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Driving The Future: Strategic Insights Into

AUTOMOTIVE LOGISTICS

Introduction

The automotive industry stands at the crossroads of innovation and logistics efficiency, navigating through the complexities of global supply chains to meet the ever-evolving demands of consumers worldwide. As the sector embraces transformative trends–from the surge in electric vehicle (EV) production to the challenges posed by the COVID-19 pandemic and semiconductor shortages–it becomes increasingly clear that robust automotive logistics are more than just a backbone; they are a competitive advantage..

This whitepaper delves into the dynamics of the automotive logistics market, highlighting the pivotal role of logistics in ensuring timely delivery of vehicles and components, enhancing customer satisfaction, and maintaining a seamless flow from production to end-user. Through an exploration of global trends, regional market insights, and the emerging challenges within the automotive supply chain, we provide a comprehensive overview of the current state and future outlook of automotive logistics.

Engagement with The ILS Company: Invitation to learn more about specialized supply chain solutions offered by The ILS Company for strengthening business operations

Automotive Supply Chain Challenges Overview

The automotive supply chain faces several challenges that need to be addressed to ensure efficiency and reliability. These challenges include:

Poor Quality Assessments

The automotive industry must ensure that vehicles meet production specifications and are in good working order when they reach consumers. A lack of proper auditing can lead to failures and recalls, damaging the reputation and profits of automotive manufacturers.

Changing Consumer Preferences

The demand for vehicles is heavily influenced by consumer trends and preferences. The automotive supply chain must be flexible and adaptable to respond to changes in what consumers want or how they wish to receive their products.

Lack of Cost Visibility

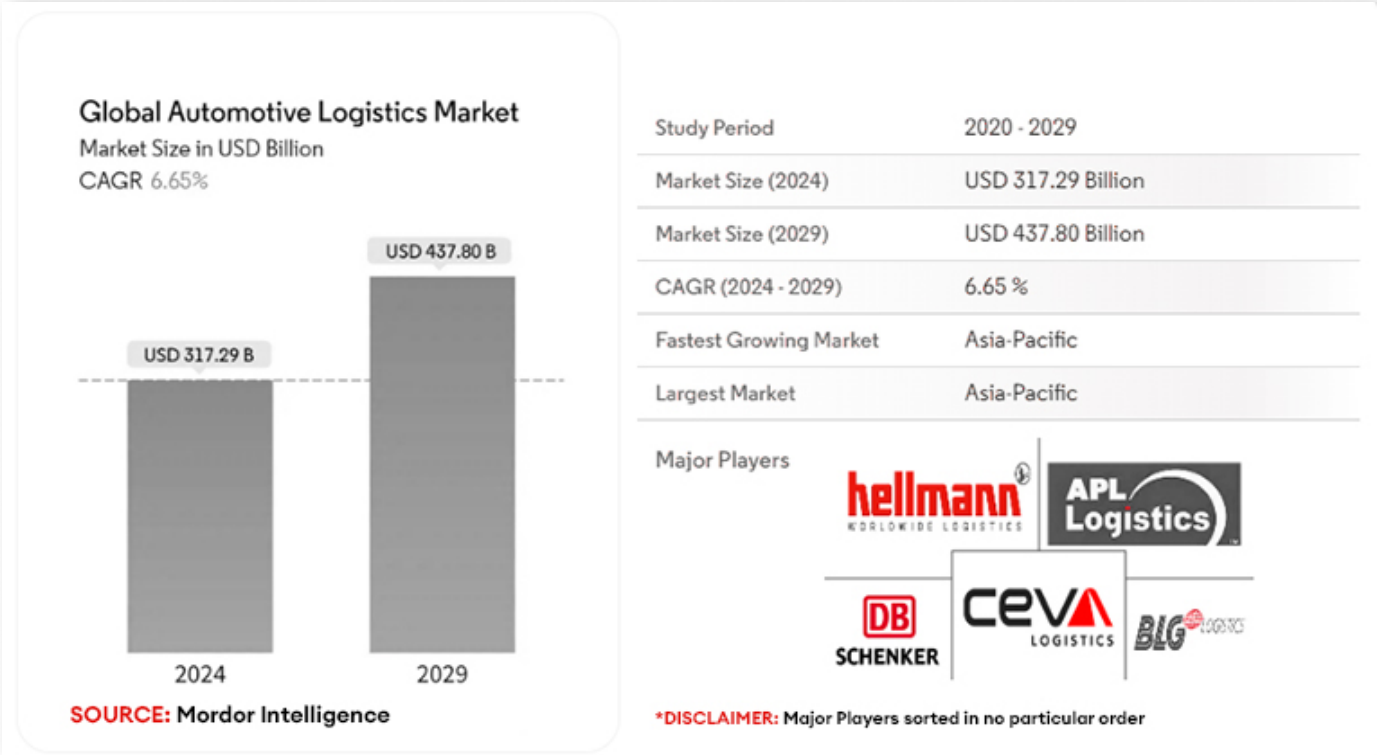
The automotive industry incurs major fixed and variable expenses, including costs for machinery, manpower, research and development, suppliers, materials, and shipping. Without sufficient visibility into these expenses, it becomes challenging to calculate accurate price points and profit margins.

