

IFFCO Tokio: AI-process improvements generate better customer incentives

Summary

Like in many industries, insurance companies face a challenge in providing the right incentives. In general, insured people are not motivated to seek the best price for services (e.g., healthcare, or in this case, car repairs) if an insurance company is footing the bill. But sometimes AI can make possible process changes that enable them to unlock this value.

Opportunity: Pay customers directly

IFFCO Tokio settles approximately 500,000 motor vehicle damage claims in India each year. Traditionally, customers sought repairs at privately owned repair workshops, which provided quotations for IFFCO Tokio to approve, but there were several issues with this process. Workshops are incentivized to inflate their estimated costs, and customers do not have incentives to seek out the best prices. This led to disagreements about repair charges and delays to repairs. Customers, many of whom depended on their vehicle for their livelihood, were severely disadvantaged by delays of up to 20-30 days per settlement, and often could not afford to wait, sometimes forgoing repairs and driving with vehicles that were unsafe.

IFFCO Tokio resolved to pay customers directly for the cost of repairs. This would provide customers better incentives and empower them to take charge of the process. But there were two challenges: providing fast enough turnaround on quotations and getting estimates correct without the quotation from the workshops.

Challenge: Manual effort and poor-quality data

Initially, IFFCO Tokio did this work manually. They developed a smartphone app that customers could use to upload photos of the damage, receive a quote for estimated cost, decide themselves whether the quote was acceptable, and receive the payment independent of the timeline for repair. Now the customer was in charge.

The new approach proved to be immensely popular with customers, but it was time consuming and imprecise. The turnaround time for this process was up to 5 hours per claim, much of which was assessor time on inspecting parts and filling out forms with their “repair/replace” decisions and cost estimates for each part. Their efforts were also stymied by poor quality images; previously pictures of the damage had been taken in the controlled environment of a professional garage, but customers frequently submitted images with e.g., incorrect angles, poor lighting, zoom level, glare.

Solution: Guided image capture and variable training data size

IFFCO Tokio had hoped that machine learning could speed up the process by automatically providing a first estimate for each part but knew that the quality and consistency of the images was key. To improve the quality of image capture, they augmented the app with camera-stencils to guide customers on composition and added additional instructions. They also increased the volume of training data for part types where glare or reflection made damage particularly difficult to discern e.g., 3x the number of images for metallic parts, and 5x for glass parts. This combination of better images for both inference and for training, enabled the use of Deep Learning to classify the car model, parts damaged and damage type. Based on this, the system was then able to determine whether the parts could be repaired or would need replacing, along with an estimate for the cost.

One important consequence of automating parts of a decision-making process, where there is a perceived or assumed reduction in human oversight, is the potential for abuse. In this case, IFFCO Tokio anticipated an increase in fraud (e.g., duplicate claims for previously claimed damage) and built a fraud detection engine to identify previously used images. However, they found minimal exploitation in the overall system, as ultimately an experienced human assessor was always in the loop.

Outcomes: Reduced time, saved hours, customer retention / acquisition

The system was a roaring success, in ways intended, and unintended. Assessor effort was reduced significantly, the end-to-end time was reduced to 30 minutes per claim on average (including negotiation with customers), and the new system paid for itself in less than a year. More surprisingly, IFFCO Tokio also experienced a reduction in settlement price by 40%, and an increase in the acceptance ratio from 30% to 65%. Moreover, the system offered increased resiliency, as customers were still able to receive their settlements when garages were closed during the pandemic. Finally, and perhaps most importantly, the new system was directly linked to increased customer satisfaction, retention, and even acquisition. AI had become not just a driver of increased efficiency, but also a driver of top-line growth.