

BACK TO THE TOP – LEARNING FROM CHINA’S SPEED

Chinese automakers are redefining development speed, digital and AI-driven engineering, and software-defined vehicles. German companies still lead in quality, safety, and engineering depth – but must adapt to remain competitive. By combining radical simplification, faster decision-making, and AI-powered shift-left development, the German automotive industry can reclaim leadership while building on its core strengths.



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Despite many critical voices, I remain convinced that the German automotive industry has a strong future. The foundations are solid: world-class engineering talent, deep system expertise, proven safety leadership, and premium quality that customers can experience directly. German OEMs still set benchmarks in active and passive safety, chassis dynamics, mechanical excellence, and brand trust. These strengths are not easily replicated and continue to represent a powerful competitive advantage.

At the same time, the competitive landscape has fundamentally changed. Chinese automakers have demonstrated a new level of speed, execution discipline, and digital-first thinking, *Figure 1*. Their success is not based on a single breakthrough, but on a consistent combination of radical simplification, accelerated decision-making, and next-generation engineering processes. German companies can learn from these approaches – without abandoning their own DNA and strengths.

SUCCESS FACTORS OF CHINESE MANUFACTURERS

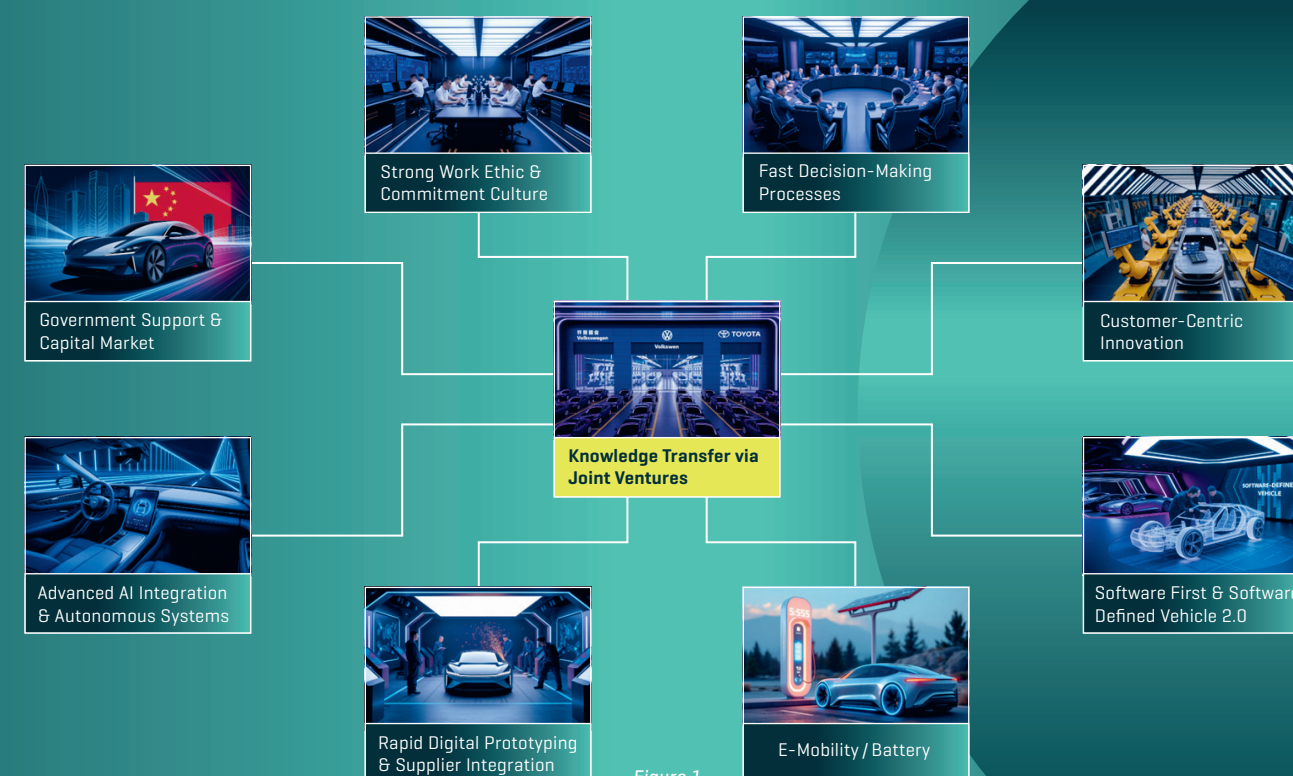


Figure 1

The following points provide a brief overview of topics and approaches that I have gained from

