



TechTalk **SERVER-BASED ARCHITECTURE**

# ***TRANSFORMATION IN BUSINESS***

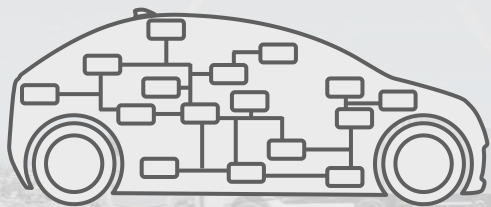
# Our Environment is Transforming

The Way of Business as Well



Up2now

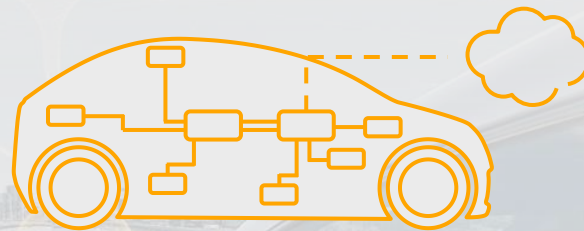
Going forward



## Traditional Architecture

- › Development starts with **clear specification**
- › Focus on **application**
- › Business models within traditional supplier-customer relationship and **volume-driven**

Revenue stream targets mainly SOP<sup>1</sup>



## Function-defined Architecture

- › **Agile** development along **story points**
- › Focus on **platforms**
- › The SW-defined vehicle enables **alternative business streams**, much more **value-driven**

Revenue streams **before and beyond SOP<sup>1</sup>**,  
**embedded and up to cloud**

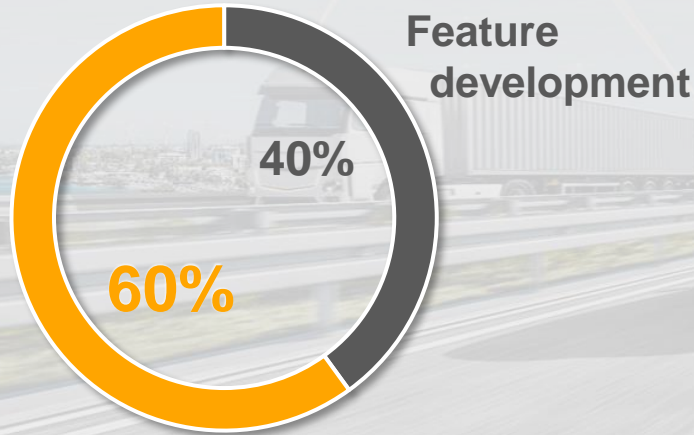
<sup>1</sup> SOP: Start of production

# Value Pools are Shifting

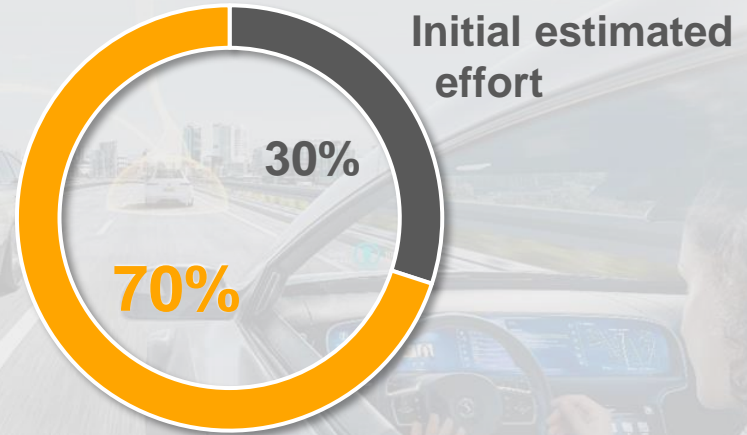
Even During the Development Phase Until SOP<sup>1</sup>



