

From managing the semiconductor crisis ...

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We are facing many semiconductors and a high product complexity



Apple iPhone 15



Number of
main variants¹

4

Units sold
per year

~ 225.000.000

Number of
semiconductors

Approx. 35¹

SONY PlayStation 5

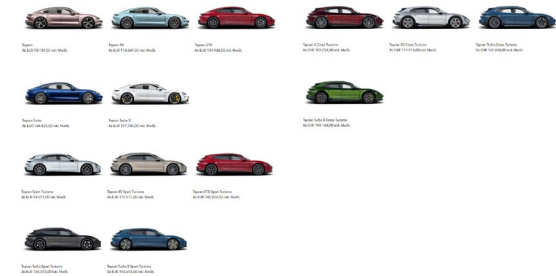


2

~ 19.000.000

Approx. 130¹

Porsche Taycan



14

~ 44.000

Approx. 8.000¹

¹ based on Porsche Consulting teardown

A cross-functional, cross-brand initiative has taken measures to handle supply shortages and secure production



C A R I A D



COMPASS

N-Tier
transparency



Tier-1 and IDM
communication



Broker
buys



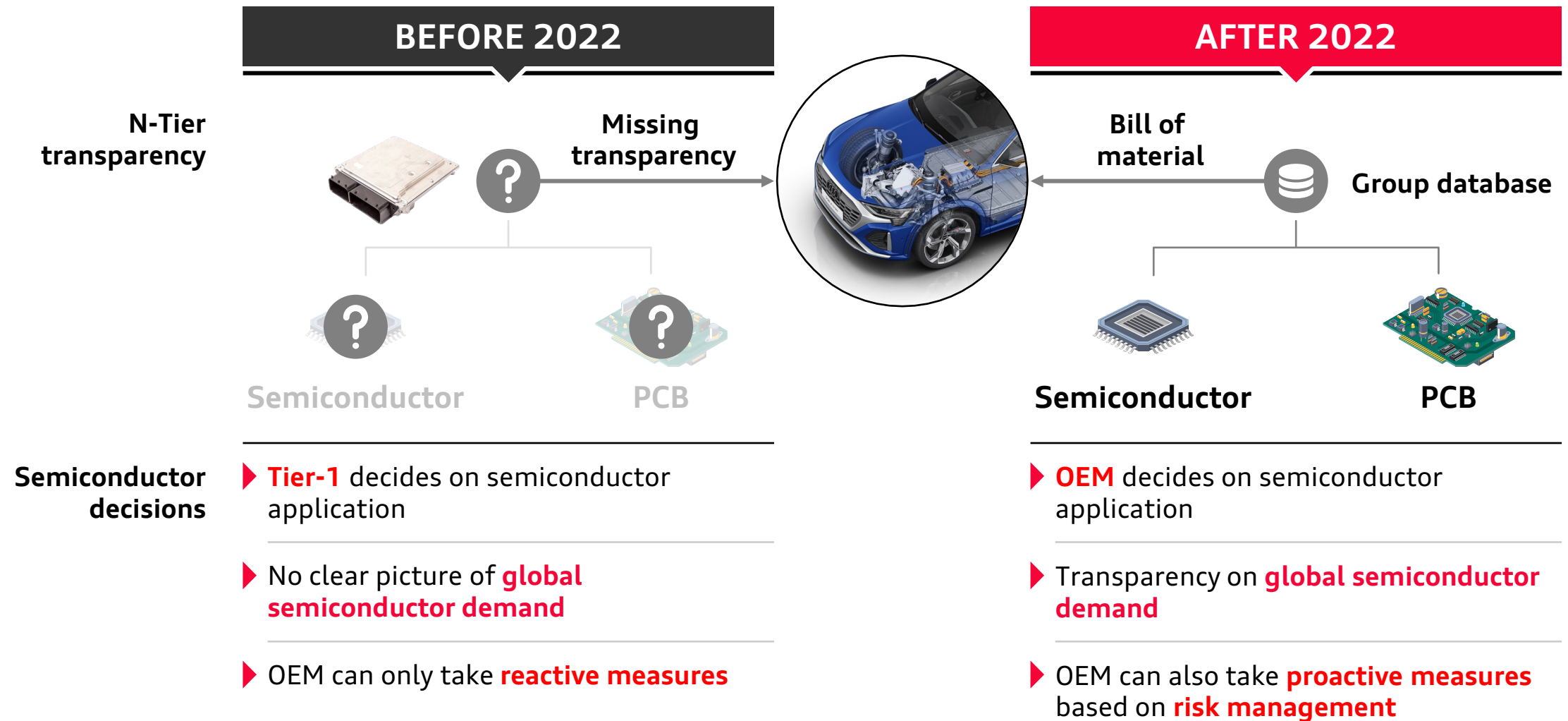
Sales
measures



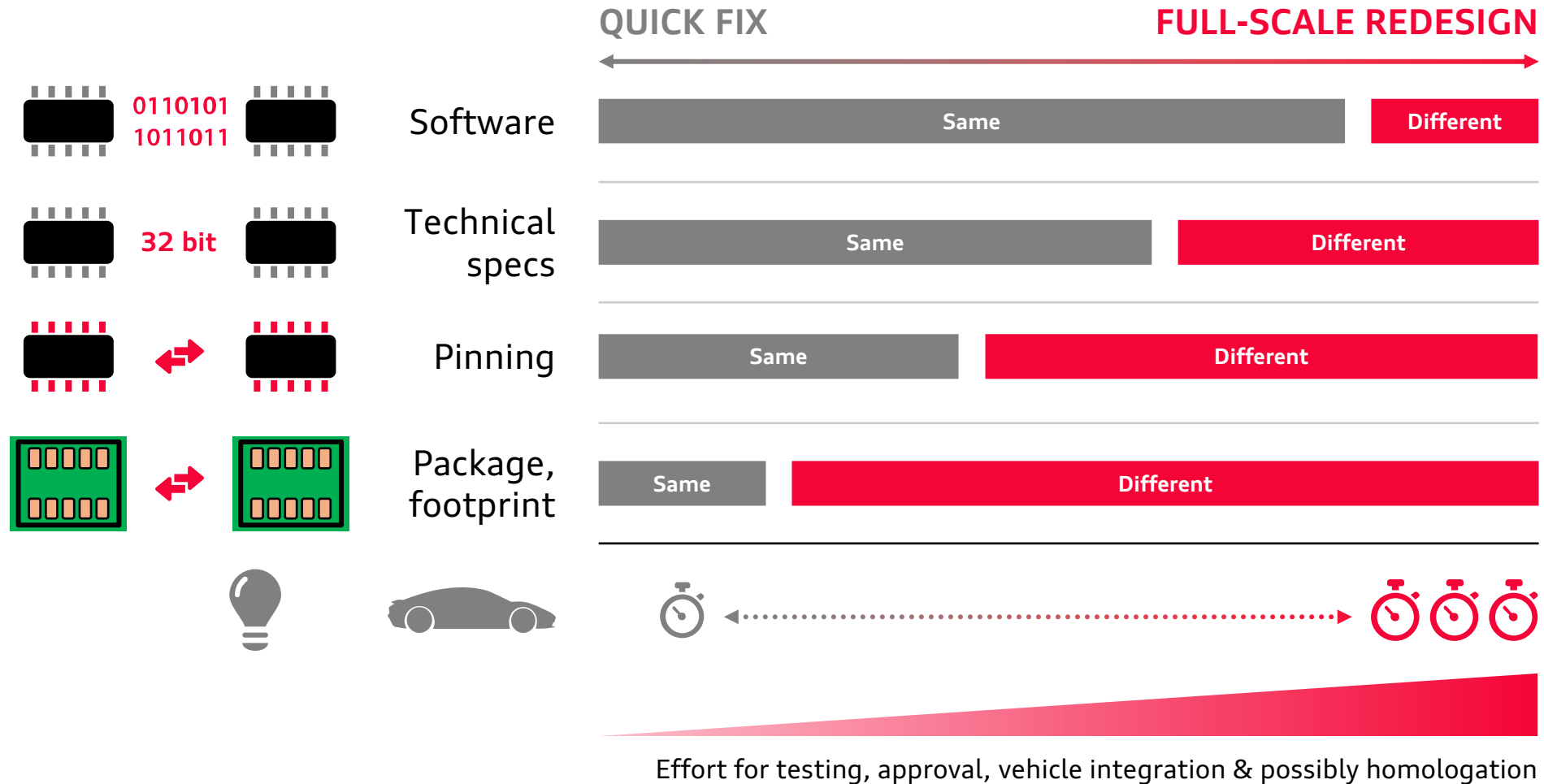
Technical
alternatives
and re-designs

Risk management

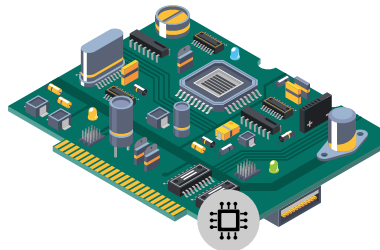
We generate n-tier transparency across our semiconductor supply chain ...



