

# Spare the trouble



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*An automobile Original Equipment Manufacturer's spares business has two major, and at times conflicting, needs to satisfy; 1) ensure delivery of spares to the customers at point of requirement in shortest possible time and 2) to do so in a manner that is financially beneficial to the company.*

## **Importance of Spares Availability**

Once an OEM (Original Equipment Manufacturer) has sold a product (car; truck etc) to a consumer, it becomes a commitment for the OEM to ensure that the spares and service are seamlessly available to the customer. In the case of some large OEMs, this could involve making more than 1.5 lakh individual parts readily available at all times! If customers (or the mechanics) struggle for parts whenever they want to repair or maintain their vehicles, they judge the OEM poorly. Frequent poor sales and service experience is known to negatively impact vehicle sales of a company.

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## **The financial challenge in Spare Management**

Ensuring spares availability is naturally a major challenge due to the enormous variety of parts involved across the portfolio of the OEM's vehicles. With new models being launched with increasing frequency, the number of spare part SKUs that have to be serviced also increases. Moreover, OEMs have to maintain this large variety of parts over the long life span of vehicles (very often for more than 7 years). To complicate things further, some of these are in frequent demand while others are needed very infrequently. Unfortunately, this business has a large number of these infrequently demanded "stranger" items! Consequently whenever OEMs try to improve spares availability, the cash tied up in slow moving inventory balloons! Further, it is not enough for a part to be available at the warehouse or the distributor's location; all parts have to be available or delivered in shortest possible time to the point of requirement (service dealers, retail shops etc. from where the customers buy them)

Because of the conflicting objectives of spare parts management, most OEMs in India struggle with parts availability. The ramifications of such unavailability further leads to inefficiencies in service centers and ironically takes away the advantage of what should have been a monopoly market for OEMs

## **Impact of unavailability at Service dealerships**

Delay in parts availability at service dealerships lead to high turnaround times for vehicles coming in for service and disgruntled customers. This in turn can have a cascading effect on service bay availability and delays in repairing other vehicles in the service center. Servicing in an OEM dealership is usually more expensive, than getting it done outside. Unfortunately, most often these higher prices do not translate into superior service in terms of vehicle turnaround times in the service centers, hence it not surprising to find customers seeking out cheaper alternatives. Therefore most vehicles leave OEM service network after warranty period. If we take cars - according to ACMA while nearly 20% of the cars on road are more than 15 years old, the typical age profile of cars reporting at dealerships is of less than seven years.

## **Impact of unavailability in Aftermarket**

Many OEMs allow parts to be sold outside its network; more so, for the older models. This is to ensure good reach of parts to counter the gaps in their existing service network. But distributing large no of parts through a network of distributors, and small retailers come with its own challenge. Most of these players in the market are small businessmen find it difficult to invest large sums as capital.

The problem of unavailability is further aggravated by presence of few, yet very large wholesalers in the network. Their presence is assumed to be the answer to reach out to far flung areas. So companies sell in bulk to these large wholesalers at cheaper rates with the hope that they will help the company improve 'reach' and get sales from these unserved areas. Unfortunately these wholesalers are passive sellers who sell only to those who approach them and therefore do not serve this purpose effectively. Moreover they end up creating more area conflicts in current territories than serving the deeper geographies. Most OEMs have resigned themselves to live with this –the management bandwidth in the spares and service business is already fully occupied in expediting spares in the distribution and service network.

These conditions impact the last mile availability of original parts creating an ideal condition for small local players to manufacture and sell counterfeits. Most of the counterfeit sellers also offer much better service to retail points due to their geographical concentration. Easy availability, a customer in dire need of parts (when vehicle is down) and non-availability of original parts makes it a viable market for counterfeits.

Consequently no other consumer product category has seen counterfeiting to this extent in the Indian market. ACMA assesses that 36% of the components in the aftermarket are fake. It is also thought to be growing 9-11% annually. Since counterfeiting is usually of the OEM's intellectual property, in addition to eating into the aftersales of the vehicle manufacturer, it may also spoil the vehicle and endanger the life of the driver.

