

SOFTEQ

Six Trends in Automotive Disruption Explained

E-book

Introduction

This whitepaper explores undercurrents reshaping the automotive industry. We turned to experts in car/car components manufacturing, software and services, and dealerships for insights—and we got them. Below, you'll find six major trends. Some of them challenge established suppliers and bring new opportunities to innovative startups. Others show that every tiny detail is vital when it comes to UX. So you can learn:

- What keeps automotive companies from innovating
- Why bad user experience can cost companies their business
- Why the current car architecture doesn't meet modern requirements and what the alternative is
- How changes in the car architecture can affect the position of companies within the supply chain
- How automotive companies are bridging technology gaps
- What's going on in the software workforce market

Stay on track!

Trend 1: Technologies Are Getting More Advanced, but Businesses Are Still Hesitant to Implement Them

Today's cars can be very smart. They can establish various outside connections—to other vehicles, parking facilities, and public transport systems. Cars can read their surroundings through multiple recognition sensors, like cameras, radars, and ultrasonics. This phenomenon is called vehicle-to-everything, or V2X.

MarketsandMarkets predicts the automotive V2X market [will grow at a CAGR of almost 40%](#) in the next six years.

The reality, however, looks different. Not many automotive OEMs and their suppliers use the potential of these technologies. PwC revealed that driver assistance and autonomous and connected cars are [the least-followed trends](#)—only 4% of respondents mentioned them.

We asked our experts about possible reasons and this is what they said: Many businesses are unwilling to break old contracts with established suppliers. Some OEMs still think their customers will accept dated technology because they are loyal to their favorite brands. Also, some suppliers don't have the necessary expertise to connect their products to the IT architecture in modern cars.

Blog Post

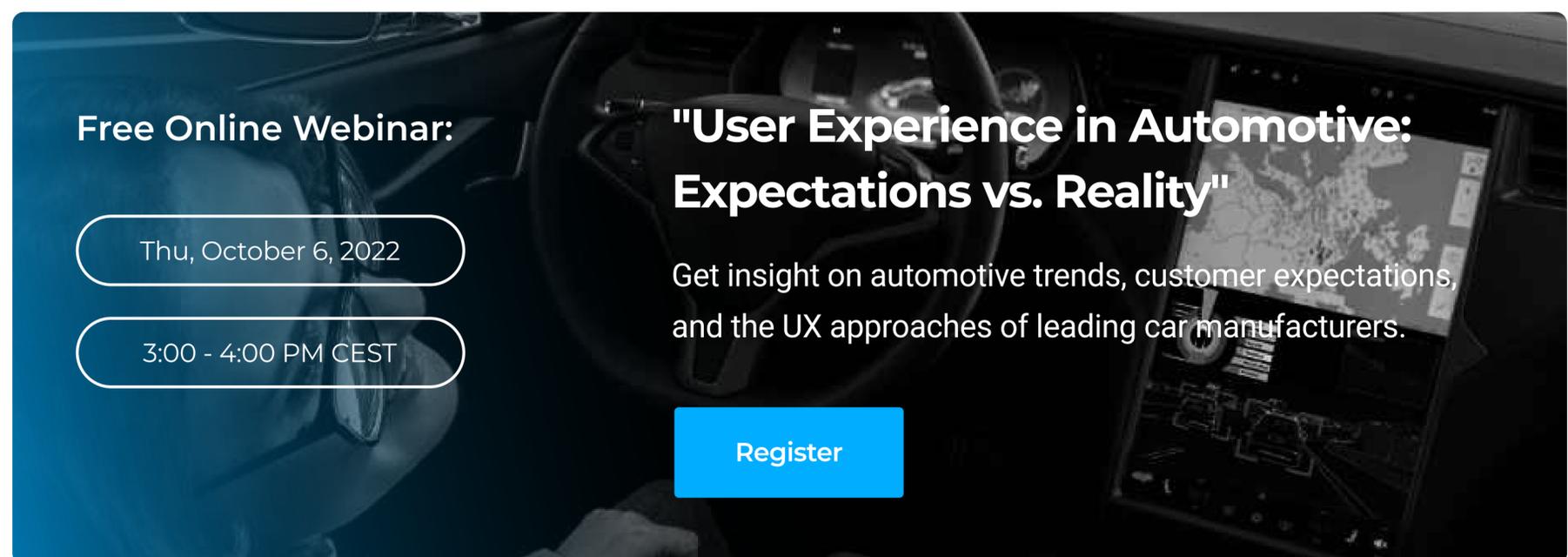
In this article, we describe how the V2X ecosystem in tandem with 5G can improve the driver experience and bring new horizons for automotive companies.

