed faster normalization. Downside cases stressed input volatility. Currency paths were range-bound. Execution levers remained controllable.

Tire Units by Segment

year	segment	units_m
2019	APAC	72.15
2025	EMEA	88.43
2022	EMEA	103.46
2024	South	117.55
2018	North	88.54
2018	APAC	131.51
2020	North	113.78
2025	EMEA	135.14
2024	South	96.26
2021	South	102.66
2018	APAC	87.64
2023	APAC	114.34
2021	Americas	81.22
2022	North	51.96
2020	APAC	68.66

Regional Operations: Americas

Americas remained the largest region. Consumer replacement softened modestly. OE showed selective recovery. Commercial demand mixed by subsegment. Specialty lines held steady.

Network optimization progressed steadily. Warehouses consolidated in phases. Delivery windows tightened meaningfully. Inventory health improved significantly. Service metrics trended upward.

Manufacturing cadence was adjusted. Premium capacity expanded incrementally. Maintenance turnarounds were executed. Overtime usage declined materially. Quality yields improved steadily.

Commercial services scaled regionally. Retread penetration increased further. Roadside assistance coverage expanded. Telematics adoption rose among fleets. Uptime guarantees gained traction.

Product launches met milestones. TraverseGrip AT refreshed positioning. CityQuiet EV gained placements. Tempest Sport UHP broadened sizes. WinterSure Ice exceeded expectations.

Retail formats were refined. Appointment systems improved utilization. Mobile service pilots expanded. Loyalty programs drove retention. NPS improved across markets.

Procurement delivered key wins. Carbon black contracts were restructured. Steel cord suppliers diversified prudently. Energy hedges reduced volatility. Inbound logistics rates improved.

Talent initiatives advanced. Skilled roles were prioritized. Training modules were modernized. Safety programs delivered results. Engagement scores rose meaningfully.

Human Capital Metrics

region	trir	engagement_percent	annual_turnover_percent	training_hours_per_capita
Americas	105.14	0.2	0.56	48.75
North	57.34	0.74	0.72	115.57
EMEA	79.05	0.7	0.83	68.26
South	108.2	0.16	0.73	147.83
South	71.87	0.75	0.59	125.72
APAC	85.5	0.98	0.35	108.67
South	105.74	0.47	0.55	59.83
EMEA	86.25	0.56	0.22	90.39
North	104.26	0.5	0.46	95.03
North	85.41	0.63	0.0	116.42
EMEA	131.99	0.68	0.89	139.09
Americas	119.14	0.59	0.73	109.88
EMEA	128.81	0.36	0.16	103.61
South	91.04	0.14	0.71	92.29
South	99.33	0.24	0.76	70.82

Americas Product and Channel Highlights

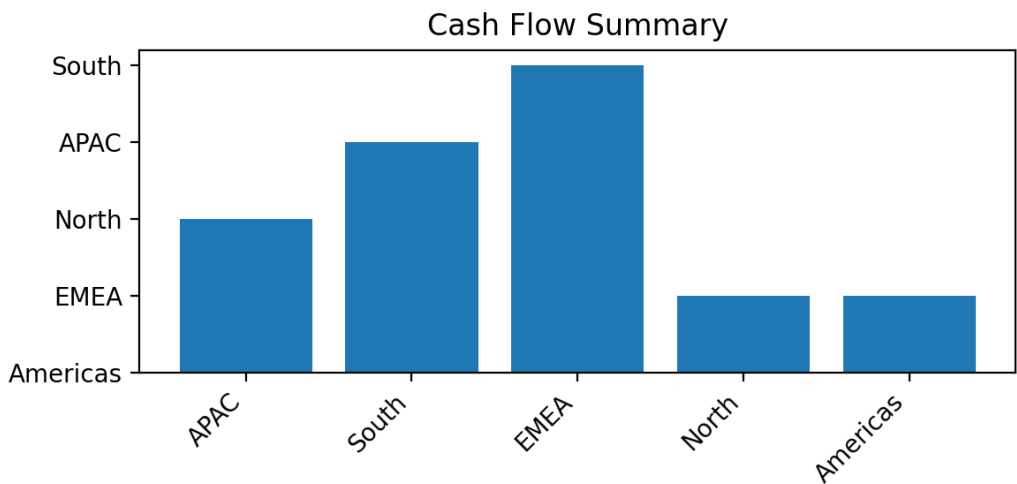
Premium EV lines expanded rapidly. Fitments landed with leading OEMs. Retailers highlighted EV credentials. Warranty packages reinforced confidence. Influencer content amplified reach.

Independent dealers remained crucial. Co-op programs rewarded mix. Digital leads converted efficiently. Wholesale fill rates improved gradually. Training improved category knowledge.

Fleet solutions deepened relationships. Predictive analytics reduced downtime. Retread quality perception improved. Service SLAs met commitments. Cross-selling increased attachment rates.

E-commerce enhanced convenience. Checkout flows reduced friction. Appointment integration improved reliability. Pricing transparency built trust. Returns experience improved materially.

Cash Flow Summary



Americas Operational Excellence

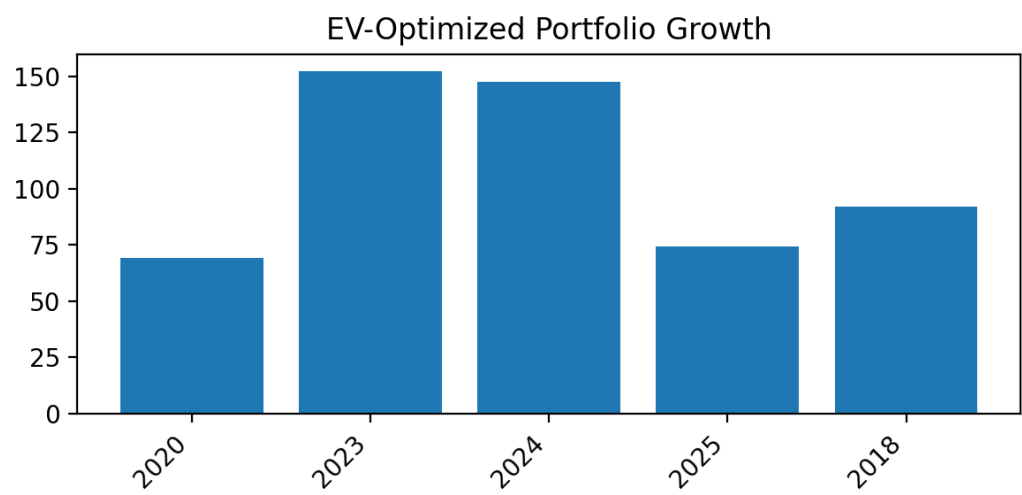
Lean programs sustained momentum. Kaizen events targeted bottlenecks. SMED reduced changeover minutes. Autonomous maintenance scaled further. Visual management improved alignment.

OEE improved across lines. Downtime causes were prioritized. Spare strategies reduced delays. Asset health dashboards rolled out. Reliability metrics improved steadily.

Safety remained foundational. TRIR trended downward again. Ergonomic aids were deployed. Heat stress plans were refined. Leadership gembas reinforced behaviors.

Sustainability advanced sitewide. Renewable electricity sourcing increased. Scrap recycling yields improved. VOC controls were upgraded. Water stewardship projects expanded.

EV-Optimized Portfolio Growth



Regional Operations: EMEA

EMEA navigated complex conditions. Replacement demand contracted meaningfully. OE stabilized versus prior year. Energy costs pressured margins. Logistics normalized progressively.

Portfolio actions advanced deliberately. Sites rebalanced product mix. Certain footprints entered consultation. Transition services were preplanned. Customer continuity was prioritized.

Pricing held despite headwinds. Promotions remained selective regionwide. Indexation clauses supported stability. Mix strategy favored larger rims. Private label exposure declined.

Fleet solutions gained traction. Urban bus programs expanded. Long-haul services broadened. Telematics pilots scaled carefully. Retread network integration progressed.

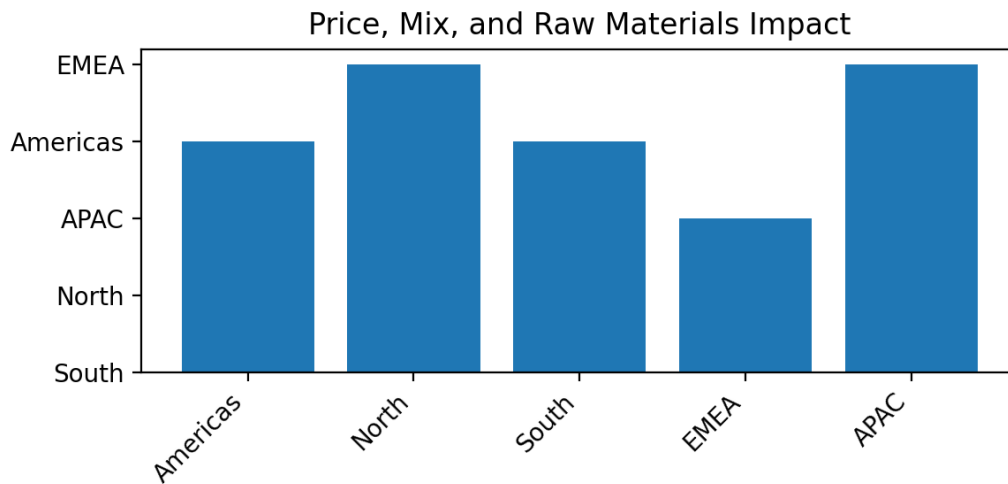
Quality and safety improved. Process audits intensified cadence. Employee training hours increased. Digital work instructions expanded. First-pass yield rose measurably.

Innovation tailored to climates. Alpine compounds saw upgrades. RainGrip treads improved drainage. UrbanStop patterns reduced noise. EV-focused casings reduced heat.

Supply chain remained flexible. Dual suppliers were approved. Regional buffers were recalibrated. Port alternatives were validated. Rail usage rose selectively.

Engagement with stakeholders continued. Authorities were briefed regularly. Labor partners consulted collaboratively. Communities received transparent updates. Customers were supported closely.

Price, Mix, and Raw Materials Impact



EMEA Customer and Market Actions

Dealer networks remained essential. Joint planning improved allocations. Assortments reflected local needs. Winter readiness programs expanded. Training improved simulation usage.