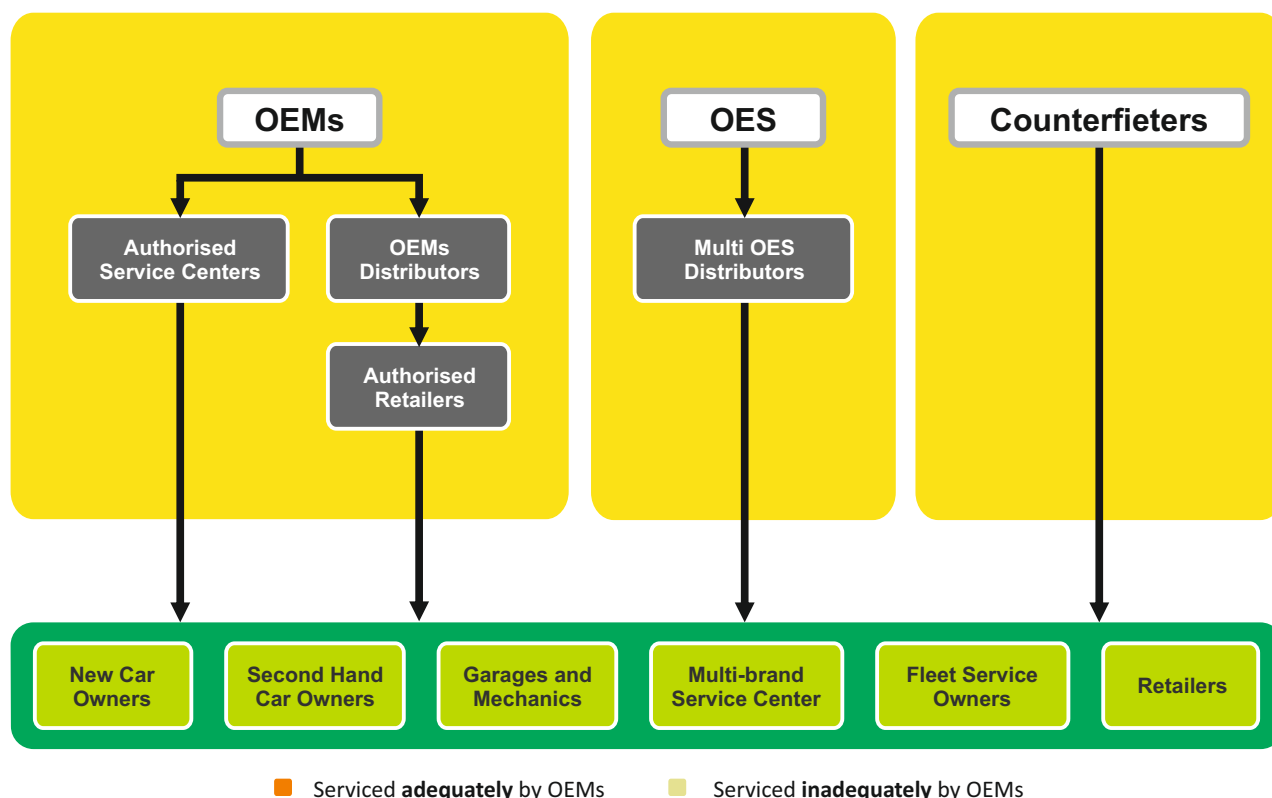


Figure 1: Coverage pattern of Auto part aftermarket (for service and parts) for most Indian OEMs

## Core Issue

These chronic availability issues have their roots in how typical OEMs operate. They send in 3 month rolling schedules, based on sales forecast of individual parts to their vendors, who then manufacture and supply as per the schedules. In addition to supply being unreliable, the fact that forecasts are inherently error prone creates situations wherein some items are stocked out and others are in surplus. At the same time, demand tends to be skewed with high month end spikes due to prevalent practice of pushing material at month ends (with or without incentives) to meet sales targets. This is one of the reasons why distributors tend to keep 45 to 60 days of stock even when the nearest company warehouse is just few days away.

Pushing parts to the channel partners, when many parts are inherently slow moving, aggravates the problem. The speed at which stock rotates deteriorates because the channel partner is exposed to a smaller demand and highly variable demand in a restricted geography. Thus, this practice impacts the buying power of channel partners, and their ability to restock when items are sold out. The daily working capital woes of a distributor forces him to restrict his business and many tend to service only a limited number of retailers (usually larger retailers) who they perceive as low credit risk. Net impact is reduced availability of spares in the market.

### Direction of solution

Any solution should aim at ensuring parts are made available at shortest possible time. But this has to be realized at the same or lower levels of inventory and nobody in the entire chain should be burdened with extra investment.

