



**DR.-ING. ULRICH HACKENBERG**  
Member of the Board of  
Management of Volkswagen  
Brand with responsibility for  
Development

## “FUTURE PROJECTS WILL BENEFIT”

Entering a new vehicle segment makes particularly high demands on all those involved in the product development process. With the new up!, Volkswagen has managed to combine development targets which seem contradictory at first to form a harmonious whole. At the same time, it has laid the foundation for synergies which will be of benefit for future development projects. ATZ asked Dr. Ulrich Hackenberg, Member of the Board of Management for the Volkswagen Brand with responsibility for Development, to name the basic elements.

**Dr.-Ing. Ulrich Hackenberg** is an engineer who holds a seat on the Volkswagen Brand Board of Management, with responsibility for Development. He is an enthusiastic motorcyclist and has spent almost all his professional life in the Volkswagen Group, switching several times between Audi – where he started out in 1985 – and Volkswagen. His career began in preliminary development, where he led the Vehicle Mechanical Systems main department, and enjoyed a meteoric rise from 1989 onwards. First of all as Technical Project Director for the A4, soon followed by additional functions as Head of Vehicle Concepts and Head of Technical Project Management for the entire product range.

From 1998 to 2002, he was in charge of the Body Development area at VW, and he additionally took on responsibility for development of passenger car concepts. Following the takeover of Bentley, he restructured the Technical Development there as a Member of the Board of Management. From 2002 to 2007, Hackenberg was back in Audi where he directed Body Development with the emphasis on bodywork, interior equipment and vehicle safety. Under his aegis, the Modular Longitudinal Matrix was established for the vehicle segments of the B, C and D classes. He was appointed to a visiting professorship at Tongji University in Shanghai in 2007.

**1** With the up! Volkswagen is entering a market segment that has comparatively low profit margins. This requires ambitious cost targets in the development phase. How were you able to keep costs down and hit these targets?

It is certainly more difficult to design and engineer a small car with a contribution margin than it is to design a larger vehicle with a higher margin. Our aim was to make sure that our smallest car to date was also a genuine Volkswagen. In short, this means that the up! too must embody Volkswagen's core values such as quality, safety and reliability – more so than any other vehicle in its class.

In order to be able to hit our ambitious cost targets, we designed the up! loosely based on our MQB platform (or modular transverse kit). After initially deciding on a rear-engine design, we eventually opted for a front-engine architecture and have therefore developed a whole new front-engine powertrain. This addition to our modular transverse kit means we can now build smaller cars such as the up! on this platform, while leveraging synergies from cars above the New Small Family range.

Excellent examples of this are our brand new three-cylinder engine with 1-l displacement and a new manual transmission. Not only are these compo-

nents precisely tailored for the up!, they can also be used in the Polo. This generates the necessary economies of scale. And of course we have poured all our knowledge and expertise into designing and engineering the up!, incorporating our latest technologies and making full use of state-of-the-art virtual design engineering techniques. There are many aspects of the up!'s development that will benefit upcoming projects: one of which will definitely be the meeting of strict cost targets.

**2** There are two SI-engine versions of the up! planned and one powered by natural gas. Do you also have an electric version in the pipeline?

The up! is the first in a whole new generation of cars with three-cylinder SI engines. There will be three versions, delivering 44 kW and 55 kW. The average fuel consumption of the BlueMotion Technology version (particularly with the start-stop system) is 4.2 l/100 km and 4.3 l/100 km. Both of the 1.0-l engines are therefore well below the emissions limit of 100 g/km CO<sub>2</sub>. These will be followed by a natural-gas version, delivering 50 kW, which will consume an average of 2.9 kg of gas per 100 km. This equates to CO<sub>2</sub> emissions of 79 g/km. We will also be bringing out an electrically powered up! in 2013.

**3** Do you think the infotainment system “maps + more” can be used as the model to bridge the gap between the various product life cycles in consumer electronics and those in the car-making industry?

We don't see “maps + more” as a “bridging” technology; we see it as a genuine innovation. We developed a system especially for the low-priced up! that combines navigation, phone, information, and entertainment into one affordable solution. You can program your route in advance from the comfort of your living room. As soon as you're ready to go, you just simply click the device into the center console. The touchscreen means that navigation, phone, information and entertainment are literally at your fingertips. And the device also displays other important vehicle information such as the ParkPilot. Moreover, you can control key functions using the radio controls. Unlike similar systems, “maps + more” is seamlessly integrated into the car.

**4** As a design engineer, what part of the up! are you most proud of?

I'm particularly pleased with its spatial dimensions. We have created a high-quality small car with an incredibly spacious interior and clean, attractive styling. The up! is a powerful small vehicle with extremely short overhangs, a long wheel base, and a large track width.

