# Automotive leader innovates with PLM in CAD Development

*Image courtesy of The BMW Group.*

## Overview

- ***The Challenge***
  *To maintain market leadership, the BMW Group wants to rapidly respond to ever changing customer demands for diverse and innovative vehicle models and variants*
- ***The Solution***
  *The joint BMW Group/IBM/ Dassault Systèmes Parametric Car initiative envisions the fully configured virtual car to manage complexity, increase quality and reduce development time. It combines process integration, newest vehicle development methodology and IT tools*
- ***The Benefit***
  *Also by utilising the new product development approach the BMW Group is running an unmatched model offensive expanding its market position, both nationally and internationally.*

### Pursuit of the superlative

Industry analysts predict that the number of new vehicle models introduced by auto makers will increase by more than 25 percent in the first decade of the 21st century. At a time when automotive companies are facing increasing functional complexity, rising development costs per vehicle and shorter lifecycles, the BMW Group is overcoming these tremendous challenges with process and IT excellence, setting up projects such as the Parametric Car. One key to success is the ability to respond quickly to customer demands for innovative vehicles that address specialised and smaller niche markets.

The BMW Group set out to transform its value creation processes, from idea generation to product development by integrating business processes with the newest IT technology. It also innovated its business model by enhancing external partnering and collaboration with its suppliers.

### Success through innovation

An important part of the transformation was to implement a far-reaching paradigm shift in the product development strategy. The ambitious objective was to significantly reduce development time of new models. It was set to be achieved by using parametric and associative design methods, automating the generation of computational models from virtual vehicle data and by integrating several systems. CAx is heading towards the virtual vehicle, and the BMW Group ambition is to integrate CAx systems and methods to realise a virtual functional car and to enable the digital factory.

To achieve this, the PCV5 (Parametric Car based on CATIA® V5) project was launched few years ago as a joint BMW Group/IBM/Dassault Systèmes initiative. IBM and Dassault Systèmes have helped the BMW Group to meet its objectives with this project that laid the CAD-foundation for an unmatched model offensive to expand the company's market position. IBM and Dassault Systèmes' strong commitment included several years of PLM consulting and service engagements that supported and guaranteed the project's success.

### Bottom line benefits

To meet its 'Sheer Driving Pleasure' promise, the BMW Group is dedicated to provide more individualised vehicle innovations, such as adaptive curve light, dynamic drive, 'clever' airbag and active steering, bringing its customers closer to the vision of a completely personalised automobile. The implementation of PLM solutions that support the development process of the BMW Group and its corresponding transformation are first steps towards realising this vision.

Using parametric and associative design methods the company is transitioning from simple explicit geometry designs to designs that are driven by functional specifications.

As models are now being created virtually, the company has been able to introduce the concept of a 'car family', reducing the time needed for changes and for capital-intensive and time consuming physical prototypes. By integrating processes, deploying methods and innovative tools, and by establishing collaborative environments with their partners, the BMW Group can introduce new model series and variants within significantly shorter times.

By now, almost all new parts at the BMW Group are created with CATIA V5 and BMW is exchanging its product design data with more than 500 of its key suppliers.

### Speeding toward a bright future

IBM will play an important role in the BMW Group's broad PLM/CAx scope as a partner for future innovation initiatives.

### For more information

For more information, contact your IBM Representative, IBM Business Partner or visit the IBM PLM Web site at: **ibm.com**/solutions/plm/automotive

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