Extending vehicle and fleet lifespan: Bird case study

Scooters need to withstand frequent use, occasionally harsh weather conditions, and prevent tampering. Bird, the first company to offer shared electric scooters, has taken a number of steps to improve fleet durability and retention.

DURABILITY: CUSTOM DESIGN AND REGULAR MAINTENANCE

Bird invested in R&D to internally design its own e-scooters (Bird Zero, Bird One, and Bird Two) to improve on the consumer models used in earlier operations. The improvements included:

Custom battery with battery management system;
A frame more adapted to a shared used, with reinforced parts;
Long-lasting tires with flat protection;
Tamper-resistant components (i.e., no exposed cables);
A regenerative front brake and a rear drum brake with no electronic failure vulnerability.

Regular maintenance also contributes to a longer usable life. Investment in local service centers and streamlined maintenance processes allowed for a reduction in the proportion of Bird Zero fleet damaged from 40% to 12%. Key features that contributed to this improvement include:

Staff presence on street, in-app reporting, and sensors that alert to maintenance needs;
Regular maintenance performed by in-house mechanics;
A stock of spare parts in service centers, with part reuse from retired vehicles;
Weather analytics to remove scooters in case of extreme weather.

VEHICLE RETENTION

The proprietary design in itself prevents risks from hacking and resale for parts. In addition, specific design developments are made to enhance retention: for instance installation of a superior GPS system, sensors, and algorithms that detect suspicious movement have improved retention of the Bird fleet to close to 90% retention after 6 months.

In the future, retention is expected to increase even more as the Bird proprietary models are becoming more numerous in the fleet: between September 2018 and July 2019, the proportion of consumer models went from 98% to 25% of the worldwide fleet, the fleet being now composed of 57% of Bird Zero, 19% of Bird One, and Bird Twos beginning to be deployed in Summer 2019.

There is wide variation among providers. Establishing an e-scooter business that is sustainable requires investment in vehicle R&D, technology, and personnel. It can be assumed that providers who have not made these investments have an environmental impact that is moderately to significantly higher than those companies who have.