



# A BETTER APPROACH TO RESIDUAL VALUE

Traditional residual value business models are on their last legs; it is time to upgrade

AS CONSUMERS CONTINUE to move toward ride-hailing services, automobile subscription plans, and other models that allow them to use cars instead of owning them, automakers and mobility providers are expected to hold more and more vehicles as assets on their balance sheets – vehicles whose value is predicted to triple, to more than €2.2 trillion (\$2.5 trillion) by 2030.

To make the most of their holdings, it is vital for manufacturers to take two key steps: First, they need to achieve the greatest possible accuracy in predicting residual value (RV) – what the vehicles are worth at the end of the lease period – to enable optimal pricing of leases. And, second, they need to realize the best possible return when they deal with vehicles returned at the end of the lease period, whether by selling, reuse in mobility offerings, or further leasing cycles.

The past few years, however, have seen current residual value models reaching the limits of their ability to produce accurate results. Traditional modeling and forecasting techniques cannot keep up with a market that is constantly being roiled by changing customer preferences, economic swings, greater transparency in the used-car market, new technologies such as electric cars, or the regulatory uncertainties created by the diesel crisis and the Worldwide Harmonized Light Vehicles Test Procedure (WLTP).

## **RESIDUAL VALUE GETS (VERY) COMPLICATED**

It should come as no surprise that residual value models are breaking down. In today's market there is far more to RV than a simple calculus of age, mileage, and maintenance.

One key factor: Consumers today face a greatly expanded array of choices – not just one model or brand versus another, but large versus small cars, internal combustion versus hybrids and all-electric vehicles, and so forth. Personal taste and shifting fashions affect some of these choices, but many are driven by various social, macroeconomic, and regulatory factors. If the price of gasoline shoots up, demand for used SUVs may plummet; if a state or nation bans or restricts internal combustion engines (much the way some German cities have attempted to ban older diesel vehicles), hybrids may suddenly have a significantly higher residual value in those geographies.

None of these things are easy to predict three or four years in advance. What will future model changes and facelifts, as well as comparable substitution models from other manufacturers, do to supply and demand in the used-car market? Will today's crop of rear-facing cameras, anti-collision devices, and other gadgets hold their value, or will new technology leave them behind? These sorts of questions have long been part of how companies thought about selling new vehicles; now, they need to become part of how they approach the vehicles that are not sold – at least not yet.

In the future, it will be necessary to calculate residual values down to the level of individual vehicles, using a wide array of internal and external data, including data collected during vehicle maintenance and inspections, as well as additional data points from connected services. (See Exhibit 1.) Meanwhile, records of used-car transactions online can provide better understanding of market demand and buying intentions. For example, the volume and duration of individual advertisements on used-car platforms can help identify supply/demand imbalances for certain models.

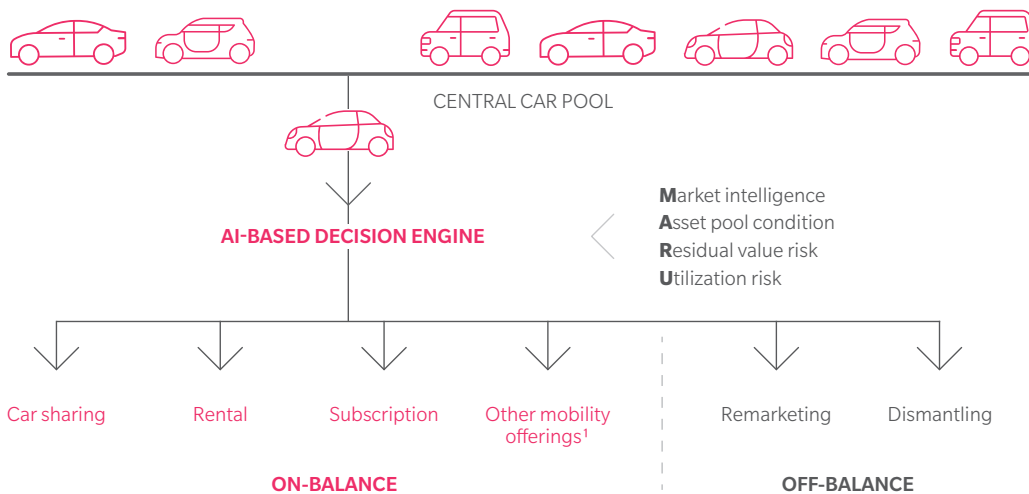
This applies not only to the domestic market; instead, all relevant neighboring markets must be included in the analysis to identify possibly higher transaction prices. In addition, social listening and emotion analytics represent another increasingly relevant input source. Comments and notes about specific car models on relevant platforms can enrich forecasts of their future residual values and provide an even more accurate picture of what customers will ultimately be willing to pay. Software models employing artificial intelligence and machine learning can now capture and use all this information and dynamically adapt themselves to new changes in market structures, delivering increasingly robust RV predictions. Reliable and accurate models like these will be a key enabler for future asset-based mobility offerings.