[Read the article](#)

Trend 2: Customers Expect More from User Experience

Consumers are used to seeing new models of smartphones, tablets, and PCs come out every year. They expect the same from cars, seeing them as gadgets. For car manufacturers, this means that users will no longer accept dated and inconvenient interfaces. So, they need to focus more on intuitive usability, personalized user interfaces, and customized settings.

Our interviewees believe that bad UX can cost brands their businesses. Poor usability makes daily driving stressful. And this is how consumers lose trust in the brand and how the company loses its brand value. And the worst thing here is that bad UI may cause fatalities, and this should never happen. Therefore, automotive companies need to ensure that their software solutions are up to date.



Free Online Webinar:

Thu, October 6, 2022

3:00 - 4:00 PM CEST

"User Experience in Automotive: Expectations vs. Reality"

Get insight on automotive trends, customer expectations, and the UX approaches of leading car manufacturers.

[Register](#)

Trend 3: Advanced Features Require an Easily Adjustable Car Architecture

Today, cars are becoming more and more complex to meet market and legislative requirements. For improved safety, vehicles need to communicate with other systems, requiring advanced connectivity solutions. And consumers themselves no longer accept the obsolete user experience. As a result, carmakers have to regularly upgrade their models. But it's difficult to support these advances with the existing automobile architecture. And here's why.

A traditional vehicle may have more than 100 electronic control units (ECUs). Each ECU is responsible for its own function. ECUs are connected to each other with wires and support limited interactions. This approach is called distributed architecture. Each new car generation has more functionality, which makes the ECU network even more complicated. This resulted in systems where even minor adjustments require huge efforts and costs.

A new type of electronic architecture is emerging to resolve this complexity. It combines several ECUs together into dedicated domain control units (DCUs). And the DCUs are combined into a centralized system. With this approach, carmakers can reduce the number of ECUs and simplify the wire harness.

To allow ECUs to communicate with each other at the software level, software and hardware platforms should be decoupled. From a software perspective, a car is becoming a software platform that supports an ecosystem of applications, regardless of the underlying hardware—just like a smartphone. This means software solutions have to be completely rewritten.

Such solutions require a lot of trial-and-error strategies from automotive companies. One of our interviewees compared this to the initial development of the computer and digital industry:

