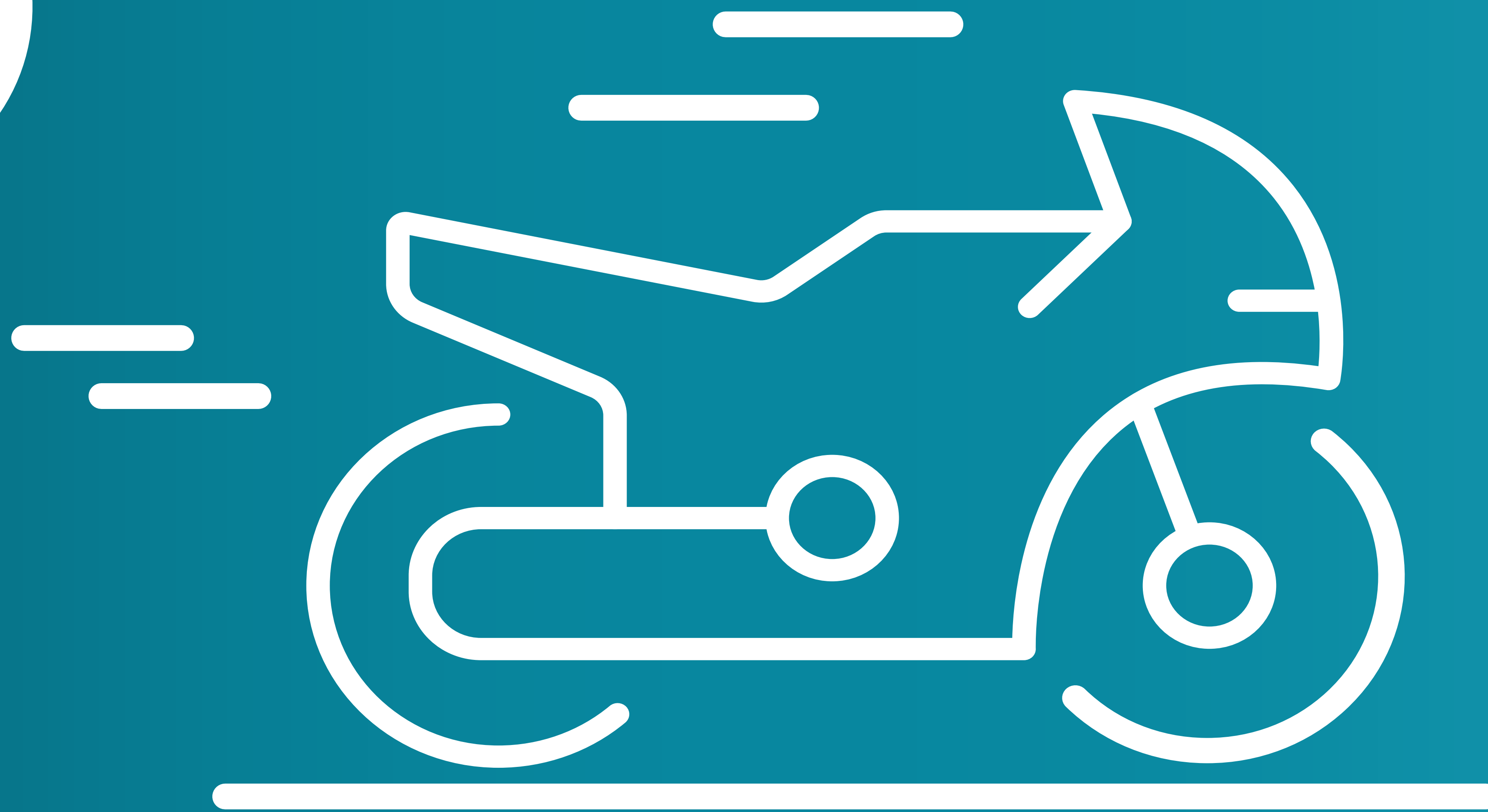


# 2-WHEELERS

EVOLUTION VS. REVOLUTION  
IN A CHANGING MARKET

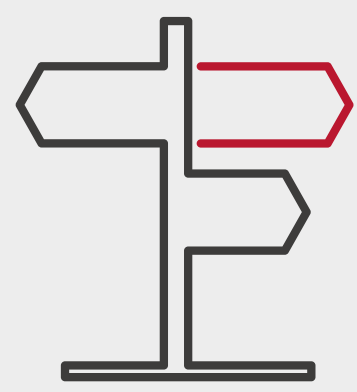


To evaluate which path to follow in an evolving market, a deep understanding of the 2-wheeler industry & customer requirements is crucial

## KEY QUESTIONS



What is the current status of the global 2-wheeler market?



