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Technology Is Radically Reshaping Auto Economics

Digital technologies and AI are poised to increase the efficiency of automotive processes by 30%.

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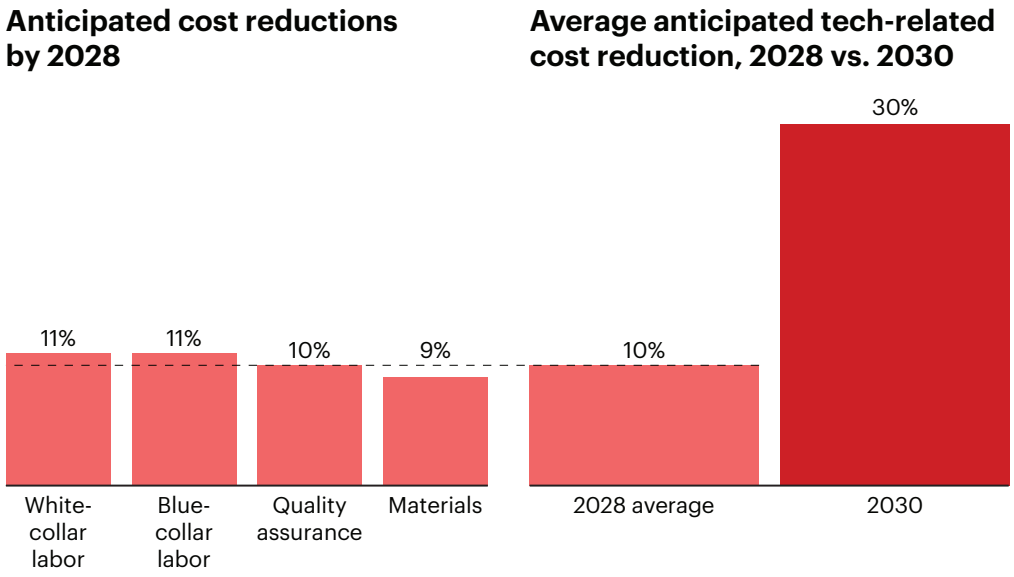
At a Glance

- Three-fourths of automotive industry managers expect significant cost improvement in the next two years.
- Digital collaboration between OEMs and suppliers already has begun to slash vehicle development times by more than 40%, a Bain survey shows.
- More than 80% of industry managers expect AI to dynamically reconfigure production plans in real time.
- Most industry managers surveyed said they expect a shift to fabless production, similar to the Apple–Foxconn model.

Squeezing costs has long been crucial to staying competitive in the automotive industry. But advanced technologies are about to transform the rules of the game. In a recent Bain & Company survey, most auto industry managers said they believe new technologies will usher in efficiency gains of 10% in three years and 30% in the next five years (*see Figure 1*). Productivity leaps of that magnitude will radically change processes and reengineer a lasting shift in the industry's cost structure.

Figure 1: Advanced technologies are expected to deliver 10% savings for automakers in the next three years—and more than 30% by 2030



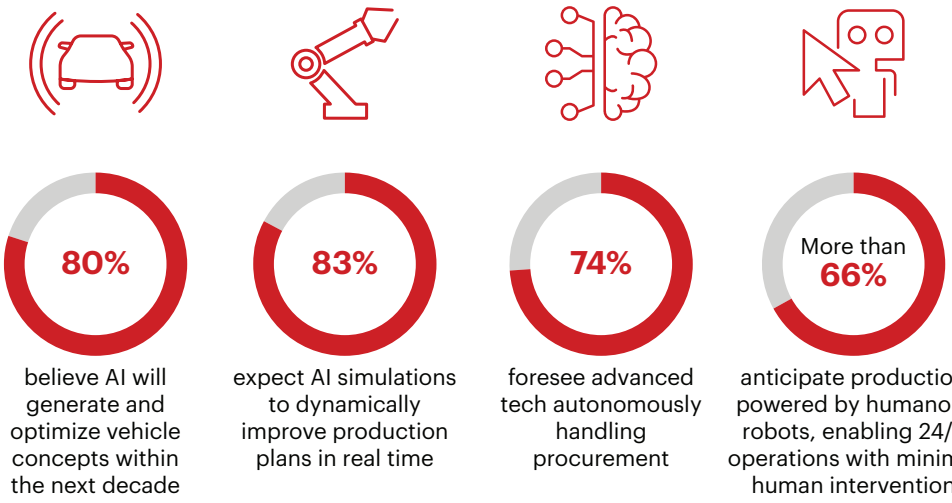
Note: Bars of equal value may vary in height due to rounding
Source: Bain tech-induced cost reduction survey, April 2025, North America and Europe (n=300)

Eighty percent of auto industry managers believe AI will generate and optimize vehicle concepts within the next decade, according to our survey. More than 80% expect AI simulations to dynamically reconfigure production plans in real time. And more than two-thirds of those surveyed envision production powered by humanoid robots, enabling 24/7 operations with minimal human intervention (*see Figure 2*).