External Factors' Influence

Various external factors such as environmental upheavals, trade agreements, and global health crises can impact a factory's ability to operate, secure raw materials, and deliver inventory on time. These factors introduce unpredictability and risk to the automotive supply chain.

These challenges highlight the importance of robust supply chain management in the automotive industry to avoid falling behind on orders, incurring costly delays, and frustrating customers.

Global Automotive Logistics Market



The Global Automotive Logistics Market is anticipated to grow from USD 317.29 billion in 2024 to USD 437.80 billion by 2029, at a CAGR of 6.65% during the forecast period. This growth is influenced by the profound impact of the COVID-19 pandemic across various industries, including the automotive sector, which experienced significant supply chain disruptions. Despite these challenges and the gradual easing of restrictions, the pandemic continues to affect the automotive industry.

Adapting to the New Normal

To adapt to the evolving landscape and complexity of automotive logistics, companies are refining their supply chain strategies to capture new market opportunities, reduce costs, and maintain competitiveness.

The Rise of Electric Vehicles

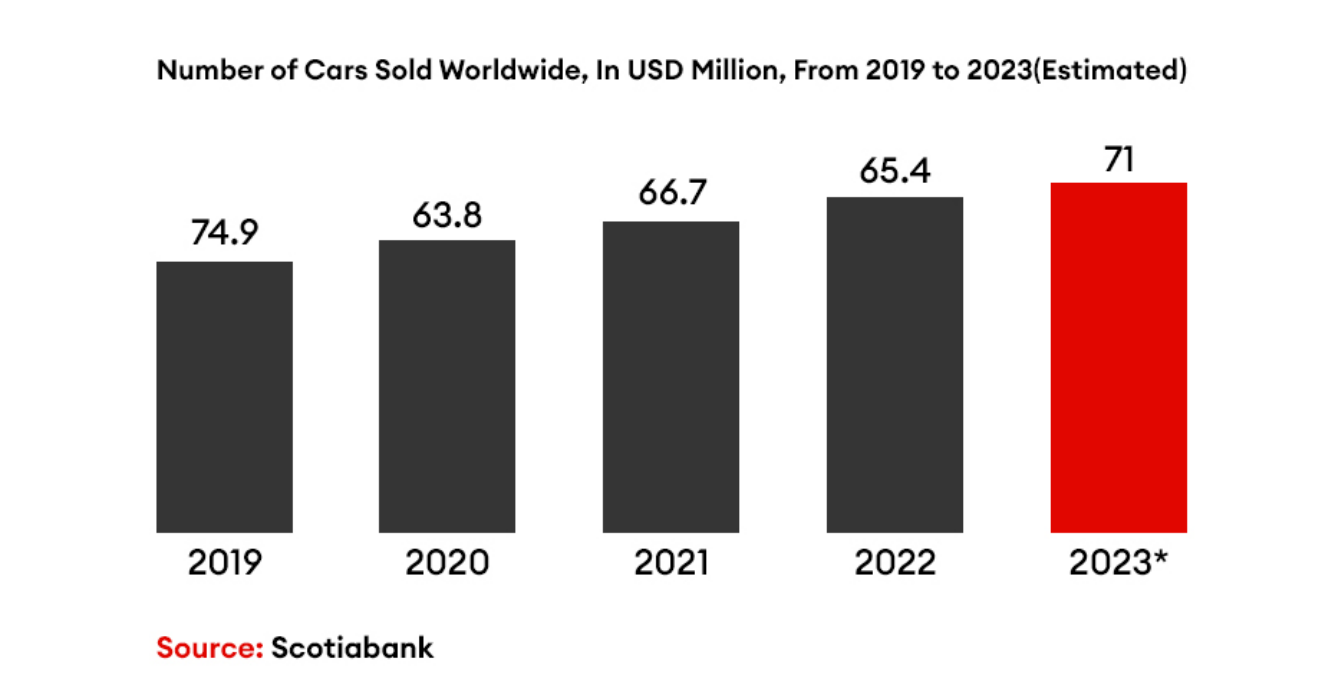
The emergence of electric vehicles (EVs) is poised to significantly propel the global automotive logistics market. Logistics service providers are expanding their services in warehousing and inventory management, particularly for OEMs and component manufacturers, with demand closely linked to vehicle production rates.