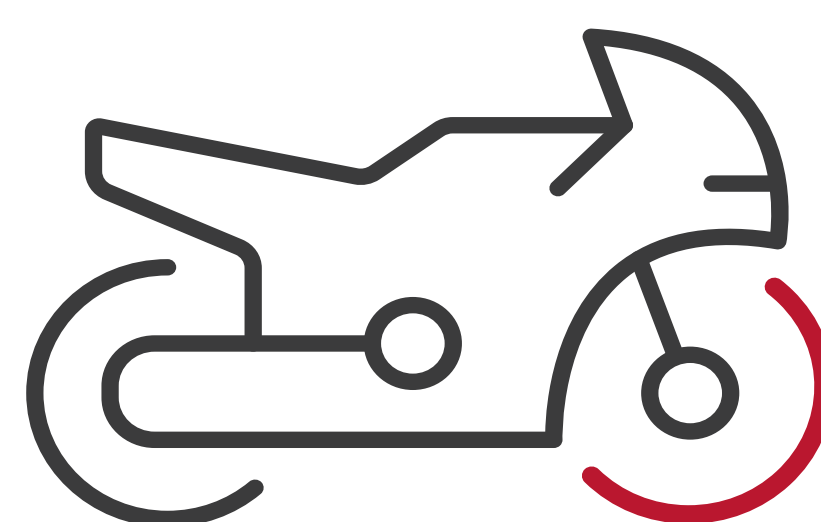
What are the global and local trends affecting the 2-wheeler industry?



Which technologies will drive future growth in the 2-wheeler landscape?

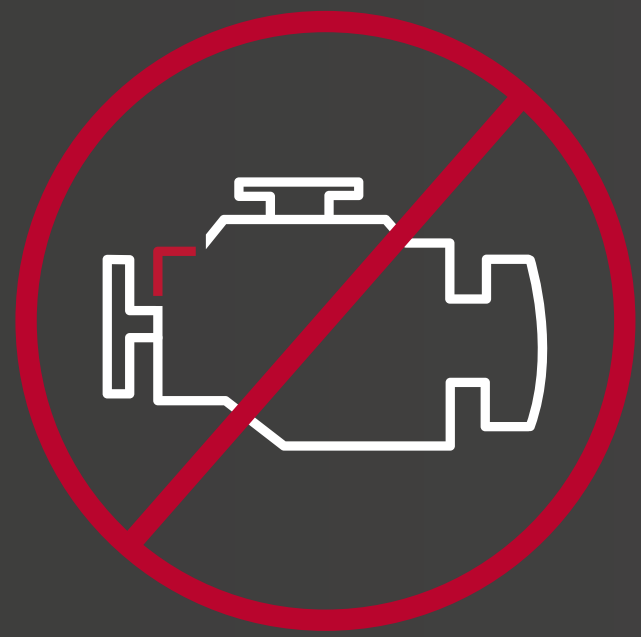


How will product portfolios have to evolve to satisfy customers' demands?