The winners in this shifting landscape will be companies that can quickly scale new digital technologies and AI while optimizing their core processes and operating model. A handful of leading automakers are starting that critical shift with selected use cases and are rethinking how value is created across the product life cycle. They have already begun pushing down costs for labor, materials, and quality assurance, rewriting the industry's economic model.

Many original equipment manufacturers (OEMs) and suppliers have set up pilot projects, but most are struggling to get beyond experimentation. In our experience, these efforts stall due to fragmented data, unclear return on investment, and organizational inertia. Few companies have embedded advanced technologies throughout their operations. As a result, huge productivity gains go untapped.

Figure 2: Auto leaders expect AI and automation to reshape vehicle design, production, and procurement by 2035



Source: Bain tech-induced cost reduction survey, April 2025, North America and Europe (n=300)

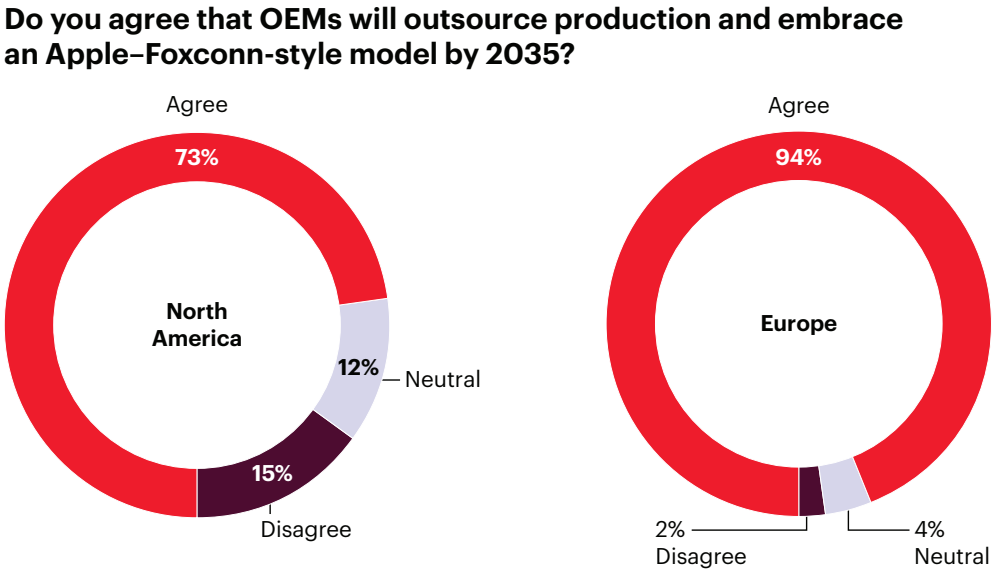
The opportunity

Rapid development. One of the biggest technology-led breakthroughs will be a faster, smarter development process. Digital collaboration between OEMs and suppliers already has begun to slash vehicle development times by more than 40%, transforming how new vehicles come to life. Leaders now aim for 24 months to market, and development times are likely to shrink further. Those efficiency gains will be made possible by teams working in sync across shared digital platforms, experimenting more freely, and making decisions earlier in the process. That approach doesn't just save time—it reduces complexity, lowers development costs, and allows companies to respond more fluidly to shifts in consumer demand and regulation.

Automation. Leading companies are harnessing artificial intelligence in indirect functions to make critical decisions, from shaping vehicle concepts to adjusting factory schedules and sourcing strategies in real time. On the factory floor, automation is steadily advancing, with another leap expected as intelligent robots and humanoids become more common by the end of the decade. These practices are already improving bottom-line performance in fast-moving organizations, and early results suggest much more is possible.

Outsourced manufacturing. Many automakers are reimagining the factory itself, including a shift to an outsourced production model. More than 80% of those surveyed said they expect a shift to fabless production, similar to Apple's iPhone arrangement with Foxconn, by 2035 (*see Figure 3*).

Figure 3: Nearly 85% of respondents expect a shift to fabless production by 2035



Source: Bain tech-induced cost reduction survey, April 2025, North America and Europe (n=300)

Under this model, OEMs would design their products, focusing on customer experience and brand management, while delegating operations to external partners, who would take on the capital-heavy manufacturing. If companies choose this path, it will mark a major departure from the vertically integrated systems that have defined the automotive industry for decades—and could create greater flexibility and resilience.

