

9TH ANNUAL

State of Smart Manufacturing Report: Automotive Edition

How the automotive industry is harnessing emergent technology to reduce risk, generate growth and maximize workforce potential



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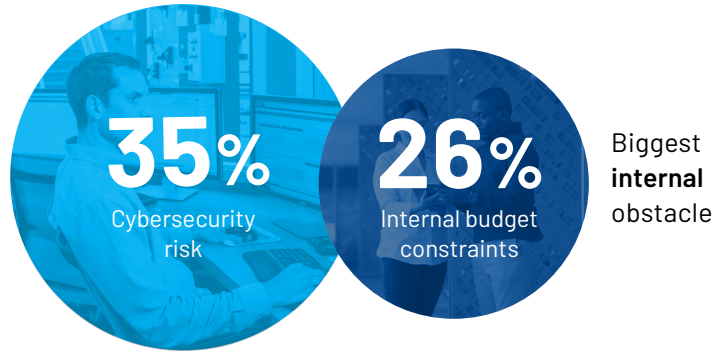
OBSTACLES AND OUTLOOK FOR AUTOMOTIVE

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Cybersecurity is an even bigger concern for automotive than other industries: respondents in our [pan-industry report](#) ranked it lower, at number 3 on the list of external pressures. Recent high-profile data breaches and the proliferation of internet connectivity within automotive may have contributed to **cybersecurity leaping up from the ninth biggest risk last year to this year's top spot.**

Internally, budget constraints are dampening growth, closely followed by organizational change management. While retaining and upskilling existing employees is a top three concern, the sector is less challenged by recruitment than other industries. Attracting employees with desired skill sets sits at ninth place on the internal risks table, despite topping the chart in our aggregated industry report.



EXTERNAL OBSTACLES



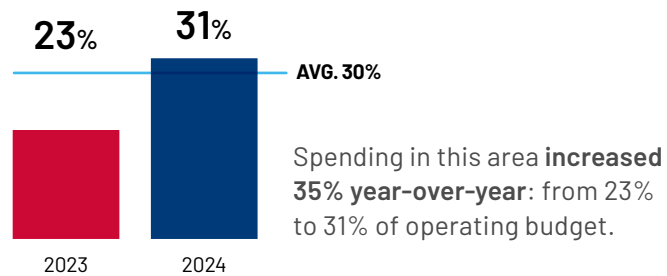
INTERNAL OBSTACLES



TECHNOLOGY INVESTMENTS DRIVE ROI

Despite internal budget constraints, automotive firms have **increased investment in technology by more than one-third**; a higher-than-average rate when compared to the aggregated industry responses in this survey.

TECHNOLOGY INVESTMENT



ABOUT THE RESEARCH

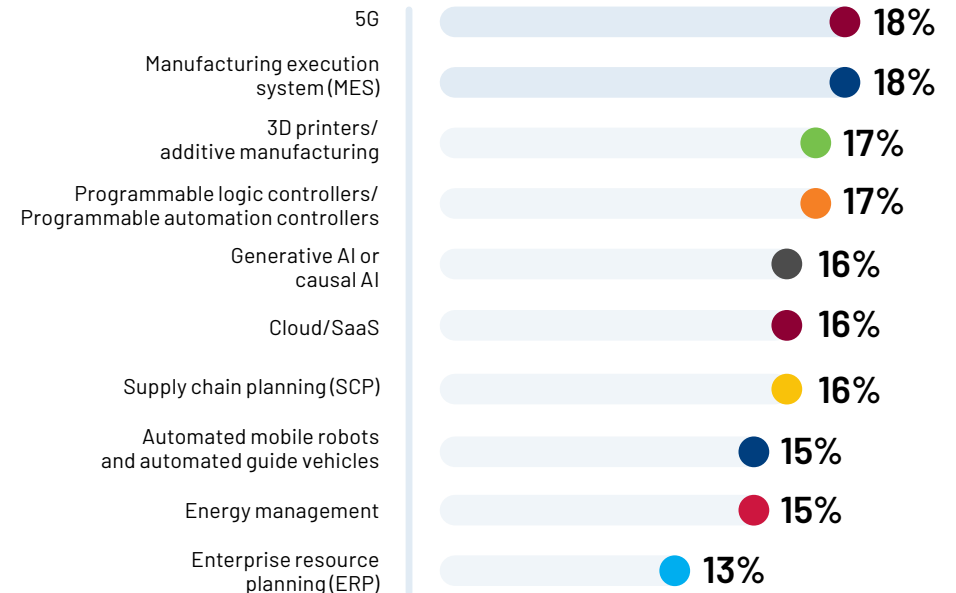
This report is based on the responses of 182 managers and executives from automotive manufacturers, automotive supply manufacturers and electric vehicle manufacturers in 15 countries.