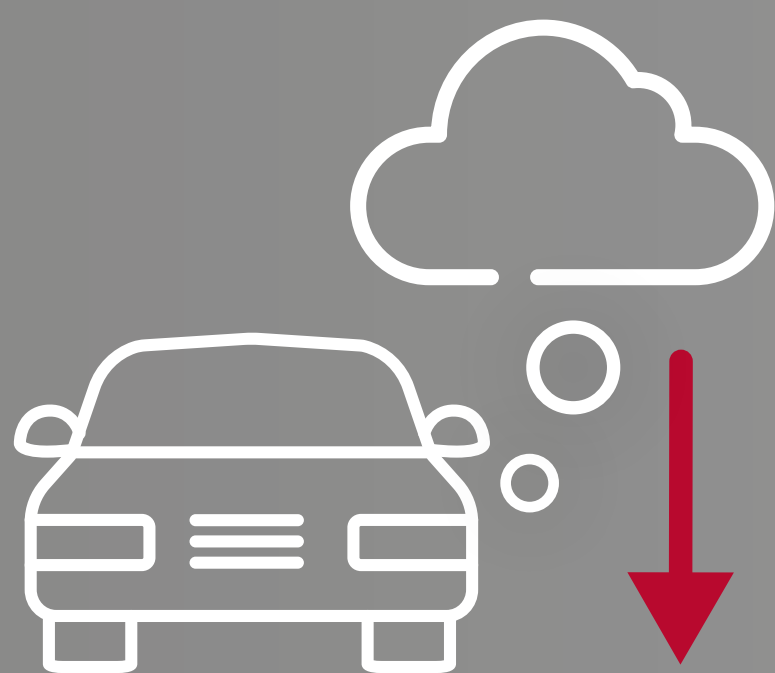


Two-wheeler OEMs and suppliers are facing increasing pressure from regulatory authorities and end-customers...

## **REGULATORY & CUSTOMER PUSH**



**FOSSIL FUEL VEHICLE BANS**



**EMISSIONS REGULATIONS TIGHTENING**



**CUSTOMER REQUIREMENTS**

...to further drive the technology advancement of their vehicles while keeping an eye on sustainability

## INDUSTRY APPROACH

### REVOLUTIONARY APPROACH



Electrification

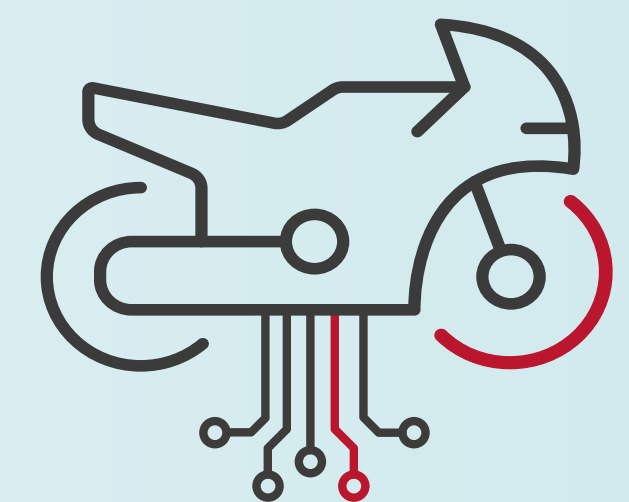


Alternative fuels

### EVOLUTIONARY APPROACH



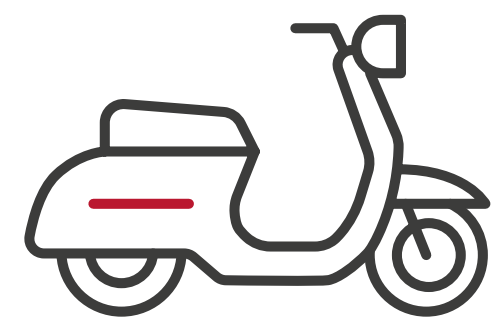
Powertrain-  
improvements



Smart, connected  
motorcycle



Customer demands from 2-wheeler users can be summarized within two main categories with significantly different needs and requirements