Regional Market Dominance

Regions with higher vehicle production rates are expected to lead the automotive warehousing sector, reflecting the direct correlation between production and logistics demand.

Market Overview of Automotive Logistics

▸ ***Positive Predictions for Production Demand and Automotive Sales for Efficient Logistics***



There has been remarkable growth in global light vehicle production, with Asia Pacific leading in production volumes followed by North America. Additionally, Electric Vehicle (EV) production and sales are surging, necessitating specialized logistics solutions.

The pandemic and chip shortages significantly impacted the industry, removing an estimated 11.3 million vehicles from global production in 2021 and projecting further reductions in 2022. Global auto sales, after a dip during the pandemic, rebounded to 66.7 million units in 2021, with expectations of a decline in 2022 and sales volumes in 2023 remained below 2019 levels.

China, home to the largest vehicle market based on sales, experienced a slowdown in its economy and a sharp drop in monthly auto sales in 2021 due to the pandemic and recession fears. However, the market showed signs of recovery from April 2021 onwards, thanks to effective containment measures, offering relief to major manufacturers.

- ***Asia-Pacific Region to Dominate the Market***

In 2022, Marine Engineering and Daewoo Shipbuilding launched a container ship 'Ever Ace', which is the world's largest ship with a capacity of over 25,000 TEUs. Other than that, China State Shipbuilding Corporation launched an aircraft carrier, 'Fujian' in 2022, which is a first domestically built of its kind in China.

The Asia-Pacific (APAC) region is poised to dominate the automotive logistics market, fueled by the dynamic economies of China and India. Key factors propelling this growth include:

- **Resource Availability:** Easy access to raw materials and a surge in vehicle demand.
- **Economic Factors:** A growing population and the presence of low-wage labor.
- **Automotive Giants:** The region hosts major OEMs such as Toyota, Maruti Suzuki, Hyundai, and SAIC Motor Corporation Limited, increasing the need for sophisticated logistics solutions.
- **Production and Trade Expansion:** Rising automotive production and trade activities necessitate advanced logistics for procurement, transport, and storage.

