

In 2019, Volkswagen decided to create a car OS—how's that going?

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In 2019, Volkswagen Group had a bold plan. After proving that it made sense to use a few common architectures to design a varied range of vehicles across multiple different brands, it decided to apply that same approach to software. It set up a new division and moved the entire VW Group's software development under that roof, with a mandate to create a new unified automotive operating system for future VW Group EVs.

In fact, the division had to work on three different systems simultaneously. Called E³ for end-to-end architecture, E³ 1.1 would be the software to run on VW Group's MEB platform for mass-market EVs. Cars using this software are now on the road, including the VW ID.4, Audi Q4 e-tron, and of course, everyone's favorite, ID. Buzz. E³ 1.2 is destined for more upmarket EVs from Audi and Porsche, using the upcoming PPE platform. And that unified OS, called E³ 2.0, would show up mid-decade in a new, unified platform across the entire VW Group.

It hasn't exactly gone smoothly. In 2020 VW replaced Christian

Senger as the head of the division—called Car.Software.Org, now called CARIAD—with Dirk Hilgenberg. By 2022, problems with CARIAD’s development and buggy software for the launch of the ID.3 and ID.4 EVs saw VW Group fire its chairman, Herbert Diess, along with multiple reports of delays to future group vehicles, including the electric Porsche Macan. The division cost VW Group more than \$2 billion last year in the process.

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Still the right move

“The idea is still right, but of course, as you have seen, we’ve gone through the storming phase, a norming phase, now you know, having to deliver in the performing phase, but it’s what you would expect,” said Hilgenberg, CARIAD’s CEO.

“So, yes, that was the right decision, taken on very bold and very decisive, while also bearing in mind the big backpack on our shoulders. The task was at a time on the MEB, what we call now the 1.1 software on the ID, and we have gone through those teething problems—the platform stability, with the rollouts, with OTA working fine now with the new updates, pulling vehicles into the workshops, making sure they get upgraded with minimal invasive impact to the customer. So, lessons learned about the brand side as well as CARIAD,” Hilgenberg told me.

Then there’s E³ 1.2. “The other big package in our backpack is the Premium Platform Electronic [PPE], which is being developed as we speak, and we are, I would say, in the final stretch; we can see the finish line,” he told me.

E³ 1.2 sounds like quite a step up from E³ 1.1. “There’s much more complexity in there, of course, for premium vehicles with more functionality, but again, also looking into over-the-air updates, sensor belts massively enhanced—which will be

important to deploy the driver assistance function," Hilgenberg explained.

"More safety for the customer, more catering for data, which we can use for not only crowd data but also for services, which are anticipating—you know, the road has a curve, there is fog there coming up, there's a big accident—so with connected vehicles you bring information back into the vehicle. The vehicle, the companion, tells you, 'Hey, you got to be careful,' the driver assistance system says, 'You got to take over you have to be alert.' So, it is the evolutionary roadmap on the ADAS stack, really materializing through 1.2 in a different way," he told me.

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