

The background image shows a man in a blue suit and glasses leaning over a white car chassis in a dark, futuristic workshop. Several computer monitors in the background display technical data and 3D models of car parts. A blue line graphic curves across the bottom of the image, framing the title.

JAPANESE AUTOMOTIVE OEM USES AUTOMATION TO MAKE ANALYSIS PROCESSES MORE EFFICIENT

The company brings in Capgemini, who works collaboratively with its partner to review the Finite element analysis process and introduce automation that improves efficiency and accuracy

Achieving more efficient processes

When a Japanese automotive OEM decided that its Finite element analysis process was not fully supporting its larger ambitions, the company decided that it needed to perform a full review of the existing approach to identify opportunities to improve efficiency. However, gaining the full benefit of such an analysis required technical expertise, which meant finding a partner that had experience within the automotive industry as well as automation.

“The key objectives were to achieve a reduction in the time spent by the engineers, standardize processes, and improve quality,” says a key stakeholder at the automotive OEM.

This led the organization to select Capgemini as its partner for the project. The collaborative relationship combined sector-specific knowledge and a vision of more efficient processes with the technical expertise needed to truly execute the review. Together, the partners began to coordinate to develop a plan to launch the project.

Client: Japanese automotive OEM

Region: Japan

Industry: Automotive

Client Challenge:

A leading Japanese automotive OEM wanted to transform its Finite element analysis process in order to achieve greater efficiency and quality

Solution:

The company selected Capgemini to review its existing processes and recommend opportunities for automation throughout the steps associated with pre-processing, analysis, and post-processing

Benefits:

- Up to 98% time saving for connector element creation in pre-processing
- Up to 90% less time required for meshing automation of fasteners in pre-processing
- Up to 97% faster auto report generation for the post-processing of FEA results

Identifying and acting upon opportunities for automation

The work began with Capgemini setting up and managing a series of sessions with vendor engineers in order to understand the challenges they faced that the project needed to address. This personal level of expertise gave the partners a more in-depth view of the existing processes as well as the specific ways in which the company could improve its efficiency.

With this review finished, the company and Capgemini then agreed upon a specific set of processes that could be automated. Working in an agile manner to accommodate continuously evolving requirements. The team used Capgemini's Rightshore® approach to review the pre-processing, analysis deck preparation, and post-processing ways of working. Ultimately, the partners chose three processes, which had been manual to that point and were both repetitive and error prone, as their initial targets, after which they developed an automated solution to perform each more efficiently and accurately.

A future built upon automated solutions

After a 3.5-month-long project, the partners released this three-part automation solution that addressed specific challenges needed to improve the processes involved with Finite element analysis. As a result, the automotive OEM was able to move employees that had previously needed to devote a substantial amount of time to these tasks over to more value-adding work that required a human perspective. In addition, the company was able to save up to 98% of the time involved with connector element creation in pre-processing, up to 90% for meshing automation of fasteners in pre-processing, and up to 97% for automotive report generation for the post-processing of FEA results.

In the wake of the project's success, the automotive OEM and Capgemini will continue their relationship in an effort to identify further automation opportunities and continue improving efficiency in other processes.



Capgemini has worked with us in an agile method and shown tremendous flexibility to accommodate our suggestions and functionalities. The quality of the deliverables was top notch and business users accepted the solution. We are happy with the overall efficiency gains realized and the outcome of the engagement."

A KEY STAKEHOLDER

The automotive OEM





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