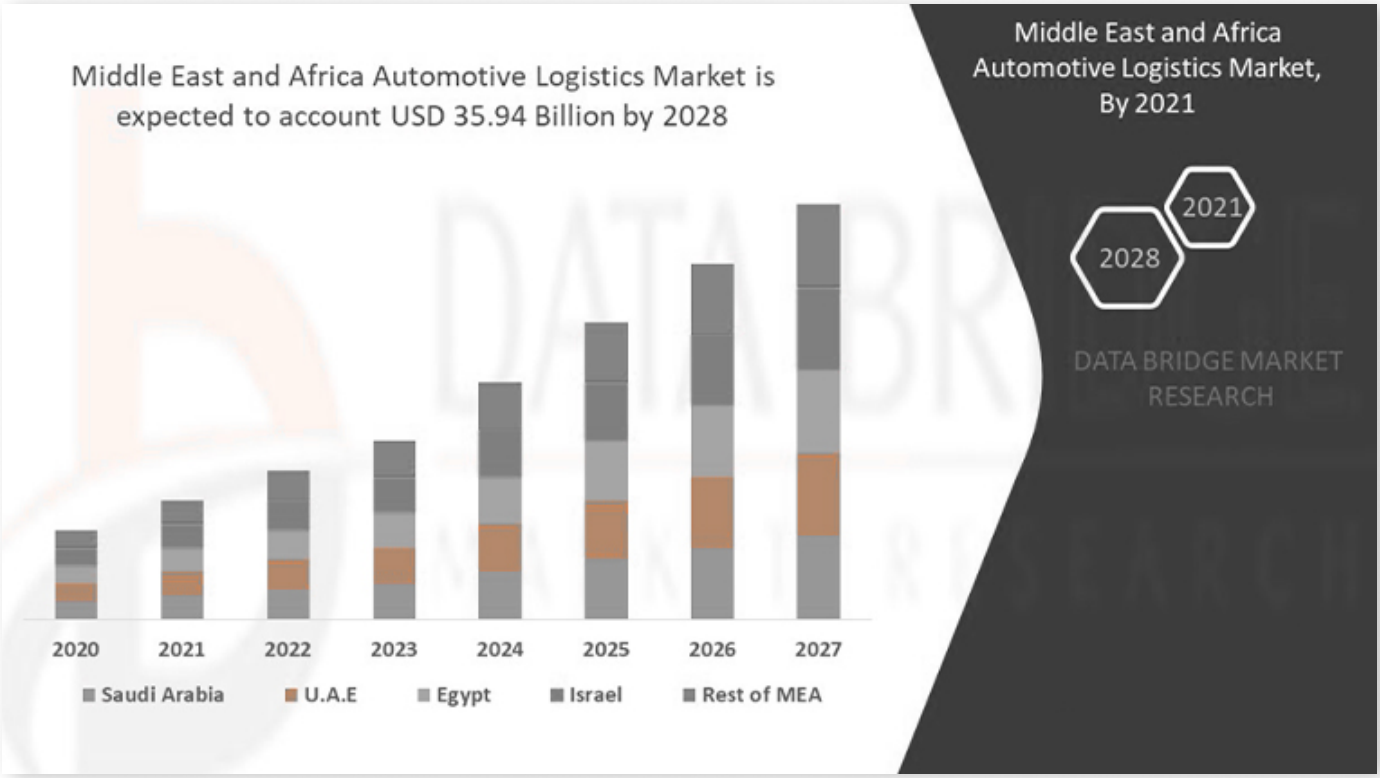
Global logistics companies are capitalizing on APAC's market potential:

- **Market Entry:** Examples include GEFCO's establishment of a dedicated subsidiary in Chongqing, China, in June 2019, focusing on vehicle import/export via rail and expanding logistics operations in Central China.

- **Service Enhancements:** GEFCO aims to support OEM supply chains with comprehensive services for finished vehicles, including door-to-door delivery, storage, and distribution to dealers.
- **Innovation and Growth Opportunities:** Anticipated demand for new-generation automotive logistics, spurred by initiatives like China's Belt and Road (OBOR), and the significant expected growth in electric vehicle (EV) sales due to environmental and sustainability goals.

Middle East Automotive Logistics Market

Market Size



The Middle East and Africa automotive logistics market is projected to increase at a CAGR of 4.8% from the period 2021-2028 to reach USD 35.94 billion by 2028. These logistics services include seamless warehousing and transportation services for raw materials, finished vehicles, and spare parts from manufacturers, suppliers, and the customer.

This growth is driven by the rising collaboration and partnerships among the vehicle manufacturers and logistics providers, increase in the production of automobiles, rise in the demand of electric or plug-in vehicles. Another factor contributing to this increase is the use of cloud-based platforms, enabling the manufacturers and logistics providers to track the shipment and manage all the processes efficiently.