It's part of the 9th annual edition of the [State of Smart Manufacturing report](#), which surveyed 1,567 manufacturing leaders across multiple industries.

Adoption of **smart technology and AI** is seen by manufacturers as the best way to mitigate against both external and internal risks.

Automotive manufacturers are **generating the most ROI from investments that create improved connectivity and efficiency in the plant**, such as 5G, manufacturing execution systems (MES) and programmable logic controllers (PLC).

BIGGEST ROI



Q. Which of the technologies that your company has invested in had the biggest ROI over the last 12 months? Select top 3.

Base: 1562

BETTER DATA MANAGEMENT NEEDED TO FUEL INNOVATION AND IMPROVE SECURITY

Respondents believe those at the forefront of the automotive manufacturing industry are using data to fuel AI / ML and optimize processes, followed by cybersecurity. Cybersecurity sat outside of the top three answers in our overall survey, again highlighting automotive's particular concern with this topic.

When it comes to their own data, automotive manufacturers believe their own organizations use less than half of what they collect effectively.



Only **43%** of data is being used effectively

HOW LEADERS USE DATA

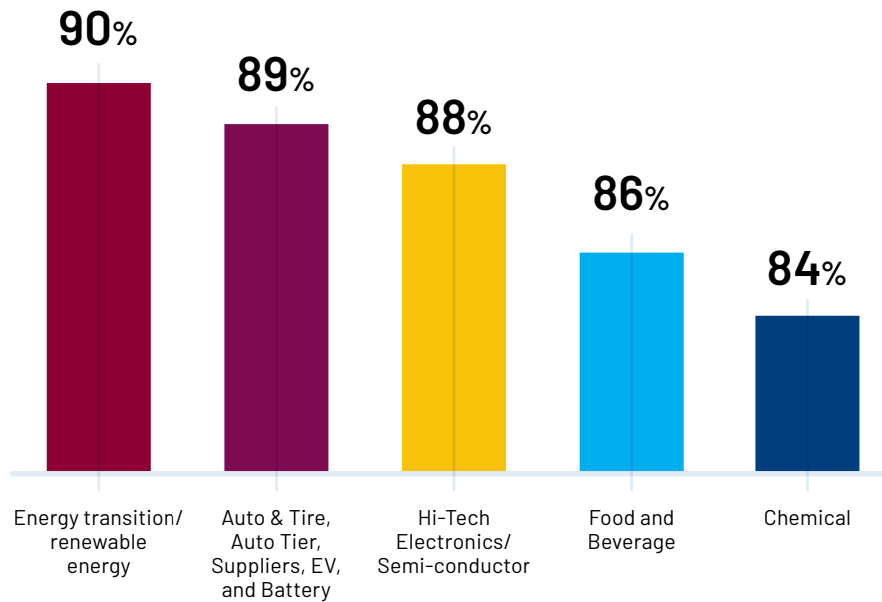


Q. How do you perceive leaders in your industry are using the data collected from their currently employed technologies, processes, connected devices, etc.? Select all that apply.

Base: 1567

MAKING STRIDES IN THE FIELD OF ESG

Organizations in the energy transition/renewable energy sector have had the most success in implementing some form of ESG policy (90%)



Q. Which of the following best describes your organization's current efforts around ESG (Environmental, Social, and Governance/ Sustainability)? Select one.

