SUPPLY CHAIN INSIGHTS
CAR AS TECHNOLOGY | TECHNOLOGY AS CAR

The technology-driven vehicle is turning the automotive AND tech supply chains on their heads

"Forget the gadgets. Come to the Consumer Electronics Show (CES) for the cars."

So read the headline for a December article in PC World magazine previewing what would be 'hot' at the 2016 CES show in Las Vegas in January.

That headline proved abundantly true. Cars, and the technology within them, took center stage at the massive exposition, attended by nearly 200,000 people. Automotive exhibits covered more than 200,000 net square feet of exhibit space, a 25 percent increase over the 2015 CES.

This expanded automotive presence at CES is not a newfound fascination with vehicles. Rather, it's a fascination with technology.

Consumers around the world now see their cars as a mobile workstation and smartphone – one that also happens to transport them from point A to point B, in varying degrees of luxury. "Connectivity, software, data – these are the new battleground in the automotive sector," says Michael Martin, VP Strategic Development Global Automotive at DHL Supply Chain. "The software behind the car – the consumer interface - will be the competitive differentiator in sales. The better the interface, the more attractive the car."

This new consumer mindset represents a seismic change for the 100-plus-year-old automotive industry. It is up-ending the balance of power - from the traditional auto OEMs to technology companies.

The stakes are high. The new tech-based automotive sector recorded $9 trillion in annual revenues in 2015, according to IBISWorld. Numbers like that make it a highly sought-after market for many firms – tech, automotive or

otherwise. The implications for this convergence - and clash - of the tech and auto sectors are significant. The supply chain, as the execution arm for this converged sector, must adapt at the speed of the industry's change.

Delivering the smartphone on wheels

In his keynote address at CES, Dr. Herbert Diess, Chairman, Board of Management, Volkswagen Passenger Cars, described new vehicles under development at VW as "a smartphone on wheels". But vehicles are evolving beyond just being mobile smartphones.

As cars morph into tech products, the cost of the electronic parts in the average vehicle will rise from 20 percent in 2004 to 40 percent in 2016, according to Boston Consulting Group. A premium class car now contains 100 microprocessors and runs on 100 million lines of software code. By 2020, 75 percent of cars will be connected.

The transformation of vehicle into technology is driving another change in the industry – a transformation in the supplier base, both traditional and non-traditional. Traditional Tier 1 automotive suppliers are reinventing themselves as technology hybrid tech + manufacturer

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firms. "They are producing components with high value add that derives from technology," Martin notes. "Their products now have programmable dimensions and sensors to report back on performance and condition."

Bosch's mobility division, for instance, now employs 34,000 engineers, of which about a third work in software, according to the Financial Times.

Meanwhile, the pure-play tech companies like Apple, Google and Microsoft are getting into the car business in a big way. They are focusing on aesthetics, media and user interfaces.

"This revolution makes it possible for a technology group to be a car company, as Tesla has shown," the Financial Times article observes in a recent article. "It may even be possible to thrive without being either an OEM or a supplier — the idea that Google is exploring."

This technology boom has lowered the cost of entry into the automotive industry, and expanded the playing field as a whole. "Companies no longer have to build massive manufacturing plants in order to be a major player in the sector," says Martin. "Take a look at who is driving the patents in the industry. It's the tech companies. That tells you a lot."

"One day, the industry's 'big three' may be quite different companies, doing quite different things," the Financial Times writes. Imagine a world where Google, Apple, Bosch, Continental or Microsoft top the list as the automotive industry kingpins.

The race for trillions

In this new competitive battlefield, time is of the essence. First mover advantage is powerful – and fleeting. Hybrid Tier 1 suppliers and tech companies alike must accelerate their innovation cycle – and create a supply chain to support this rapid rollout cycle.

Building a car will become a matter of collective coordination – more so than it is today. The question is: Who will be the lead in this collaborative effort?

"The picture is unclear at the moment, but everyone realizes this is a gigantic opportunity," Martin says. "For our part, as a logistics service provider, we need to understand the complexities of supplying the Tier 1 suppliers, whether they're the new hybrids or straight tech companies." The risk of supply chain interruption rises with each new set or type of supplier entrants.

For all parties, failure to understand the complexities of the new auto + tech sector, can interrupt the global supply chain and shut down production – on a massive scale. The Japan 2010 earthquake-tsunami disaster and the 2011 floods in Thailand were clear lessons on this point.

But profit – not natural disasters - may emerge as the greatest risk generator for the industry going forward. If Apple is launching a new iPhone, and there is a capacity limit on a critical component that is shared with the auto sector, Apple will assign that capacity first to its own product. The auto sector will get what's left, which may mean critical component shortages that slow or shut down production.

"The key to the future auto supply chain is better visibility and a fuller understanding of what the shared risks are between the auto and tech sectors," Martin believes. This means knowing what components, resources and capacities the two sectors now share in this increasingly symbiotic ecosystem. It also means knowing about such things as a new smartphone launch well in advance – and planning for it.

"We've seen serious supply chain problems emerge because of a lack of visibility into shared components," Martin concludes. "The industry can't afford that, so we need greater intelligence and visibility so we can all do a better job not just of planning and managing the supply chain – but managing business risk."

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