

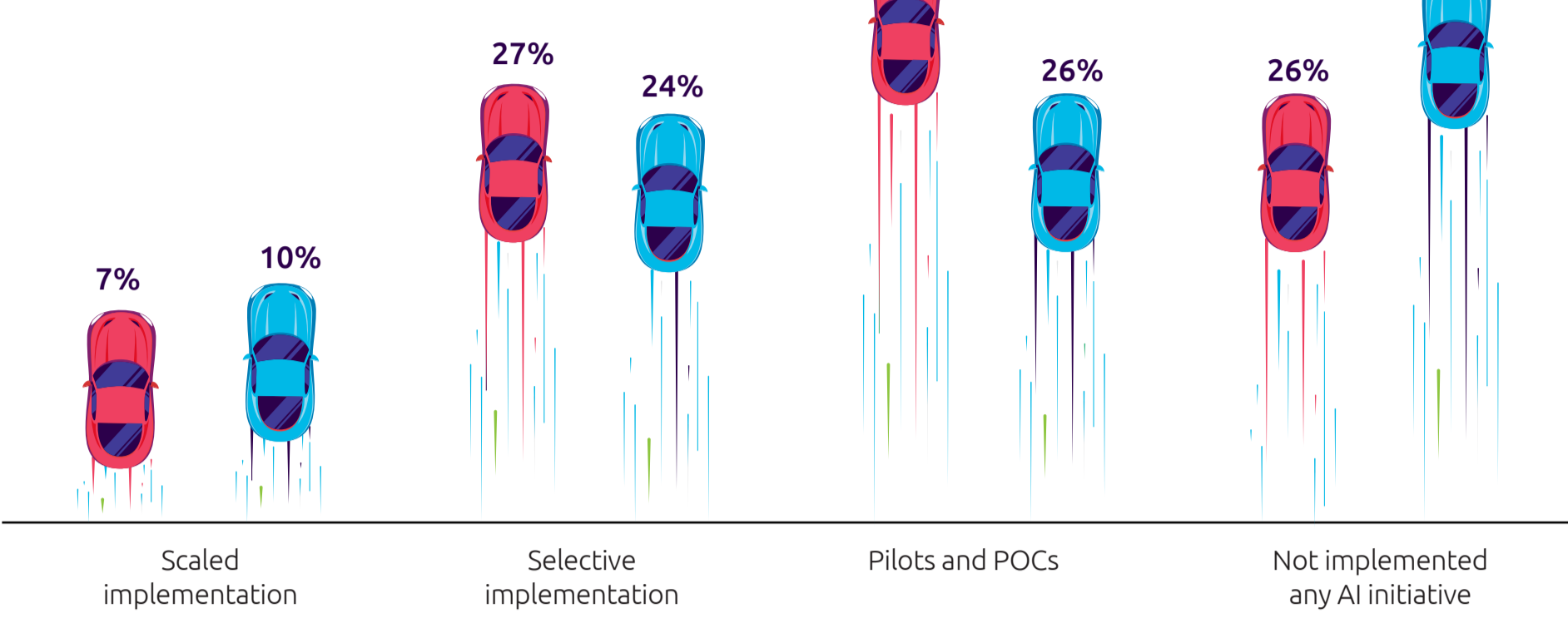


Accelerating automotive's AI transformation:

How driving AI enterprise-wide can turbo-charge organizational value

The number of automotive companies deploying AI at scale has increased only marginally

Status of AI implementation at automotive organizations



Source: Capgemini Research Institute, AI in Automotive Executive Survey, December 2018-January 2019, N=500 automotive executives.

Stages of AI implementation as defined in the research:

