

News

Continuous Evolution in the Auto Recycling Industry

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Look back a few decades and you'd be amazed at how the automotive recycling industry has evolved. Long gone are the dusty "junk yards" of previous generations – today's auto recycling enterprises are technology-driven, streamlined companies that are embracing the latest innovations in dismantling and recycling end-of-life vehicles.

Todd Bialaszewski, owner of [Junk Car Medics](#), a nationwide junk car buyer, pointed out that much stricter standards and regulations in the auto recycling industry have emerged over the last decade. Specifically, both federal and state regulations have increased regarding the handling of fluids and hazardous materials.

"This has caused many yards to invest in specialized equipment and to revamp their processes," Bialaszewski said. "There has also been a large shift in how inventory of parts is handled, with most of that now being handled with online platforms. Then of course, the introduction of EVs and the different processes that are needed to handle the batteries."

The evolution of the auto recycling industry in the last decade has also seen a huge shift towards a self-service model. According to Troy Webber, president of Chesterfield Auto Parts and chief executive officer of Yardsmart, the national automotive recycling convention used to have one or two seminars on the topic, and now there is one every session.

"Most full service and late model recyclers are either switching to the self-service model or integrating some part of it into their business," Webber said.

Not surprising, the biggest change the auto recycling industry has faced is in the realm of technology. Modern cars are becoming little more than gasoline-powered computers. As Webber explained, previously, computers were used to make the car more efficient, but now they control everything from the engine to the radio.

"All a mechanic has to do to fix a car these days is plug in a computer," Webber said.

This is one of the biggest hurdles the auto recycling industry faces and it requires vigilance. According to Webber, as new vehicle manufacturers use more and more proprietary technology in their vehicles, auto recyclers don't have access to the proprietary information necessary to supply the parts to the customers.

“If the OEM will not tell us what cars the parts go on, we can’t sell them,” Webber said.

Another big change within the automotive recycling space has been in the reuse of parts, which has expanded greatly. “The rise of e-commerce has made it much easier to market, distribute, and profit from used parts,” said Timothy Gotsick, EV expert and vice president of technology and innovation at MacDermid Enthone Industrial Solutions, a Waterbury, Connecticut-based manufacturer of chemical compounds catering to all facets of surface finishing applications including the automotive industry. “This, in turn, has extended the lifetime of automobiles currently in use. Although this may slow the changeover to new technologies, such as EVs, it is a net benefit to both users and the environment. The ‘Right to Repair’ movement has recently emerged as a potent force in the electronics industry, but the automotive industry has long served as an example of this successful consumer-supplier cooperation.”

Gotsick further pointed out that in true recycling, continued improvements in mechanical sorting technology have made it possible to “pre-purify” waste streams more easily, reducing the intensity of chemical processing necessary to break down and purify valuable commodities that are present in small proportions.

The auto recycling industry has also faced its fair share of challenges. The COVID pandemic caused a big shift in scrap prices and the demand for parts.

As Bialaszewski explained, currently inflation is impacting the industry just like every other industry, with the cost of labor and materials continuing to rise.

“But the biggest change is the EV aspect,” he said. “The handling of the lithium batteries is unique and requires specialized training that not all yards have.”

The way vehicles are dismantled also has greatly changed. According to Bialaszewski, robotic systems and other automated solutions can strip vehicles quicker than the average employee.

“The industry getting online in terms of managing their inventory allows yards to expand their customer base from the local market to nationwide,” Bialaszewski said. “There’s also a bunch of certification programs that were introduced, with the Automotive Recycling Association (ARA) being a driving force.”

Of course, recycling industries always struggle with profitability. Automotive recycling requires significant capital investment for startup and has substantial fixed operating costs.

“But the profit available is dependent on commodity prices, which can fluctuate significantly,” Gotsick said. “In periods of falling commodity prices, the profit available may not be enough to cover operating and capital costs.”