For this it is imperative to classify parts into various categories and create a distribution strategy based on that. Based on frequency of demand at the point of sale, parts can be classified thus:

- 1 **Fast mover Parts:** These are regular maintenance parts like the Filters, Oils, Break lining, Clutch, belts, Oil seals, Battery, Tyre, wiper etc. which are replaced as part of regular maintenance. In terms of sales, these are usually 60 to 70% of the total spare parts sold.
- 2 **Erratic Parts:** These are parts which are prone to frequent damages like the gear parts, Bumper, wind shields, etc. They may also be exclusive parts needed for preventive maintenance of less popular models or consumables or items needed after minor accidents. While the vehicles of a particular model may not frequently visit a particular service center, as far as the customer is concerned, these are regular items and they will not have the patience to wait for long.
- 3 **Slow Parts:** These are infrequently used repair parts or failure parts like Radiator, Window glass, Fuel injection, crank shaft etc.
- 4 **Stranger parts (rare parts):** These include major or rare Accident parts, parts with small chance of failure or parts with large replacement cycles like axels, Transmission, Cabin, frame, Door, fuel tank, central locking system. Accident insurance claims which are usually made in these cases, generally take ten to 14 days. As long as the parts can be made available within this window, there would not be any hold up for customer service due to unavailability.
- 5 **Out- of circulation parts:** These are usually stranger parts that belong to 4- 10 year old models of the OEM which are no longer in production. And even though these parts are not used in current models, the OEM is legally expected to maintain these parts for repairs and replacements.



Category	Fast runner Parts	Erratic Parts	Slow Parts	Stranger parts (rare parts)	Out-of-circulation parts
Characteristics	<ul style="list-style-type: none"> <li>usually parts for preventive maintenance or</li> <li>consumables</li> <li>very low customer tolerance for waiting</li> </ul>	<ul style="list-style-type: none"> <li>usually exclusive parts for preventive maintenance of less popular models or</li> <li>consumables or</li> <li>items needed after minor accidents</li> <li>low customer tolerance for waiting</li> </ul>	<ul style="list-style-type: none"> <li>Infrequently used parts or</li> <li>Repair parts /Failure parts</li> </ul>	<ul style="list-style-type: none"> <li>Major or rare Accident parts</li> <li>parts with small chance of failure</li> <li>parts with large replacement cycles</li> </ul>	<ul style="list-style-type: none"> <li>more than 4- 10 year old</li> <li>not used in current models</li> </ul>
Typical parts*	Filters, Oils Break lining Clutch, belts Oil seals Battery Tyre, wiper	gear parts Bumper Windshield (of multiple models)	Radiator Window glass Fuel injection crank shaft	axels Transmission Cabin, frame Door, fuel tank, central locking system	Engine body shell Seats
Delivery time from nearest stocking point	0	2 hrs	2-4 days	One week	Made to order (approx.15 days)
Typical closest stocking location#	<ul style="list-style-type: none"> <li>Service dealerships</li> <li>Retailers</li> </ul>	**Cluster warehouse of Service dealerships	Regional Warehouse	Central Warehouse	Not stocked; made to order
Frequency of consumption at service points	Daily/weekly	Once in a month	Once in three months	Once in six months	Very rarely

\*(may vary, different parts may be fast moving, erratic etc. for different stocking locations)

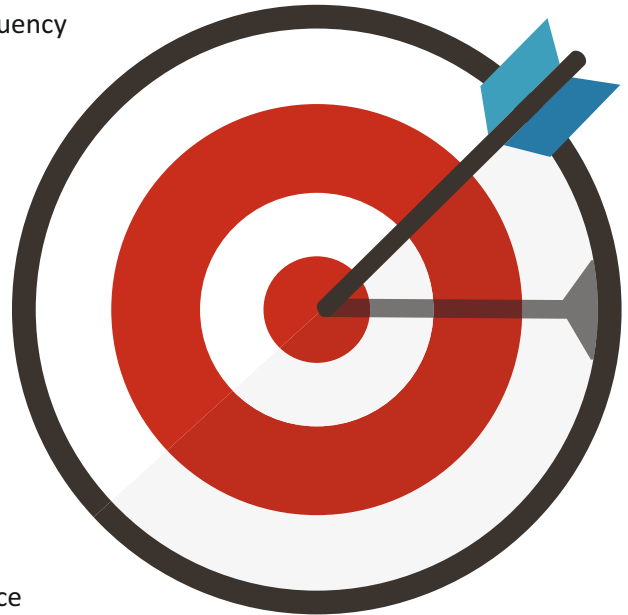
\*\* (network of dealerships in close proximity who share their stock information virtually and trade when required)

