

EXPEDITED LOGISTICS SOLUTION:

Adding Efficiency to the Global Automobile Parts Supply Chain



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Introduction

Along with the premium-priced luxury vehicles and futuristic-looking “concept cars” that garnered most of the attention during the annual New York Auto Shop, auto manufacturers also showcased updated models with greater efficiency, more attention to comfort, improved safety mechanisms, and advanced use of technology. Honda, for example, introduced a more powerful version of the Civic; Ford introduced a car that won’t allow the vehicle to exceed the speed limit; and Chevrolet debuted a version of the Malibu that includes technology to allow parents to monitor their teenagers’ driving habits.

But while manufacturers basked in the “oohs and aahs” of impressed car show attendees, little mention was made of the herculean efforts of the global network of parts suppliers to make those vehicles possible. Parts suppliers, of course, have always had an integral role in helping to bring manufacturers’ “drawing board” designs to life. But today’s suppliers operate in a “new” environment in which they are under extreme pressure to meet manufacturers’ need for greater innovation, but with shorter lead times, along with greater flexibility and faster transit times.

These pressures, coupled with the increasingly global nature of the supply chain and the industry’s

susceptibility to disruption, are causing Tier I and Tier II suppliers to look long and hard at their existing processes in search of greater efficiency and certainty.

[KPMG](#) calls this a “transitional” period for auto suppliers and cites increased incidences of businesses joining forces to share resources and maximize productivity. Johnson Controls, for example, which supplies seats, headlinings, door trim panels, and dashboards to automobile manufacturers, announced in 2012 that it was joining with India’s Pricol Limited, a supplier of instrument clusters. Germany’s Grammer AG has been working to build truck seats with Chinese supplier Jiangsu Yuhua Automobile Parts. In either instance, the companies entered into a joint venture as a way to expand their presence in the global market and to achieve greater efficiency. KPMG, in fact, notes many companies in the industry will “hardly be able” to avoid joining forces with other companies.

These changes come at a time of sustained growth within the supplier sector. As analysis by [Pricewaterhouse Coopers \(PwC\)](#) notes, the automobile industry as a whole was significantly affected by the economic recession, including the

Auto suppliers are under pressure to reduce costs, cut lead times, and adapt to an increasingly complicated inventory of new parts; at the same time, manufacturing is more global than ever before.

supplier sector, which saw significant capacity reductions, accelerated industry consolidations, and a fundamental shift in operating strategies. Nowadays, the report notes, the industry is “back on solid footing,” with increased sales predicted for at least the next five to seven years.

In fact, North American “suppliers and OEMs [original equipment manufacturers] alike are running at max capacity to meet demand—both for domestic sales as well as exports to markets overseas.” While growth of course is a positive, it does pose new challenges.

Suppliers are being asked to adapt to the reality of today’s vehicles that include a growing array of “nontraditional” parts, ranging from electric car batteries to hybrid engines to satellite radios to customized interiors. Car manufacturers are requesting new products but with increasingly shortened lead times. This presents a double quandary: On the one hand, suppliers that were stung by having too much inventory on their hands when the recession struck are reluctant to carry too many SKUs or too much of any one SKU. At the same time, with so much production located around the globe, suppliers need a fail-proof strategy to move product from anywhere in the

world to meet an OEMs’ precise manufacturing schedule.

A growing number of suppliers are turning to expedited logistics services to address these multiple challenges. In fact, for many auto suppliers, expedited has become the preferred option for all shipments, rather than an “option of last resort” used only for only shipments that are extremely time sensitive. Through expedited services, a business has the peace of mind of “guaranteed on-time delivery” regardless of where in the world products originate or are delivered. Shipments benefit from an array of services ranging from special handling to end-to-end visibility to customs processing. As today’s automotive supply chains become increasingly complicated, businesses appreciate the certainty and reliability of an expedited solution.

The following discussion will offer a detailed overview of issues and trends that affect Tier I and Tier II automotive suppliers. As we’ll see, suppliers are under tremendous pressure to meet OEM expectations. This in turn highlights the need for an experienced logistics partner to manage deadlines and help the supplier reap the rewards of the current pro-growth environment.