Innovation in GCC's Automotive Market

The three key initiatives driving the growth in the region are Saudi Arabia Vision 2030, Dubai 2040 Urban Master Plan, and We the UAE 2031. All these initiatives are introduced to promote sustainability, and transport plays a major role in that. The development of Electric Vehicles (EVs) is a critical part of this infrastructure.

To meet the goals, the Saudi Electricity Company has signed deals with multiple Japanese companies, such as Nissan for an electric vehicle pilot project (creating fast-charging EV stations).

Similarly, the UAE government has set the goal to convert 10% of Dubai's vehicles to electric by 2030. Dubai alone has currently around 200 charging stations. The UAE electric vehicle market is predicted to grow at a Compound Annual Growth Rate (CAGR) of approx. 24% from 2022 to 2028.

Market Trends

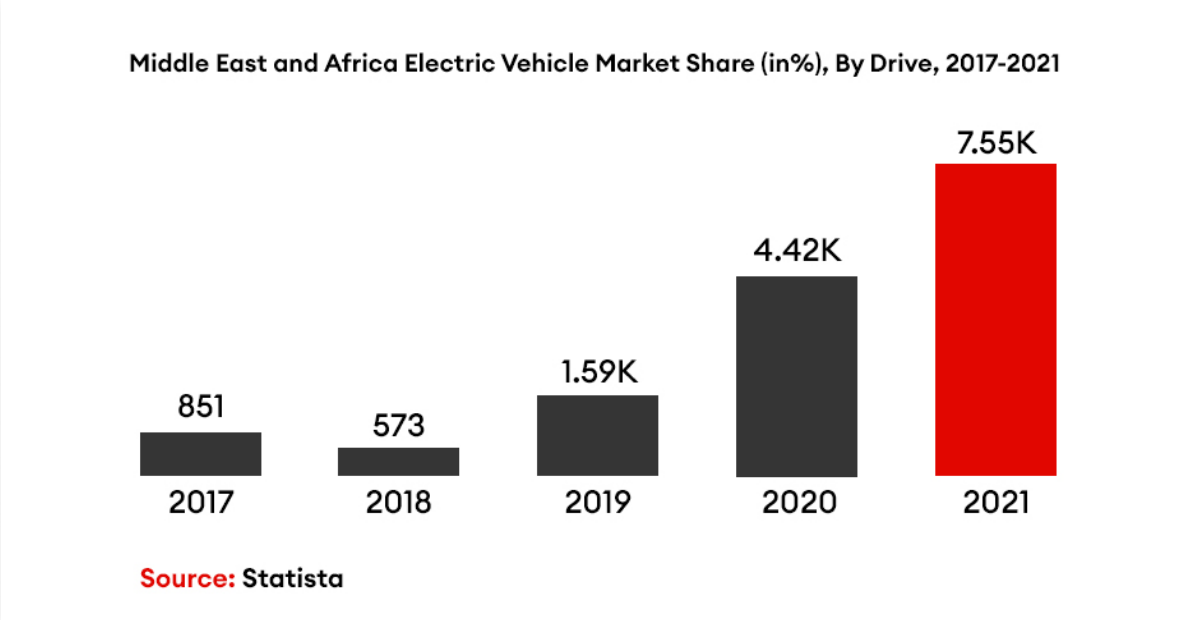
The following section covers the major trends in the GCC market for automotive sector from 2024 to 2029:

- ***Rise in E-Commerce to Drive the Growth in Logistics and Transportation Sector***

  The UAE has proved itself to be the fastest growing ecommerce market in the UAE with a Compound Annual Growth Rate (CAGR) of 18% during 2020-2025. Furthermore, with Saudi's 2030 vision, their government is actively working to reform the governance structures, allowing for market laterization and private sector participation.

  New business models are also expected to increase as more companies will be expanding due to the increase in contactless services and boom in ecommerce. Moreso, further rise in the field will lead to an increased impact on the automotive sector of the region.

- ***Rise in the Penetration of Electric Vehicles***



The electric and hybrid transportation modes are gaining popularity in the Gulf region, particularly in the UAE, Saudia, Oman, and Jordan. The government of the UAE has already started initiatives to reduce the road transport's footprint by setting an objective of reaching 10% of EVs by 2030 in Dubai.