When investigating technical alternatives, several features are to be considered – the impact, the implementation schedule and business case



... and enable risk management
down to semiconductor level



Group database HaMOn

Semicond.	Category	ECU	Manufact.	Location
Order code 1	MCU	Airbag	NXP	China
Order code 2	Storage	Steering	Infineon	Germany
Order code 3	Transistor	Battery	Renesas	Japan
Order code n	...	...	...	...

..... AFTER 2022



Risk monitor: Overall assessment



Risk categories	Wafer-Manufacturer	Frontend-Fab	Backend-Fab	ECU-Manufacturer
1. Natural disasters	High Risk	Medium Risk	High Risk	Low Risk
2. Trade war	Medium Risk	High Risk	Low Risk	High Risk
3. Life cycle	Low Risk	Low Risk	Low Risk	Low Risk
4. Safety stock	Low Risk	High Risk	High Risk	High Risk
5. Pin-to-Pin alternative	Low Risk	Low Risk	Low Risk	Medium Risk
6. Pandemic	High Risk	High Risk	High Risk	High Risk



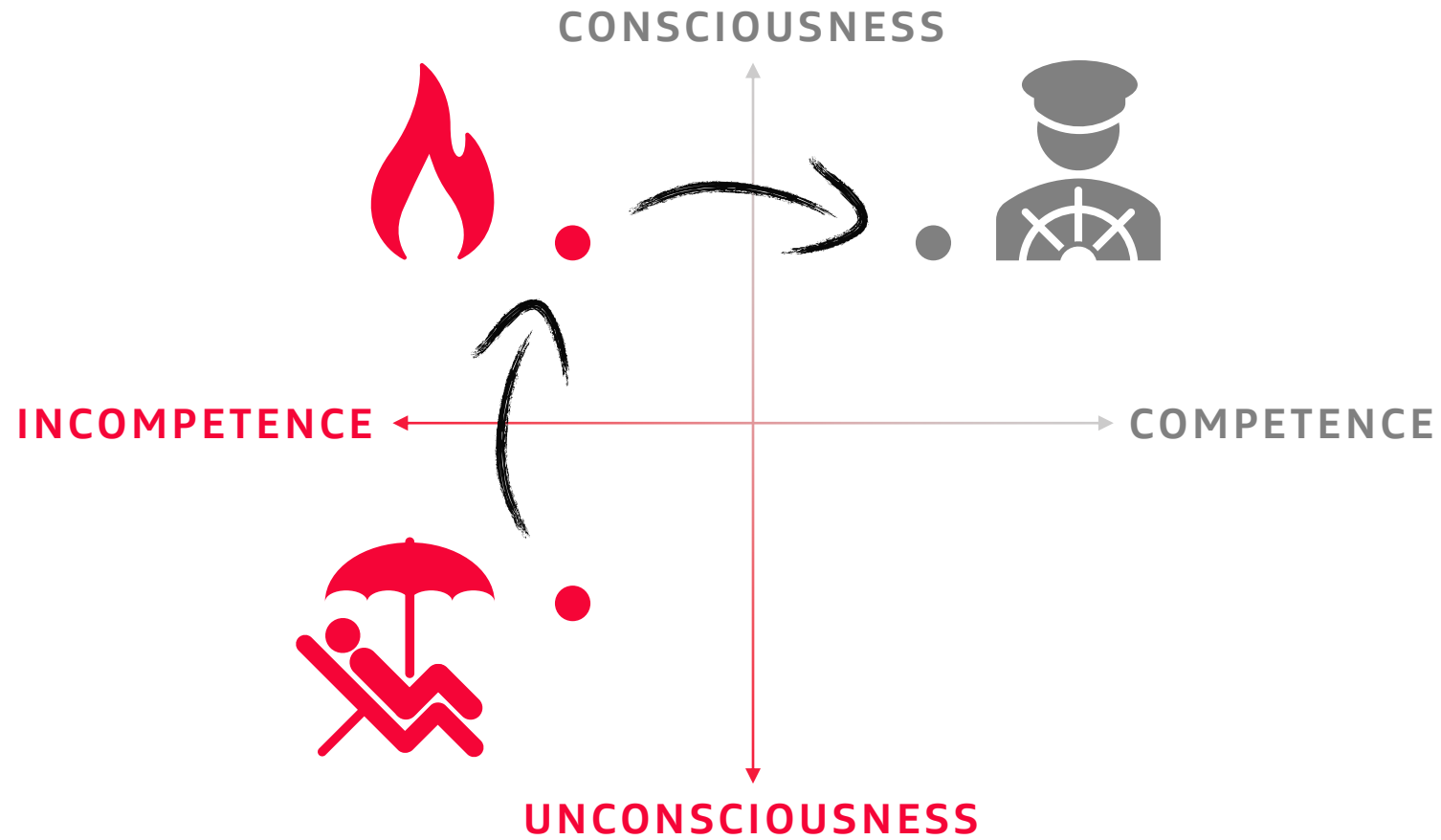
High Risk



Medium Risk

Low Risk

Being conscious about incompetence – the first step



Reducing variants and complexity is key to improve innovation, resilience and cost efficiency