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Automotive Suppliers—An Industry in Transition

A visit to the Toyota [website](#) reveals that a single car can have as many as 30,000 parts, “counting every part down to the smallest screws.” But as anyone even vaguely familiar with assembly knows, it’s usually the small screws that keep the whole thing from working. In the case of an automobile, those 30,000 parts are sourced from multitudes of suppliers, often located across the globe.

Making sure that all 30,000 parts arrive at an automobile assembly plant—on time and undamaged—is obviously a top concern for suppliers. However, many compelling factors affect a supplier’s ability to achieve this. For one thing, the nature of the parts themselves has changed significantly in recent years. Many parts now rely on sensors and other forms of technology, which have forced some suppliers to significantly overhaul their production processes. Another important consideration is the increased globalization of the supply chain. Several analysts refer to this as the auto industry’s “shifting center of gravity” as manufacturing has moved away from the United States and Canada in favor of China, Mexico, and “low-cost” developing countries.

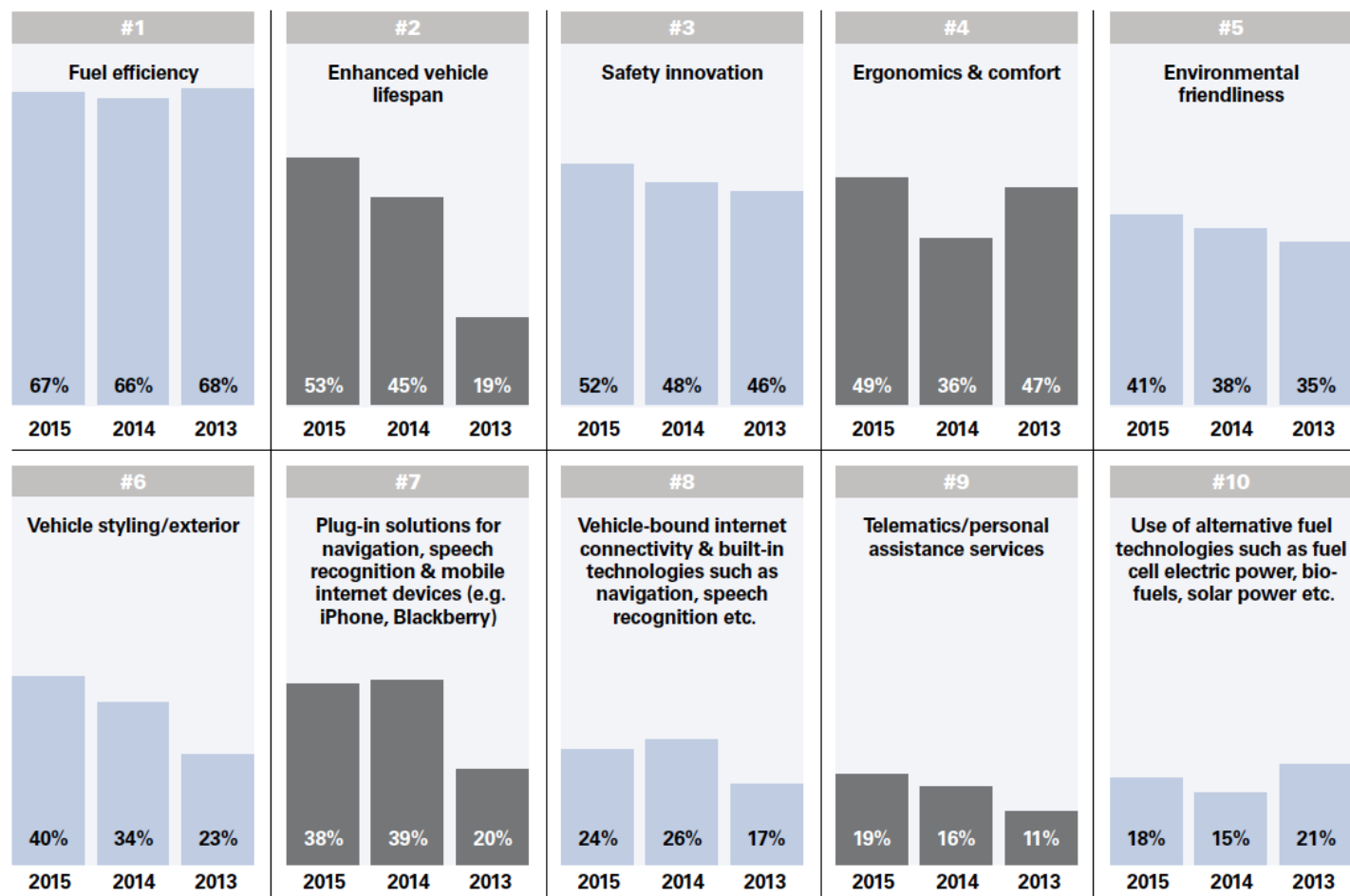
Not surprisingly, this has created logistical challenges as suppliers must contend with myriad transportation challenges including poor infrastructure, unsatisfactory transportation options, customs issues, and language and cultural issues.