**EXHIBIT 1: VEHICLE LIFETIME VALUE – DECISION ENGINE**

AI-based decision engine to determine next best utilization to maximize vehicle lifetime value

INTEGRATED APPROACH: DECISION TREE AND SETUP OF DECISION ENGINE

COMMENTS



- **Vehicle lifetime value:** Active management of each vehicle (e.g. utilization) throughout its life to maximize benefit
- AI-supported maximization: Decision engine matches – **each VIN<sup>2</sup>** (asset) based on specific criteria is created, e.g. mileage, condition, value – with **each** available **asset-based mobility services** for each market based on key business metrics – and identifies the **next best utilization** for each asset per market

<sup>1</sup> Leasing, ride-hailing, etc.  
<sup>2</sup> Vehicle identification number  
 Source: Oliver Wyman analysis

## MAXIMIZING VEHICLE LIFETIME VALUE


Lease returns today are mainly remarketed in the domestic market or via online auction platforms for local dealers – a system designed to sell used cars as quickly as possible, not to maximize profits. Hardly any OEMs avail themselves of nationwide direct marketing, much less the possibility of selling used cars in neighboring countries that may have less saturated markets. As a result, value is more often destroyed than saved.

Companies will benefit by developing alternatives to remarketing for cars with highly volatile residual values, such as electric vehicles. For example, lease returns could be “held” in various utilization-based mobility services such as car sharing, rental, subscription, used-car leasing, ride-hailing, or other vehicle-based offerings, and monetized by pay-as-you-drive business models until a more advantageous time to sell them arrives (or until dismantling becomes the best alternative). This approach makes it possible to generate higher lifetime revenues for some vehicles. These new mobility offerings necessitate the management not only of residual value risks, but also utilization risks (such as active management of an internal, comprehensive used-car pool to keep utilization rates high). And it requires additional capabilities to deal with the balance sheet impact, focusing on balance sheet reduction measures and additional refinancing requirements.

Currently, such mobility offerings are principally used as additional sales channels for new cars by OEMs seeking to achieve their short-term volume targets, whereas the utilization rates of the offerings are a secondary consideration. This will have to change. But to facilitate the change will require suitable capabilities and capacities in utilization-based mobility offerings, especially for those models whose residual values are hard to calculate and decline very rapidly.

## SHIFTING GEARS

To the OEMs (and especially their captive finance units) that pioneered auto leasing, the new practice probably looked like just another way of selling cars. In retrospect, it turns out that these companies were dipping a toe into a very different industry that is only now fully emerging: access to mobility. This sort of shift from ownership to usage is not unique to the automotive industry – think of the difficult shift of the music industry in transitioning from selling physical media to selling access. And there is much still to learn about mobility and the business models it will require.



BALANCE SHEETS OF OEMS AND  
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€2.2 TN

BY 2030

But for the foreseeable future, any OEM-centered mobility play will need to pay close attention to the residual value of vehicles, ramping up the accuracy of predictions and learning to optimize the lifetime revenue of each individual vehicle. A few tools to do this, such as yield management and dynamic pricing, already exist. Others, thanks to machine learning and artificial intelligence, are on the way. What is crucial for auto companies today is to truly understand the business implications of the new, more complex transactions they have created – and undoubtedly will continue to create with further usage-based models – and to get them on the road to success.

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