

# I

## Automotive Remanufactured Industry Overview

### A U T O M O T I V E   R E M A N U F A C T U R E D   A F T E R M A R K E T O V E R V I E W

#### Market Overview and Definitions

A core is the part that is pulled off the vehicle during a repair and returned to the supply source to feed a remanufacturing process. The core is the raw material for the remanufacturing process. What differentiates a core part from any other part changed is the core value. A core value is a dollar value assigned by the supplier to part. Core values are basically deposits, an additional cost paid as part of the purchase price of the new part that is returned to the installer when the spent part is returned to the supplier. Core values are designed to encourage the installer to return the spent part back to the supplier to feed the remanufacturing process.

Remanufacturing consists of the following steps:

- Completely disassembling the core
- Salvage of components that are suitable for remanufacturing
- Remanufactured to OEM or other standard specifications
- Reassembling with new or remanufactured components

Core bank otherwise known as core inventory maintenance is not a challenge for part numbers that have consistent demand, that is, typically those parts that were installed in vehicles whose age ranges between 3 and 7 years. Cores are scarce for later model applications and high demand applications. Factors that impact demand are:

1. High sales rates of particular vehicle models
2. The use of a similar part across a number of vehicle applications
3. Premature failure rates of the part

As the installed base of vehicles dwindles, excess cores accumulate. These cores are often scrapped to maintain equilibrium.

#### C O R E C H A R G E

The terms core charge; core value, core deposit, and core price are used interchangeably throughout this deliverable.

Customers at each step in the distribution channel pay the core charge to their suppliers. When they return a core to their supplier, they receive the core deposit for that part. The final entity who pays for the core, owns the core until it is returned to the remanufacturer or the automaker's parts distribution center, whoever actually owns the core. A distributor/dealer/installer has the option to sell the core in the market place since it owns the core as long as it holds the core. The industry employs two basic strategies for pricing cores. For ease of management, the core value is set the same for all parts in the line no matter what the vehicle application or demand. The second is one in which the value differs by SKU number based upon the application and demand. These two strategies, the attributes and benefits of each are discussed in detail later in the study.

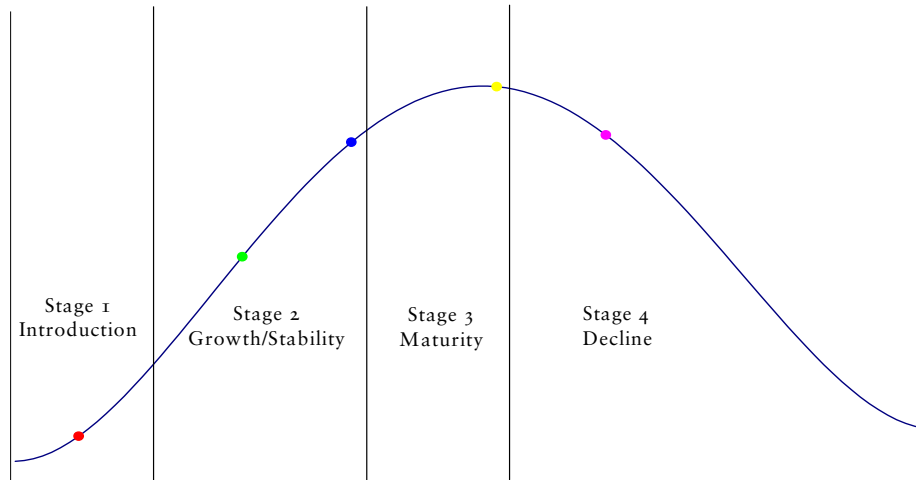
The large distributors are responsible for returning their own cores and receive core credits. Remanufacturers contact the smaller distributors, track core receivables, and encourage core returns. There are no behavioral differences between traditional and retail distributors in dealing with cores.

## CORE LIFE CYCLE ANALYSIS

Chart 1.1 demonstrates the core life cycle analysis

### CHART 1.1

Automotive Remanufactured Core Market: Core Life Cycle Analysis (North America), 2009



Source: Frost & Sullivan

#### Stage One: Introduction

When the vehicle is launched, there are no cores available for any of the parts that are present in that vehicle. The core cycle starts with purchase of new units by aftermarket distributors to fulfill the demand for replacement parts. More than xx percent of these units will not be returned because they are utilized for filling up the core pipeline.

In the introductory phase of the core lifecycle, remanufacturers associate a core penalty charge along with the core charge so that distributors are charged an additional penalty for not returning the core.

#### Example

Chrysler begins its remanufacturing operations by collecting the failed units from its vehicles in operation (VIO) base warranty which is actually done on a warranty claim basis. As the dealer files for the warranty claim, a part is removed from the vehicle, which Chrysler identifies as a core to be remanufactured. The dealer returns that failed unit to Chrysler's return center and these failed parts do not carry a core charge because these are new products.

### **Stage Two: Growth/Stability or Equilibrium**

In stage two, the number of cores sold into the market place are equal to the number of cores received back into the supplier. This stage is perfect for remanufacturing purposes. The core values are stable at this stage. Core fall out is the number of cores that leave the market. They leave the market because the core is in poor quality and does not meet the return criteria or because they are lost. In stage two, the number of vehicles scrapped and the core fall out rate is almost equal at this stage. Vehicles scrapped increases core supply as cores are harvested from scrapped vehicles to fill supply. The core fall out or attrition rate at the time of remanufacturing increases core demand. Thus demand matches supply and this creates equilibrium.