Before delving too deeply into these and other challenges, it’s useful to have an idea of priorities set by automakers, which in turn drive many of the decisions and processes put

in place by their suppliers. According to 2014 research by [Pricewaterhouse Coopers](#), a survey of automotive executives found the most important drivers for their industry include:

- Minimized Costs 90%**
 - Decreased manufacturing costs
 - Inventory reduction
 - Best-cost country sourcing
- Maximum Delivery Performance 87%**
 - Collaborative planning with key suppliers
 - Collaboration with key customers
 - Improved manufacturing time/reduced order fulfillment time
- Maximum Volume Flexibility and Responsiveness . 83%**
 - Flexible shift models/payment structure
 - Internal capacity flexibility
 - End-to-end supply chain planning and visibility
- Complexity Management 67%**
 - Making to order
 - Automation of processes
 - in order to cope with complexity
 - Assortment/inventory policies distinguished by product family and storing location
- Minimized Risks 67%**
 - Visibility and regular monitoring of main suppliers’ operational indicators
 - Multiplication of sources and sole-sourcing avoidance
 - Regular review of suppliers’ financial risk and mitigation through risk-sharing partnerships

TOP VEHICLE FEATURES AFFECTING CONSUMER PURCHASE DECISIONS



Source: [2015 KPMG's Global Automotive Executive Survey](#)

Auto executives are also very attuned to customer preferences, with research by KPMG citing improved fuel efficiency, enhanced vehicle life span, safety, and comfort as top priorities. Also top of mind is the record-setting number of product recalls that took place during 2014, which have increased pressure for greater quality control. More than [60 million](#) vehicles were recalled for a variety of issues including defective air bags and faulty ignition switches.

To meet these objectives, carmakers are asking more of their suppliers. According to research by the [Boston Consulting Group](#), cost cutting is currently a top priority. “In a typical year,” the study notes, “suppliers are asked to shave two to three percent off their prices.” But in 2015, automakers are seeking to cut their total spending by four to six percent, with suppliers expected to bear as much as 65 percent of those cutbacks.

Suppliers must trim costs at the same time they are being asked to expand global sourcing, reduce manufacturing cycles, and improve delivery processes to meet automakers’ precision-like Just-In-Time or Just-In-Sequence delivery requirements.

Globalization of the Supply Chain

With an eye affixed firmly to the bottom line, many suppliers are moving production to lower-cost countries and to countries nearer to end-customers. For example, the Boston Consulting Group notes that in 2009, 66 percent of suppliers in their

study had manufacturing sites in Western Europe, Japan, and the United States. By 2014 that number had dropped to 58 percent and is expected to decline further to 47 percent by 2019.

At the same time, there has been a sharp increase in the number of manufacturing plants located in China, Mexico, Eastern Europe, India, and other developing Asian countries. The survey cited one German supplier that is planning to shift a “lead” manufacturing plant to Eastern Europe. The supplier explained that the new plant would be more productive than the one it was replacing (which was located in Germany) “because work rules are more flexible and new processes and a new organization structure will be introduced.”