Commercial wins. Leading OEMs are also applying generative AI tools to commercial activities, with impressive results in marketing and lead generation. These tools include digital sales assistants for frontline staff and direct customer engagement. In our survey, four out of five respondents said gen AI applications exceeded their expectations. Many are finding that they can better understand what customers want, tailor content quickly, and bring greater precision to digital engagement. That's a reminder that technology's biggest impact may come not from robots or sensors but from the ability to make smarter decisions, faster.

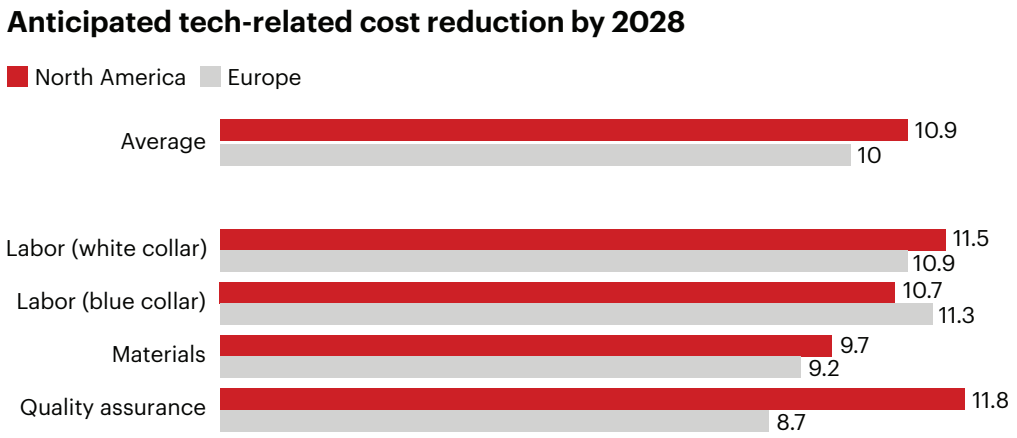
The challenges

Despite technology's potential to cut costs dramatically, companies continue to cite poor data quality as the key stumbling block. Many organizations have invested in cloud infrastructure and edge computing, but their systems are still fragmented, their data definitions inconsistent, and their platforms built for an earlier era. For most leadership teams, the challenge isn't the technology itself—it's building a data foundation robust enough to allow digital tools to work at scale.

And to keep pace, they need to deploy new tools quickly. Auto manufacturers are moving faster than suppliers in adopting and scaling advanced technologies. They have more experience identifying high-impact use cases and are more likely to have the data governance needed to support large-scale implementation. That growing gap could put pressure on supplier relationships, especially as OEMs begin to rethink what they build in-house and what they source from outside.

Beyond technical constraints, mindset is the biggest obstacle to realizing substantial savings. Technical capabilities are similar across North America and Europe, for example, but management outlooks differ between the regions. US leaders expressed greater confidence that digital tools can deliver significant savings in the near term, worrying most about how to achieve savings in full-time equivalent positions and other cost items. European respondents were more cautious, with many questioning whether new technologies will deliver as promised (*see Figure 4*). That hesitancy could result in a failure to reap the benefits of digital technology.

Figure 4: US auto leaders expect greater savings from tech than their European peers do



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This difference in mindset and culture—not infrastructure—may prove to be the bigger barrier to broad adoption. Leading OEMs and suppliers are taking bold and decisive steps. Those that stand on the sidelines run the risk of being overtaken by the competition and being outpriced in the global market.

What sets the leading companies apart

To harness the power of AI and other digital technologies, organizations must be ready to embed new tools and change the way they work. Those adept at using digital technologies and AI to dramatically reduce costs follow a few key guidelines.

Solve real problems. Rather than rushing to deploy the latest digital tools, successful companies start by addressing their biggest operational challenges. Whether it's improving production processes, optimizing sourcing, or empowering frontline staff, they wield technology to solve pressing problems.

Focus on impact. Instead of launching dozens of disconnected pilots, fast movers begin with a few high-impact use cases that can be scaled. Once those "lighthouse" projects deliver results, leaders replicate them systematically across other sites and functions.

Build a data backbone. The foundation isn't software—it's data. Leading companies are investing in clean data and standardized, integrated platforms that allow them to see across the organization and act on insights with confidence.

Change the operating model. The most effective management teams optimize processes from end to end, transform the organization and develop new capacities, and encourage decision makers to take bold moves. They also install incentive systems that reward robust use of AI and digital technologies to take out cost.

The auto industry has faced pressure on costs for decades, but what's happening now isn't about marginal gains. It's a quantum leap in efficiency. The winners won't be the ones with the most advanced tools or the biggest budgets. They'll be the ones that focus on solving the right problems, with the right technology, at the right time. Ultimately, these leaders will forge a new operating model that redefines the industry's cost curve.

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