



2035 - THE EDGE AI REVOLUTION: WHEN 80% OF AI MIGRATES TO THE EDGE

From centralized AI to distributed intelligence:
Technologies, Markets and Strategic Issues 2020-2035

Target Sectors

Industry 4.0, Healthcare, Smart Cities, Automotive,
IT & Telecom, Retail, Agriculture, Energy & Utilities



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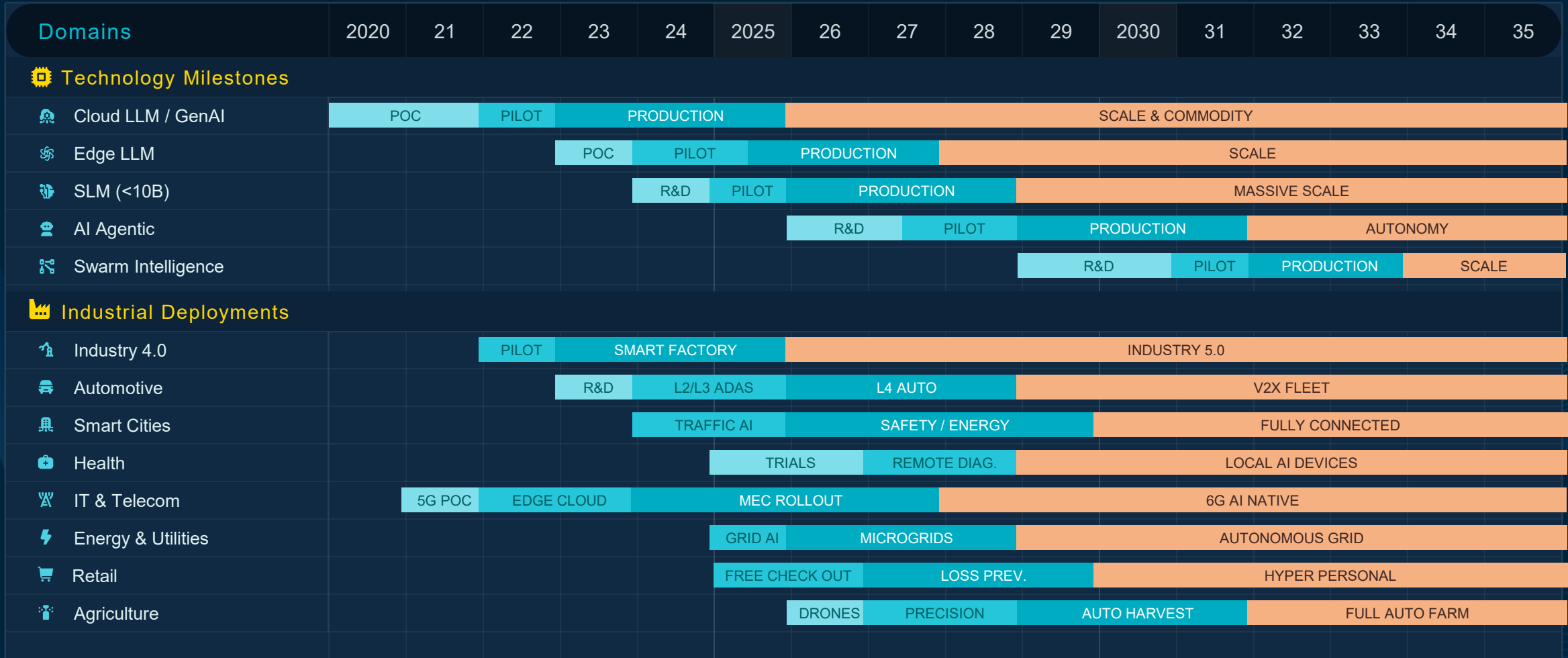
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SECTION 2 – SECTORS IMPACTS

Strategic roadmap : When each sector shifts towards the Edge

Technology milestones and deployment phases by industry sector



● POC / R&D (Exploration) ● Pilot (Validation) ● Production (Deployment) ● Scale (Commoditization)