Perhaps no country has benefited more from the shift in vehicle and parts production than Mexico. Vehicle production topped 3.2 million units during 2014 and is expected to grow to 4.7 million units by 2020. Automakers have been drawn to [Mexico](#) because of its numerous trade agreements, government-supported economic enticements, and its skilled, affordable workforce. Not surprisingly, most major suppliers have followed and become fully integrated. “The Tier I level in Mexico is complete,” said [Oscar Albin](#), executive vice president of INA, Mexico’s national association of suppliers. “You can make a car with parts made in Mexico.”

Auto suppliers are under increased pressure from car companies to locate production as close to auto assembly

lines as possible. The Boston Consulting Group research found that suppliers expect to increase their number of global manufacturing sites by an average of nine percent over the next five years. Further, 60 percent of the auto supply executives surveyed expect production capacity—including many core manufacturing operations for certain products—to be located in emerging markets within five years.

For many suppliers, moving production overseas—or to Mexico—has resulted in a new set of challenges. Entering a new market requires a tremendous amount of local groundwork and market research. This includes careful consideration of all logistical issues, many of which need special attention.

For example, [IndustryWeek](#) recently highlighted problems businesses locating production in India face despite that government's commitment to attracting foreign investment. The article cited a survey by the Indo-German Chamber of Commerce of German companies with operations in India. While most expressed optimism about India's long-term prospects, there was strong sentiment that current conditions are far from optimal. For example, 58 percent cited "bureaucracy" as the major obstacle to good business practices, followed by lack of infrastructure (52 percent), corruption (45 percent), lack of skilled people (35 percent), and tax disputes (3 percent).

To be sure, a supplier will need to (a) be aware of all possible impediments to success and (b) have a plan in place to succeed despite these obstacles.

Need for Flexibility/Adaptation

From hybrids to electric cars to highly "connected" vehicles, today's parts suppliers are tasked with developing and delivering a more diverse array of products than ever before.

Analysis from [Pricewaterhouse Coopers](#) noted that the ever-changing product portfolio of automobile manufacturers highlights the need for customization and flexibility among suppliers. And, with so much of today's focus on electronics, traditional supplier relationships have been challenged.

"These days, a car needs to fit seamlessly into the customer's ecosystem," Antonino Ardilio, head of technology development at Fraunhofer Institute for Manufacturing Engineering and Automation, in Stuttgart, Germany, said in an interview with [KPMG](#). "The customer considers questions such as: Does the car have a USB connection? What interfaces are there for a smartphone? Does it have internet capability?"

Ardilio notes that a result of this heightened focus on "connectivity" is the inevitable partnering of auto suppliers with IT companies and consumer electronics manufacturers. "Bluetooth, WiFi, or 3G internet are not exactly the domain of an OEM," he added.

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This is in addition to increasingly complex products required to meet more stringent government fuel-economy standards, not to mention the customization and product modifications necessary to meet different standards set by different countries, and in some instances, at the state or provincial level.

As a result, suppliers now find themselves tasked with providing increasingly technical and complex products that may have very short life spans. Car “infotainment” producers, for example, are under enormous pressure for continual upgrades and to bring to market “the next big thing.” This in turn poses fundamental inventory issues, since no supplier wants to be stuck with unsold inventory that is suddenly obsolete but neither does a supplier want to risk not being able to meet a manufacturer’s demand.

Tightened Delivery Schedules

Automakers have almost universally adopted carefully orchestrated Just-In-Time manufacturing principles, in which parts arrive at the assembly line precisely on time and in exactly the right quantity. And, more recently, manufacturers have also adopted Just-In-Sequence (JIS) principles in which parts arrive in the right order. Parts arrive in a specific order, and workers unpack them directly from shipping containers. Each part is then installed without a worker having to stop to look for a particular part or in any way halt the production process.

For a supplier, fulfilling a manufacturer’s sequenced order requires a careful analysis of its operations in order to determine how best to ensure that necessary parts are available, and placed in proper sequence, and delivered on time.