OEM programs progressed steadily. Fitments secured on new platforms. Homologation testing met schedules. Technical support teams strengthened. Launch readiness checklists tightened.

Government tenders advanced. Public fleets prioritized safety. Lifecycle cost cases resonated. Service reliability mattered greatly. Emissions targets influenced awards.

Digital marketing localized content. Language variants improved engagement. Product finders simplified choices. Ratings were monitored closely. SEO investments improved traffic.

Operational KPIs by Plant

plant	oee_percent	scrap_percent	changeover_min	trir
South	0.24	0.55	63.96	131.3
APAC	0.8	0.51	138.21	165.21
EMEA	0.86	0.47	108.52	82.04
Americas	0.59	0.15	102.18	98.19
EMEA	0.56	0.88	90.77	91.17
Americas	0.63	0.32	99.89	70.68
Americas	0.13	0.34	65.73	104.9
Americas	0.79	0.76	115.22	73.34
North	0.72	0.31	85.54	97.51

Americas	0.96	0.24	94.01	58.86
EMEA	0.62	0.2	105.01	129.3
APAC	0.63	0.58	118.83	73.95
North	0.03	0.33	149.97	119.53
North	0.08	0.18	76.9	83.23
South	0.02	0.24	102.18	80.39
APAC	0.76	0.92	69.49	79.78
EMEA	0.9	0.96	123.76	112.5
South	0.73	0.39	81.37	139.69
EMEA	0.89	0.36	92.32	98.81
APAC	0.76	0.14	94.25	117.01

EMEA Footprint and Productivity

Footprint actions reduced complexity. Lines consolidated around platforms. Tooling sets were standardized. Warehouse footprints were rationalized. Fixed costs trended downward.

Energy initiatives mitigated costs. PPAs expanded renewables share. Heat recovery projects commissioned. Compressed air leaks reduced. Lighting retrofits completed broadly.

Logistics lanes were optimized. Intermodal options expanded networks. Load factors improved steadily. Damage incidents decreased materially. Dock scheduling reduced congestion.

Quality labs were upgraded. Ice, wet, and noise tests expanded. Labeling performance improved steadily. Field feedback closed loops quickly. Warranty claims trended lower.

Human Capital Metrics

region	trir	engagement_percent	annual_turnover_percent	training_hours_per_capita
APAC	79.34	0.96	0.18	52.17
Americas	121.09	0.53	0.23	72.16
North	80.47	0.44	0.74	107.05
South	85.08	0.56	0.04	96.19
Americas	105.86	0.62	1.0	122.12
Americas	105.88	0.03	0.1	138.07
Americas	82.3	0.04	0.67	67.82
North	104.54	0.13	0.52	111.2
Americas	84.57	0.61	0.88	125.82
APAC	94.74	0.6	0.08	91.49
Americas	98.75	0.88	0.83	86.27

Americas	127.04	0.13	0.07	123.07
Americas	114.37	0.68	0.14	123.32
EMEA	82.29	0.33	0.28	103.77
APAC	120.23	0.11	0.13	111.77

Regional Operations: Asia Pacific

Asia Pacific delivered growth. OE volumes rose strongly. Replacement trends varied by market. Premium adoption grew in cities. Channel digitalization advanced rapidly.

China led EV fitments. India expanded premium offerings. ASEAN markets recovered gradually. Australia streamlined retail formats. New Zealand optimized fleet services.

Manufacturing executed well. Flexible lines handled mixes. Yield metrics improved consistently. Local sourcing increased content. Lead times shortened meaningfully.

Launch cadence accelerated. AeroSure EV extended sizes. TrailMaster AT refreshed performance. UrbanMax Taxi tailored durability. AquaLite Rain advanced safety.

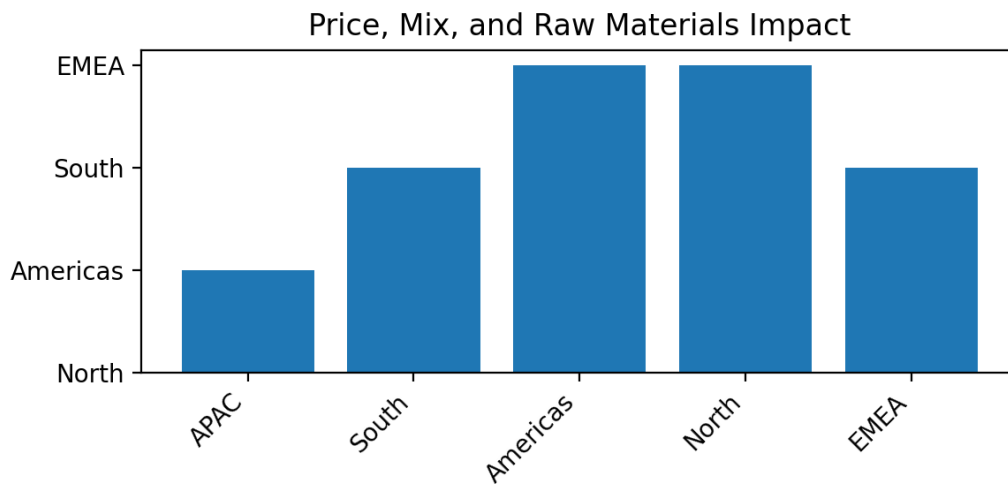
Distribution scaled efficiently. Franchise programs strengthened governance. Multi-brand retailers expanded bays. Online marketplaces improved content. Last-mile delivery pilots tested.

Supplier partnerships deepened. Natural rubber sourcing diversified. Chemical inputs secured multiyear. Tooling vendors aligned schedules. Quality audits expanded coverage.

Regulatory compliance remained strong. Labeling regimes were met. Safety standards exceeded requirements. Customs processes were digitized. Certifications were renewed timely.

Talent development progressed. Technical academies expanded cohorts. Supervisors trained on analytics. Safety culture matured clearly. Engagement remained robust regionwide.

Price, Mix, and Raw Materials Impact



Asia Pacific Commercial and Fleet

Fleet programs scaled regionally. Telematics enabled route insights. Retread hubs improved proximity. SLAs reached high compliance. Training empowered driver behaviors.

Bus fleets adopted UrbanMax. Long-haul lines improved fuel. Mixed-service tires gained traction. Mining sites expanded trials. Ports standardized on heavy-duty.

Value propositions emphasized uptime. Cost-per-kilometer messaging resonated. Predictive alerts reduced breakdowns. Mobile service improved coverage. Parts availability improved reliability.

Partnership models evolved carefully. Financing bundled services effectively. Data-sharing frameworks protected privacy. Joint KPIs aligned incentives. Renewals remained very strong.

Cybersecurity Key Metrics

month	patch_sla_percent	phish_fail_percent	mttr_hours
North	0.83	0.5	90.36
North	0.64	0.7	101.0
APAC	0.12	0.98	140.59
North	0.93	0.24	141.68
EMEA	0.74	0.92	79.13
APAC	0.72	0.81	125.58
EMEA	0.62	0.34	108.9
North	0.54	0.3	115.02
North	0.61	0.02	113.12
EMEA	0.96	0.34	66.2
South	0.16	0.3	94.91

North	0.12	0.24	91.68
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Asia Pacific Operational Resilience

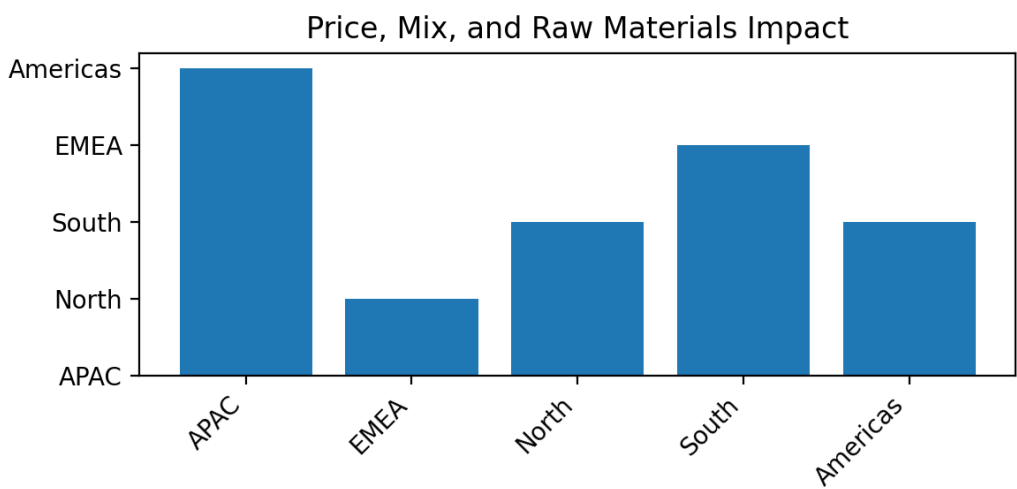
Continuity plans were updated. Alternate ports were validated. Supplier sites mapped contingencies. Seismic risks were assessed. Inventory buffers right-sized prudently.

Cyber readiness advanced programs. Network segmentation improved posture. Patch cadence tightened schedules. Vendor access was restricted. Playbooks were tested successfully.

Climate resilience progressed. Flood mitigation projects executed. Heat protocols trained supervisors. Water usage tracked rigorously. Drought risks assessed regionally.

Community ties strengthened. Safety workshops educated youth. Road awareness campaigns expanded. Local sourcing supported livelihoods. Volunteering weeks energized employees.

Price, Mix, and Raw Materials Impact



Manufacturing Footprint and Supply Chain

The footprint spans three regions. Plants specialize by platform. Flexible cells absorb variability. Maintenance excellence protects uptime. Logistics aligns with customers.

Compounding hubs drive consistency. Recipes are digitally controlled. Traceability spans batch histories. Labs verify properties rigorously. Approvals follow gated protocols.

Supplier networks are diversified. Dual and triple sources exist. Qualification criteria remain demanding. Scorecards drive improvements. Audit cadence is maintained.

Planning balances cost and service. Forecasts blend signals systematically. IBP aligns functions monthly. Scenario plans stress capacities. KPIs monitor exceptions tightly.

Automation investments continued. Robotics eased ergonomic loads. Vision systems reduced defects. AGVs improved material handling. MES integrated more stations.

Sustainability is embedded operationally. Energy metering covered lines. Demand response programs activated. Waste valorization projects matured. Packaging reuse expanded steadily.

