

**”Don’t do  
things halfway!”**



# 3DSE Architecture Camp 2018

## 5 Key Insights for Successful Architectural Work

### 1 The choice is yours! There are two approaches to designing successful product architectures—top down or bottom up.

Determining how to introduce and design successful product architectures depends on the company's specific portfolio and future challenges it will face. We have identified two approaches:

- **Top down** is a systems engineering- and platform-oriented approach that aims to reduce the variant complexity from the top down using modular architecture to integrate components in a smart way.
- **Bottom up** is a variant and configuration-oriented approach that tries to establish a clear structure and classification system that makes it possible to manage the variance and its increasing complexity. The challenge is to maintain the structure and keep it „clean“.

### 2 Let's be clear: architectural work is an ongoing journey—for everyone.

Developing a product architecture is a choice, not an imperative! This important decision is strategic and has a long-term impact on the company's product development. Planning needs to take into account the next 10+ years, across functions, in order to make the right decisions and create a stable architecture. As markets become more dynamic and volatile, forecasting becomes even more demanding. Finding a good balance between stability and flexibility for the architecture is key. Many companies underestimate the magnitude of change required to enable this type of proactive, strategic planning.

### 3 An architect needs to combine diplomatic skills with profound technical expertise.

The architecture sets the stage and framework for future products. This will not always work out smoothly, which is why arbitrating trade-offs between conflicting stakeholder requirements

is critical. The architect must assume the role of moderator, using strong, diplomatic communication skills while at the same time applying a depth of technical expertise and objective decision making. A position of influence within the organization provides empowerment with regard to the ability to make decisions and to interact with various stakeholder groups.

### 4 High speed and validation by customers

A product architecture establishes a structure to integrate standardized modules into a complete product. Knowing and managing these interfaces is key. Poorly defined interfaces (SW/HW) obstruct the flexible integration of module variants and reduce the ability to effectively customize products. Cross-functional alignment and clearly defined accountabilities are necessary to establish a common understanding of interfaces and their interactions. Bring the right people together and start managing your interfaces!

### 5 First things first: reduce complexity before you start enhancing the portfolio.

A lot of companies experience a reduction in complexity when introducing a new product architecture. A common metric for measuring complexity is the number of component parts, i.e., decreasing complexity translates into fewer components. Such optimizations can leverage efficiency gains in engineering departments and in upstream/downstream processes, such as purchasing and manufacturing, however, they also require consistent sunseting plans. This enables more efficient utilization of available resources, e.g., enhancing the portfolio with new products or innovative features/functions and establishing strategic standards for future requirements.

Interested in more information?  
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