

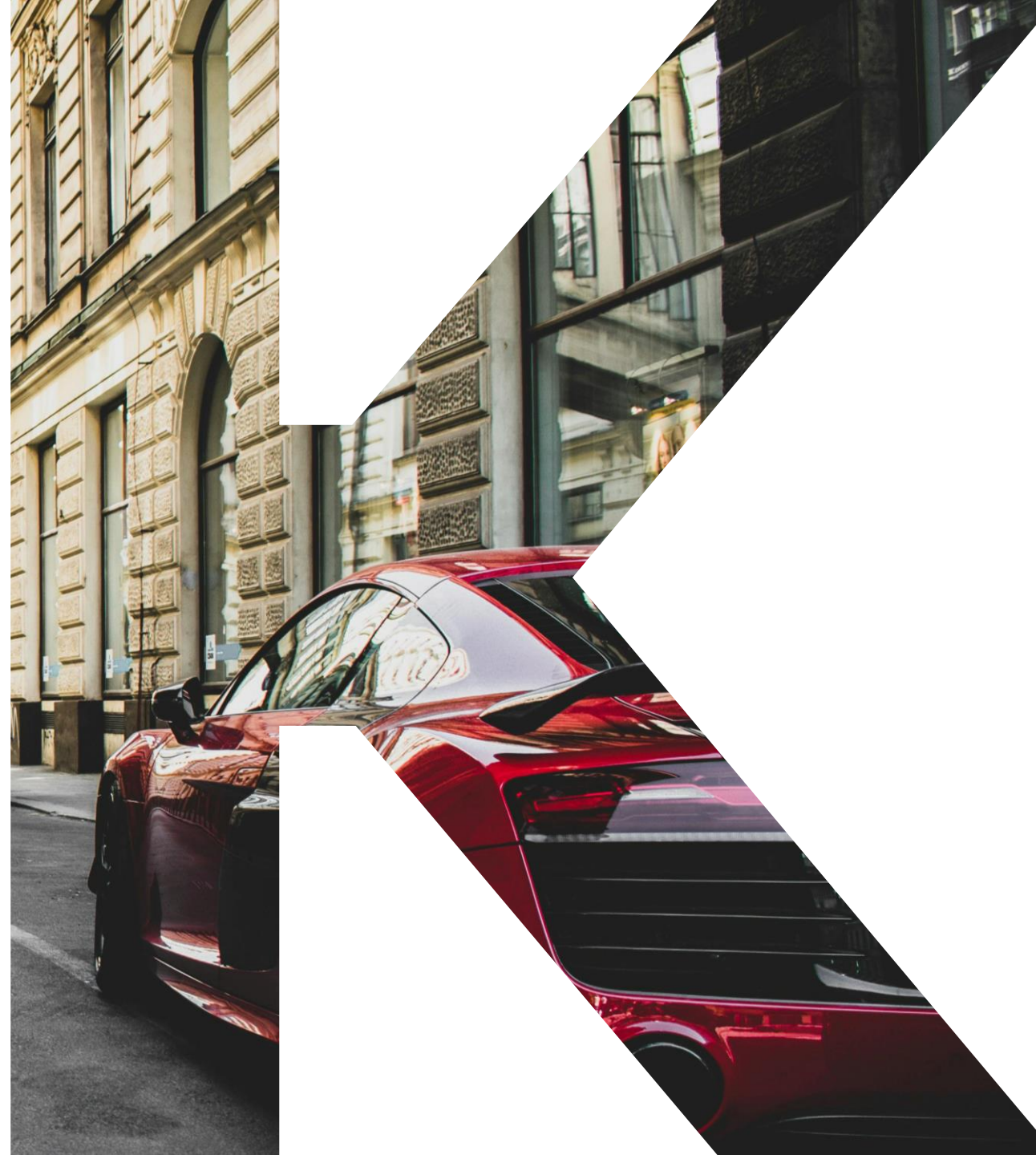
KEARNEY



Automotive Supply Chain Conference 2024

Getting ready for growth through supply agility, logistics capability and tech-enabled risk management – Theme Presentation

21 February 2024



Foreword

The supply chain network of automotive companies is increasingly complex, driven by dependencies ranging from sourcing specialized raw materials, semiconductors, and other high-value parts. Surging demand, lead-time delays, logistics choke points, capacity shortfalls, and productivity hangovers continue to be daily struggles for global and Indian automotive supply chain community.