The Middle East region is known for oil and gas, but electric vehicles are expected to gain popularity from 2024-2029. There are some other initiatives that might help with the boost in EV demand in the region. For instance, Saudi Electricity Company has signed deals with Nissan Motors and Tokyo Electric Company for the first EV pilot project in Saudi Arabia.

Similarly, UAE also has a developed market for EVs, not just for sales but for charging infrastructure with Dubai having around 200 charging stations, while Abu Dhabi has 20. The UAE government has set a target of 42000 electric cars on the road in a few years.

Automotive Industry in the UAE

Global automotive production is forecasted to grow from 100 million units by 2025 to 117 million units by 2030. Whereas the e-commerce automotive market in the UAE was valued at USD 318.2 million in 2020 and expected to grow at a CAGR of 14.8% in 2020-2025 to reach USD 381 million.

The automotive, spare parts, and aftermarket industry in the UAE has been growing steadily for the past few decades due to reasonable fuel cost, tariffs, and tax rates. The government of the UAE has built an efficient and resilient infrastructure for industry.

In 2019, there were around 1 billion motor vehicles reported to be sold globally, with over 70% sales generated by passenger cars. Furthermore, there was an increase of over 17.6% in automotive sales in the UAE as of March 2021.

UAE Government has no unnecessary restrictions and limitations that enable smooth purchase process on both individual and corporate level. It has also allowed the country to expand on development and innovation, making it the first country in the MENA region to open a hydrogen-fueling station. Other industry related UAE plans include a 25% transition plan to autonomous vehicles in Dubai by 2030.

Who Dominates the Market?

The Japanese brands are leading the market in Saudi Arabia and the UAE. Toyota has been the market leader in the UAE for several years, followed by Nissan and Mitsubishi. The Japanese brands are not only dominating the UAE and Saudi Arabia, but also leading the entire MENA region, with Korean and American brands taking second and third place.

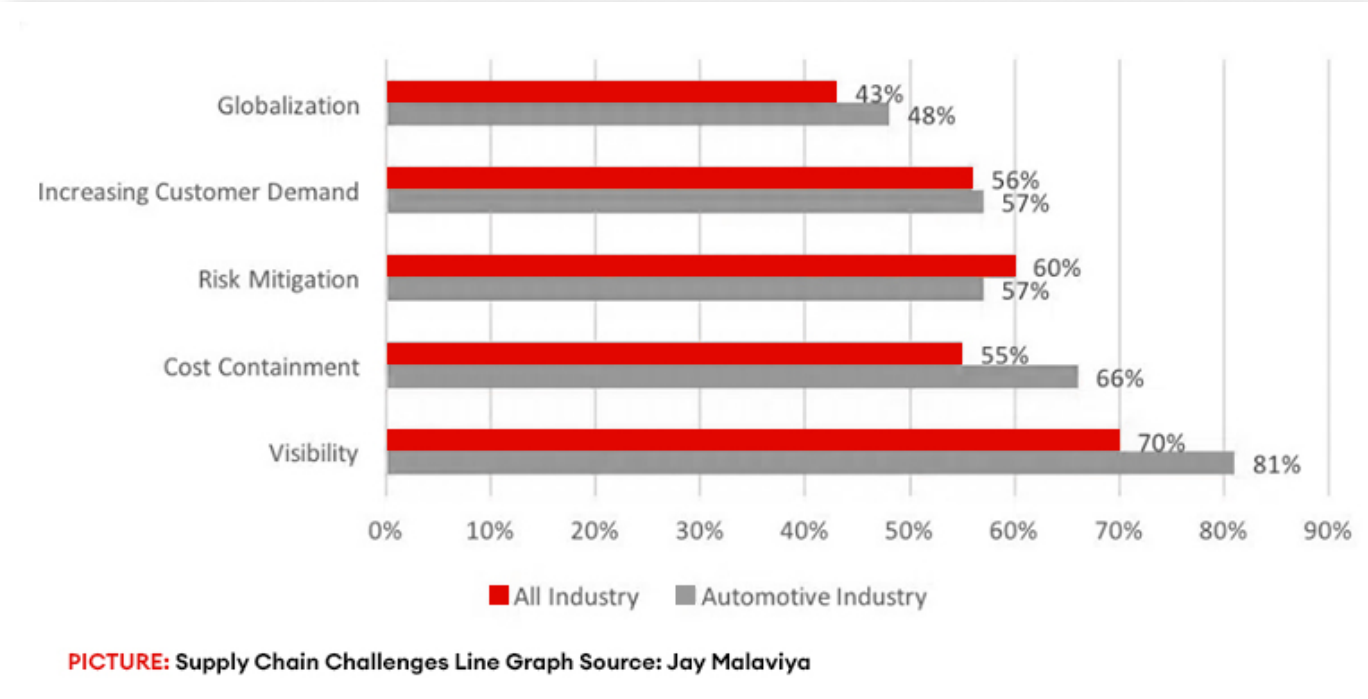
As the market expands, the growth will not only be driven by the vehicles themselves, but also by automotive logistics. This involves storing the vehicles, distributing them to the dealership or customers, transporting raw materials or finished automobiles, or managing different processes throughout the supply chain.

