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Why Daimler is banking on software to gain edge

Software-defined vehicle market seen rising from $213.5 bn to $1.23 tn by 2030

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Daimler Truck AG, the world's largest commercial vehicle manufacturer, is banking on the growth of software-defined vehicles (SDVs) while cautiously exploring generative artificial intelligence (GenAI) to address industry challenges. These initiatives are led by the company's global innovation centres, including Daimler Truck Innovation Center India (DTICI), one of its largest hubs outside Germany, said a senior company executive.

"Our work revolves around two key areas—engineering and IT (information technology). Within engineering, we focus on two major pillars: conventional mechanical engineering (chassis, cabin, aerodynamics and computer-aided engineering, or CAE) and software and electronics, which power our trucks and buses," Raghavendra Vaidya, managing director and chief executive officer (CEO) of DTICI, told *Mint* in a recent interview.

DTICI, according to Vaidya, has been investing in IT infrastructure since its separation from Mercedes-Benz in 2021. It is also using data analytics and AI, and exploring GenAI "not just for the sake of technology, but to solve business problems."

It's not that Daimler Truck no longer sees value in hardware improvements. "We are still working on aerodynamics, fuel efficiency and on reducing emissions for our diesel trucks, which is all hardware," Vaidya said. But implementing new truck features often requires hardware changes, which at times can even take up to three years, limiting the ability to innovate fast. SDVs, on the other hand, promise to change this by decoupling software from hardware, allowing for rapid, over-the-air updates like it's done in smartphones.

The key challenge, of course, is balancing cost and value. "The hardware platform cost must decrease, while software-driven features—such as cross-traffic assist—will bring additional value," Vaidya said. "Whoever wins this (SDV) battle will be able to make their trucks more valuable for customers, and acquire a competitive advantage."

DTICI managing director and chief executive officer Raghavendra Vaidya.

Vaidya underscored the "crucial role" of the group's joint venture with Volvo in this software transformation. Last May, Daimler Truck and Volvo announced a 50:50 JV to develop a common SDV platform and dedicated truck operating system. "Volvo will deliver a next-generation hardware and software platform, allowing both companies to customize their applications while maintaining a common foundation," he said. The firm recently launched its next-generation electrical/electronic (E/E) architecture—which connects in-vehicle electronic control units, sensors, actuators,—and is "now developing SDVs, set to hit the market early next decade."

As Daimler Truck, Volkswagen, BMW, Hyundai, Renault, Stellantis and Mercedes-Benz transition to SDVs, the market for such vehicles is expected to grow from $213.5 billion in 2024 to $1.23 trillion by 2030, according to Research and Markets.

With improved connectivity (3G to 4G, and now 5G), trucks are being constantly linked to the internet through a telematics system. This helps monitor and manage truck performance in real time. With "nearly 90 mini-computers onboard," Daimler Truck likens it vehicles to "data centres on wheels," continuously streaming data—about 30 billion messages are processed by its platform every month.

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MARKET OUTLOOK

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