KPMG

Shifting dynamics on the road ahead

Helping the automotive workforce adapt to advanced technologies and economic shifts

kpmg.com

The automotive industry is undergoing transformative changes that are redefining the future of work, driven by advancements in artificial intelligence (AI), robotics, and advanced manufacturing. As these technologies reshape vehicle design and production, automakers must urgently adapt their workforce. This means not only evolving skill sets but also strategically addressing broader economic shifts and labor challenges. Companies face the complex task of remaining competitive while contending with a shortage of skilled workers, declining union membership, and an aging workforce. By implementing innovative strategies to attract tech-savvy talent and invest in workforce development, the industry can build resilience and be well-prepared to capitalize on new technological opportunities.

Up to

3.8 million

skilled manufacturing jobs could go unfilled between 2023 and 2033—threatening progress on software-defined vehicles.

Once solidly unionized, the automotive workforce has seen a decline in union membership, as some manufacturing moved to right-to-work states. The United Auto Workers (UAW) membership numbers fell to 370,000 in 2023, a 3.3 percent drop from the previous year and the lowest level since 2009.[1] This shift in unionization, along with the rise and fall in employment, has further contributed to the overall uncertainty and churn in the workforce. The challenges are significant, particularly in filling roles necessary for creating software-defined vehicles.

Meanwhile, the average American worker is getting older. According to the Pew Research Center, the median age of an adult worker is 42, up from 39 in 2000. Today, more than a third of the adult workforce (34 percent) is age 50 or older, compared with 24 percent in 2000.[2] These workforce challenges, exacerbated by skill deficits and economic shifts, require automakers to implement multifaceted strategies to adapt and thrive.

[1] "UAW Membership Hits 14-Year Low Amid Organizing Push," Autobody News, March 29, 2024

[2] Luona Lin, Juliana Menasce Horowitz, and Richard Fry, "Key labor force trends," Pew Research Center, December 10, 2024

Automakers adapt workforce strategies for resilience

In past decades, the automotive workforce was an indicator of the country's industrial health. Autoworkers' prosperity typically signaled robust industrial performance and consumer demand. Today, the auto labor landscape is much more uncertain and experiencing significant fluctuations, with some companies adding jobs while others are laying off workers. The automotive manufacturing employee count stands at about 997,300 workers (seasonally adjusted)[3]—it rose in 2022 and 2023, but fell in 2024, due to layoffs driven by reduced sales of both gasoline-powered vehicles and electric vehicles (EVs).

The ongoing tariffs on automotive parts and supplies are pushing companies to reconsider the locations of their manufacturing facilities. They must decide whether to keep operations offshore, nearshore, or bring them to the US, which impacts workforce composition (i.e., contingent labor). Auto companies face rising labor costs and economic uncertainties.

The average autoworker's hourly wage rose 8.3 percent year over year to $32.81, reflecting tight labor markets, recent union contract wins, and the growing demand for skilled workers.[4] However, rising wages may also pressure employers to seek efficiencies and reduce expenses.

Historically synonymous with Detroit, the automotive industry still has significant workforce concentrations in the Great Lakes region. However, newer hubs are emerging in the Southwest, Texas, and California, each one offering unique advantages. The Southeast draws various foreign automakers due to its large workforce and trade access. For example, Mercedes-Benz plans to produce a new core-segment vehicle at its plant in Tuscaloosa, AL, starting in 2027, deepening its footprint in the region.[5] Meanwhile, California's affluent population and tech collaborations drive demand in the West.

These challenges highlight the industry's need to adapt and transform, emphasizing the importance of strategic workforce planning.

8.3% **Year-over-year increase brought the average autoworker's hourly wage to $32.81, reflecting tight labor markets, recent union contract wins, and rising demand for skilled workers.**

[3] "Automotive Industry: Employment, Earnings, and Hours," US Bureau of Labor Statistics, July 23, 2025

[4] Ibid.