Automotive Supply Chain Issues and Solutions

The automotive supply chain has one of the most complex value chains in the world of logistics. It requires a high-level coordination among the engineers, suppliers, and manufacturers for smooth operations. Due to the complexities, many companies outsource the transportation networks to manage the supply chain. In addition to the already intricate process, the major transformation in the sector has caused several disruptions in the automotive industry. Companies are forced to adapt to these changes to survive in the sector.

Some of the challenges and their solutions are covered below:

Absence Of Clear Visibility in The Supply Chain



PICTURE: Supply Chain Challenges Line Graph Source: Jay Malaviya

Low supply chain visibility in the sector is the main cause of the failure to anticipate accurate demand and procurement for specific components. An average vehicle has over 30,000 individual parts, which means delay in delivery of a single component can result in setback of the unit's production. Since the automobile sector focuses on just-in-time manufacturing, any issues in the construction or distribution ends up creating inventory shortages or loss in revenue. Alternatively, if some component is underused, it can create a burden on the warehousing space.

The automotive industry has a concern rate of around 81% for visibility, which is high in comparison to the average of other businesses, recorded at approx. 70%.
Some proposed solutions for this issue include:

- Use a centralized tracking system for supply chain and inventory management communication. This helps in increasing the visibility of each part to minimize the risk of unexpected delays.
- Keep track of the location of each component at all times with the help of advanced technology, such as IoT. The technology shows the location to anticipate the arrival date of the parts.
- Find all the delivery routes for the suppliers to identify the optimized and shortest delivery time.
- Utilize predictive analysis and AI technology to forecast the demand of automobile components based on the consumer's pattern.

Sensitivity to the External Factors

The sensitive nature of the automotive sector makes it a considerable easy target for environmental, political, economic, and market changes.

The automobile industry relies on a global network of manufacturers and suppliers on a massive scale. Any industry-level trade disruptions cause short-term impact on the local market and long-term damage to the global sector. Similarly, the tariffs in specific regions, regulations, and wartime/conflicts also creates negative impact on the automative sector's operations.

The environmental challenges also play a pivotal role in the inefficiencies found in the automotive processes. In recent years, climate change has resulted in unpredictable weather-related issues that often create hurdles in the transportation process in the supply chain.

The proposed solutions for the external factors are to invest in effective risk management solutions or to keep track of the active routes. Lastly, the companies in the automotive sector can hire a 3PL company that can add sustainability compliance in the supply chain processes to mitigate the external risks

Rising Fuel Prices and Changing Trend Towards Electric Vehicles (EV)

Many companies are shifting towards different energy sources amid the rise in the price of fossil fuels. Without any exception, the automotive industry is also going through the shift. In response, the companies are buying electric vehicles to save on fuel costs. This transition is creating a ripple effect in the automotive industry. The increase in the demand for OEM microprocessor chips (component used in the manufacturing of EV) has caused a shortage crisis.