8 transformed industries : Where Edge AI creates the most value

Accelerated Adoption by Industry (2025-2026) & Value Transformation

Priority verticals (2026 projections)

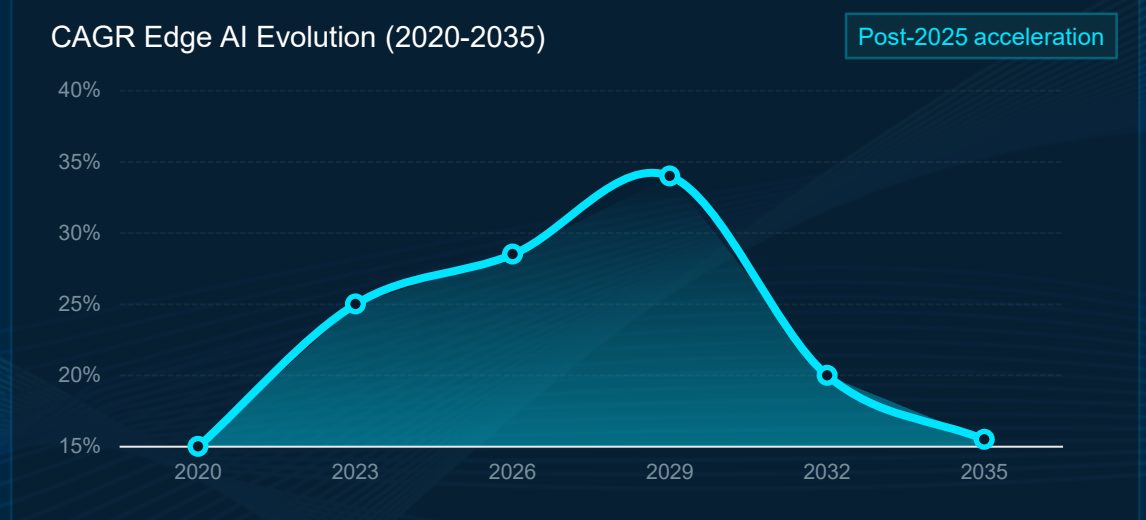
<p>IT & Telecom Leader 21.1%</p> <p>Mass adoption of Edge AI for 5G/6G network optimization and MEC services.</p> <p>MEC (Multi-access Edge Computing) for ultra-low latency in mission-critical applications.</p>	<p>Health 86% AI Usage</p> <p>Connected medical devices and real-time diagnostics with patient privacy.</p> <p>Advanced telemedicine and continuous patient monitoring with certified local AI.</p>
<p>Industry 4.0 Factory Floor</p> <p>Edge AI industrial PCs for quality control and autonomous predictive maintenance.</p> <p>Autonomous collaborative robotics and real-time energy optimization.</p>	<p>Automotive ADAS/V2X</p> <p>Critical inference for L3+ autonomous driving and V2X safety.</p> <p>Intelligent fleet management and predictive diagnostics for connected vehicles.</p>
<p>Smart Cities Intel Mgmt.</p> <p>Traffic and urban energy optimization via distributed edge sensor networks.</p> <p>Enhanced public safety through distributed intelligent surveillance.</p>	<p>Retail Auto-Checkout</p> <p>Frictionless customer experience and loss prevention through computer vision.</p> <p>Customer behavioral analysis and dynamic inventory management by Edge AI.</p>
<p>Energy & Utilities Smart Grid</p> <p>Smart microgrids and anomaly detection for critical energy infrastructure.</p> <p>Real-time demand prediction and network balancing.</p>	<p>Agriculture AgriTech</p> <p>Edge sensors for precision agriculture and optimized resource management.</p> <p>Crop monitoring by AI drones and autonomous smart irrigation.</p>

Financial Value Levers

Projected Economic Impact (2025-2035)

<p>\$551 Md</p> <p>Global AI Market Value 2035 (inc. Edge AI, Cloud AI, Agentic AI & Swarm Intelligence)</p>	<p>\$357 Md</p> <p>Edge AI 2035</p>	<p>27.7%</p> <p>Average Edge AI CAGR (2025-2035)</p>
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<p>Acceleration 2026</p> <p>Peak growth for Edge AI at 34% in 2029, in line with the annual chart.</p>	<p>Industrial ROI</p> <p>Major productivity gains via Edge AI factory floor PCs.</p> <p>Adoption: 86% AI Healthcare</p>
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ROI Edge vs Cloud : Why Edge outperforms by 2x per sector