One option is for a supplier to “build in sequence,” whereby parts are built in the same order that matches the sequence in which they will be used. A benefit of this approach is that, since parts will be delivered to the manufacturer upon completion, a supplier will be able to maximize floor space.

Another option is for a supplier to produce batches of each part, which are then assembled into kits, with each part carefully placed in proper order in which it will be used. This option is preferred by many suppliers because of its simplicity and because it lends itself to increasingly common technology that facilitates picking and packing solutions.

Yet another possibility, and one gaining in appeal, is to outsource the sequencing process to a third party, such as a logistics provider. An experienced third party can assume management for the entire process. Batches of parts arrive at the third party and are then picked, placed in proper sequence, packed, and shipped to the manufacturer. Analysis by [Datanaional Corp.](#) noted the important role an experienced third party can have in executing a sequencing strategy: “If the third-party sequencer is reliable and experienced, partnerships like this may work out well. Both parties do what they are best at, and the manufacturer gets the product exactly as expected.”

“However,” the analysis continued, “if the synergies don’t occur, the relationship could become strained and the customer could become negatively impacted.”

Handled correctly, automakers’ JIS requirements can be an opportunity for a well-prepared supplier. Seamless sequencing prowess can be used as a competitive edge, both in soliciting additional business within the automotive industry and also with industries that might benefit from a similar approach to manufacturing.

Vulnerability to Weather/Natural Disasters

As the whole world became aware of in the aftermath of the 2011 Japanese earthquake and tsunami, the auto parts supply chain is just one natural disaster away from significant disruption. Media reports abounded at the time about the severe damage and destruction that Japan’s parts suppliers and auto manufacturers endured and the ripple effect it had on auto assembly lines worldwide. The disaster also exposed the vulnerability of the industry’s Just-In-Time production strategy, which left manufacturers with scarce inventory supplies to tide them over until suppliers could relocate production.

As this catastrophe made clear, the supplier network is extremely susceptible to the slightest delivery interruption. In 2013, a Corvette assembly plant in Bowling Green, Kentucky, was forced to shut down for a few days due to winter weather-associated delays. Similarly, workers at a nearby Volkswagen

plant were sent home when a shipment of windshield wipers failed to arrive on time, also because of weather issues. Idle assembly lines come with a very hefty price tag and have resulted in a rethinking of existing supplier strategies.

Some manufacturers are increasing the number of suppliers used to provide generic-type parts. But for Tier I and Tier II parts suppliers, that provide very specific, customized materials, the focus has been on managing future disruptions. Specifically, top suppliers have been tasked with developing contingency plans so that, in the event of a disruption, a clearly defined “Plan B” can be activated, which in some cases requires manufacturing to be moved to another part of the world.

For many suppliers though, this is easier said than done. For one thing, a supplier would need to anticipate disruptions not just to its manufacturing plants but to its lower-tier suppliers as well. Remember, the typical vehicle has 30,000 parts, and a sudden loss of any one could be enough to derail overall production.

This extreme vulnerability of the parts supply chain has caused many suppliers to turn to expedited logistics. In many cases, minimizing the risk of an assembly line shutdown is well worth the extra costs associated with an expedited solution.

Expedited Services— A Preferred Logistics Solution

What has evolved then is an automobile parts supply chain that is (a) more global than ever, (b) operating at near capacity, (c) producing increasingly complex products under shortened time frames, (d) responding to manufacturers' demands for precision-like deliveries and sequential fulfillment, and (e) susceptible to supply chain disruptions.

Other than that, as they say, what could possibly go wrong?

An increasing number of suppliers are no longer willing to find out. Instead, they are turning to expedited services as their preferred logistics solution. Suppliers are drawn to the guaranteed delivery assurances associated with expedited service along with its many value-added services, high levels of customer service, and, for many, the peace of mind of having a trusted partner on whom they can rely.

Expedited service has traditionally been regarded as the “Roll-Royce” of logistics, reserved only for most urgent or highly perishable shipments. While critical shipping and “next flight out” are still key expedited components, the category now includes much more and in many ways is perfectly matched for the automobile parts industry.