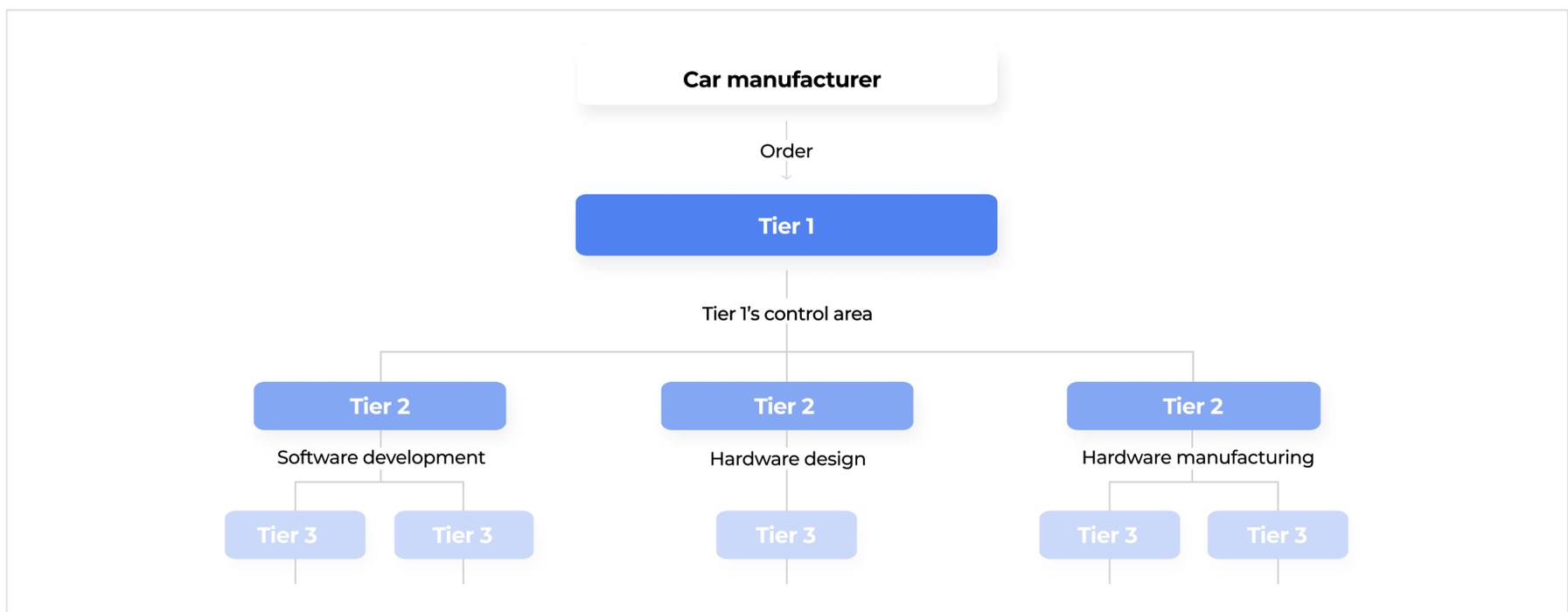


“Maybe you can compare that with the problems that the computer industry had with the integration of certain things, which often did not have their own competence, but were quickly buying up other companies. If you look at Google, for example, how many companies they have bought up to put together their package and integrate everything in one architecture? Similar to Windows. And they succeeded. I don't know how many computer crashes they had, just between 2000 and 2010, that was terrible. The same is happening with the automotive OEMs.”

Trend 4: Positions of Companies Within the Supply Chain Are Changing

Traditionally, each ECU has been quite self-sufficient, including both software and hardware. And tier 1 suppliers gained a total monopoly on supplying ECUs. They deal with other suppliers at their own discretion. It looks like tier 1 suppliers subcontract tier 2 suppliers, the latter subcontract tier 3, and so on and so forth. Each next level of subcontractors is invisible to all those above the previous level, which creates many opportunities for cost manipulation. However, this model is on the decline.