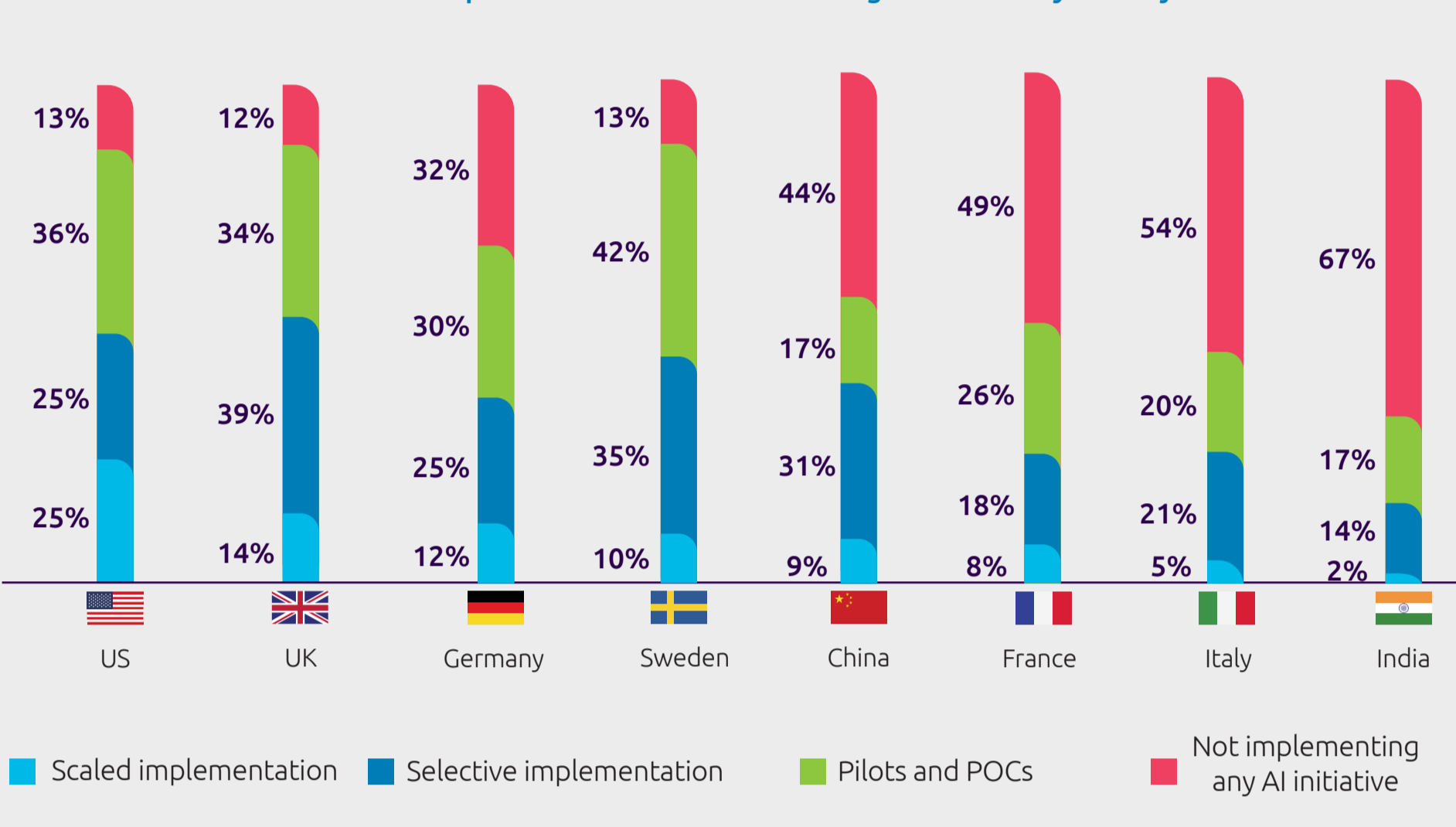
Scaled implementation = ongoing implementation across all sites/enterprise wide with full scope and scale;

Selective implementation = ongoing implementation at multiple sites in various parts of an organization, but not at an enterprise level.

"Now" refers to December 2018 - January 2019, the period during which the survey was conducted.

US, UK, and German automotive companies lead in implementing AI at scale

State of AI implementation at automotive organizations - by country



Source: Capgemini Research Institute, AI in Automotive Executive Survey, December 2018-January 2019, N=500 automotive companies.

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Large automotive OEMs can boost their operating profits by up to 16% by deploying AI at scale