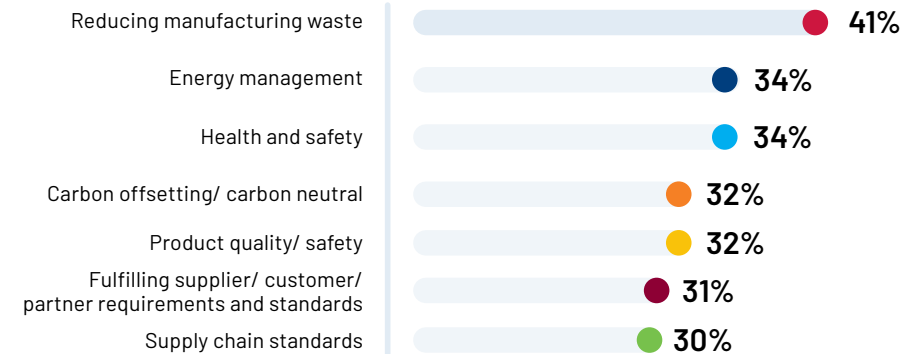
Base: 917

* Only showing respondents from these industries

The automotive sector is among the most successful in implementing environmental, social and governance (ESG) policies; second only to the energy industry.

Reducing manufacturing waste is most important to automotive ESG programs, signaling the shift toward a circular economy in this sector.

WHAT MATTERS MOST FOR 2024



Q. What matters most to your organization's sustainability/ESG policy? Select all that apply.

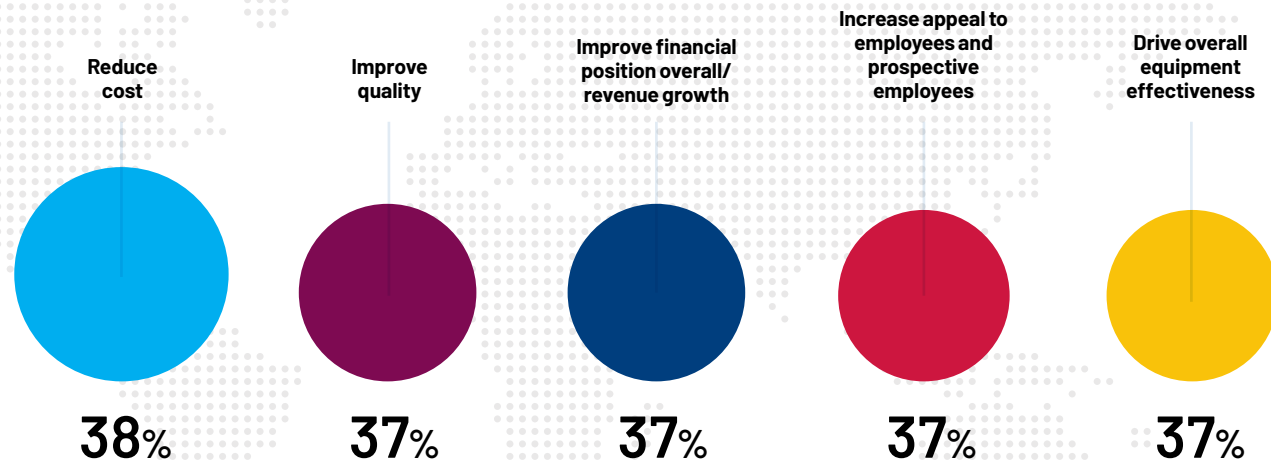
Base: 1567

MANUFACTURERS ADOPT SMART MANUFACTURING TECH TO CUT COSTS

97% of automotive manufacturers are using or evaluating smart manufacturing technology, up from 85% last year; and most believe it will help them to reduce cost. This is in contrast to our overall survey, where quality improvement topped the table of expected outcomes.

However, cost is also seen as the main barrier to adoption of smart manufacturing in the automotive sector, with a higher percentage (40%) citing this reason than in the cross-sector survey (37%).