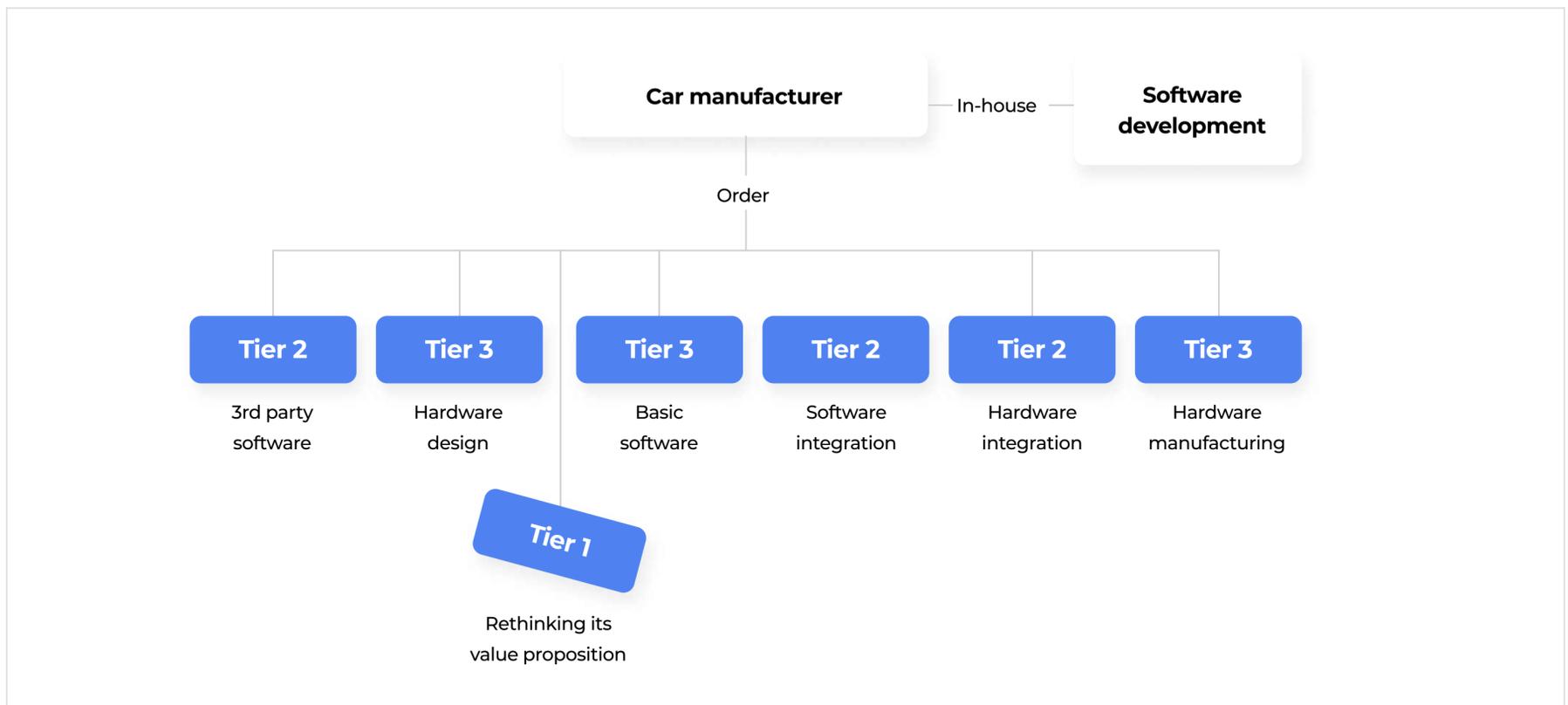
Cost transparency decreases in every subcontractor's level in traditional automotive supply chain



In the new reality, carmakers are more independent from major suppliers. They can overview the cost structure and enter into direct negotiations with tier 2 suppliers.

But for tier 1 suppliers, this means the loss of control. They are also gradually losing their unique value proposition as integrators. To stay on track in the changing business environment, tier 1 suppliers will have to regain competence in software development and [rethink their value proposition](#). For tier 2+ suppliers, it opens up new opportunities to improve their position in the supply chain.

In the emerging supply chain structure with fewer middlemen, the car manufacturer has more control over costs



Trend 5: Companies Enter Into Strategic Partnerships to Bridge Technological Gaps

The new vehicle architecture demands new technological know-how from car manufacturers. To fill technological gaps, they partner with innovative startups. Here are some examples:

- **Toyota and Aurora, a Silicon Valley startup that provides self-driving solutions.** The companies are collaborating to add autonomous driving capabilities to Toyota's future models, beginning with the Toyota Sienna minivan.
- **Hyundai and BOS Semiconductors, a Korean-based startup that develops system-on-chip (SoC) solutions.** The car manufacturer invests in the startup to ensure the supply of semiconductors for their future models.
- **Honda and Sony.** They signed a joint venture agreement establishing a company to build electric cars together. The new company will benefit from Honda's car-building experience and Sony's software expertise.