## Defined features vs. changes and integration



Integration, changes  
and testing

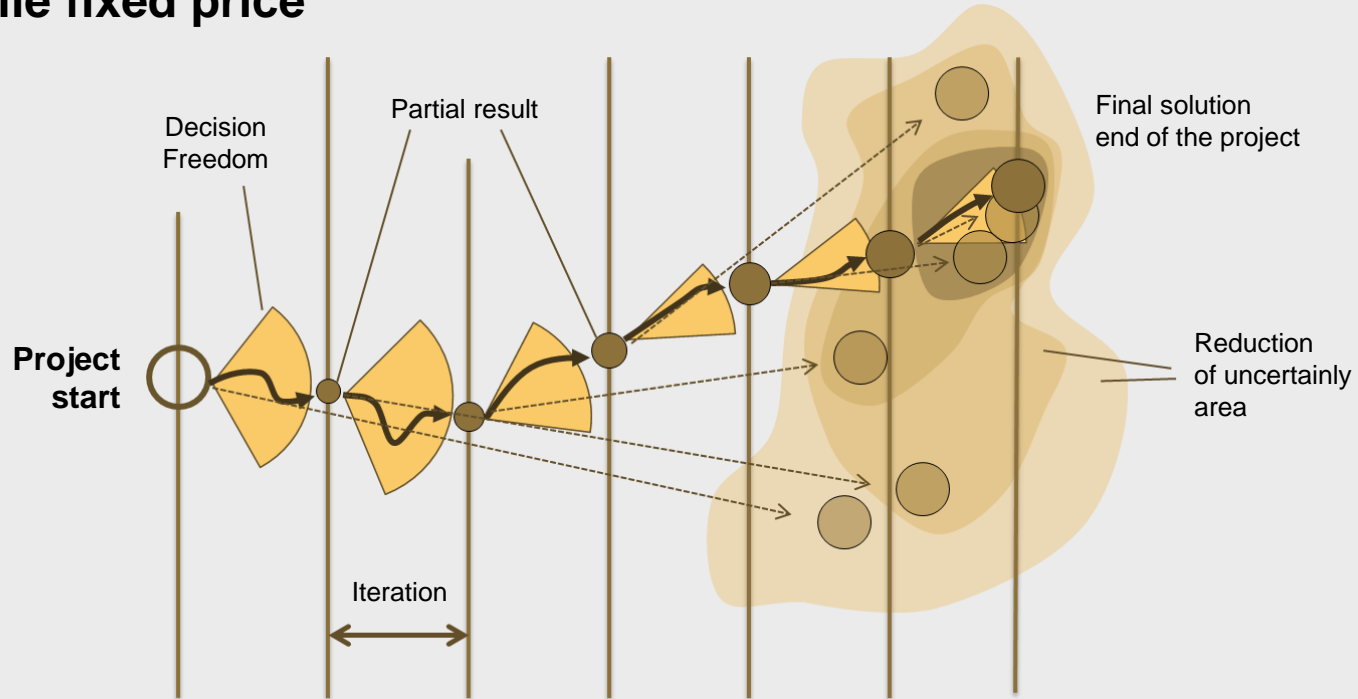


<sup>1</sup> SOP: Start of production

# How to hit a “Moving Target”?

## Managing the Complexity and Related Cost

### Agile fixed price



# Value Pools are Shifting

Integration is a new Business Opportunity



## Vertical:

- › Full-stack
- › Vehicle to cloud



**System:**  
Products and  
Networking