# (may vary; a stocking location is decided based on frequency of sale from a location)

Table 1: Spare Parts Classification

### Distribution Strategy

Based on the above categorization it is evident that the frequency with which each part is demanded at a point of sale and customers' willingness to wait can be used to decide which SKU has to be stocked where. For example while the fast movers have to be readily available at the service dealerships (retailers), customer service is not usually jeopardized if a stranger part is not immediately on hand. Similarly, most customers are willing to wait for the out- of circulation parts. This means that while the frequently needed parts have to be held closer to the consumption point, the less frequently demanded items can be held further upstream. This will help reduce the SKUs that has to be held at different stocking points but the challenge in this environment is that VOR situations (vehicle on road), customer intolerance to waiting and repair bay blocking, force service points to keep a large number of SKUs. But by questioning the assumption that this range has to be carried individually as they currently do, a mutually beneficial method can be evolved. A system of parts sharing can be set up between dealerships in a locality (cluster warehouse) in such way that each dealer in the cluster will only carry a limited but independent set of erratic parts that can be sourced by others in the cluster. This can ensure that any part is available to another within 2 hours! While these actions trim the SKUs being held at a location, in order for dealerships/channel partners of the OEM to service their customers with this large range of parts within their limited capital, they should also be able to hold lower stocks.



Stock is a function of lead time, therefore significantly reducing the lead-time of the dealership/distributor from their next node (the regional warehouse) in the service distribution network can aid in reducing the stock the dealer has to maintain. And similarly availability at a central warehouse can help reduce inventory at the regional warehouse. Thus when lead times are reduced, the minimum inventory to be held at various nodes in the network for every SKU will reduce, enabling stocking of an increased range of spares in the supply chain for the same working capital.

In addition to decoupling the supply lead time from the replenishment time, a central warehouse is also needed to act as a dampener to absorb fluctuations in spares demand. The greatest variability in parts demand is logically at the point of sales, while the CWH which is an aggregate location servicing demands from all points, experiences the least variability. Using this benefit of aggregation, a central warehouse is able to serve many different destinations in the supply chain far more efficiently whilst keeping the lowest possible overall stock in the system.

### Inventory Creation and Movement – from Push to Pull

For the distribution strategy to succeed, availability has to be ensured at all points in the supply chain: in the central warehouse, regional warehouses; distributors/dealerships; and at the retailers. This is only possible if the supply chain moves away from the damaging “push” system and implements a “pull” i.e. instead of pushing inventory downstream each node quickly responds and replenishes the depletion from the inventory maintained at the subsequent node.