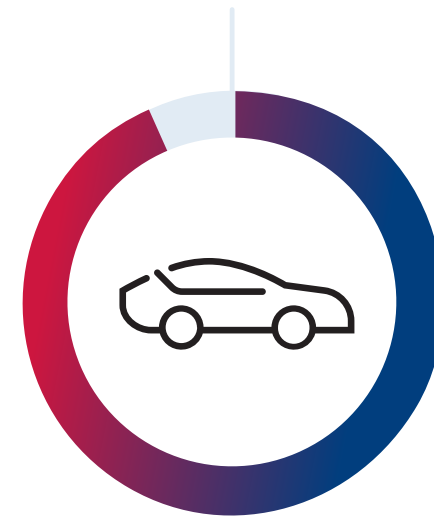
SMART MANUFACTURING IS DRIVING BUSINESS OUTCOMES AROUND THE WORLD



Q. What positive business outcomes are you looking to achieve from your smart manufacturing technology? Select all that apply.

Base: 1567

97% of automotive manufacturers are using or evaluating smart manufacturing technology

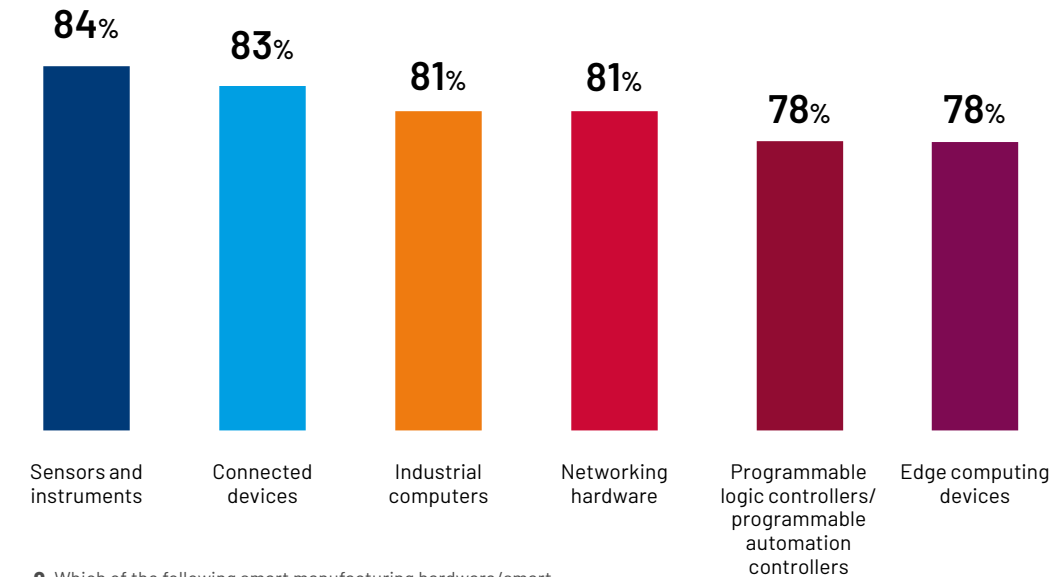


FACTORY FLOOR PROCESSES SEE MOST **SMART MANUFACTURING ADOPTION**

PERCENT OF **SMART MANUFACTURING ADOPTION**

HARDWARE

Automotive manufacturers are using smart manufacturing technology to improve connectivity throughout the plant, with sensors and instruments the most adopted hardware, and connected devices next on the list.