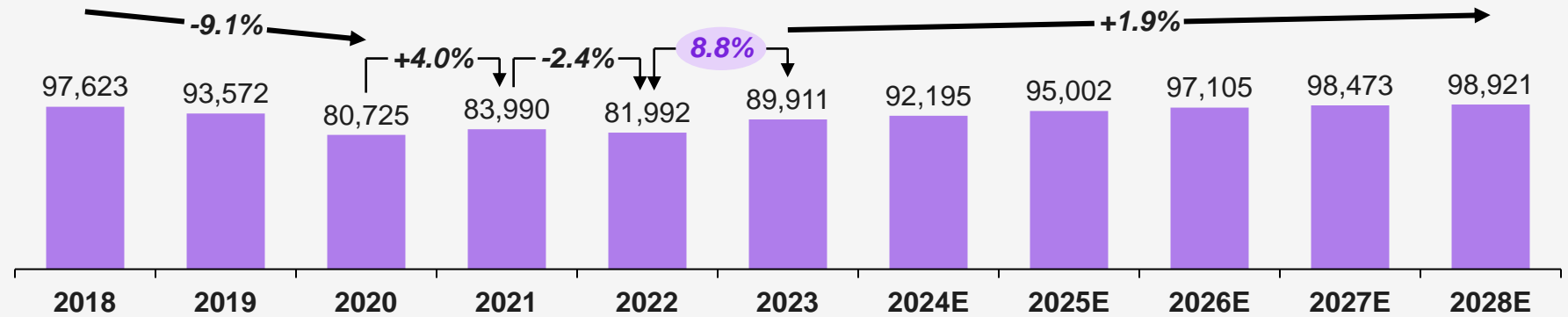
As the industry looks to leave behind global inflationary scene and macroeconomic tailwinds from a tough 2023, the automotive industry is looking at stable yet moderate growth in Indian market, while growing strength-by-strength in global automotive sourcing landscape. Not only does the industry have a significant cost advantage in comparison to developed markets, the maturing ecosystem with rapid adoption of Industry 4.0 technologies, automation, and engineering design positions India as the key alternative to China. The industry should also look at long-term investments in logistics capabilities that would build sustained competitiveness.

In these circumstances, the automotive industry remains cautiously optimistic about growth and catching new opportunities. These shifts also demand strategic necessities for supply chain departments, managing deeper intricacies collaboration needs and possible disruptions. Considering these, we see the following three themes as the key considerations for supply chain professionals:-

- **Enabling global competitiveness through supply chain agility**
- **Building forward-looking logistics capabilities**
- **Developing tech-enabled disruption risk management**

Automotive sales have seen a strong recovery in 2023; long-term forecast remains promising despite headwinds in near-term EV sales

Global Automotive sales (in thousand units)



① YoY recovery faster than expected

Robust rebound with actual growth of 8.8% in 2023 against an expected growth of 6.5%

- Ease of supply chain shortages, especially for critical parts like chips, led to improved production of vehicles

While some constraints remain, the auto industry has regained its mfg. pace with chip-shortage related losses dipping from 9.5M units in 2021 to 0.5M+ in 2023 first half

② Despite headwinds, long-term outlook surpasses forecasts

Exit volumes for each projected year expected to be higher than forecasts

- In FY23, PV/2W/CV segments grew by 27%/17%/34% YoY; demand momentum expected to continue

However, headwinds remain with a dampening outlook on EV sales:-

- OEMs like Ford, and GM are shifting prod. timelines, near-term inv. in EVs
- Interest rate hikes by the Fed have pushed up costs considerably for car buyers

Source: IHS dataset*, GDP per capita, real, US\$
 *Excludes 2Ws and limited coverage of MHCV for certain geographies

**Three big themes
have emerged in
automotive supply
chains globally in
the past year**

**Transforming Supply Chains:
Embracing Resilience, Agile
Inventory Management, and
Real-time Visibility**



**Strategic Logistics Evolution:
Anticipating Demand,
Proximity Deployment, and
Sustainable Practices in a
Changing Landscape**

**Tech-Driven Resilience:
Harnessing Innovation for
Supply Chain Risk
Management**



Transforming Supply Chains: Embracing Resilience, Agile Inventory Management, and Real-time Visibility

Rethinking traditional supply chain model for greater resilience



Pivoting inventory mgmt. systems to overcome supply shortages



Developing supply chain visibility for real-time decision making



Business Drivers

- Geopolitical shifts and **excessive dependence on sole-suppliers in specific regions** necessitate SC restructuring

- **Over-reliance on JIT system caused the chip shortage**, resulting in \$200B+ losses, highlighting need for balance

- **Multi-tier supply chains face political, economic, regulatory disruptions**; SC traceability is required for quick adaptability