Guaranteed Delivery

Whether a shipment requires an urgent intercontinental transportation solution or time-certain delivery within the United States or North America, there is an expedited solution for every scenario. But only a truly experienced logistics provider will have access to a full range of solutions. Although expedited services are generally associated with air service, expedited ocean and truck solutions are also available.

Sequencing/Fulfillment Services

Auto suppliers face intense pressure to meet manufacturers' strict Just-In-Time production schedules along with requirements for parts to be delivered in the precise sequence in which they will be used. An experienced expeditor will be able to manage these shipment preparation and delivery demands. An expeditor will use manufacturers' precise sequencing schedules to assemble kits, which will then be delivered to the manufacturer at the precise time.

Globalization Issues

An expedited logistics provider will offer hassle-free service across international boundaries and seamless clearance through local customs processes. At a minimum, a qualified logistics provider will ensure that an expedited shipment arrives at a customs checkpoint with all paperwork ready to go and, where possible, already prefiled. All taxes/duties/fees will be paid in advance, and the shipment will be in compliance with all security and “other government department” mandates.

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A truly exceptional logistics provider will go beyond this and offer innovative services to include:

- Use of regional airports. Extremely busy airports can be avoided by rerouting a shipment to travel via a less-busy alternative.
- Maximal use of “customs-friendly” countries. Some countries are notoriously inefficient at clearing shipments through customs, while others can move shipments quickly. A savvy logistics provider will be able to plan a logistics route that avoids likely difficult customs procedures.
- Local couriers. A qualified provider will have local personnel on the ground ready to oversee the proper handling of a shipment. Local personnel will speak the local language, be fully aware of airport logistics, customs processes, and even local ground options. In some instances, the local agent will accompany the shipment to its final destination.

Inventory Management

Now more than ever, parts manufacturers face the unpleasant distinction of producing technology/electronic-based products with very short life cycles that lose value quickly. Having the capacity to accurately forecast demand is important but so is the ability to move existing inventory quickly to where it is needed.

With an expedited plan in place, an account manager has full visibility into global inventory levels and the capability to move

products accordingly. Alternatively, a nonexpedited solution would house inventory in warehouses or distribution centers, and potentially be located thousands of miles—continents—away from where it is needed.

Finding the Right Logistics Provider

A prevailing sense of urgency is a defining characteristic of the expedited industry in which lead times are measured in minutes and logistics providers seem to make the impossible happen on a daily basis. Not surprisingly, a diverse network of providers make up the expedited logistics industry, and it's important to weed through them to make sure you select a provider that best meets your unique needs.

For an auto parts supplier, you will need a carrier with international expertise that can handle highly secure/fragile shipments and that can offer a high degree of flexibility. It's important to take the time to research a potential logistics provider well before its services are actually needed. You don't want to find out too late that your carrier overstated its capabilities or, for whatever other reason, is not capable of transporting your urgent shipments.

A few things to keep in mind when considering potential expedited carriers:

Customization and Collaboration

It's essential to view your expedited logistics provider as a partner. You want to build a relationship so there is mutual

understanding of your business objectives, priorities, and needs. This information sharing can only happen through many, many direct conversations and ongoing open lines of communication. A good logistics provider will use this information to create a customized solution to meet your specific needs.

Personalization

As you build your relationship, it's important that the same individuals service your account the whole way through. The same individuals who prepare your original logistics solution should be the same people who oversee the pickup, transit, and final-mile delivery of your expedited shipments.

Depth of Assets

Integral to expedited service is the capacity to move a shipment, at a moment's notice, to anywhere in the world. Few providers have the deep network of assets necessary to accomplish this. A bona fide expedited service provider will be able to detail precisely how its network is configured and how it will respond to your request for service.

Experience

When it comes to managing expedited logistics, there is no substitute for experience. Choose a provider that has handled auto parts logistics in the past—and can provide references. Unless a provider has been through the process, and knows firsthand what to expect, any claims of “guaranteed service” should be met with skepticism.