**Horizontal:** All functions – cross domain



# How to Manage the Ever-Increasing Amount of Software?

## Offer a Cooperative Integration Solution



# Value Pools are Shifting

A Chance in Generating New Revenue Streams after SOP1



## Vehicles in field:



Develop new SW  
add-on functions



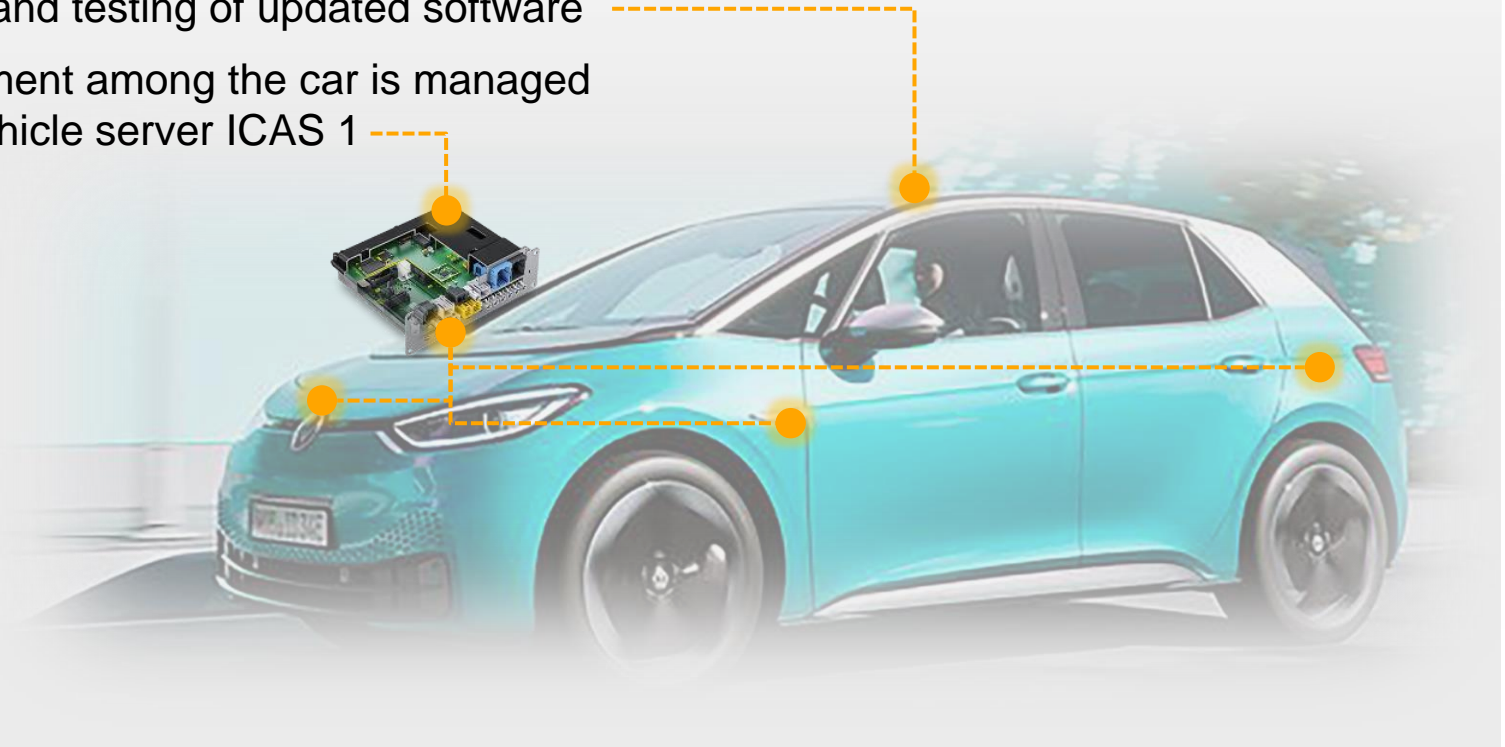
Update functions in  
a secure manner



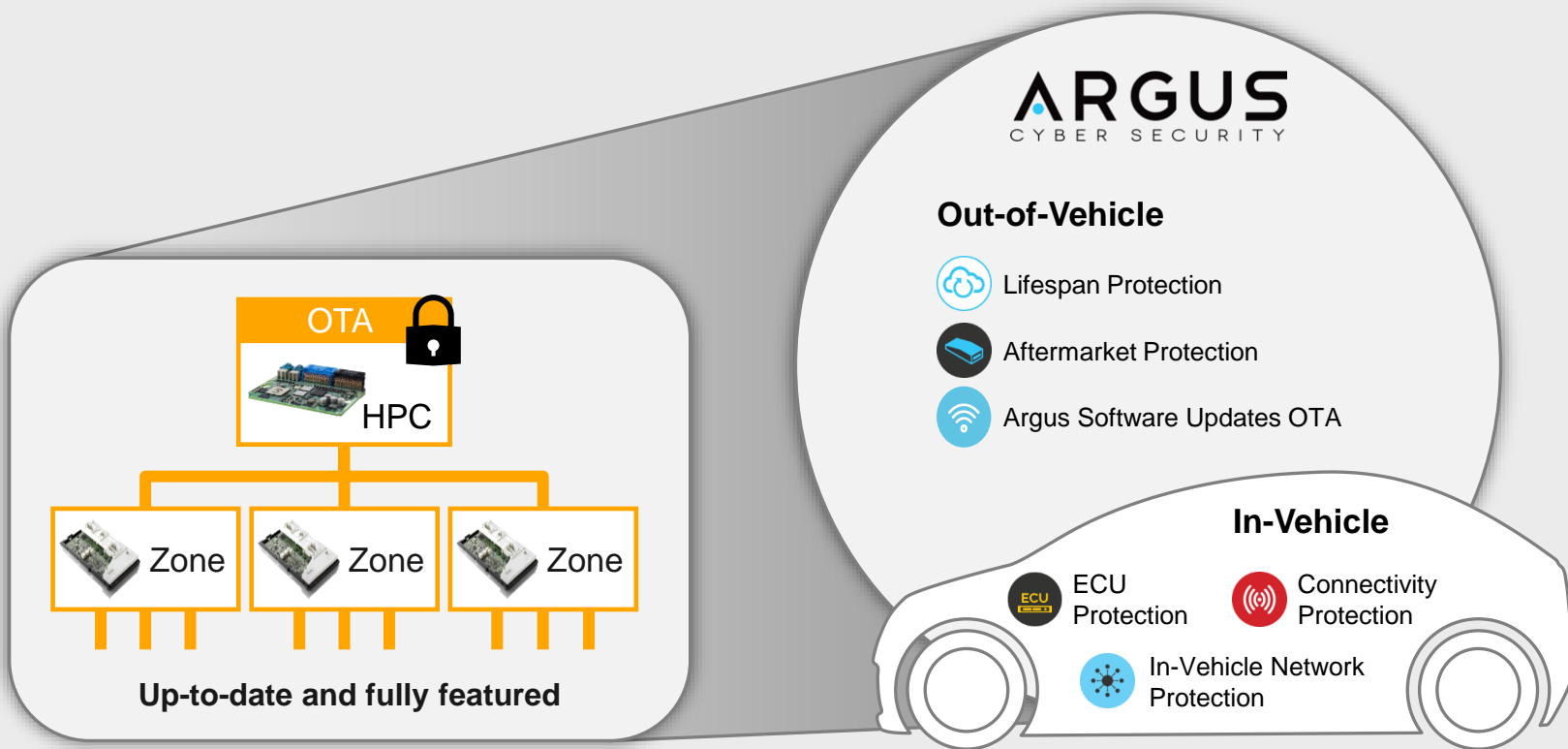
# VW Launches First Over-the-air Updates for ID.3 and ID.4