In the growth phase, there are two methods to get the core back. One is the warranty claim for the original installed unit in which the failed unit becomes the core. The second way is to charge a very high price for the core to ensure its return.

### **Stage Three: Maturity**

In this stage more cores start to come back than what was actually sold. This happens due to an increased core supply as vehicle scrappage rate increases.

In the matured phase of its lifecycle, the core charges should always be in line with the competitors' prices. When the core price is higher than the competition but with no added value, distributors are discouraged from doing business with the respective supplier. As it becomes a more common core, its prices are adjusted to the market price.

### **Stage Four: Decline**

As remanufacturers continue to receive more cores than what is actually needed, core prices drop. At this point the core has entered the decline stage of its lifecycle. Core values are reduced significantly in such cases because remanufacturers do not need them for remanufacturing purposes.

## **MARKET DEFINITIONS**

The term "aftermarket" refers to the independent aftermarket and the post-warranty original equipment service (OES) channel. The independent aftermarket involves the sale of parts through traditional aftermarket channels, auto parts retailers, and private-label transactions.

Traditional aftermarket channels include independent warehouse distributors (WDs), program distributors, and jobbers. Jobbers are small distributors that primarily distribute in local regions. Program distributors are WDs that have common promotional campaigns with jobbers.

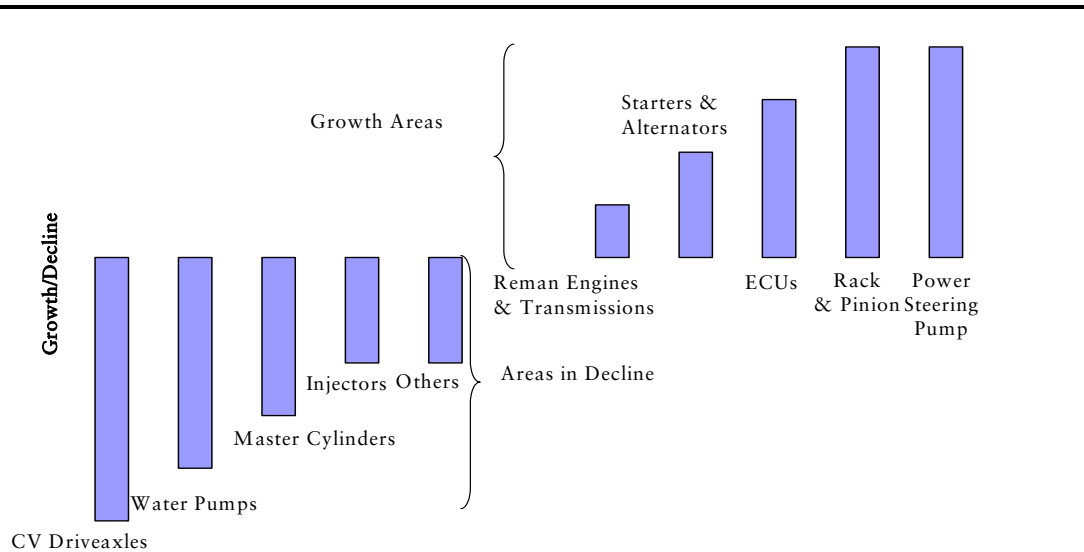
This study focuses on light vehicles which are passenger cars and light trucks with gross vehicle weight ratings (GVWR) of less than 14,000 pounds, or Class 1-3 vehicles. North America refers to the United States and Canada.

## Remanufactured Aftermarket Snapshot

Chart 1.2 demonstrates the areas in growth and decline in the automotive remanufactured aftermarket.

CHART 1.2

Automotive Remanufactured Aftermarket: Areas in Growth and Decline (North America), 2009



Note: The length of the bar indicates the growth/decline rate

Source: Frost & Sullivan

## GROWTH AREAS

Remanufactured product categories that have maintained their market share and are expected to remain steady within its respective market segment in future include the following:

- **Power Steering Pumps:** Units are more complex and it is fairly expensive to forge a casting for power steering pump. This makes remanufacturing the most cost effective option.
- **Rack and Pinion Steering Gears:** Involves very intricate casting which is hugely expensive to manufacture.

The Asian manufacturers have still not developed the technological expertise to produce a steering unit cost effectively. The transition towards the expensive electric power steering from hydraulic will further increase the cost of remanufacturing. This is expected to hinder the progress of the Asian manufacturers.

- **Engine Control Units:** The remanufactured ECU aftermarket is flat and not growing despite a large difference in price between new and remanufactured ECUs. The ECU software has been updated in existing vehicles to fix the drivability issue. The OEMs shifted quickly to the updatable software that is expected to prolong the life of the ECU. This has lowered replacement rates, lowering unit shipments of remanufactured ECUs. But the remanufactured ECU segment is expected to occupy xxx% of the ECU market in the medium to long term because of the cost effectiveness in producing a remanufactured ECU.
- **Starters and Alternators:** Rising copper prices, makes manufacturing of new parts very expensive. Reducing copper content in new parts compromises the quality. Therefore, remanufacturing proves to be the most viable option. Remanufactured parts are of comparable quality and durability when compared with new parts and sometimes carry a lifetime warranty.
- **Engines and Transmissions:** The remanufactured segment occupies more than 95 percent of the market for total replacement engines and transmissions. These two segments have steadily declined due to economic recession and some of its market share was taken away by the salvage engine and transmission category. The market is expected to revive from 2011 as the economy stabilizes and the replacement cycle begins. Consumers and fleet operators are expected to keep vehicles longer and prefer repair over new or used vehicle purchase. This will generate replacement opportunities for remanufactured engines and transmissions.