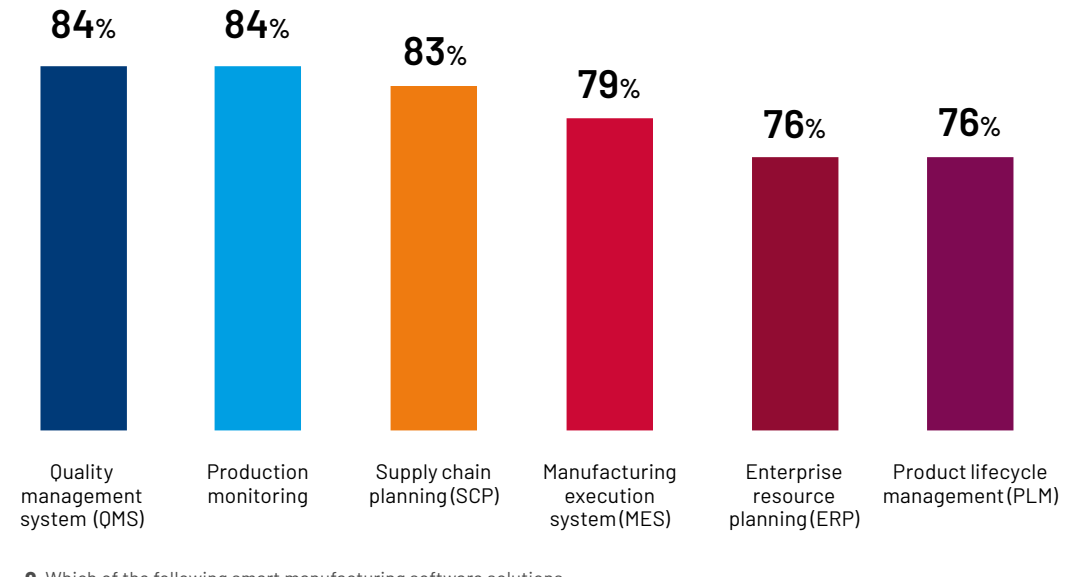


Q. Which of the following smart manufacturing hardware/smart devices has your company adopted or has plans to adopt?

Base: 1567

SOFTWARE

Software adoption is also targeted toward improvement of factory floor processes, with **production monitoring and quality management systems being the most popular** – the same result as in our cross-sector survey.



Q. Which of the following smart manufacturing software solutions has your company adopted or has plans to adopt?

Base: 1567

BUILDING A WORKFORCE FIT FOR AN ERA OF CHANGE

Automotive employers believe **employees who can work well in teams and are flexible and analytical will help drive the industry forward.** These so-called 'soft skills' are rated more highly than technical abilities around maintenance, repair and smart technology.

Manufacturers recognize that keeping their workforce engaged and motivated in an era of seismic change will be crucial: respondents say **employee engagement is the biggest workforce-related obstacle over the next 12 months.**

SKILLS EMPLOYERS ARE SEEKING

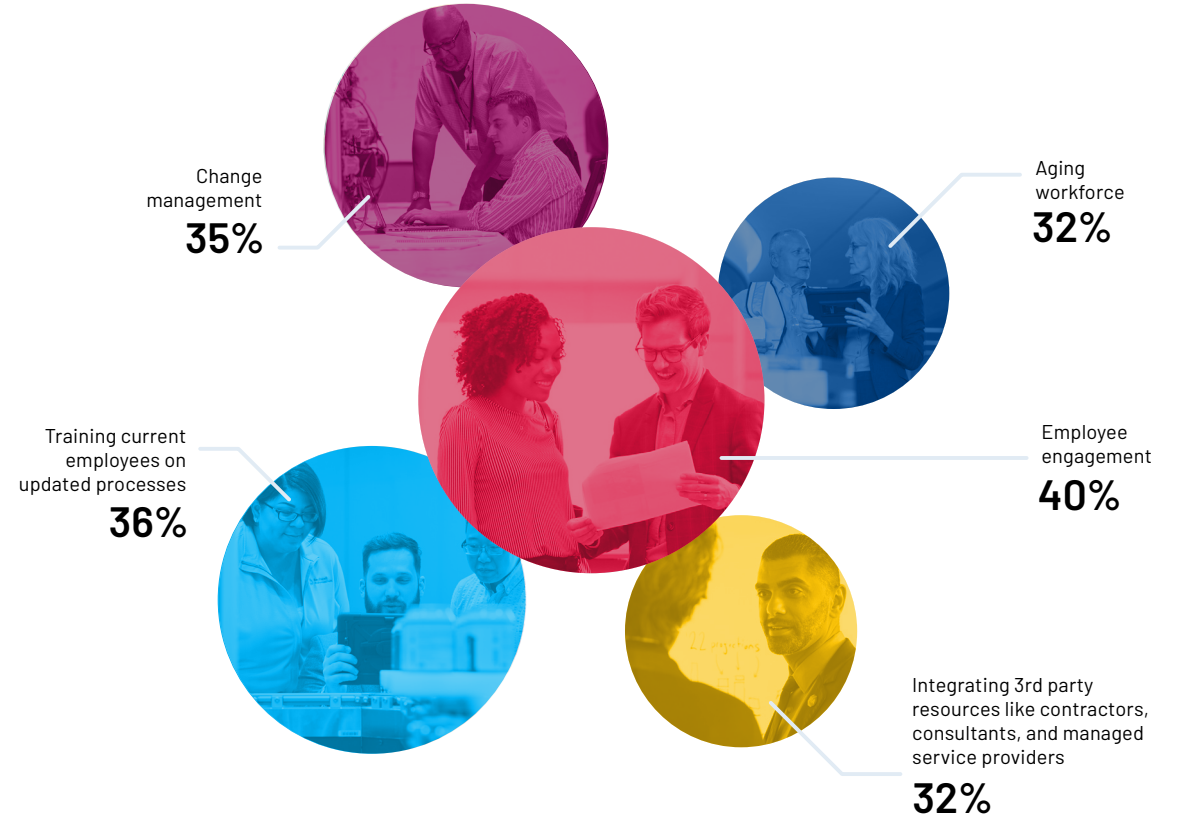
Automotive manufacturers are using smart manufacturing technology to improve **connectivity** throughout the plant, with sensors and instruments the most adopted hardware, and connected devices next on the list.