## Our Contribution:

- › Integration and testing of updated software
- › SW assignment among the car is managed by the in-vehicle server ICAS 1

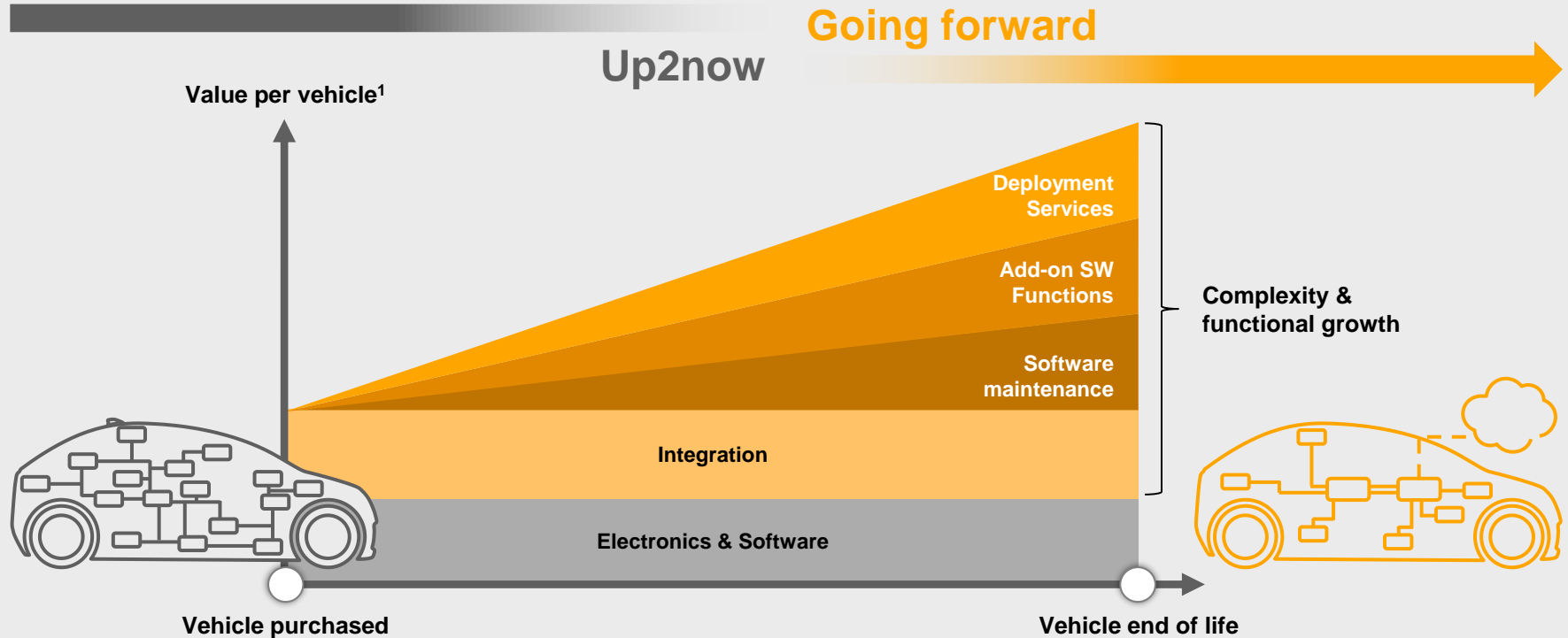


# New Architectures Require Strong Cyber Security and OTA Updates



# The Software-Defined Vehicle

## New Value Streams Across Lifecycle



<sup>1</sup> Not to scale; for illustrative purposes only

# Overall Summary

## Server-Based Architecture



Digitization and connectivity are causing one of the most comprehensive transformations that the car has undergone since its invention, effecting...

- › ...**Products** and **Technologies**,
- › ...**Processes** and **Working Methods**,
- › ...and **Business Models** and **Relationships**.

We **adapt** to the changing market and stakeholder requirements and expectations and **master** holistic product development and integration of new centralized vehicle architectures.

In this transformation, our **customers** and **suppliers** increasingly **become partners** with whom we take the next step forward into the digital era of mobility.

***THANK YOU!***