- **3 years of working in China,**
- **7 years as CIO R&D Mercedes-Benz,**
- **numerous consulting projects with China context, and**
- **my work as Guest Professor at Jiangsu University.**

1.

The first and most powerful lever is **Radical Simplification**. Over decades, engineering organizations have accumulated enormous complexity: countless variants, layered architectures, overlapping committees, and fragmented toolchains. While each addition made sense in isolation, the overall system became slower, less transparent, and more difficult to manage. Chinese automakers have taken a different path. They aggressively reduce complexity across hardware, software, and systems, moving from many small elements to larger modular logical objects.

This simplification also includes reducing variants and harmonizing platforms. Instead of optimizing every single model individually, modular architectures are designed for reuse across multiple vehicle lines. Architecture thinking becomes the dominant paradigm. Large building blocks replace fragmented components, and reuse becomes a key performance indicator. The result is not only faster development but also improved quality stability and cost efficiency.

End-to-end process simplification is equally important. Toolchains are streamlined, interfaces are reduced, and digital engineering environments are harmonized. Rather than managing disconnected tools, development flows across integrated environments. This reduces friction, improves transparency, and accelerates execution. Radical simplification therefore becomes the foundation for speed.

Radical Simplification Speed, Speed, Speed ... Shift Left Next Generation

2.

The second major dimension can be summarized in three words: **Speed, Speed, Speed**. Chinese OEMs have fundamentally rethought governance and decision-making. Committees are minimized, ownership is clearly defined, and decisions are pushed closer to engineering teams. In some cases, governance structures have been reduced by up to ninety percent. This dramatically accelerates iteration cycles and enables continuous progress.

Product engineering timelines illustrate the impact. While traditional cycles often extend beyond four years, leading Chinese automakers target approximately two years from concept to start of production. This is achieved through parallel development processes, early supplier integration, and empowered R&D leadership. Rather than waiting for complete certainty, teams move forward with calculated risk and continuous learning.

Parallelization is a key enabler. Mechanical, electrical, and software development proceed simultaneously wherever possible. Integration happens earlier and more frequently. This reduces late-stage surprises and shortens overall timelines. At the same time, suppliers are integrated much earlier into development. Instead of sequential collaboration, suppliers become partners in concept definition.

Encouraging calculated risk-taking is another important factor. Engineering leaders are empowered to make decisions even with incomplete information. Instead of striving for perfection before moving forward, teams iterate rapidly. This mindset requires trust and strong leadership, but it significantly increases speed and innovation.

3.

The third major concept is **Shift Left Next Generation**. Development moves earlier into the digital domain, enabling digital-first engineering with minimal physical prototypes. Simulation, virtual validation, and AI-supported design allow engineers to evaluate concepts quickly and efficiently. Multiple options can be explored before committing to hardware decisions.

Artificial intelligence plays an increasingly important role. AI-supported concept design, requirement analysis, and architecture optimization accelerate early phases of development. Engineers can analyze solution spaces faster and make better-informed decisions. Seamless simulation and validation environments connect disciplines across mechanical, electrical, and software domains.

Strong end-to-end ownership further enhances this approach. Systems and functions are owned by dedicated teams responsible from concept to validation. This reduces handovers, improves accountability, and accelerates iteration cycles. Combined with digital validation environments, this creates a powerful shift-left engineering model.

Software First 2.0 represents another key learning. Vehicles are increasingly defined by software rather than hardware differentiation. Chinese automakers treat software development and integration as the core of the vehicle. Continuous integration, frequent updates, and customer-centric functionality become standard. This accelerates the transition toward Software Defined Vehicle architecture.