Inventory strategies evolved. Safety stocks reflected risk. VMI expanded for inputs. Slotting improved picking efficiency. Ageing controls tightened discipline.

Transportation improved reliability. Mode shifts saved costs. Tendering delivered better rates. Visibility tools enhanced tracking. Damage rates declined markedly.

Enterprise Risk Heatmap

risk_category	likelihood	impact	owner
Americas	89.99	105.85	North
APAC	71.33	29.18	Americas
EMEA	67.25	114.34	EMEA
EMEA	116.67	102.03	APAC
South	158.48	86.79	North
South	94.58	110.87	Americas
North	81.91	103.79	South
Americas	82.52	102.06	EMEA
South	84.56	122.44	North
South	75.81	103.91	North
EMEA	129.51	78.21	Americas
North	92.81	123.31	South
APAC	85.1	84.69	North
Americas	65.35	83.34	EMEA
South	134.43	70.81	Americas
Americas	65.43	106.64	APAC
APAC	158.92	149.15	North
South	101.41	95.92	North

Procurement and Supplier Development

Category strategies were refreshed. Index-linked clauses balanced risk. Should-cost models informed bids. Collaboration improved innovation sharing. Compliance remained non-negotiable.

Supplier sustainability advanced. Traceability extended upstream tiers. Labor standards were audited. Emissions reporting was standardized. Corrective actions were tracked.

Risk sensing improved visibility. Geo events were monitored. FX exposures assessed monthly. Financial health indicators screened. Contingency plans were updated.

Joint value creation scaled. Alternate materials were piloted. Tooling lead times compressed. Co-investment supported capacity. IP protections safeguarded knowledge.

Fleet Solutions KPIs

region	uptime_percent	cpk_usd	sla_compliance_percent
APAC	0.26	108.87	0.42
APAC	0.63	113.48	0.04
Americas	0.83	133.76	0.92
North	0.82	87.81	0.04
South	0.42	86.01	0.62
Americas	0.1	88.89	0.38
APAC	1.0	91.93	0.96
EMEA	0.95	76.25	0.53
North	0.67	92.73	0.16
North	0.7	111.16	0.28
APAC	0.56	127.68	0.26
EMEA	0.94	97.33	0.22

Logistics and Inventory Excellence

Network design was optimized. Node roles were clarified. Pooling reduced variability. Slotting cut travel distances. Pick accuracy improved further.

Freight programs were strengthened. Consolidation increased utilization. Accessorials were strictly managed. Claims trended downward steadily. Carrier scorecards improved.

Inventory performance improved. Turns increased year-on-year. Obsolescence risk declined materially. Aging KPIs improved steadily. Forecast error decreased meaningfully.

Customer service metrics rose. OTIF broke records regionally. Lead times continued narrowing. EDI compliance increased adoption. Feedback loops accelerated fixes.

Fleet Solutions KPIs

region	uptime_percent	cpk_usd	sla_compliance_percent
Americas	0.02	87.2	0.14
North	0.76	122.78	0.31
EMEA	0.78	87.32	0.38
North	0.11	96.88	0.52
EMEA	0.52	108.2	0.48
North	0.95	104.21	0.91
APAC	0.44	87.31	0.33
APAC	0.99	77.18	0.5
Americas	0.47	119.27	0.73
North	0.22	85.61	0.16
South	0.59	65.14	0.73
North	0.3	78.76	0.91

Research, Technology, and Product Innovation

Innovation focused on outcomes. Safety remained the top priority. Efficiency gains reduced ownership cost. Durability extended replacement intervals. Comfort improved ride experience.

EV-optimized lines advanced. Torque-ready compounds stabilized tread. Low-noise patterns met targets. Thermal management reduced fatigue. Weight savings improved range.

Data-enabled products matured. Sensors monitored pressure continuously. Temperature readings flagged risks. Tread-depth analytics supported planning. Cloud portals centralised insights.

Materials science progressed. Bio-based oils displaced petroleum. Recycled fillers improved reinforcement. Mass-balance sourcing expanded coverage. Compounding windows widened predictability.

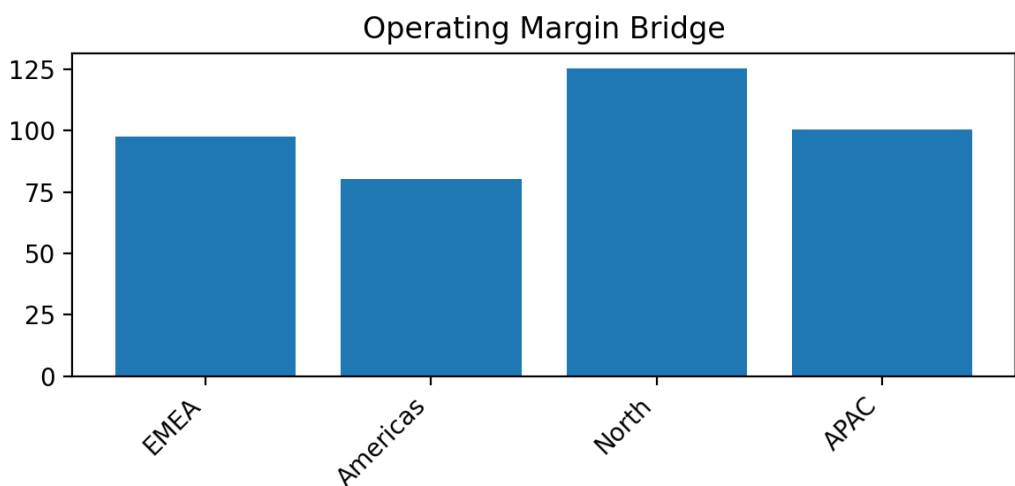
Simulation cut development cycles. Virtual tracks tested noise profiles. Rain models refined hydroplaning. Sidewall stress maps improved. Tooling designs iterated rapidly.

Testing remained rigorous. Proving grounds expanded protocols. Wet, ice, and heat labs upgraded. Endurance rigs increased throughput. Standards exceeded regulations consistently.

IP portfolio was strengthened. Filings increased in priority geographies. Trade secrets were safeguarded carefully. Defensive publications reduced risks. Licensing opportunities were assessed.

Partnerships accelerated progress. Universities explored new chemistries. Startups piloted sensor modules. Suppliers co-developed reinforcement fabrics. Fleets informed real-world needs.

Operating Margin Bridge



EV and Advanced Mobility Portfolio

AeroSure EV targeted quietness. Sidewall damping reduced noise. Rolling resistance exceeded benchmarks. Load ratings addressed vehicle mass. Warranty terms reassured customers.

CityQuiet EV served commuters. Urban braking distances improved. Wet grip scored premium ratings. Wear life met urban cycles. Labeling exceeded class thresholds.

ConnectTread modules integrated platforms. BLE beacons simplified data. APIs connected fleet systems. Dashboards visualized heat cycles. Alerts enabled proactive service.

Autonomous-ready specs were studied. Redundancy features were assessed. Thermal signals validated stability. Degradation curves were mapped. Failsafes were thoroughly reviewed.

Manufacturing Footprint Summary

site	region	annual_capacity_m_units	utilization_percent	renewable_electricity_percent
South	EMEA	105.18	0.35	0.81
South	North	91.88	0.27	0.76

South	Americas	104.91	0.83	0.44
EMEA	EMEA	108.36	0.8	0.64
South	Americas	113.56	0.43	0.32
South	EMEA	112.09	0.52	0.68
Americas	EMEA	51.86	0.68	0.4
Americas	APAC	108.13	0.52	0.21
EMEA	South	75.46	0.09	0.46
APAC	APAC	106.41	0.89	0.64
EMEA	South	112.73	0.31	0.39
EMEA	South	132.62	0.52	0.16
APAC	Americas	89.77	0.61	0.15
EMEA	South	135.31	0.89	0.26
EMEA	APAC	82.5	0.94	0.79
EMEA	Americas	131.67	0.76	0.93
North	Americas	98.27	0.82	0.22
North	EMEA	104.96	0.91	0.96
Americas	EMEA	47.71	0.83	0.47
Americas	North	52.01	0.54	0.57

Sustainable Materials and Circularity

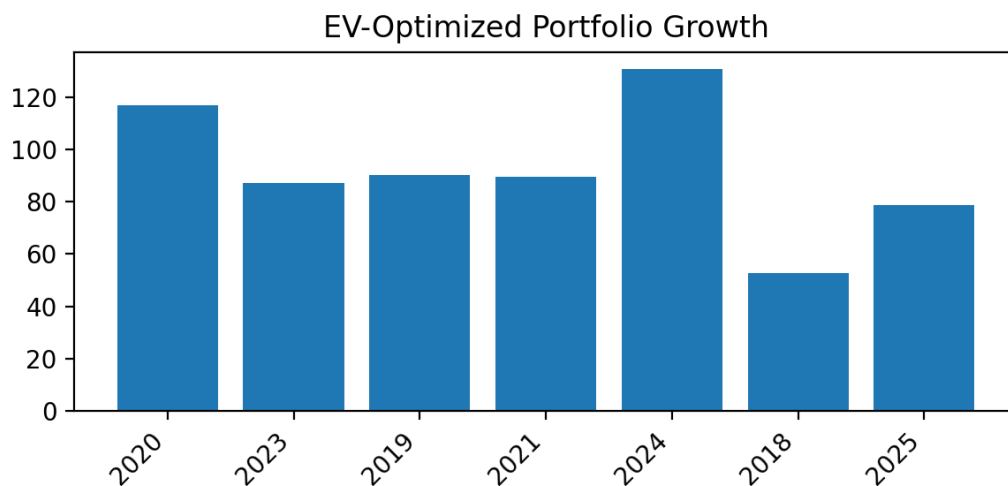
Sustainable content increased meaningfully. Bio-oils replaced legacy inputs. Recycled polymers met specs. Silica from waste streams qualified. Mass-balance approaches expanded.

Traceability systems matured. Chain-of-custody audits passed. Supplier attestations verified sources. Third-party certifications were secured. Book-and-claim managed complexity.

Circular pilots progressed. End-of-life feedstocks processed. Devulcanization trials scaled carefully. Retread casings extended life. Take-back logistics tested feasibility.

Lifecycle analysis informed design. Hotspots identified interventions. Weight savings reduced emissions. Longer life reduced waste. Manufacturing improvements lowered intensity.