Q. Over the next 12 months, how important are the following knowledge and/or skills as your organization recruits its next generation of employees?

Base: 1567

WORKFORCE-RELATED OBSTACLES



40% of respondents rated **employee engagement** as the top obstacle when it comes to the workforce

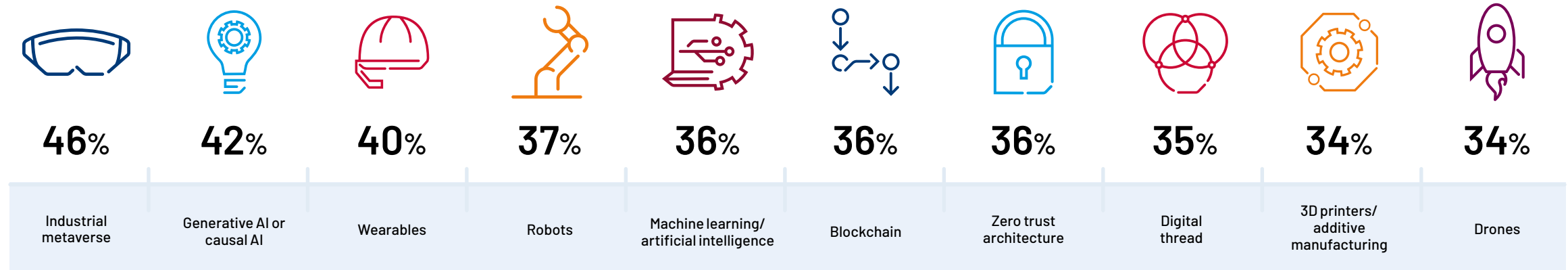
PLANNED **AUTOMOTIVE TECHNOLOGY INVESTMENTS** BUCK THE GENERAL TREND

Adoption of the industrial metaverse within the automotive sector looks set to outstrip other industries. While this technology languishes at the bottom of the table of cutting-edge tools already invested in by all sectors in our survey, it's the one most automotive respondents plan to invest in within the year.

While a fully operational metaverse may be some years away, the technical and operational opportunities offered by the so-called 'proto-metaverse' are clearly attractive.

Wearables are also seen as having huge potential – automotive respondents ranked them just beneath GenAI/Causal AI at number 3 on the planned-investment table; a full 13 places higher than in our pan-industry report.