Business Outcomes

- **Bypassing suppliers for direct procurement**
 - Automakers like **GM and VW are directly partnering with chip mfg.** like TSMC, Global Foundries, and Qualcomm
- **Multi-stream SCs**
 - One for **delivery of standard parts following JIT model**, and
 - Another for **next-day delivery** of low-cost, easy-to-store, **critical components**

- **Balancing Just-in-Case (JIC) reliance with JIT efficiency**
 - **Toyota avoided production disruptions** amid chip shortages by instructing suppliers to stockpile key parts; it also maintains inventory of seats, steel coils, etc.
 - **Ford also shifted to a JIC model**, during the chip shortage
 - Critical parts like **wire harness** (SC disrupted by Russia-Ukraine war) can benefit from JIC-JIT mix

- **Improving SC transparency for faster-to-market capability**
 - **JLR has partnered with Tata Tech.** for a cloud-based ERP system to improve visibility for suppliers
- **Bolstering sustainability via traceability of plastics**
 - **Porsche** partnered with Circularise to develop **blockchain-enabled traceability of parts and materials**



Strategic Logistics Evolution: Anticipating Demand, Proximity Deployment, and Sustainable Practices in a Changing Landscape

Developing logistics handling capabilities ahead of demand



Deploying logistics capabilities near demand centers



Adhering to changing emission norms



Business Drivers

- Logistic firms and select OEMs are dealing with **capacity crisis by increasing assets like vessels**

- Auto logistics hubs are strategically emerging **closer to major demand markets**, enhancing delivery efficiency and speed

- Responding to global emissions regulations, **OEMs/logistics players are adopting fleet run on alt. fuels** for IB & OB operations

Business Outcomes

- Shipping firm **Sallaum Lines plans to 2x its fleet in the next decade**; ordered 6 new PCTCs, 2 car carriers to add to current fleet of 10 PCTCs
- **Ceva Logistics signed a ten-year lease for 4 ro-ro vessels** to transport 140K vehicles annually
- **Chinese OEM BYD plans to add 8 car carriers** to its fleet to get ahead of the capacity crunch

- **Suardiaz and Peel Ports launched UK's Green Auto Hub for Stellantis**, reducing ~15K lorry trips (~17.5M km) between Spain and the UK for EV parts shipment
- **Prominent auto logistics hubs are coming up along the US-Mexico border:**
 - **In 2023, CH Robinson** expanded its logistics space to 1.5M+ sq. ft. in Laredo, US

- **Bio-fuels are becoming popular as a sustainable fuel option**
 - **Volvo Cars partnered with DB Schenker for biofuel-powered vessels** for shipping 12K TEUs of auto spare parts, reducing CO₂ emissions by 84% per container
 - **Mazda UK, XPO Logistics are utilizing 200 HVO-fueled trucks** for parts distribution, emitting ~90% less CO₂ than diesel eng.



Tech-Driven Resilience: Harnessing Innovation for Supply Chain Risk Management

Risk monitoring, sensing, and escalation to mitigate impact of disruptions



- **Predictive analytics and software solutions** can help visualize risk from several lenses – supplier risk mapping, commodity and parts risk mapping, and a multi-tier supplier network view
- **Jaguar Land Rover has collaborated with Everstream Analytics** to embed AI in its SCM for real-time SC monitoring to avert global supply issues

Building multi-tier SC visibility for real-time responsiveness



- Technology like **Blockchain, digital twins** is being used for real-time traceability and to identify bottlenecks
- **Cofinity-X** is a joint venture by car makers **BMW, Mercedes-Benz, VW** and suppliers to improve supply chain transparency; it's a marketplace for data sharing network Catena-X

Dynamic risk assessment through AI-powered insights



- **Gen AI technology** can analyze historical data, market conditions, weather patterns, and geopolitical events to produce **risk assessments, scenario simulations and mitigation strategies** on demand
- **Bearing.ai** uses Gen AI to **optimize shipping route navigation** - Shipping companies like Mitsui O.S.K. Lines & K Line are using this system across some of their current fleet



About CII IL



About Confederation of Indian Industry - Institute of Logistics

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, the Government and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with over 9,000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 300,000 enterprises from 294 national and regional sectoral industry bodies.

The CII Institute of Logistics (CII-IL), established by the Confederation of Indian Industry as a 'Centre of Excellence', serves as a driving force in propelling the growth and competitiveness of the logistics and supply chain sector.

Through its array of services, CII-IL acts as a catalyst, elevating the performance of Indian supply chains to unprecedented levels by establishing a sustainable ecosystem through active stakeholder participation and a global network. This ripple effect not only empowers industries to garner deeper insights into emerging trends, but also enables them to tackle industry-specific challenges of national significance, while adopting globally recognized best practices in the logistics and supply chain sectors.

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