EV-Optimized Portfolio Growth



Sales Channels and Customer Solutions

Omnichannel strategy guided growth. Retail stores anchored experience. E-commerce simplified discovery. Wholesale enabled reach breadth. Fleet programs drove retention.

Digital tools supported journeys. Product finders eased selection. Fitment guides improved accuracy. Appointment booking streamlined service. Live support improved conversion.

Dealer partnerships deepened. Joint business plans aligned goals. Training built product knowledge. Data sharing improved forecasts. Merchandising improved attachment rates.

Fleet platforms scaled value. Dashboards summarized KPIs. Alerts prioritized safety interventions. SLA tracking ensured accountability. Benchmarking highlighted opportunities.

Pricing strategy stayed disciplined. Value framing emphasized outcomes. Bundles improved perceived value. Subscriptions smoothed expenditures. Finance options supported adoption.

NPS improved across regions. Feedback loops drove changes. Technicians received soft-skills training. Store environments improved accessibility. Aftercare programs built loyalty.

Warranty models evolved prudently. EV conditions reflected profiles. Commercial usage tiers were clarified. Claims handling accelerated digitally. Transparency increased customer trust.

Brand communications remained focused. Safety stories led messaging. Sustainability underscored responsibility. Performance demonstrations built credibility. Testimonials amplified authenticity.

Tire Units by Segment

year	segment	units_m
2020	Americas	52.37
2022	North	87.01
2021	North	103.65
2022	North	104.97
2025	EMEA	111.3
2024	APAC	141.24
2020	South	87.72
2021	Americas	89.75
2019	South	68.89
2023	Americas	131.92
2024	South	127.5
2020	South	128.98
2021	APAC	83.19
2018	North	131.79
2025	South	97.48

Retail and E-commerce Experience

Store formats were refreshed. Layouts improved product visibility. Service bays increased throughput. Waiting areas improved comfort. Accessibility features were enhanced.

E-commerce flows optimized. Load times improved materially. Mobile UX led enhancements. Ratings widgets increased trust. Payment options expanded meaningfully.

Analytics improved operations. Funnel drop-offs were addressed. Search improved result relevance. Content localized across regions. A/B tests guided priorities.

Customer care modernized. Chatbots handled routine tasks. Handoffs to agents were seamless. Knowledge bases were expanded. Satisfaction scores improved significantly.

Quality Metrics

platform	first_pass_yield_percent	warranty_rate_percent	audit_score
North	0.34	0.61	78.11
Americas	0.01	0.63	118.04
Americas	0.18	0.27	93.38
EMEA	0.36	0.66	105.11
APAC	0.94	0.82	209.36
South	0.96	0.37	126.36

APAC	0.29	0.62	97.36
South	0.42	0.3	117.46
Americas	0.78	0.8	127.83
South	0.18	0.14	110.66
EMEA	0.72	0.79	137.18
EMEA	0.65	0.94	118.77
APAC	0.92	0.48	124.74
APAC	0.78	0.0	80.53
Americas	0.25	0.62	84.66

Fleet and Enterprise Solutions

Telematics integrations scaled. Data interoperability improved greatly. Dashboards prioritized safety alerts. Route insights improved planning. Maintenance windows optimized uptime.

Service models diversified. On-site service trucks expanded. Hub-and-spoke locations matured. Extended hours increased availability. Response times decreased considerably.

Contracts aligned incentives. KPIs tied to downtime. Gainsharing rewarded efficiency. Penalties were clearly structured. Renewals reflected delivered value.

Cross-sell performance improved. Retreads matched casing programs. Sensors attached to premium lines. Training complemented installations effectively. Reports showcased measurable ROI.

Human Capital Metrics

region	trir	engagement_percent	annual_turnover_percent	training_hours_per_capita
EMEA	122.55	0.08	0.3	52.64
APAC	90.73	0.18	0.04	93.97
North	98.7	0.08	0.34	103.52
EMEA	134.4	0.96	0.54	117.78
EMEA	123.5	0.54	0.28	119.46
Americas	129.72	0.37	0.59	103.78
Americas	47.58	0.32	0.81	62.36
South	72.89	0.63	0.51	116.5
EMEA	63.76	0.15	0.61	107.62
Americas	87.66	0.41	0.71	84.08
North	108.51	0.65	0.83	118.3
APAC	71.66	0.2	0.09	117.79

EMEA	103.89	0.97	0.92	114.38
South	95.58	0.73	0.15	7.33
North	118.2	0.89	0.43	80.09

Financial Review and Management Discussion

Revenue declined modestly year-on-year. Mix improvement partially offset volume. Price realization remained constructive. FX translation created headwinds. Other revenues normalized sequentially.

Gross margin faced pressures. Production curtailments affected absorption. Energy costs elevated in EMEA. Input costs eased late year. Logistics stabilized progressively.

Operating expenses were managed tightly. Productivity benefits materialized gradually. Advisory and transaction costs incurred. Advertising spend was optimized. Bad debt trends remained benign.

Segment performance varied regionally. Americas moderated versus prior year. EMEA reflected demand softness. Asia Pacific delivered strong growth. Specialty and aviation remained resilient.

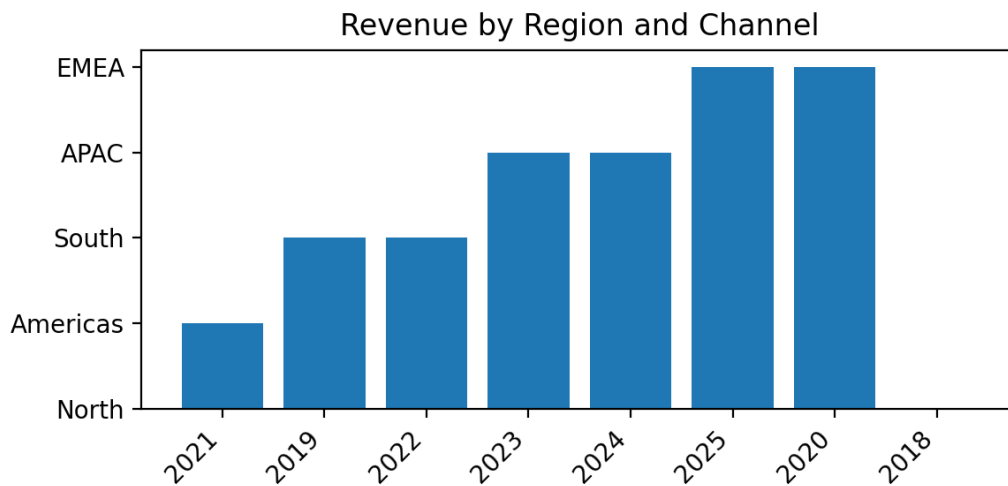
Interest expense increased materially. Average rates trended higher globally. Average debt balances declined slightly. Interest income rose in inflationary markets. Hedging gains were modest overall.

Other income included asset gains. Sale-leaseback proceeds supported deleveraging. Currency losses reflected specific markets. Non-service pension impacts moderated. Legal items were immaterial overall.

Tax expense reflected pretax profile. Discrete items offset some exposures. Jurisdictional mix influenced effective rates. Deferred tax assets were reassessed. Valuation allowances were maintained regionally.

Net results reflected transition. Portfolio changes affected comparatives. Margin programs were underway. Cash generation remained robust. Balance sheet actions progressed deliberately.

Revenue by Region and Channel



Segment Performance Commentary

Americas delivered resilient margins. Price and mix offset volumes. Aviation and services supported results. Productivity benefits aided costs. Logistics improved fulfillment metrics.

EMEA faced persistent headwinds. Replacement demand contracted broadly. Energy and transport impacted costs. Mix and pricing mitigated partially. Footprint actions began contributing.

Asia Pacific grew profitably. OE fitments expanded materially. Replacement mix improved steadily. FX trimmed reported performance. Cost discipline supported expansion.

Specialty businesses performed well. Aviation retread volumes grew. Industrial products remained steady. Off-road orders were selective. Agricultural trends stabilized gradually.

Sustainability Targets and Progress

kpi	baseline_year	target_year	baseline_value	current_value	target_value
APAC	2025	2025	88.41	137.96	66.86
South	2024	2025	97.73	64.61	108.77
EMEA	2023	2020	105.24	88.44	83.51
Americas	2018	2021	82.84	81.29	102.46
North	2020	2018	142.4	106.84	93.86
EMEA	2019	2020	106.54	85.47	101.76
EMEA	2018	2024	141.13	114.1	75.89
Americas	2019	2021	105.32	141.06	82.01
APAC	2018	2018	102.45	116.33	115.74
South	2024	2022	89.36	89.26	97.89
APAC	2023	2025	40.59	113.05	105.71

North	2018	2018	105.97	86.73	103.19
North	2018	2019	63.15	96.5	100.85
South	2018	2022	109.99	80.71	101.95
Americas	2020	2024	49.22	85.86	122.08
Americas	2018	2020	77.65	101.81	86.5
APAC	2024	2022	104.18	69.4	77.78
EMEA	2018	2018	93.73	73.74	163.02
Americas	2023	2019	65.57	109.9	85.2
EMEA	2022	2020	103.23	104.03	118.98

Key Drivers and Sensitivities

Raw materials remain volatile. Pricing contracts create lags. Energy costs drive EMEA variance. Production levels affect absorption. Freight rates influence margins.

Demand remains rate-sensitive. Consumer confidence affects replacement. OEM output shapes OE lines. Fleet miles drive services. Weather patterns affect seasonality.

Currency exposures matter. Translation impacts reported results. Transaction exposures are hedged. Interest rate paths affect expenses. Working capital responds to volumes.

Execution remains controllable. Mix levers support margin. Cost programs deliver savings. Portfolio actions reduce complexity. Balance sheet flexibility increases options.

Enterprise Risk Heatmap

risk_category	likelihood	impact	owner
South	70.25	40.76	EMEA
North	48.67	126.58	APAC
South	125.8	122.53	Americas
South	104.99	103.01	South
APAC	85.28	82.02	South
Americas	110.69	65.94	South
South	98.8	111.29	Americas
APAC	79.46	99.38	Americas
South	109.31	84.95	Americas
EMEA	113.63	101.13	EMEA
APAC	119.53	102.85	North
APAC	77.95	80.39	Americas
Americas	72.28	79.45	Americas

EMEA	99.08	66.86	South
EMEA	146.74	99.93	South
APAC	92.94	107.91	Americas
EMEA	117.02	112.86	North
Americas	140.94	132.93	Americas

Liquidity and Capital Resources

Liquidity remained strong throughout. Cash balances supported operations. Revolvers provided additional headroom. Securitizations diversified funding sources. Letters of credit managed obligations.