[5] Ralph Hiddenburg, "U.S. Automotive Manufacturing Market Trends Report – May 2025," Timpl, May 13, 2025

Emerging tech challenges and opportunities

In addition to the added technological demands of software-defined vehicles, EVs, and advanced driver-assist features, the automotive industry is continuing its investments in advanced manufacturing technologies to improve efficiency. For example, the integration of AI in production lines enhances quality control, automates complex tasks, and ensures consistent output with higher precision. Robots handle tasks such as welding, painting, assembly, and material handling, while automation systems control and optimize workflows. Internet of Things (IoT) technologies create smart factories, where machines and devices are interconnected to optimize production processes and improve supply chain management. Collaborative robots (cobots) work alongside human workers, executing repetitive or dangerous tasks, increasing worker safety and productivity. Data analytics tools analyze vast amounts of production data for insights and efficiency improvements.

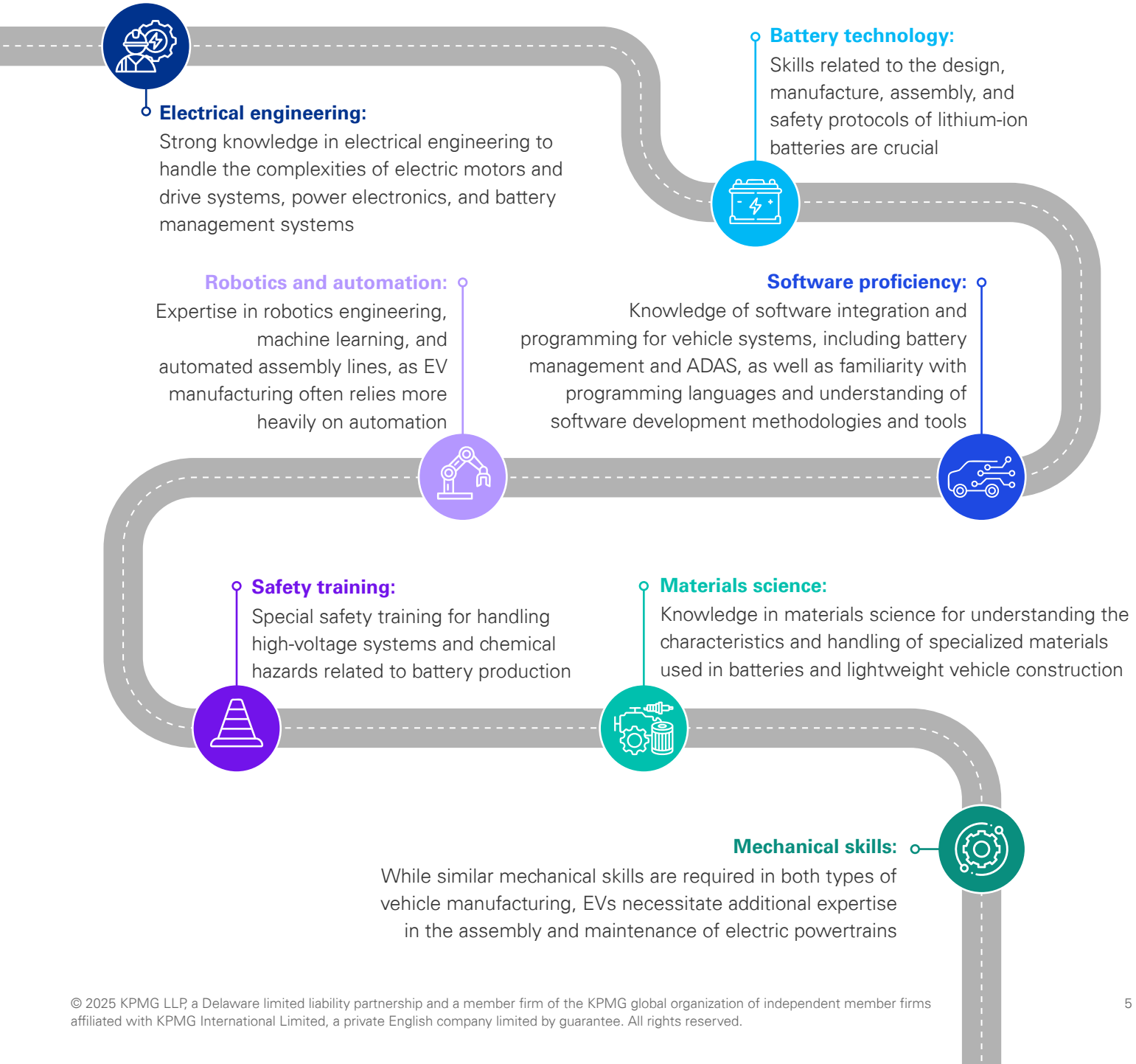
As manufacturing becomes more dependent on technology, autoworkers will need to develop and sustain advanced skills to thrive in high-tech environments. These changing skill requirements include:

