

# Automotive News

## Guest commentary: Digital thread: Headwinds, tailwinds and its future in the automotive industry

[kaizenanalytix.com](http://kaizenanalytix.com)

Share: [Twitter/X](#) [Facebook](#) [LinkedIn](#) [Email](#)

Let's delve deeper into what is accelerating its potential, the challenges slowing its adoption, and real automotive use cases.



**JAY VELAYUTHAM**

Associate Partner at Kaizen Analytix

April 12, 2024, 06:00 AM



Credit: Getty Images

To survive in an increasingly digital world, the automotive industry needs to leverage digital thread — the seamless flow of information throughout the product lifecycle, connecting various data sources from R&D to **manufacturing**, customers and **dealers**, to aftersales support.

As digital thread continues to evolve, understanding the concept and its potential applications is becoming more crucial for sustained competitive advantage. Let's delve deeper into what is accelerating its potential, the challenges slowing its adoption, and real automotive use cases.

### Tailwinds

Digital technologies are allowing companies to be more swift, adaptive and competitive than ever. Understanding these developments are crucial in grasping the accelerated adoption of digital thread, especially in the manufacturing space.

- 1. Evolving ERP systems:** Enterprise resource planning systems have evolved into platforms that provide clarity, collaboration, and cognition. Modern ERP solutions, like SAP S/4HANA and Oracle Cloud ERP, facilitate seamless integration, streamline operations, and ensure data consistency. Building digital thread solutions that extract data from these ERP systems can make centralized reporting easier and more nimble.
- 2. Data advancements:** With big data expected to reach 175 zettabytes by 2025, technologies like data lakes become pivotal. These not only manage and analyze high-volume datasets, but also make sense of complex data structures.
- 3. Faster market reach:** "Speed" is synonymous with success, and decreasing time-to-market is vital. By aligning every business unit, digital thread offers companies the agility needed to improve risk management of factors that could inhibit product launches like engineering issues, negative customer feedback and more.
- 4. Adaptive supply chain management:** Supply chains have become complex webs of interactions. Recognizing customer demand and swiftly adapting is essential, and digital thread offers real-time responsiveness.

### Headwinds

Any transformation comes with its own challenges. Before fully implementing digital thread, it's crucial to understand the headwinds that may impede a smooth implementation.

- 1. Legacy systems:** Many companies maintain legacy systems that should be transformed, which can be a significant and costly hurdle. Similarly, some locked data sets need to be opened to extract their insights. This transition requires diligent strategic planning in terms of connectors and data integration with enterprise data.
- 2. Organizational synergy:** Digital transformation is as much about people as it is about technology. Aligning cross-functional teams, especially in large conglomerates, demands strong leadership and a unified vision.
- 3. Integrating everything:** The complexity of ensuring a seamless connection across all systems can be daunting. The most successful integrations often require a holistic strategy rather than slow, fragmented adaptations.
- 4. Technical skills:** Implementing digital thread requires a variety of advanced skillsets (e.g. data engineering, software development, machine learning, etc.), and recruiting that talent in-house is nearly impossible. Leveraging outside partnerships is key.

### Automotive use cases

The automotive industry, often a frontrunner in adopting advanced technologies, is beginning to embrace the digital-thread revolution. These examples will showcase its tangible benefits and transformative potential.

- 1. Holistic decision making:** Imagine a scenario where an automotive company notices a high volume of customer complaints about a particular steering wheel model. In the past, the customer-experience team gathered such feedback and would manually communicate with different business units across the supply chain — losing time, energy, and accuracy along the way. With digital thread, the design team could have a real-time, 360-degree view of that part, able to see customer feedback, service records, supply issues and more in one place. The result: increased product quality, efficiency, and customer satisfaction.
- 2. Sales and engineering synergy:** Sales teams have a great sense of what vehicle models customers desire. Previously, sales teams had little knowledge of the implications on the engineering team's timeline, design difficulties, or redundant complexities when deciding on different models. Digital thread can remove the inefficiencies that result from a disconnect between what's sold and what's feasible to manufacture.
- 3. Trade and compliance:** Global operations often present challenges for supply chains due to the diverse laws and regulations of different countries. For instance, self-driving AI chips are prohibited from export to China, and vehicles equipped with deicers can't be imported into the Middle East. Inadequate communication of regulatory compliance to engineering teams, or the absence of regulatory checkpoints in manufacturing or logistics, can result in expensive production delays, goods detained at ports, or extensive reworks.

The digital thread's potential within the automotive industry is vast and untapped. We are witnessing the beginning of a metamorphosis as companies start devoting the necessary time and resources to successfully navigate this complex web with precision, bringing to fruition a new era of automotive manufacturing that is as innovative as it is interconnected.

Subscribe to our newsletter: <http://autonews.com/newsletters>

Read online: [www.autonews.com/guest-commentary/digital-thread-and-automotive-industry](http://www.autonews.com/guest-commentary/digital-thread-and-automotive-industry)

| [kaizenanalytix.com](http://kaizenanalytix.com)