Operating cash flow improved. Working capital generated material cash. Inventory normalization drove benefits. Payables aligned with volumes. Receivables quality remained healthy.

Investing cash reflected priorities. Productivity capex continued steadily. Growth capex targeted premium capacity. Select asset sales provided proceeds. Strategic investments advanced capabilities.

Financing cash outflows declined. Net repayments reduced leverage. Interest costs increased with rates. Hedging reduced some volatility. Covenant headroom remained ample.

Maturity profiles remained staggered. Near-term needs are covered. Medium-term windows are manageable. Optionality exists for refinancing. Markets remain actively monitored.

Supplier financing programs continued. Confirmed payables remained stable. Terms aligned with market norms. Participation levels remained healthy. Transparency improved disclosures.

Ratings communications were proactive. Agencies engaged frequently. Performance trends were shared. Plan milestones were reinforced. Outlook drivers were highlighted.

Capital allocation remained disciplined. Debt reduction stayed prioritized. Essential capex funded prudently. Portfolio actions supported flexibility. Return frameworks stayed rigorous.

Enterprise Risk Heatmap

risk_category	likelihood	impact	owner
North	77.11	82.24	EMEA
EMEA	134.75	68.0	APAC
North	64.45	101.29	Americas

APAC	134.76	128.96	EMEA
South	113.77	131.53	Americas
APAC	75.91	84.07	APAC
South	125.45	123.58	APAC
APAC	84.22	108.88	South
South	57.28	90.48	APAC
South	88.32	77.0	APAC
North	75.05	94.99	South
North	149.9	79.97	APAC
North	113.34	74.56	South
South	125.46	96.51	South
North	106.97	134.28	Americas
Americas	97.17	112.76	North
EMEA	70.97	85.19	EMEA
EMEA	117.2	43.17	South

Working Capital and Cash Conversion

Inventory days reduced meaningfully. Forecast accuracy improved steadily. Safety stocks reflected risk tiers. Obsolescence provisions trended lower. Clear-out programs stayed targeted.

Receivables metrics stayed strong. DSOs improved year-on-year. Disputes decreased materially. E-invoicing adoption increased. Credit insurance remained adequate.

Payables aligned with commitments. Confirmed programs stabilized balances. Sourcing terms reflected value. Supplier health was monitored. On-time payments remained high.

Cash conversion cycle shortened. Management routines enforced discipline. Incentives supported outcomes. Digital dashboards improved visibility. Weekly cadences ensured accountability.

Human Capital Metrics

region	trir	engagement_percent	annual_turnover_percent	training_hours_per_capita
South	109.53	0.28	0.3	150.59
APAC	99.9	0.73	0.35	80.29
APAC	130.83	0.29	0.49	102.55
EMEA	70.42	0.86	0.9	128.47
South	130.28	0.06	0.11	59.57
APAC	50.13	0.31	0.58	110.4

Americas	80.01	0.9	0.88	129.58
EMEA	99.73	0.13	0.67	104.54
Americas	126.43	0.96	0.76	104.52
South	72.97	0.38	0.01	112.95
EMEA	109.69	0.47	0.63	81.55
North	148.57	0.19	0.88	43.39
APAC	134.72	0.5	0.45	58.66
EMEA	142.9	0.66	0.82	114.91
EMEA	27.34	0.2	0.65	143.5

Capital Structure and Covenants

Debt mix remained diversified. Secured and unsecured tranches balanced. Fixed and floating exposures managed. Regional facilities supported operations. Securitizations added flexibility.

Covenant headroom remained substantial. Interest coverage tracked comfortably. Leverage ratios improved gradually. Borrowing bases remained healthy. Compliance controls were strong.

Hedging policy stayed prudent. Rates hedged opportunistically. FX exposures balanced naturally. Commodity hedges were selective. Counterparty risk was diversified.

Future financing options assessed. Windows monitored continuously. Markets remained constructive broadly. Investor engagement remained active. Optionality preserved through planning.

Tire Units by Segment

year	segment	units_m
2023	EMEA	79.26
2021	EMEA	74.76
2022	APAC	74.68
2021	EMEA	67.81
2025	Americas	141.12
2023	EMEA	106.45
2020	Americas	104.63
2025	EMEA	145.44
2021	Americas	121.73
2022	Americas	116.94
2019	Americas	124.21
2021	North	133.36

2019	EMEA	84.71
2021	Americas	86.65
2022	South	106.79

Risk Factors and Enterprise Risk Management

Risk management is integrated. Strategic risks are reviewed regularly. Operational risks are quantified. Financial risks are hedged prudently. Compliance risks are monitored continuously.

Market risks include demand shifts. Competitive pricing pressures persist. Regulatory changes can emerge. Customer behaviors may evolve. Technology disruptions remain possible.

Operational risks include supply variability. Capacity constraints may arise. Quality incidents must be prevented. Labor markets may tighten. Cyber threats remain persistent.

Financial risks include FX volatility. Inflation may re-accelerate unexpectedly. Interest rates affect expenses. Liquidity must remain resilient. Counterparty risks must be managed.

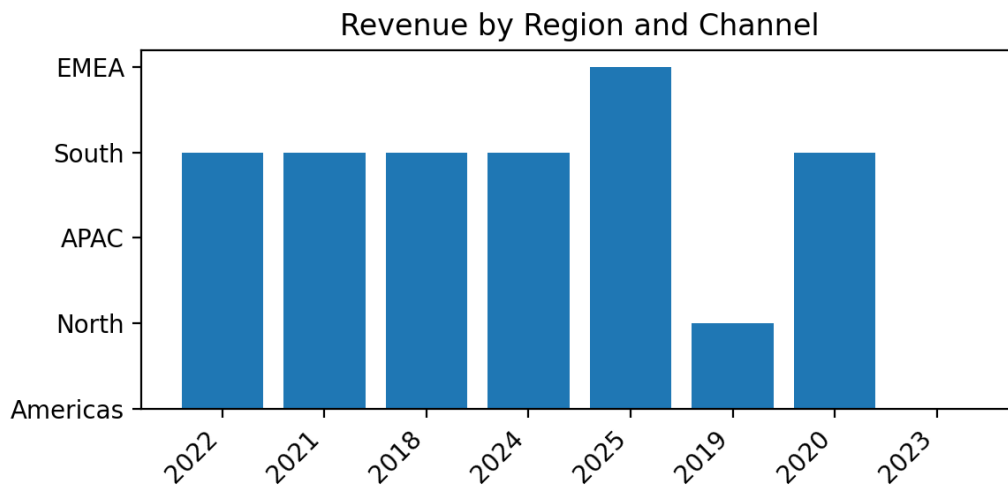
Legal and regulatory risks exist. Environmental obligations may increase. Trade policies may change. Data privacy rules may tighten. Product standards may evolve.

Geopolitical risks remain material. Conflicts may disrupt logistics. Sanctions regimes may expand. Energy supply may fluctuate. Currency controls may tighten suddenly.

Climate risks are evolving. Extreme weather may disrupt sites. Water scarcity may emerge locally. Heat risks affect safety protocols. Insurance costs may rise.

Mitigation plans are active. Diversification reduces exposure. Scenario planning supports resilience. Business continuity is regularly tested. Culture reinforces risk awareness.

Revenue by Region and Channel



Top Enterprise Risks

Demand contraction remains material. Elasticities can intensify quickly. Channel inventories may fluctuate. Price wars can re-emerge. Brand equity mitigates outcomes.

Energy and utilities risk EMEA. Price spikes strain margins. Availability risks require contingencies. Efficiency projects offset impacts. Contracts diversify sources.

Supply disruptions threaten continuity. Natural disasters can hit regions. Transport chokepoints may arise. Alternate routes must exist. Buffers reduce variability.

Cyber incidents could disrupt operations. Ransomware threatens continuity. Third-party links add exposure. Defense-in-depth reduces risk. Drills ensure response readiness.

Cybersecurity Key Metrics

month	patch_sla_percent	phish_fail_percent	mttr_hours
North	0.62	0.22	73.31
EMEA	0.9	0.2	107.39
North	0.51	0.81	145.21
APAC	0.98	0.28	109.05
APAC	0.27	0.49	162.51
North	0.43	0.7	57.03
Americas	0.91	0.4	125.38
North	0.22	0.6	105.6
South	0.75	0.51	82.07
Americas	0.25	0.82	41.08
North	0.15	0.75	55.02
South	0.94	0.81	120.39

ERM Governance and Controls

Board oversight guides ERM. Committees review key risks. Management owns mitigation plans. Internal audit tests controls. External advisors benchmark practices.

Risk appetite is defined clearly. Thresholds guide decision-making. Escalation protocols are documented. Reporting cadence is regular. Incentives align with prudence.

Tools support risk transparency. Dashboards integrate indicators. Early warnings highlight deviations. Heatmaps visualize concentration. Playbooks document responses.

Culture underpins effectiveness. Training builds awareness. Speak-up mechanisms encourage voice. Lessons learned are shared. Recognition reinforces good behaviors.

Enterprise Risk Heatmap

risk_category	likelihood	impact	owner
APAC	87.54	100.12	South
North	81.97	113.43	APAC
APAC	98.09	86.4	Americas
South	120.64	83.89	Americas
Americas	167.43	121.02	APAC
South	70.81	107.5	South
APAC	126.98	68.0	South
South	101.06	73.14	APAC
North	108.03	96.79	Americas
North	107.11	69.08	Americas
Americas	75.85	116.0	Americas
APAC	77.58	114.04	APAC
EMEA	126.59	105.86	South
EMEA	87.32	98.38	North
APAC	84.44	99.12	Americas
EMEA	82.89	98.61	Americas
South	93.2	84.77	Americas
North	97.88	79.2	Americas

ESG: Climate and Sustainability

Cartech maintains ambitious targets. Net-zero goals guide trajectory. Interim reductions anchor accountability. Science-based pathways inform actions. Transparency supports stakeholder trust.

Operational decarbonization progresses. Renewable electricity share increases. Efficiency projects reduce intensity. Heat recovery reduces fuel usage. Electrification pilots expand cautiously.

Product sustainability advances. Rolling resistance keeps decreasing. Longevity extends replacement intervals. Materials sourcing lowers footprints. Circularity programs gain traction.