Customs Experience

Equally important is to choose a provider with strong experience in customs management. This is especially critical given the global nature of the auto parts industry. An experienced customs manager will be fully knowledgeable about the customs requirements for every border your shipment will cross and will ensure that all your shipments are in full compliance. In some instances, an expedited provider can provide a qualified local courier to personally transport a shipment through the customs process and resolve any potential problems. An experienced provider can also plan an expedited logistics solution that bypasses busy airports with congested customs processes in favor of less-busy regional alternatives.

Technology

Tremendous advances in expedited logistics have been possible due to technological innovations. Logistics providers can provide high levels of visibility and shipment tracking, ensure constant communication between drivers/pilots and a central office, and have unprecedented access to route optimization and capacity availability. Many expedited logistics providers have their own customized technology solutions that allow a bird's-eye view into operations. Often these internal systems will integrate directly with a customer's own network, making it possible to generate reports, billing information, and shipping materials.

Value-Added Services

For many shippers, the benefits of expedited value are the premium levels of service that have become integral to the service rather than the accelerated rates of delivery. Proof of delivery, tracking and tracing, and time-guaranteed delivery have become industry standards. Following are a few additional value-added services that some—but not all—logistics providers may offer:

- **Kitting**—For a parts supplier, this may be the most important feature of all and a solution to the Just-In-Sequence requirement of many auto manufacturers. In this scenario, an expeditor would retrieve finished products from the parts manufacturer, assemble sequentially appropriate kits that meet the manufacturer's precise requirements, and then deliver the kits to the assembly plant at the appropriate time.
- **Security**—As parts suppliers deal with increasingly high-tech components, supply chain security has become more important than ever. Added security is integral to the expedited process because of (a) fewer touches, (b) accelerated supply chains, and (c) extra personnel to monitor shipments. Certain shipments may be handled via a team-driver approach through which two drivers ensure that a shipment is never left unattended. Or a courier may be used to personally accompany a shipment

traveling via air.

- **Customs Clearance**—Shipments that cross an international border require compliance with all applicable customs, security, and revenue mandates. Customs agents are very unforgiving when it comes to filing proper documentation. It is essential, if your shipment requires a border crossing, to have a qualified customs broker or logistics partner who can ensure complete compliance and a hassle-free customs clearance process.
- **White Glove**—Shipments that require special care often require super-premium white-glove treatment. White glove is a very specialized service within the expedited industry. White-glove freight requires drivers to have special training and to travel with specialized equipment, including furniture pads, pallet jacks, specialized tools, hand trucks, dollies, lift gates, and temperature-controlled units. Special security mechanisms usually are in place for white-glove shipments, and drivers need to be properly trained to perform any necessary assemblage or installation.

Conclusion

One of the great challenges a global auto parts supplier faces is manufacturing products to meet the nuances of each market it serves. In India, for example, KPMG notes a cultural affinity for repeated horn blowing. “Drivers honk their horns constantly,” KPMG’s analysis noted, “as many times in one day as a German driver would honk in a whole year. A normal Western horn could not take this for very long. And a car without a horn is inconceivable in India.” The cultural distinction led Mercedes Benz’s India-based research facility to develop a new horn, specifically for use on cars sold in India.

This single horn is illustrative of the hundreds of thousands of auto parts produced annually across the globe. For every part, there is a supply chain, and strict production and delivery time frames.

In the post-recession environment, suppliers find themselves in the enviable position of being profitable and operating at near capacity. At the same time though, they are under enormous pressure from car makers to cut costs and improve efficiency. In some circumstances, these competing factors could be a recipe for disaster.

Instead, the changing dynamics can be an opportunity for a well-managed parts supply chain. Smart managers are increasingly realizing the value of entrusting their supply chain to an expedited logistics solution. The combination of guaranteed delivery, high levels of “extra” services, and unmatched customer service allow parts suppliers tremendous efficiencies and a welcome sense of relief.

With automakers expected to continue to push suppliers for additional cost efficiencies and improvements, it’s a safe bet that expedited service will continue to gain favor as a preferred solution.

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