Impact of implementing AI on operating profits and margin for a large OEM

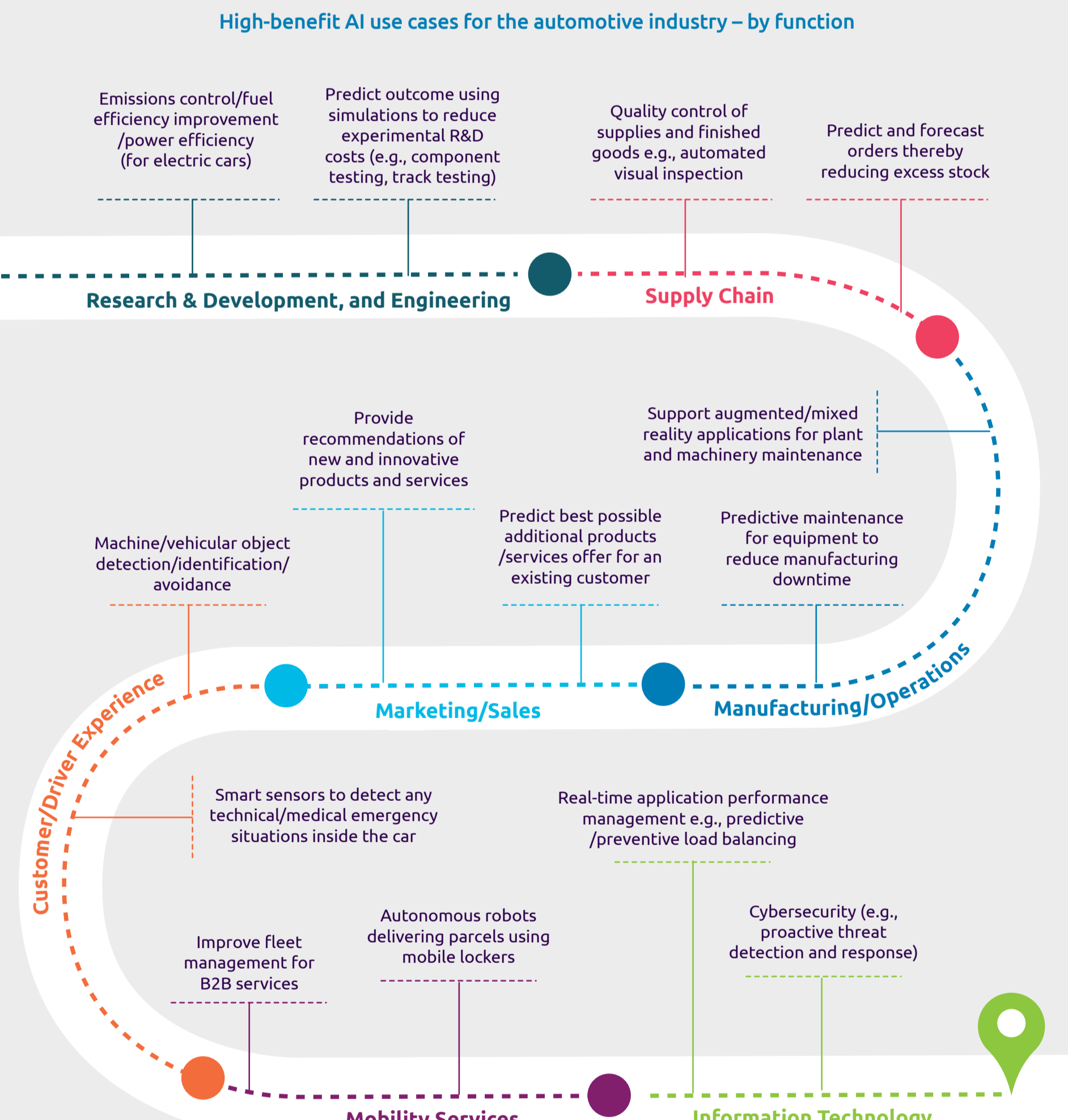
	Present day (\$bn)	Conservative improvement from AI (\$bn) ¹	Optimistic improvement from AI (\$bn) ¹
Operating Profits	\$4.7	\$4.9 (\$232mn or 5% increase from current level)	\$5.4 (\$764mn or 16% increase from current level)
Operating Margin	5.9%	6.2%	6.8%

¹ A conservative estimate considers 10% of estimated improvement from our survey results translate into actual efficiency gains; whereas an optimistic estimate implies that 33% of estimated improvement from our survey results translate into cost and efficiency gains. For more details on assumptions and methodology, please refer the report.

Source: Capgemini Research Institute Analysis; Bloomberg.

Where should auto manufacturers focus their AI investments?

High-benefit AI use cases for the automotive industry - by function



Source: Capgemini Research Institute, AI in Automotive Executive Survey, December 2018-January 2019, N=500 automotive companies.

Leading organizations are already implementing AI use cases

Audi
Is using AI to test and identify tiny cracks in sheet metal during production. The system can potentially detect the finest of cracks using millions of images, automating visual quality inspection

Continental
Developed a highly scalable and modular virtual simulation program that can generate 5,000 miles of vehicle test data per hour compared to 6,500 miles of physical test driving per month.

Michelin
has developed a tire-monitoring system using telematics and predictive analytics, allowing real-time view into performance and wearing of individual tires

Mercedes-Benz
Has tested a computer-vision based system to recognize and register parcels automatically in a last-mile delivery vehicle, reducing the time to load the vehicle with parcels by 15 percent

Volkswagen
Has unveiled a showroom of the future where it shows AI and Virtual Reality technology to understand customer's likes and preferences and recommend appropriate car models for them

General Motors
Conducted a pilot run for AI-enabled predictive maintenance that deployed a cloud-based image classification tool on nearly 7,000 robots and detected 72 instances of component failure that could have led to unplanned downtime

Source: Source: Company websites and media reports.

How can automotive organizations effectively scale AI?

- Upgrade IT Practices:** Develop the maturity of traditional IT systems and data practices
- Acquire skills:** Hire experts and upskills employees to expand AI initiatives
- Invest more:** Increase investments significantly in skills, software and hardware to scale AI
- Select right:** Focus on selecting and scaling those use case that offer high benefits
- Govern well:** Implement measures for swift progress on AI projects and prioritize AI investments

Source: Capgemini Research Institute Analysis.

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