Supply chain collaboration expands. Standards harmonize reporting expectations. Supplier roadmaps align reductions. Joint projects deliver innovation. Incentives encourage adoption.

Water stewardship improves sites. Metering revealed key hotspots. Recycling systems were expanded. Leak losses decreased measurably. Drought planning matured significantly.

Waste reductions continued steadily. Segregation improved capture rates. Valorization projects created value. Landfill diversion increased rapidly. Packaging reuse expanded coverage.

Social impact remained strong. Safety performance kept improving. Education initiatives supported youth. Road safety programs expanded reach. Volunteering engagement remained high.

Governance strengthened oversight. Board expertise covers ESG. KPIs linked to incentives. Reporting followed global frameworks. Assurance increased data confidence.

Cybersecurity Key Metrics

month	patch_sla_percent	phish_fail_percent	mttr_hours
APAC	0.85	0.53	115.43
North	0.15	0.99	147.53
EMEA	0.91	0.15	118.08
EMEA	0.09	0.5	80.01
EMEA	0.03	0.08	133.05
Americas	0.12	0.33	62.72
North	0.92	0.75	99.33
EMEA	0.98	0.69	88.19
Americas	0.41	0.35	116.86
Americas	0.46	0.84	102.27

South	0.63	0.31	116.48
South	0.05	0.04	94.0

Climate Strategy and Targets

Targets cover scopes comprehensively. Baselines reference recent operations. Absolute reductions guide accountability. Intensity metrics track progress. Validation followed rigorous standards.

Abatement levers prioritized impact. Energy efficiency delivered quickly. Renewables addressed electricity sources. Fuel switching evaluated prudently. Offsets reserved for residuals.

Scenario analysis informed planning. Physical risks were assessed. Transition risks were modeled. Opportunities were quantified carefully. Governance reviewed outcomes.

Data processes improved quality. Sensors automated metering. Estimation methods were refined. Independent assurance increased comfort. Disclosure aligned with best practice.

Quality Metrics

platform	first_pass_yield_percent	warranty_rate_percent	audit_score
EMEA	0.78	0.88	54.0
APAC	0.85	0.52	87.76
APAC	0.84	0.07	122.72
South	0.46	0.71	128.88
Americas	0.43	0.93	84.19
North	0.67	0.14	106.64
Americas	0.67	0.91	103.39
North	0.37	0.9	102.98
Americas	0.45	0.71	112.95
Americas	0.41	0.66	120.72
EMEA	0.06	0.25	101.93
EMEA	0.56	0.18	95.71
EMEA	0.76	0.6	105.23
South	0.74	0.62	69.27
North	0.22	0.68	106.47

Sustainable Materials and Circular Economy

Material roadmaps were published. Bio-based content increased steadily. Recycled sources gained shares. Third-party certifications ensured rigor. Pilots informed scale-up plans.

Design-for-circularity advanced. Casings optimized for retread. Tread blocks eased removal. Adhesives enabled disassembly. Labels supported identification.

End-of-life systems explored. Partnerships tested collection models. Processing technologies were evaluated. Economics assessed with transparency. Policy dialogues supported feasibility.

Customer education supported adoption. Materials explained clearly on labels. Benefits quantified for outcomes. Myths addressed with evidence. Trust improved through data.

Manufacturing Footprint Summary

site	region	annual_capacity_m_units	utilization_percent	renewable_electricity_percent
EMEA	APAC	117.48	0.04	0.81
South	North	82.49	0.66	0.68
APAC	APAC	124.77	0.46	0.11
EMEA	EMEA	151.66	0.41	0.83
Americas	North	70.21	0.81	0.28
Americas	Americas	88.74	0.81	0.02
North	APAC	46.44	0.87	0.24
EMEA	Americas	80.78	0.47	0.17
EMEA	South	117.55	0.58	0.45
North	APAC	67.13	0.34	0.22
Americas	Americas	142.28	0.29	0.08
North	North	69.45	0.59	0.04
EMEA	EMEA	111.97	0.97	0.85
Americas	Americas	87.8	0.8	0.66
EMEA	APAC	99.19	0.55	0.42
EMEA	North	105.87	0.11	0.01
North	South	125.2	0.88	0.76
EMEA	APAC	129.8	0.53	0.48
APAC	Americas	122.24	0.98	0.85
North	EMEA	123.9	0.96	0.71

Human Capital and Culture

People strategy underpins performance. Capability building remained central. Inclusion strengthened collaboration. Safety remained non-negotiable everywhere. Engagement supported retention outcomes.

Workforce planning advanced. Critical roles were mapped. Pipelines were actively cultivated. Internal mobility improved pathways. Succession plans were refreshed.

Learning programs scaled globally. Technical curricula modernized content. Leadership training expanded cohorts. Digital academies increased access. Certifications validated mastery.

Diversity and inclusion progressed. Employee groups expanded membership. Bias training reinforced behaviors. Hiring slates increased diversity. Metrics tracked improvements objectively.

Health and wellbeing mattered. Programs covered holistic needs. Mental health resources expanded. Fitness incentives encouraged participation. Financial wellness tools improved literacy.

Safety results improved. Serious incident potential decreased. Near misses were analyzed deeply. Ergonomics projects reduced strain. Contractor management strengthened oversight.

Engagement scores improved. Feedback loops drove actions. Leaders communicated frequently. Recognition programs celebrated impact. Community service energized teams.

Ethics remained foundational. Code training reached all. Speak-up channels were trusted. Investigations were handled promptly. Discipline remained consistently fair.

Manufacturing Footprint Summary

site	region	annual_capacity_m_units	utilization_percent	renewable_electricity_percent
APAC	Americas	94.46	0.92	0.35
South	EMEA	120.68	0.36	0.42
South	APAC	97.35	0.04	0.43
Americas	South	84.16	0.65	0.9
APAC	APAC	123.44	0.8	0.27
EMEA	South	107.96	0.24	0.37
South	South	85.71	0.05	0.81
North	South	143.5	0.51	0.75
Americas	EMEA	63.17	0.43	0.24
North	South	63.98	0.22	0.65
APAC	North	133.74	0.48	0.55
North	EMEA	98.87	0.59	0.74
South	North	80.05	0.72	0.29
South	APAC	97.42	0.83	0.83

Americas	North	85.82	0.52	0.27
EMEA	APAC	86.46	0.1	0.17
South	APAC	84.81	0.82	0.33
South	APAC	97.17	0.53	0.37
North	EMEA	79.56	0.66	0.8
Americas	South	110.08	0.74	0.83

Talent, Learning, and Mobility

Attraction strategies evolved. Employer brand highlighted purpose. Campus programs expanded disciplines. Apprenticeships built pipelines. Referral programs scaled reach.

Learning investments increased. Role-based pathways clarified. Simulations enhanced retention. Microlearning accelerated refresh. Mentoring improved inclusion outcomes.

Performance models matured. Objectives aligned to strategy. Check-ins increased frequency. Feedback normalized growth discussions. Rewards recognized impact clearly.

Mobility enabled careers. Vacancies posted transparently. Internal marketplaces matched skills. Relocation support eased transitions. Alumni networks strengthened ties.

Fleet Solutions KPIs

region	uptime_percent	cpk_usd	sla_compliance_percent
South	0.56	94.19	0.52
South	0.9	105.02	0.86
North	0.52	105.81	0.43
APAC	0.64	90.29	0.99
North	0.19	103.28	0.72
Americas	0.62	88.17	0.37
EMEA	0.58	75.49	0.18
APAC	0.61	118.09	0.95
South	0.28	68.0	0.49
North	0.32	65.01	0.66
EMEA	0.59	125.07	0.57
APAC	0.11	105.93	0.84

Safety, Wellbeing, and Culture

Safety leadership remained visible. Daily toolbox talks continued. Hazard hunts increased reporting. Life-saving rules reinforced expectations. Audits verified compliance rigorously.

Wellbeing programs expanded. Telemedicine access increased. EAP utilization improved awareness. Social connection initiatives scaled. Flexible options reduced stress.

Culture initiatives strengthened. Values workshops refreshed understanding. Storytelling highlighted best practices. Leaders modeled expected behaviors. Recognition reinforced desired norms.

Community presence grew. Road safety classes expanded. Skills volunteering increased adoption. Local NGOs received grants. Impact stories were shared.

Tire Units by Segment

year	segment	units_m
2023	APAC	119.57
2021	Americas	119.84
2018	South	100.94
2022	North	105.13
2020	APAC	72.78
2023	North	90.17
2022	South	117.2
2018	Americas	76.23
2021	North	49.97
2023	North	113.73
2020	Americas	52.41
2020	EMEA	120.43
2025	APAC	112.34
2022	South	96.53
2024	Americas	74.07

Governance, Compliance, and Ethics

Governance supports accountability. Board composition ensures independence. Committees oversee critical areas. Skills matrices guide refreshment. Evaluation processes drive improvement.

Compliance programs are robust. Policies set clear expectations. Training ensures wide coverage. Monitoring detects exceptions early. Remediation follows swift action.

Ethics defines conduct. Speak-up channels remain active. Non-retaliation is enforced firmly. Investigations follow due process. Lessons learned inform training.

Third-party risk is managed. Due diligence screens counterparties. Contract clauses embed standards. Audits check conformance periodically. Elevated risks trigger exit paths.

Data privacy receives priority. Frameworks align with regulations. Consent is honored carefully. Retention follows principles strictly. Vendor access is minimized.

Competition law is respected. Guidance prevents risky behaviors. Dawn raid playbooks exist. Audits review communications hygiene. Corrective actions are mandated.

Sanctions compliance remains vigilant. Screening tools update lists. Transaction monitoring flags anomalies. Licenses are reviewed centrally. Escalations proceed rapidly.

Reporting remains transparent. Disclosures follow best practice. Metrics support comparability. Assurance improves confidence. Stakeholder feedback shapes evolution.