2022

REACTIVE

Example

**>80 different
packages/footprints**

of Power MOSFETs



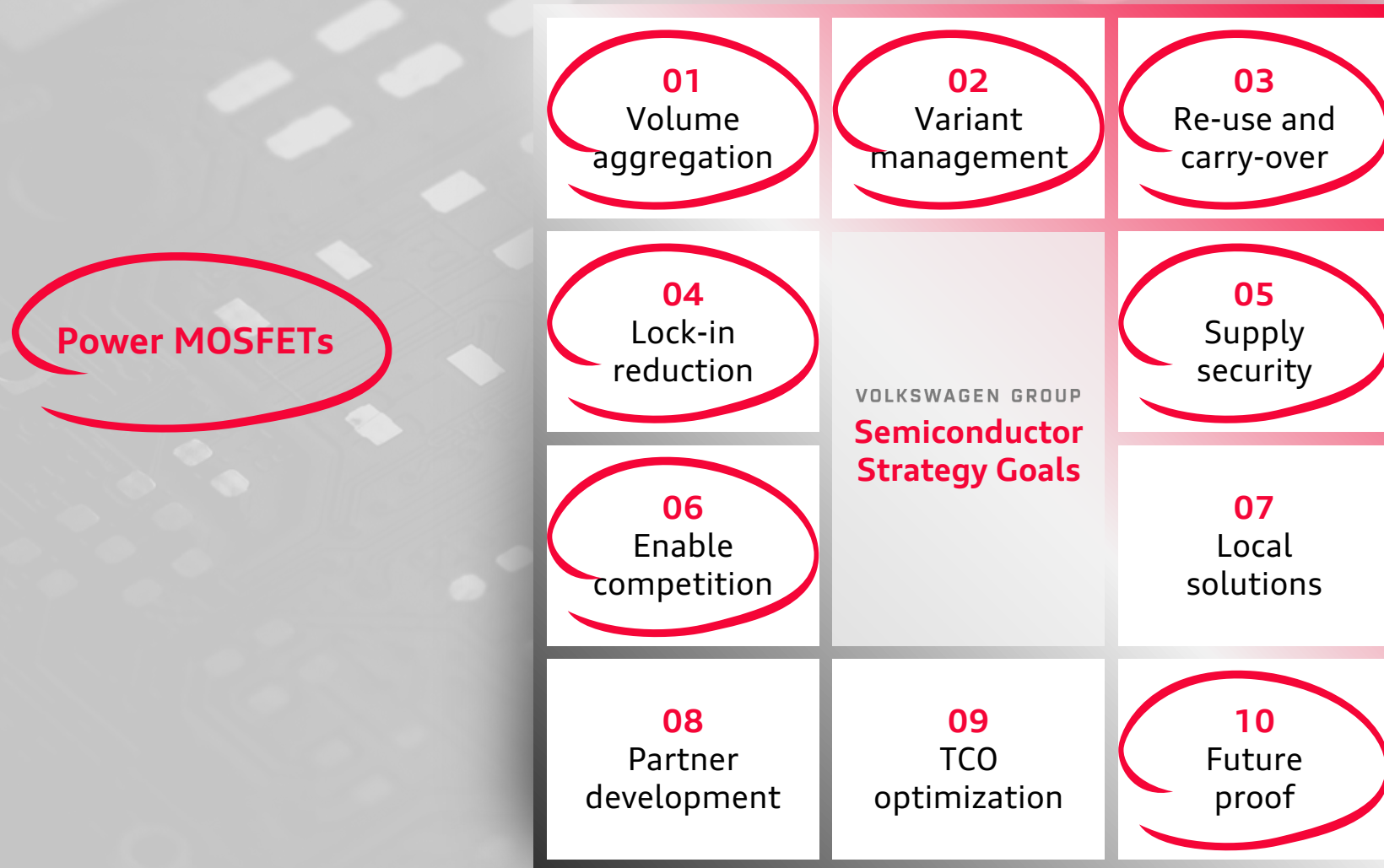
2023

PROACTIVE

**Active steering of semiconductor
content and variance**

- ✓ Innovation and SW complexity
- ✓ Resilience
- ✓ Cost efficiency

Overarching goals are the cornerstones of strategic semiconductor management



Thank

Thank you!

you!