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THE ENGINEER WILL SOON HAVE A HARD TIME

THERE IS AN ANECDOTE ACCORDING TO WHICH THE FORMER VW BOARD MEMBER FERDINAND PIËCH, IN ORDER TO DETERMINE WHETHER AN EIGHTCYLINDER WAS PERFECTLY ADJUSTED, PLACED A COIN IN THE CAR ON ITS EDGE. IF IT STAYED IN PLACE WITH THE ENGINE RUNNING, EVERYTHING WAS FINE.

More must probably not be said about the quality standards of German engineering. For a long time it was regarded as the epitome of industrial superiority in the own country and abroad, as an irrevocable quality feature and source of innovation.

And this is where the problem lies. For a long time now, innovation has been taking place for the most part not in the hardware but in the software sector. In the automotive sector alone, 70 to 90 percent of all innovations now concern electronics and the associated software. Experts are already forecasting a market volume of around 160 billion euros for embedded systems. This poses enormous challenges for most manufacturers of classic industrial products. Their R&D processes, which are focused on the development of hardware components, are not designed for the high complexity and dynamics of software development. Where prototyping in the hardware sector can take several weeks, up to 100 releases per day are made in the software environment. Synchronizing these development streams with their different speeds is one of the central challenges of the development organization in the smart products age. However, this requires skills that go beyond classical German engineering. Namely a rethinking in a number of areas: From waterfall to agile methods, from German over-engineering to continuous short-cycle product updates, and from Fire-and-Forget mentality to looking at products throughout their lifecycle.