- **Technical expertise:** Skills in programming and maintaining robotic systems, as well as using technology and AI to produce code and test software; also, training in the safe handling and operation of automated and robotic systems, as well as in using technology and AI to write code and test software
- **Data management and analytics:** The ability to analyze and interpret data from various sources to optimize production processes and improve product quality
- **Cybersecurity:** Knowledge of cybersecurity risks and how to implement measures to protect against them
- **Digital literacy:** Understanding and operating IoT devices, AI algorithms, and advanced software tools and effectively engaging with cobots and team members
- **Problem-solving abilities:** The ability to adapt to and resolve issues related to complex automated systems
- **Adaptability:** Flexibility to work with evolving technologies and processes

Advanced technologies can also serve as a recruiting tool, attracting top candidates interested in state-of-the-art industrial engineering and high-tech manufacturing processes.

Filling the critical skills gap for autoworkers

As automakers incorporate more advanced technologies in their vehicle production, their workforce will need a new set of highly competitive technology and technical skills, including:



Electrical engineering:
Strong knowledge in electrical engineering to handle the complexities of electric motors and drive systems, power electronics, and battery management systems

Battery technology:
Skills related to the design, manufacture, assembly, and safety protocols of lithium-ion batteries are crucial

Robotics and automation:
Expertise in robotics engineering, machine learning, and automated assembly lines, as EV manufacturing often relies more heavily on automation

Software proficiency:
Knowledge of software integration and programming for vehicle systems, including battery management and ADAS, as well as familiarity with programming languages and understanding of software development methodologies and tools

Safety training:
Special safety training for handling high-voltage systems and chemical hazards related to battery production

Materials science:
Knowledge in materials science for understanding the characteristics and handling of specialized materials used in batteries and lightweight vehicle construction

Mechanical skills:
While similar mechanical skills are required in both types of vehicle manufacturing, EVs necessitate additional expertise in the assembly and maintenance of electric powertrains

Rising tariffs to boost local production

In this new environment, auto manufacturers will be forced to rethink their workforce economics. Automakers may have to cut their workforce, particularly in manufacturing plants. Telemetry Insights reports that tariffs could reduce new vehicle sales by 2 million, leading to layoffs of 15 percent to 20 percent of US autoworkers, affecting 165,000 or more people.[6]

To mitigate the impact of tariffs, automakers can:

- **Diversify suppliers:** Explore alternative suppliers to reduce their dependence on imports.
- **Relocate production:** Shift some production lines from Canada or Mexico to plants in the US.
- **Optimize offshoring:** If returning production to the US isn't practical or must be delayed, then optimize offshoring facilities to drastically lower operating costs.