Gotsick added that government regulation is a double-edged sword for the industry. On one hand, regulations that encourage or mandate recycling are a boon for the industry. However, as he explains, recycling operations themselves are, by nature, a bit messy due to the variable conditions in which the obsolete vehicles are received.

“The vehicles can be seriously damaged or degraded from use and there is no guarantee that they only contain the components that came from the factory,” Gotsick said. “This can cause tighter regulations on emissions from recycling operations and increase operating costs.”

The Role of EVs

Electric vehicle (EV) technology has impacted the automotive recycling industry and its impact is expected to grow. In fact, EV technology has outpaced the ability of the end-of-life vehicle industry to properly handle it.

“As EVs become more common and eventually reach end-of-life, the nature of automotive recycling will fundamentally change. The battery pack is typically 30 to 40 percent of the cost of an EV and is often 20 to 30 percent of the total weight of the car,” Gotsick explained. “Recycling batteries is very different than recycling engines and poses some different safety challenges. During the period when EVs are a small proportion of cars being sent for recycling, it is reasonable to expect that specialized recycling operators will arise to serve this nascent market. As EVs gradually replace many ICE (Internal Combustion Engine) uses, the pressure to recover and reuse parts from ICEs, or for specialized manufacturers to take over replacement part production, will increase.”

What’s more, EVs contain lithium-ion batteries that require specialized training and equipment to dismantle, store, and recycle. As Bailaszewski explained, not all yards have the resources to properly handle them, which can lead to issues for some.

“The volume of EVs that enter the recycling stream will significantly increase in the coming years, so yards must act fast,” he said.

For years, Webber has been getting hybrid and EVs in his operations, without any way to dispose of an extremely dangerous component they contain – the battery. “The auto recycling industry was not involved in the development or consulted in the implementation of the hybrid/EV auto industry,” Webber said. “When this technology entered the scrap stream, we were left holding the batteries and asking, ‘Now what?’ Only in the past year or so have we had a source for disposal of these batteries, and these cars have been around for 20 years.”

Continuous Improvement

The concept of the traditional “junk yard” is long gone within the auto recycling industry as today’s automotive recycling companies often are tech-savvy enterprises that are making a positive impact on the environment and have made a name for themselves in the automotive space.

What’s more, the automotive recycling industry is projected to grow to \$243 billion by 2032, according to the Global Vehicle Recycling Marketing Report.

“The lifespan of vehicles is increasing and consumers are repairing their vehicles with recycled parts,” Bailaszewski said. “So the industry is expected to thrive into the future. It will be exciting to see the impact AI will have on the industry in 5 or 10 years from now.”

Webber also believes the future of the industry is bright and he doesn’t see the need to recycle end-of-life-vehicles going anywhere, anytime soon.

“Whether they are internal combustion or electrically powered, cars are here to stay. The only constant in the auto industry is change. New car manufacturers go to great lengths to change their cars every year,” Webber said. “We, in the industry, need to pay attention and adapt as the industry changes. We must have a united voice as an industry and be heard by law makers and the public.”

Gotsick added that mandated recycling can help, but it also can be a crutch that prevents recyclers from becoming economically independent. Eventually, recyclers will need to make an economically sound proposition on their own merits, without the use of mandates.

“Also, pollution regulations sometimes pose a cost for recyclers, but they are necessary to ensure public health and worker safety. Although difficult, there needs to be rational dialogue about the pros and cons of various regulations, particularly due to the benefits that recycling brings,” Gotsick said. “For instance, easing the permitting of recycling operations might make sense when one considers that the alternative is letting waste degrade in the environment, which often means many small releases of hazardous materials. The greater good is achieved by making it easier for recycling operations to start and continue operation. Likewise, the same leniency in regulation could be made available to producers that source a significant fraction of their raw materials from recyclers. The problems of the past cannot be solved by looking at isolated nodes in their supply chains; there needs to be a holistic approach to the issue.”

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