Fleet Solutions KPIs

region	uptime_percent	cpk_usd	sla_compliance_percent
North	0.9	138.72	0.24
Americas	0.22	111.65	0.81
APAC	0.83	73.24	0.22
EMEA	0.93	111.3	0.57
South	0.84	110.85	0.89
North	0.64	47.98	0.98
Americas	0.1	115.56	0.77
North	0.42	97.12	0.53
APAC	0.1	49.44	0.94
APAC	0.52	105.96	0.32
Americas	0.32	118.37	0.69
APAC	0.13	85.71	0.29

Board Oversight and Committees

Committees cover audit rigor. Risk oversight spans enterprise exposures. Talent and compensation align incentives. ESG committee reviews progress. Nominations oversee

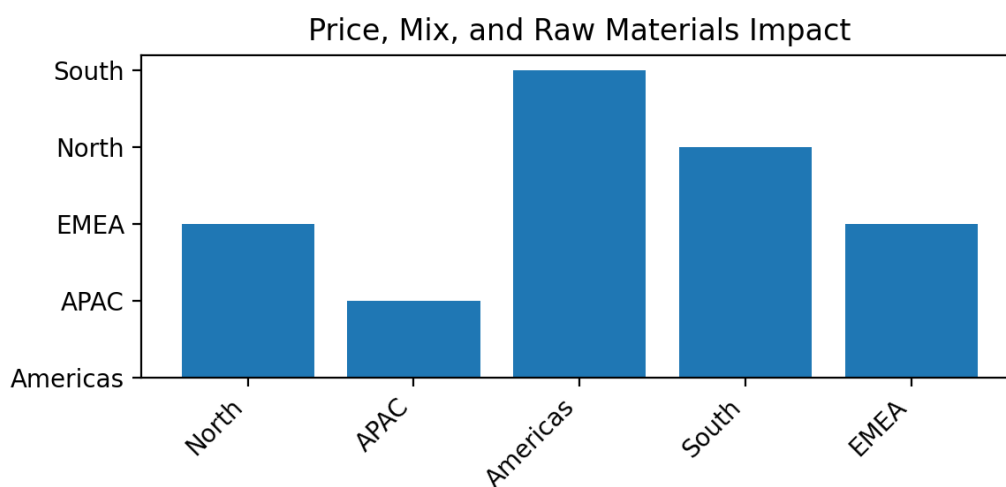
succession planning.

Independence criteria are stringent. Diversity enhances deliberations. Tenure balances experience levels. Education sessions occur frequently. Site visits inform perspectives.

Evaluation processes are annual. External facilitation adds objectivity. Action plans address findings. Chair oversees follow-through. Shareholder input informs priorities.

Stakeholder engagement continues. Investors receive regular updates. Employees join town halls. Communities receive clear communications. Regulators receive timely information.

Price, Mix, and Raw Materials Impact



Compliance Systems and Monitoring

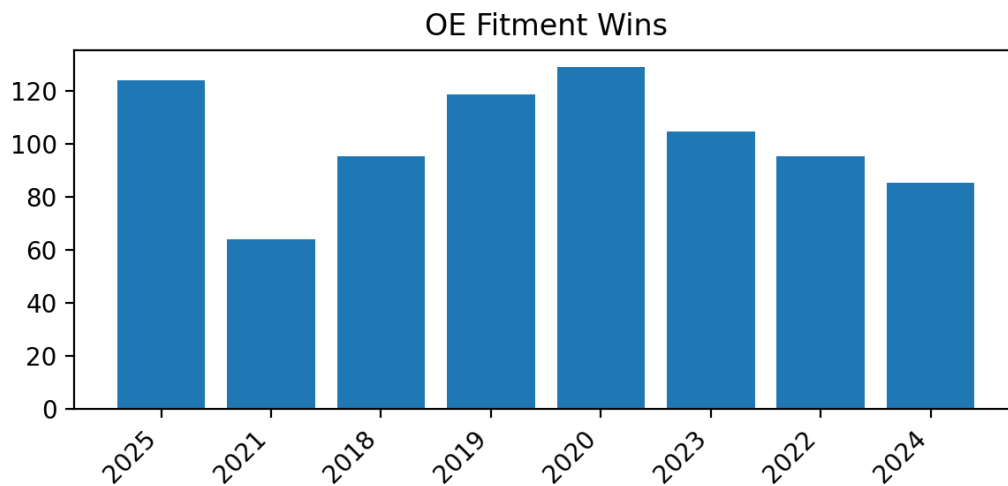
Policies are centrally maintained. Version control ensures currency. Certifications prove understanding. Translations increase accessibility. Records support audits robustly.

Monitoring uses analytics. Exceptions trigger alerts swiftly. Root causes receive attention. Controls are redesigned quickly. Outcomes inform future prevention.

Training is risk-based. Scenarios improve applicability. Micro-modules improve retention. Assessments validate comprehension. Retraining covers gaps promptly.

Third-party control is rigorous. Onboarding screens critical factors. Continuous monitoring reviews indicators. Terminations follow escalations. Learnings feed program improvements.

OE Fitment Wins



Cybersecurity and Data Privacy

Cyber risk is strategic. Frameworks align to standards. Controls follow zero-trust principles. Monitoring occurs continuously enterprise-wide. Recovery plans are frequently exercised.

Threat landscape remains dynamic. Ransomware tactics keep evolving. Supply chain interfaces add complexity. Social engineering targets employees. Regulatory expectations are rising.

Defense-in-depth is applied. Network segmentation isolates assets. MFA hardens entry points broadly. EDR tools monitor endpoints. Backups are immutable and tested.

Governance ensures oversight. Executive committees review posture. Board committees receive updates. Metrics track control effectiveness. External testing validates readiness.

Privacy program is mature. Data mapping clarifies flows. Legal bases are documented. DPIAs assess high-risk processing. Responses meet statutory timelines.

Third parties are managed. Contracts demand standards compliance. Penetration tests validate protections. Access follows least privilege. Offboarding revokes credentials promptly.

Education reduces human risk. Phishing simulations build vigilance. Secure coding training scales. Admins receive specialized modules. Playbooks guide incident response.

Incidents are handled swiftly. Triage prioritizes containment. Forensics identify root causes. Notifications follow legal thresholds. Lessons learned drive improvements.

Cybersecurity Key Metrics

month	patch_sla_percent	phish_fail_percent	mttr_hours
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EMEA	0.61	0.68	118.59
North	0.14	0.07	77.52
Americas	0.83	0.87	108.03
South	0.64	0.72	121.61
Americas	0.23	0.44	62.09
North	0.13	0.4	75.33
Americas	0.49	0.3	123.44
APAC	0.1	0.26	128.96
South	0.73	0.61	115.51
Americas	0.84	0.01	67.1
Americas	0.75	0.83	36.44
APAC	0.29	0.51	105.0

Security Architecture and Operations

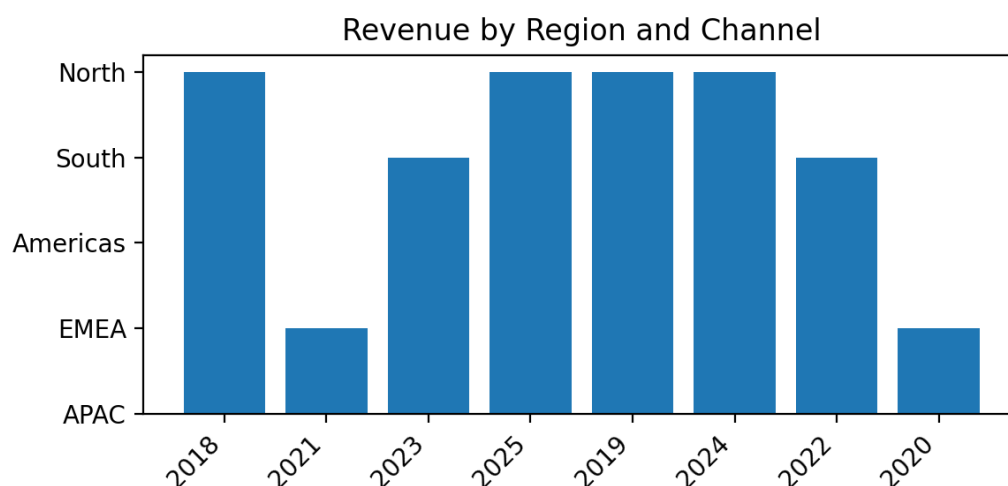
Architecture follows layered defenses. Perimeter controls screen traffic. Micro-segmentation limits movement. Identity is the new perimeter. Data-centric protections apply controls.

Operations run 24/7 globally. SOC monitors telemetry streams. Threat intel informs detections. Automation reduces dwell time. Response teams coordinate actions.

Resilience anchors continuity. DR plans are scripted. RTOs match business priorities. Regular failover tests occur. Suppliers join joint exercises.

Metrics guide accountability. Patch cadence meets targets. Vulnerability SLA compliance improves. Phishing resilience trends upward. Control coverage increases steadily.

Revenue by Region and Channel



Privacy by Design and Compliance

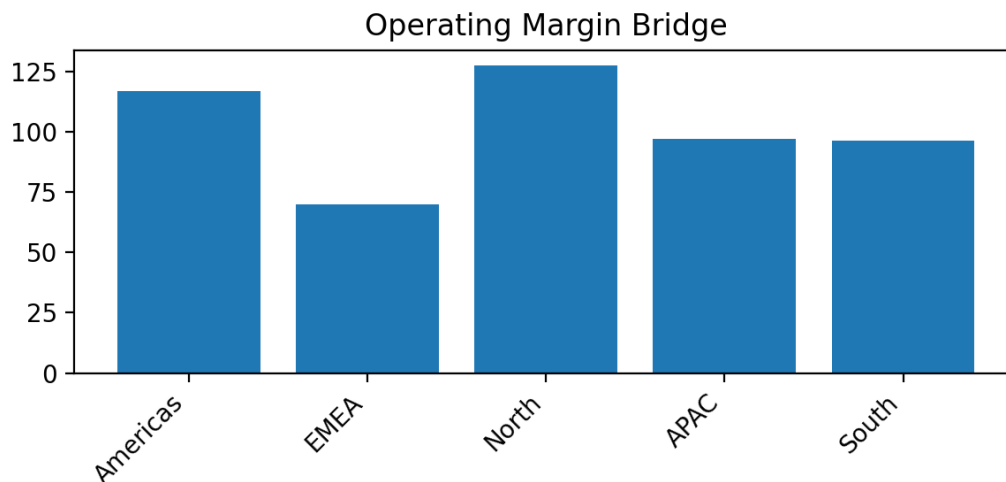
Design embeds privacy early. Data minimization guides choices. Purpose limitation restricts reuse. Retention policies reduce exposure. Access controls enforce need-to-know.

