

Implementing *optimized effectivity control* for a leading OEM

Capgemini supports BMW Group in the design and implementation of an optimized effectivity control system in the powertrain area

Powertrain technology diversity requires high flexibility and adaptability

The rapid development of battery technology promises a revolution in the way vehicles are driven and used. Charging time and the range of electric vehicles are crucial factors for potential buyers. Consequently, their purchasing decision depends, among other things, on the performance of the high-voltage storage system. As a result, established companies are facing particularly intense competition in the development of these elements, which has only been intensified by growing competition from China.

At the same time, the BMW Group is pursuing its "Power of Choice" approach, in which different types of drive systems coexist. The parallel development of conventional and electric powertrains requires a high degree of flexibility and adaptability. Given this background and the context of intense competition, the BMW Group felt that decreasing its time-to-market was essential while the nature of its growing global production network also made coordination incredibly important.

Client: BMW Group

Region: Germany

Industry: Automotive

Client Challenge: With the "Power of Choice" strategy, the BMW Group offers customers the choice between different powertrain technologies. This requires a high degree of flexibility and adaptability in powertrain development and production.

Solution: Capgemini implemented an optimized effectivity control system for powertrain components, which defines fixed points in time at which changes can be consolidated by the development department.

Benefits:

- Reduced time-to-market by eliminating redundant development loops
- More accurate provision of powertrain components at the right time in the right place for subsequent production
- Fast and accurate tracking of vehicle status through exact traceability of all changes and approvals

Introducing a new effectivity object for powertrain components

Mastering these challenges requires, among other things, effective release and change management. Achieving this requires uniform effectivity control for introducing innovations and technical changes to components. To this end, beginning in May 2023, the BMW Group engaged Capgemini to support the design and implementation of optimized effectivity control for powertrain components.

The project team introduced an effectivity object that defines fixed points in time at which innovations and changes to powertrain components can be introduced by the development department. This enables components to be made available at the right time and at the right place for subsequent production stages. The unified timing of changes avoids redundant development loops to reduce the company's time-to-market. In addition, all changes and approvals can be tracked precisely, providing fast and accurate traceability of vehicle status.

From planning to rollout

Capgemini supports the BMW Group throughout the entire project, including project management, communication, migration and design, and implementation and rollout.

The team created a comprehensive business case and defined the project scope early in the project development process and worked with program management from the BMW Group to develop a vision and roadmap for the project. They also established an agile project structure and organization while actively supporting BMW Group's change process, including communication and stakeholder and committee management.

Before introducing the new effectivity object, the team carried out a thorough analysis of the entire system chain from development to final assembly. This enabled the development of a detailed concept for enabling the system chain. In preparation for the new effectivity object, the team designed and coordinated a restructuring of the affected data. In addition, once the data has been restructured, the team supports the subsequent migration of old data to the new effectivity object.

Finally, the implementation of the effectivity object along the system chain is secured by extensive test planning as well as test monitoring and reporting. The team also plans communication events for key stakeholders in release and change management.

Capgemini still successfully collaborate with the BMW Group on the ongoing project, demonstrating seamless integration of expertise, innovation, and strategic alignment.

About Capgemini

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