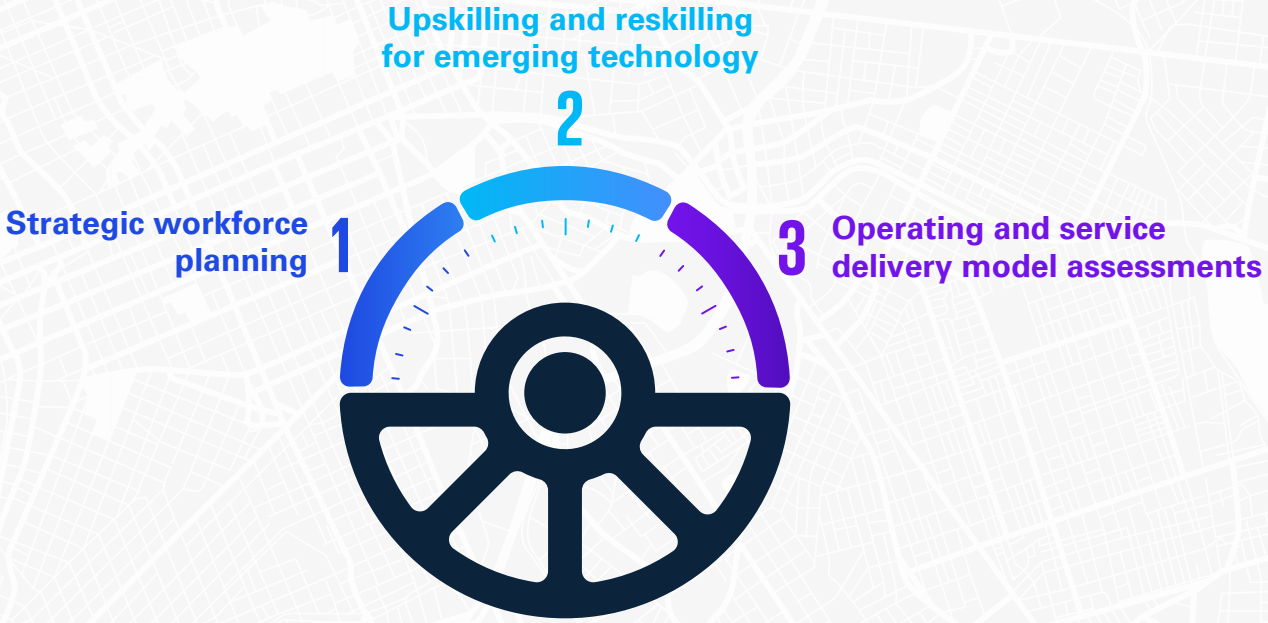
By implementing these strategies, automakers can navigate the challenges posed by tariffs and other economic trends, ensuring the continued growth and adaptability of their workforce.

Read "Revving up for localization" for more information

[6] Jamie L. LaReau, "Experts: Tariffs, now paused, would boost new car prices by thousands, lead to big layoffs," Detroit Free Press, February 3, 2025

A strategic approach to workforce transformation

Automakers looking to gain an advantage in the face of these challenges will have to look at their workforce through three distinct lenses:



By implementing these strategic adaptations, automakers can not only navigate present hurdles but also position themselves for future growth in a rapidly evolving industry.

1 Strategic workforce planning

Companies must conduct a thorough assessment of their current workforce to identify skills gaps and areas for improvement. This will help to tailor training programs and investments. They should adopt the "build, buy, borrow, bot, base" approach to manage labor demand more effectively:

Build	Buy	Borrow	Bot	Base
Develop internal talent through training and development programs	Attract external talent with competitive offers and benefits	Form partnerships to access specialized skills	Utilize automation and robotics to enhance efficiency	Strategically locate operations to optimize costs and access talent

2 Upskilling and reskilling for emerging technology

Automakers are continually investing in technology, particularly in automation and AI, which creates a skills gap in how workers adapt to these new technologies. To bridge this gap, companies should implement tailored training programs that address electrical engineering, battery technology, software integration, robotics, and regulatory requirements. By focusing on continuous learning and development, they can ensure the workforce is well-equipped to meet the demands of advanced manufacturing and EV production.

Upskilling not only enhances technical capabilities but also improves employee well-being by providing career growth opportunities and reducing job-related stress, leading to higher job satisfaction and retention. Offering comprehensive benefits packages, including mental health support, fitness incentives, and wellness programs, further supports employee well-being. Additionally, collaborating with universities and technical schools can support employees in maintaining up-to-date knowledge of technological advancements. This collaboration can also aid in developing comprehensive training programs and ensuring a consistent availability of skilled workers. Continuous learning and development are important to keep pace with rapid technological changes.

Read "Navigating Workforce Challenges Amid New US Tariff Policies" for more information

3 Operating and service delivery model assessments

Auto companies should leverage AI in human resources (HR) and other support functions (i.e., finance, procurement, information technology) to enhance process efficiencies and match skills to job positions. By using data-driven insights, they can optimize their workforce, improving talent acquisition and retention. Additionally, investing in advanced manufacturing techniques and automation will boost production efficiencies and reduce costs. Companies should accelerate localization efforts to reduce dependency on global supply chains and mitigate the effects of tariffs. Lastly, optimizing supply chain strategies and realigning workforce planning will help balance increased costs with long-term efficiencies and competitive advantages.