Consent is managed carefully. Preferences are honored promptly. Withdrawal is easy and visible. Children's data receives protections. Cross-border transfers use safeguards.

Subject rights are fulfilled. Requests are verified securely. Portability is technically enabled. Deletion processes are auditable. Exemptions are documented clearly.

Vendors follow obligations. Addenda reflect regulations. Assessments verify adequacy. Breach clauses ensure notifications. Continuous monitoring secures trust.

Operating Margin Bridge



Legal Proceedings and Contingencies

Matters arise in the ordinary course. Product liability cases occur occasionally. Commercial disputes arise infrequently. Regulatory inquiries are addressed promptly. Outcomes remain immaterial overall.

Environmental sites are managed. Remediation plans follow standards. Reserves reflect best estimates. Third-party recoveries are pursued. Timelines reflect regulatory processes.

Competition matters are monitored. Compliance programs reduce risks. Investigations receive full cooperation. Defenses are robust and well-documented. Provisions are considered where necessary.

Tax controversies exist regionally. Transfer pricing positions are substantiated. APAs reduce bilateral uncertainty. Litigation exposure remains contained. Disclosures reflect evolving status.

Guarantees and indemnities exist. Clauses reflect market practice. Caps limit potential exposures. Durations are time-bound clearly. Counterparty strength is assessed.

Insurance programs provide coverage. Limits align with risks assessed. Deductibles balance cost-efficiency. Claims handling is professional. Recoveries are pursued diligently.

Loss probability is evaluated. Counsel provides independent views. Historical patterns inform judgments. Sensitivities are reviewed periodically. Governance reviews material cases.

Management believes exposures manageable. Controls mitigate underlying risks. Provisions reflect prudence consistently. Liquidity covers potential outcomes. Monitoring remains continuous and thorough.

Debt Maturity Profile

maturity_year	instrument	currency	amount_usd_m
2021	South	APAC	125.99
2022	APAC	EMEA	136.21
2020	EMEA	EMEA	88.89
2019	Americas	South	99.75
2025	North	EMEA	109.12
2018	EMEA	Americas	69.09
2020	South	APAC	103.79
2021	Americas	South	103.17
2023	Americas	North	97.7
2025	APAC	Americas	145.23
2018	EMEA	North	64.88
2019	APAC	APAC	74.11
2019	South	Americas	47.07
2024	EMEA	Americas	161.03
2020	EMEA	North	128.43
2021	EMEA	APAC	69.62
2020	EMEA	Americas	116.68
2019	Americas	South	140.41
2024	South	Americas	82.44

2024	EMEA	EMEA	87.11
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Claims, Disputes, and Resolutions

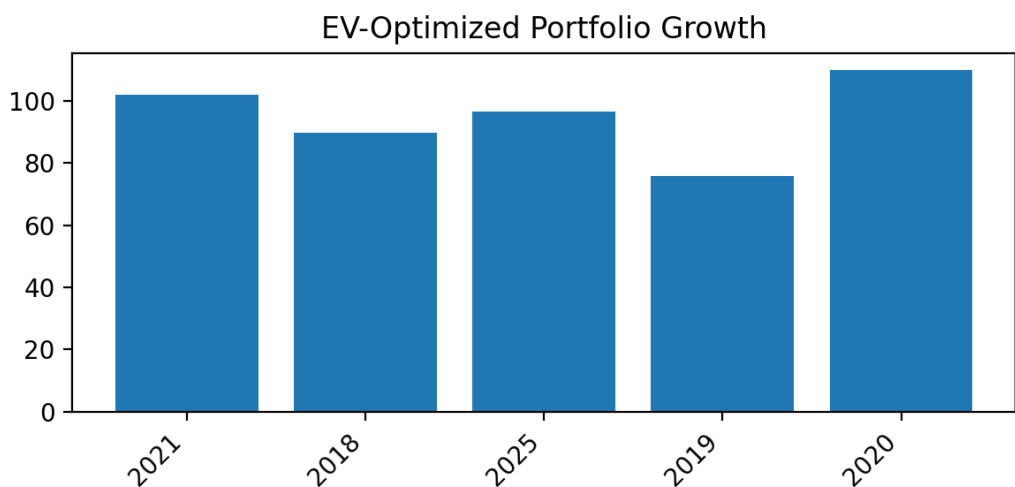
Case intake follows protocols. Facts are gathered quickly. Evidence is preserved diligently. Counsel engagement occurs early. Strategy aligns with business priorities.

Alternative resolution is considered. Mediation can accelerate outcomes. Arbitration clauses are evaluated. Settlements are assessed economically. Confidentiality protects stakeholders.

Litigation is carefully managed. Budgets track resource usage. Milestones guide preparedness. Risks are reassessed continuously. Communications are tightly controlled.

Reporting is transparent internally. KPIs track cycle times. Reserve adjustments are explained. Learnings inform process improvements. Governance reviews trends quarterly.

EV-Optimized Portfolio Growth



Environmental and Regulatory Matters

Sites comply with permits. Monitoring meets thresholds consistently. Improvements address identified gaps. Stakeholders receive timely updates. Independent audits validate adherence.

Emerging standards are tracked. Chemical restrictions may expand. Labeling updates are anticipated. Climate disclosures evolve globally. Advocacy ensures pragmatic approaches.

Remediation progresses methodically. Risk assessments guide plans. Contractors follow strict controls. Community liaison maintains transparency. Closure criteria define endpoints.

Financial impacts are contained. Provisions cover probable costs. Insurance may offset portions. Capital plans include compliance. Efficiency projects mitigate expenses.

Quality Metrics

platform	first_pass_yield_percent	warranty_rate_percent	audit_score
South	0.72	0.4	91.0
APAC	0.09	0.74	91.74
Americas	0.89	0.97	149.05
EMEA	0.02	0.45	119.6
South	0.93	0.46	102.23
APAC	0.69	0.72	122.77
EMEA	0.49	0.4	27.13
South	0.27	0.03	123.92
EMEA	0.69	0.9	73.31
EMEA	0.18	0.94	140.8
South	0.24	0.3	106.14
APAC	0.18	0.85	136.94
APAC	0.72	0.48	68.74
Americas	0.33	0.65	83.22
South	0.26	0.57	79.38

Outlook and Forward Strategy

The outlook remains cautiously constructive. Replacement demand should normalize. OE volumes should grow modestly. Premium mix should continue improving. Services should deepen customer relationships.

Cost actions will continue. Savings should ramp sequentially. Productivity should offset inflation. Logistics should remain stable. Energy efficiency should reduce exposure.

Portfolio work will progress. Non-core reviews will conclude. Proceeds should reduce leverage. Focus should increase simplicity. Execution should unlock value.

Innovation will drive advantage. EV offerings will expand. Smart products will scale further. Sustainable materials will increase. Testing will remain rigorous.

Channels will keep evolving. Retail experience will modernize. E-commerce will grow share. Fleet solutions will expand SLAs. Partnerships will multiply opportunities.

Risk management will stay central. Scenarios will inform decisions. Buffers will protect continuity. Hedging will remain disciplined. Controls will strengthen resilience.

People will power delivery. Capability building will accelerate. Safety will remain foundational. Inclusion will sustain engagement. Leadership will model values.

Cartech remains future-focused. Strategy aligns with megatrends. Balance sheet supports ambitions. Governance enforces discipline rigorously. Stakeholders share long-term value.

Tire Units by Segment

year	segment	units_m
2018	South	68.65
2024	North	106.56
2020	APAC	66.86
2022	APAC	92.68
2023	South	120.43
2025	Americas	98.66
2025	South	94.4
2024	APAC	122.83
2018	Americas	111.43
2024	North	101.68
2025	Americas	108.76
2020	APAC	58.63
2024	APAC	108.37
2024	Americas	89.95
2020	South	129.2

Key Priorities for Next 12–24 Months

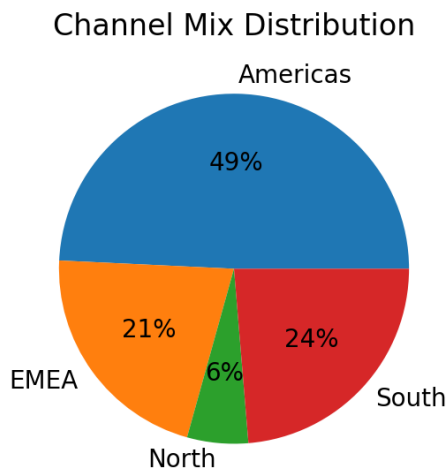
Deliver margin expansion initiatives. Complete portfolio optimization steps. De-risk energy exposure in EMEA. Scale premium and EV lines. Expand fleet service density.

Advance digital transformation programs. Roll out manufacturing analytics. Enhance e-commerce personalization. Deepen dealer data exchanges. Strengthen cybersecurity posture.

Accelerate sustainability roadmap. Increase renewable electricity share. Grow sustainable materials content. Mature circularity pilots regionally. Improve water and waste metrics.

Reinforce culture and capabilities. Expand frontline training hours. Strengthen next-generation leadership. Deepen inclusion initiatives globally. Elevate safety leadership behaviors.

Channel Mix Distribution



Outlook Assumptions and Sensitivities

Assumptions reflect balanced scenarios. Macro remains mixed regionally. FX remains within historical bands. Energy moderates from peaks. Logistics remains stable overall.

Upside cases assume demand recovery. Inventory restocking would accelerate volumes. Rate cuts would support consumers. OEM schedules would firm further. Mix would skew premium.

Downside cases test volatilities. Input costs could re-inflate. Energy shocks could reoccur. FX could move adverse. Demand could soften unexpectedly.

Mitigations are well-defined. Pricing actions remain disciplined. Cost levers remain actionable. Portfolio steps reduce complexity. Liquidity remains ample and flexible.

Quality Metrics

platform	first_pass_yield_percent	warranty_rate_percent	audit_score
EMEA	0.99	0.32	137.92
Americas	0.81	0.35	100.95
South	0.86	0.0	110.54
North	0.26	0.38	132.69
North	0.05	0.88	87.26
APAC	0.18	0.59	112.84

EMEA	0.67	0.73	120.45
APAC	0.24	0.48	115.41
North	0.57	0.19	116.31
North	0.34	0.5	60.15
APAC	0.78	0.09	88.19
North	0.72	0.77	125.64
EMEA	0.94	0.91	96.69
South	0.62	0.06	87.25
South	0.35	0.33	103.5