Secondly, the companies looking for the transition to EV must hire software engineers and battery technicians who are experts at operating such vehicles, increasing the business cost.
To make the transition smooth as possible, the companies should:

- Consolidate their packages to minimize the distance of deliveries.
- Monitor the vehicle's performance and focus on regular maintenance to minimize fuel wastage.
- To make the transition to EVs smooth, automotive companies should hire a third-party who already has the experts and experience working with electric vehicles.

Other Supply Chain Risks for the Automotive Industry

We've explained the major challenges of the sector above; however, the players in the industry should also prepare themselves for the following risks as well:

- Accuracy in alignment of production cycles and consumer demand trends.
- Ensuring the availability of stocks.
- Inventory control of raw materials, parts, and the finished products.
- Predicting the requirements with changing marketplace trends.

Trends in the Automotive Sector

Increase in Reshoring

In the automotive sector, 66% of the companies' sources half of their products or raw materials domestically; whereas 80% of them sources half of their services domestically. The reshoring is expected to increase in 2024 mainly due to supply chain fulfillment, access to better quality products due to government initiative; especially in North America, reduced shipping costs, better supplier responsiveness, and the demand of ISO certified products.

However, there's some hesitancy experienced due to the higher costs, lack of skilled workers, component and raw material shortages, and slower lead times.

Improved Supply chain Transparency

The lack of supply chain transparency has been a major concern for the automotive sector, but now companies in the industry might experience some relief in 2024. It is expected from the companies that they will take several actions to further increase the supply chain visibility, including installation of new software, utilizing blockchain technology, and improving the Supplier Relationship Mangement (SRM) strategies.

Rise in the Sustainability Investments

Industries across the globe are taking active sustainability initiatives in response to climate change, and the automotive sector is no exception. The industry is experiencing immense pressure from the government and consumers to follow more sustainable practices. These practices will affect the sourcing of raw materials and components; along with their logistics and shipping practices.

Over the next year, the companies will try to overhaul their manufacturing operations for more sustainable products. The example of this transition is the trend of expected rise in investments for Electric Vehicles (EV).

Shift Towards Technological Advancements

Like any other industry, the automotive industry is also going through a significant transition, mainly due to global expansion, mergers and acquisitions, and the development of alternate energy-driven vehicles. This requires automotive companies to adapt to technological changes to unlock savings, reduce waste and enhance overall efficiency. The major companies who made significant investments in technology have been rewarded with more visibility and transparency, helping with the ability to track the automobiles or the components as they pass through different stages of the supply chain. Some of the important technological advancements are:

- **Internet of Things:** This technology is embedded within the vehicle in the logistics and production environments and the after-market service infrastructure. Multiple supply chain points are connected to the internet that allows seamless information flow through a common enterprise platform.
- **Cloud B2B Platforms:** Consolidation is happening all across the automotive supply chain as globalization increases. Amid this increase, there is a need for more integrated enterprise systems. The cloud platforms are fulfilling the requirement of quick integration and consolidation of systems. As the sector is expanding in the new emerging markets, such as North Africa, Vietnam, and Thailand with limited IT skills and assets, the presence of cloud platforms allows all plants to be connected to a centralized system within the budget.
- **Telematics:** This technology includes enabled GPS, in-vehicle entertainment, and improved security measures, and other similar features to enhance user experience. In supply chain perspective, the technology also enables OEMs to communicate with the consumers directly, that recommends oil change when needed. Telematics can also be leveraged to send messages the alerts the drivers to a recommended service.

Conclusion

In conclusion, the automotive logistics sector is navigating through a period of significant transformation, driven by technological advancements, shifting consumer preferences, and the global push towards sustainability. The Asia-Pacific region, with its burgeoning economies and status as a manufacturing hub, is poised to lead the market, while innovations in transport solutions and the rise of electric vehicles signal a new era for automotive logistics. Despite the challenges, including supply chain disruptions and the need for digital transformation, the industry is adapting, leveraging new technologies and strategies to enhance efficiency and resilience. As we look towards the future, the role of automotive logistics in shaping the global automotive industry cannot be understated. With the right approaches and investments, the sector is well-equipped to drive forward, delivering not just vehicles, but also value, sustainability, and innovation, to consumers worldwide.