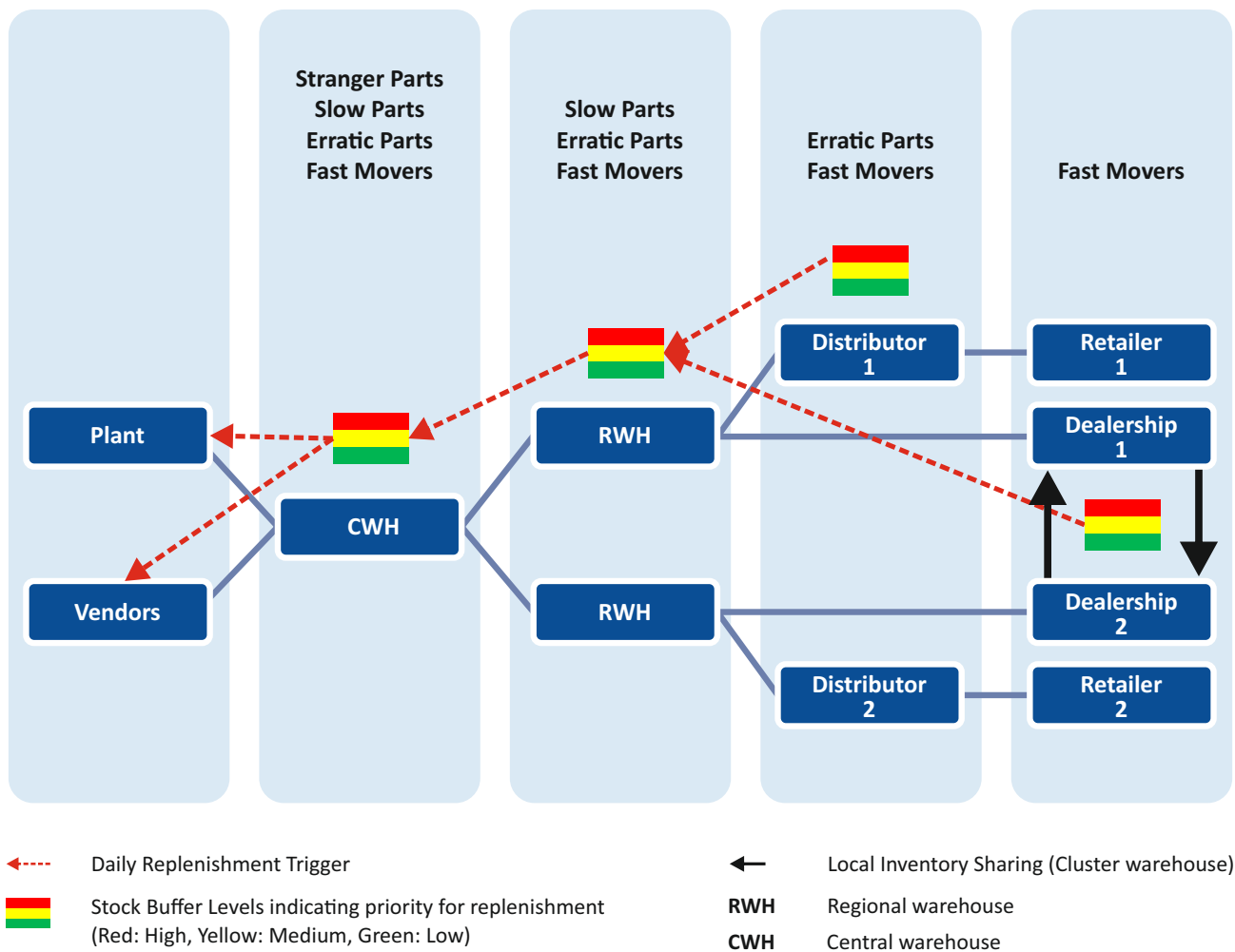


Figure 2: A diagrammatic representation of spares inventory movement with “pull” replenishment

Therefore vendors in the system have to supply as per actual consumption from the central warehouse instead of forecast based schedules. The prevalent approach of schedule based planning for spares sourcing not only creates desync with real demand, it also leads to FG inventory pile up either at the vendor or at the warehouse when the item is unexpectedly in surplus. Moving from this push system to a pull system wherein movement of inventory is based on actual consumption takes away the need to arrive at the accurate forecasts and send in monthly schedules. A communication system that indicates level of stocks against a norm (daily) can be set up between OEM's warehouse and vendors for a daily order system. The vendor can then manufacture the corresponding parts and replenish stocks at the OEM as per priority, set based on actual level stock in comparison to norm. This system enables the suppliers to receive purchase orders in a hassle free manner. Constant change in order priorities that cause capacity loss for supplier and unneeded FG can also be eliminated.

Similarly consumption based inventory movement can be triggered between central warehouse, regional warehouse, service centers, distributors and even retailers (refer figure 2). At any two links, the inventory should move based on immediate pull signals based on actual consumption with the buffer levels signaling priority for replenishment. A fast courier service has to be engaged for rapid movement of stranger and slow parts from the regional and central warehouse to the point of sales or service.

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### Benefits

This model of managing spares will give immediate benefit to the service dealerships and distributors. Higher sales achieved as an effect of better availability in the entire supply chain and without increase in inventory allows dealers to earn high ROI and gives them the motivation to invest more resources towards improving reach and customer service in the market.

But in order for this model to achieve its full potential in the aftermarket, cross country dumping by the wholesalers which force distributors to erode their margins has to be prevented and price parity has to be maintained. Once wholesalers are moved out from the network and replaced with dedicated distributors assigned with clear territories, the higher ROI would enable them to service retailers in their territories with regular beat plans. Consequently, the company will experience higher overall sales without any discounts or schemes.

What more, since material is ordered by downstream supply chain partners based on consumption, this process hitherto fraught with firefighting will move into auto mode. This and the reduction of month end skew of orders can give a much needed respite to the management team, giving them an opportunity to focus on initiatives to further increase market share.

Industry studies peg the current size of the components business in the Indian automotive after-market between Rs 28,000 crore- Rs 24,800 crore, whereas the service market is estimated at Rs 8,000 crore. The combined value is projected to rise to Rs 60,000 crore by 2020. A recent ACMA study reveals coverage figures as low as 15-20% indicating that this market is addressed ineffectively by most OEMs. But once the distribution network of the company spreads into the nooks and corners of the country, OEMs can not only increase vehicle sales, they can also augment revenues by claiming this vast untapped opportunity in the aftermarket.

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