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## **Turning Uncertainties into Success – The Use of Scenario-based Strategy Development in Semiconductor Business**

Semiconductors are in the heart of ever more technical devices and every-day goods. Nevertheless semiconductor business still holds exceptionally high technical and commercial risks, mainly due to fast innovation cycles, capital-intensive production, volatile demand and last but not least constant price erosion. This business environment poses significant uncertainties which make R&D management a turbulent task. Effective, yet easy to apply techniques to manage uncertainties are needed.

Scenario-based strategy development is a technique to identify and assess major uncertainties for a specific field of business, derive different possible “Worlds of the Future”, and finally build a strategy that allows to actively manage the uncertainties. There are different flavours of scenario-based strategy development, ranging from purely quantitative and analytical to primarily qualitative and creative approaches. In industrial applications a relatively simple technique has proven to be very effective. It follows five major steps to develop a set of scenarios. For each of these steps very instructive templates can be used. Based on the different scenarios, different strategies are derived and finally merged into an overall strategy which consists of both core and contingent strategy elements. This allows cross-functional expert teams to develop a scenario-based strategy in a relatively short period of time.

This paper outlines how scenario-based strategy development may be applied and what benefits it brings for companies in general and corporate R&D management in particular. This is illustrated by describing how Infineon Technologies – a leading semiconductor company – has developed its China Growth Strategy. Learning from this approach allows other companies as well as academia to use scenario-based strategies for reducing their R&D risk. Finally some open questions to be answered by academic research in the field of R&D management are highlighted.

### **Short Bio**

Tilo Pannenbäcker is responsible for Infineon’s worldwide Contactless Memories & RFID Business. After joining Infineon in 2001, he worked in the company’s Corporate Strategy Group, built the Strategic Marketing Function for Infineon’s Asia Pacific organization and headed Infineon’s entry to the Asia Pacific RFID

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