Customer experience becomes the primary differentiation factor. Development focuses relentlessly on functionality, usability, and digital services. Hardware remains important, but software defines the value proposition. German OEMs are well positioned to combine their hardware excellence with strong software capabilities.

However, processes, methods, and tools alone are not sufficient. Soft factors are equally critical: culture, mindset, leadership, and communication. Speed requires trust, empowerment, and clarity. Leadership must enable decisions rather than control every detail. Communication must become more direct and transparent. Organizations must accept calculated risks and learn quickly.

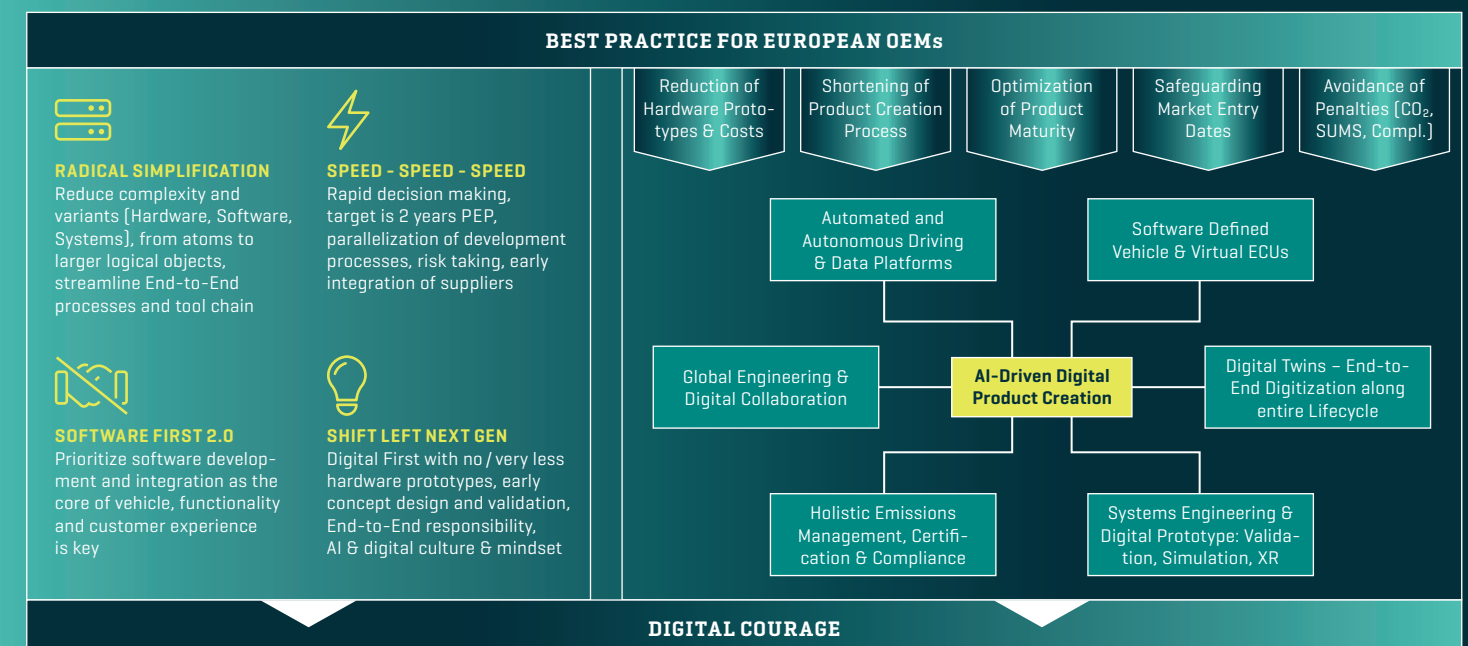


Figure 2

CONCLUSION

For me, the most important lever remains Digital Courage. It means challenging established structures, simplifying aggressively, and embracing new engineering paradigms. It also means trusting teams, accelerating decisions, and focusing on customer value. German automotive companies already possess exceptional expertise. By consistently leveraging these strengths while adopting best practices in speed, simplification, and shift-left engineering, they can return to the top of global automotive innovation, *Figure 2*.