Cloud AI vs Edge AI: Financial and Operational Performance (2025)

<p>Average ROI Edge AI (Global)</p> <p>285% ↑ Vs Cloud</p>	<p>ROI Medium Cloud AI (Global)</p> <p>145% stable</p>	<p>Average Return Time (Edge)</p> <p>9.5 Months fast</p>	<p>Favorable Edge Sectors</p> <p>7 / 9 dominance</p>
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Industrial Sector	Best use cases	Advantage	ROI Cloud AI	ROI Edge AI	Return Time
Industry 4.0	Real-time quality control, Zero latency	★ Heavy Edge	120%	320%	6 months
Automotive	Embedded ADAS, Local Vehicle Data Processing	✔ Edge	90%	280%	12 Months
Smart Cities	Traffic management, Video protection, Smart lighting	✔ Light Edge	180%	210%	18 months
Health	Patient Privacy, Medical Devices	✔ Edge	200%	250%	14 months
Retail	CRM Personalization, Global Trend Analysis	☁ Cloud	220%	190%	10 Months
IT & Telecom	Optimization RAN, MEC (Mobile Edge Compute)	★ Heavy Edge	150%	290%	8 months
Energy & Utilities	Smart Microgrids, Grid Anomaly Detection	★ Heavy Edge	160%	270%	9 months
Agriculture	Precision Agriculture, Autonomous IoT Sensors	✔ Edge	110%	240%	11 Months

💡 Latency Factor
 Real-time constrained sectors (<10ms) see a 2.5x increase in Edge ROI thanks to the elimination of network delays.

🔄 Egress Savings
 Local processing reduces cloud bandwidth costs, a decisive factor for video (Smart Cities, Industry), by 90%.

🛡️ Compliance & Privacy
 For Healthcare and Automotive, the Edge is the only legally viable option, making the theoretical Cloud ROI unattainable.

3 real-world case studies : How Edge AI generates 220-320% ROI

Financial and operational impact measured by sector (Actuals 2024-2025)



Manufacturing

Industrie 4.0 & Smart Factory

Visual Quality Control

ROI 320%

Edge AI system detecting micro-defects in real-time on high-speed production line.

\$2.4M Savings/year **6 months** Back Inv. **-85%** Defects

Predictive Maintenance

ROI 280%

Edge vibration sensors analyze machine wear to prevent critical failures.

\$1.8M Savings/year **8 months** Back Inv. **-70%** Downtime

Production Optimization

ROI 220%

Automatic adjustment of production parameters via local AI to maximize yield.

+45% Productivity **10 months** Back Inv. **Low** Latency



Healthcare

Connected Care & Precision

Local AI Diagnostics

ROI 250%

Medical imaging analysis on edge device without cloud transfer for complete privacy.

\$3.2M Savings/year **14 months** Back Inv. **+92%** Accuracy

Continuous monitoring

ROI 210%

Patient monitoring via Edge wearables with real-time detection of vital abnormalities.

\$1.5M Savings/year **12 months** Back Inv. **+80%** Alerts

Edge Telemedicine

ROI 190%

Standalone health kiosks with AI pre-diagnosis for rural or remote areas.

\$900K Savings/year **16 months** Back Inv. **+300%** Consults



Retail

Customer Experience & Operations

Standalone checkout

ROI 220%

Checkout-free stores using sensor fusion and Edge computer vision.

\$1.2M Savings/year **10 months** Back Inv. **-60%** Losses

Behavior Analysis

ROI 190%

Understanding the customer journey in stores for layout and marketing optimization.

+\$2.8M Revenue/year **11 months** Back Inv. **+35%** Conversion

Stock Management

ROI 180%

Real-time shelf tracking by Edge cameras for dynamic replenishment.


\$800K Savings/year **13 months** Back Inv. **-75%** Breakouts



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