Preparing for workforce evolution

The US automotive workforce is undergoing significant transformation due to advancements in technology, changes in labor dynamics, and economic policies. The increasing demand for EVs and autonomous vehicles, coupled with rising tariffs, is pushing automakers to reevaluate their workforce strategies.

Today's autoworkers need expertise in electrical engineering, software integration, battery technology, and robotics. Continuous upskilling and reskilling are essential to stay abreast of emerging technologies. Additionally, economic policies, such as tariffs, are prompting automakers to reconsider their supply chains and manufacturing locations, impacting workforce size and composition.

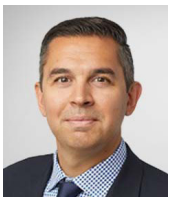
To thrive in this shifting landscape, auto companies must implement a multifaceted strategy. This includes workforce assessments, investments in training for emerging technologies, and evaluations of operating and service delivery models. Utilizing AI and data-driven insights, optimizing supply chains, and localizing production are crucial steps to manage risks and seize new opportunities.

By addressing skills gaps, fostering continuous learning, and embracing advanced manufacturing techniques, automotive companies can build a resilient, future-ready workforce.

How KPMG can help

KPMG is a leader in the industrial manufacturing sector, with deep experience helping automotive companies transform their businesses. We offer a wide array of services, including workforce diagnostics, strategic planning, and AI-driven HR strategies and solutions, and are distinctly positioned to provide the guidance, advice, and services needed to steer through this transformation and achieve long-term success. With the right strategies and support, the US automotive industry can navigate these challenges and emerge stronger, more efficient, and more competitive in the global market.

Authors



Jay Conforti

Managing Director,
Human Capital Advisory

Jay brings over 20 years of global HR and payroll experience, with a strong track record in leading transformations while managing day-to-day operations. He ensures all functional teams have a voice in payroll initiatives and partners closely with clients throughout the process. As a practitioner and industry leader in Industrial Manufacturing, Jay helps design and implement global payroll strategies, processes, roles, metrics, and technologies aligned with best practices.

Mark Gibboney

Director, Human Capital Advisory

Mark is a director in the KPMG US Human Capital Advisory practice, and for the last 19 years, he has specialized in helping organizations enhance and transform their workforce and HR function through employee experience design, operational excellence and technology adoption.

Lena Rincones

Director, Human Capital Advisory

Lena specializes in workforce transformation within the industrial manufacturing sectors, with a focus on aligning human resources service delivery to evolving organizational and technological demands. Her work encompasses the redesign of HR operating models, implementation of shared services, and deployment of digital platforms including Workday, Oracle, UKG, SuccessFactors, and ServiceNow. With over 20 years of experience across both consulting and industry, Lena applies strategic workforce planning, upskilling, and reskilling initiatives to address critical skills gaps. Her approach integrates technology, sourcing strategies, and service delivery frameworks to support the development of human-centric, scalable solutions tailored to complex, compliance-driven environments.

We would like to thank our contributors:

Ken Fodor, Michael Gelfand, Hope Raterink, Karenna Savage, Hersh Ved, and Lara Volpe

For more information, contact us

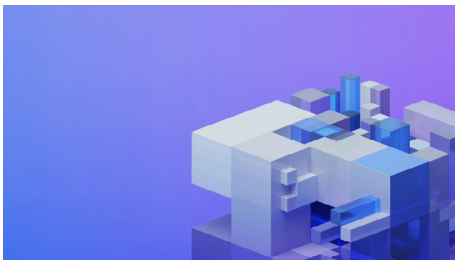
Jay Conforti
Managing Director,
Human Capital Advisory
224-221-9876
jconforti@kpmg.com

Mark Gibboney
Director,
Human Capital Advisory
331-264-0348
mgibboney@kpmg.com

Lena Rincones
Director,
Human Capital Advisory
281-939-3848
lrincones@kpmg.com

Related thought leadership:

Revving up for localization



Navigating Workforce Challenges Amid New US Tariff Policies

Empowering Workers through the age of Agent Disruption

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

Please visit us: **kpmg.com** **Subscribe**

DASD-2025-18532