TOP 10 INVESTMENT AREAS OVER THE NEXT 12 MONTHS



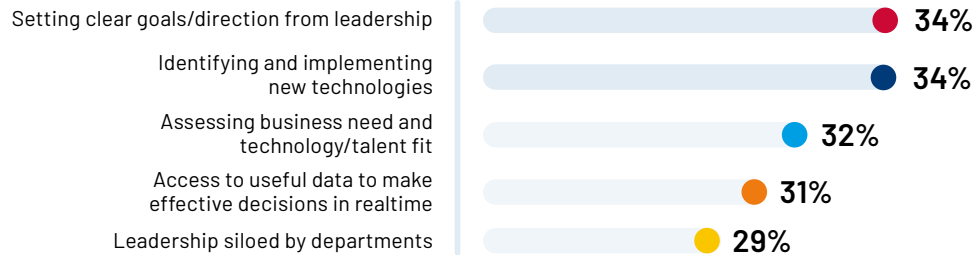
0. Which of the following technologies has your company invested in?
 Respondents selected: Plan to invest in the next 12 months from four options.

Base: 1567

LOOKING TO THE FUTURE

Being clear on the path forward is key to future success. **A failure to set clear goals was the number one leadership obstacle** in this sector – rated far higher than in the full cross-sector report, where it ranked at number 8. We’ve seen elsewhere in this report that organizational change management is front of mind for automotive manufacturers, who put leadership siloed by departments in the top 5 leadership-related risks.

TOP 5 LEADERSHIP OBSTACLES

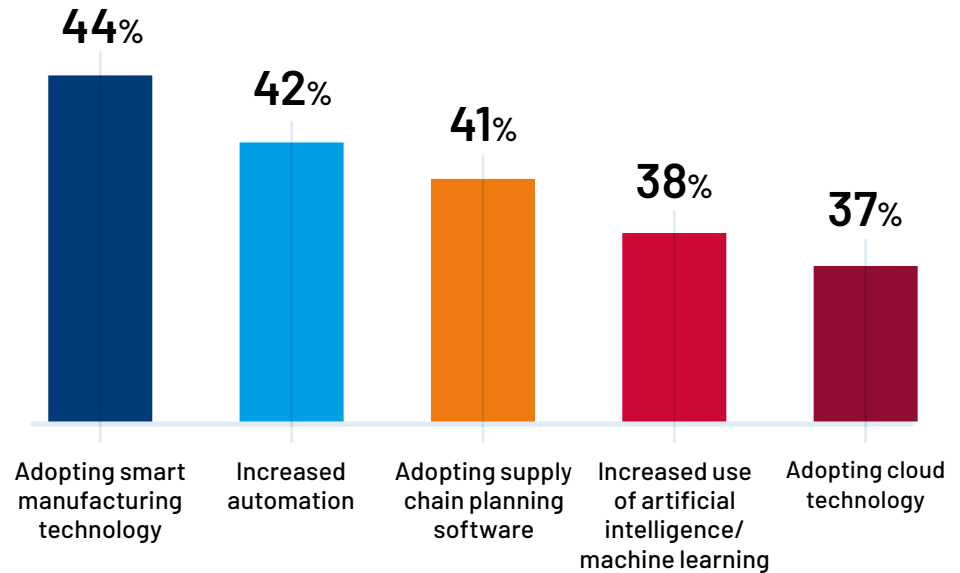


This data represents the top 5 leadership obstacles that will be faced in the next 12 months for automotive.

Going forward, automotive manufacturers are targeting strategies that will help them retain, upskill and engage the workforce in order to thrive and grow. Technologies that complement and augment the value brought by people – such as smart manufacturing technology and automation – are where they see positive business outcomes being created.





Despite the disruption faced within the automotive sector, there’s reason to be positive for those leaders who focus on the benefits to be had by technology when it’s thoughtfully applied by an engaged and inspired workforce.

HOW AUTOMOTIVE MANUFACTURERS ARE PLANNING TO DRIVE FUTURE SUCCESS



Q. How do you plan to drive positive business outcomes over the next five years? Select all that apply.

Base: 1567

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