For automotive suppliers, strategic partnerships are even more crucial. In this way, they access the know-how required to maintain their position in the changing market. Here are some examples:

- **Intel, a well-known semiconductor company, and Mobileye, a computer vision provider of autonomous driving technology.** Intel acquired Mobileye to expand their product range to application-level automotive software.
- **Sona Comstar, an Indian manufacturer of automotive components, and Enedym, a Canada-based technology startup.** The companies formed a strategic partnership to create the next generation of switched reluctance motors, electric propulsion, and electrified powertrains.
- **MooVita, a Singapore-based provider of vehicle-agnostic driverless software solutions, and Desay SV, a Chinese automotive tier 1 parts supplier.** The companies are joining forces to develop a solution that helps vehicles operate autonomously.

Expert Talks

Hear us talk about future trends and forecasts.



Trend 6: The Software Professionals Market is Drying Up

Although strategic partnerships are important for carmakers, when it comes to strategic software, they prefer to develop it in house. For example, Mercedes-Benz opened a new €200M software center in Sindelfingen, Germany. They want to develop their own operating system by 2024. Volkswagen also created a car software business unit. The giant aims to increase the proportion of software developed in-house from 10% to 60% by 2025. To get these centers up and running, carmakers need skilled professionals.

To get these centers up and running, carmakers need skilled professionals. They poach software specialists from their suppliers. We interviewed expert U.Z., and they told us:

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“I have the impression that it is about ‘insourcing,’ at least in the case of the very technology-savvy companies. You can currently see that with the OEMs [...], there are various programs to poach the best people from the suppliers. And the suppliers have only one choice: either they give away their best people or they disappear from the shopping list.”

Looking for specialists to augment your tech team?

Softeq can put at your disposal an entire team with a relevant skill set, fully dedicated to your project.

Contact us

It’s already difficult for suppliers to find software professionals with the right qualifications. And now, the OEM strategy adds fuel to the fire. By opening in-house development centers, they’re drying up the workforce market even more. Here’s how the expert we interviewed, R.J., describes this competitive environment:

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“As these topics are now becoming more important, the OEMs build their own software booths. But since people are scarce, they offer them luxury employment contracts. They’re being courted now. But the OEMs are far from getting the number of people they need now. VW, for instance, planned for 3,000 new positions, but at the moment could staff only 400, and hope to get 500 soon.”

Rethinking Value Proposition

Traditional business models in the automotive industry will no longer be the same. It's time for established suppliers to rethink their value proposition. They can collaborate with more innovative companies to regain competence in software development. For innovative startups, a wide range of new opportunities is opening up. They can improve their position in the value chain.

Are you planning to take advantage of this changing business environment and need technical advice? [Get in touch](#) with Softeq professionals. We're here to develop a custom automotive solution from scratch or fill in any knowledge gap in your project—whether it be hardware design, embedded systems, web, mobile, cloud, or QA.

Case Study

See how we created a multimedia unit for electric vehicles. It displays multimedia, navigation, and car operation data in real time.

[Read case study](#)

About Softeq

Founded in 1997 in Houston, Texas, Softeq Development Corporation provides early-stage innovation, technology business consulting, and technical solutions to enterprise companies and innovative startups. Our clients are often disrupting existing industries or going through digital transformation—an effort that requires a broad range of business and technical skills. We provide consulting along with full-stack software, firmware, and hardware engineering services—all under one roof.

We focus on various trending technologies, including the Internet of Things, artificial intelligence and machine learning, industrial automation, robotics, blockchain, and AR/VR. Softeq is headquartered in Houston, Texas, and maintains sales and delivery offices in Los Angeles, London, and Munich, Germany. The company's development centers are based in Vilnius, Lithuania, and Monterrey, Mexico. Softeq customers include Verizon, Epson, Microsoft, Lenovo, AMD, Disney, Intel, NVIDIA, Arrival, Halo by PAWS, and others.