Mainly <400 cc

## TYPICAL USAGE PROFILES

2W WORKER / COMMUTER

**Vs**

**It's all about the business case**



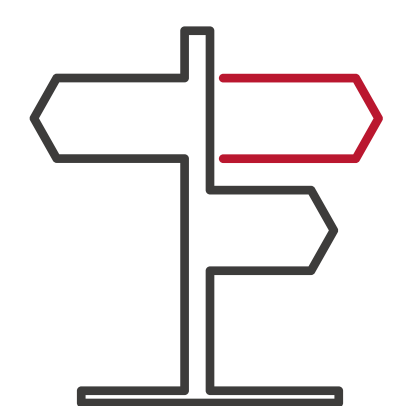
TCO

**Basic requirements**



Performance

**Daily urban rider**



Driving environment

TCO: Total Cost of Ownership

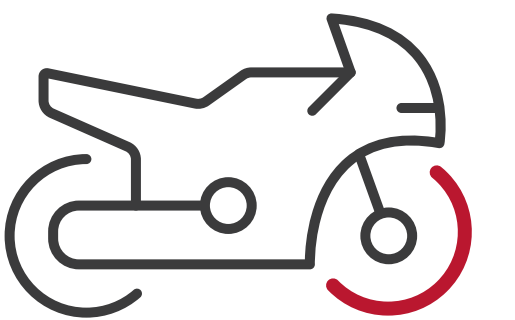
**FEV**  
CONSULTING

Customer demands from 2-wheeler users can be summarized within two main categories with significantly different needs and requirements

**Vs**

## TYPICAL USAGE PROFILES

ENTHUSIAST



Mainly >400 cc



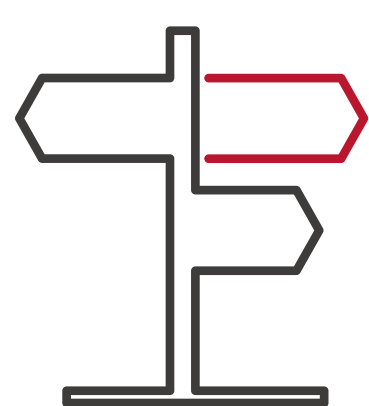
TCO

Performance before price



Performance

It's all about performance

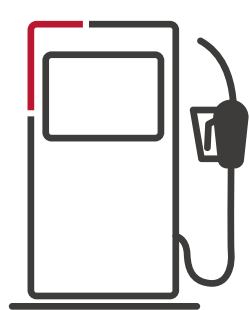


Driving environment

The long way around

OEMs and suppliers currently have two possible alternatives to replace fossil fuel powertrains in the 2-wheeler industry...

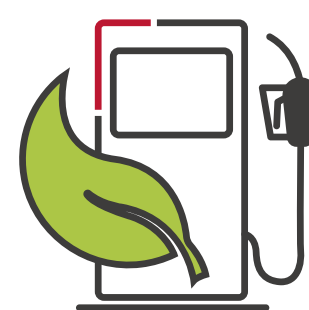
REVOLUTION: NEW POWERTRAIN DEVELOPMENT



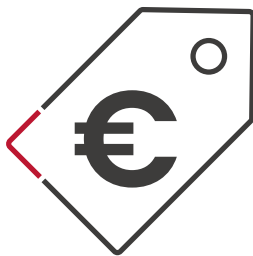

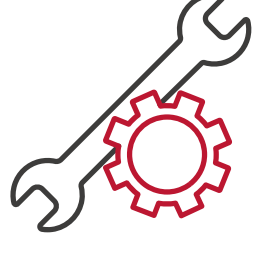
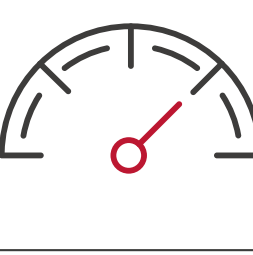
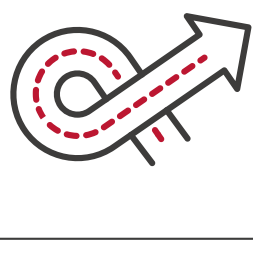

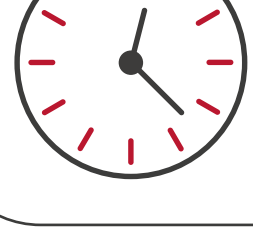
Fossil ICE



Battery electric










Alternative fuel

 Purchasing price
 Operational cost
 Maintenance
 Performance
 Range
 Weight
 Charging/fueling time

—
—
—
—
—
—
—

>

	
	
	—
	—
	—
	—
	—

Two main alternatives

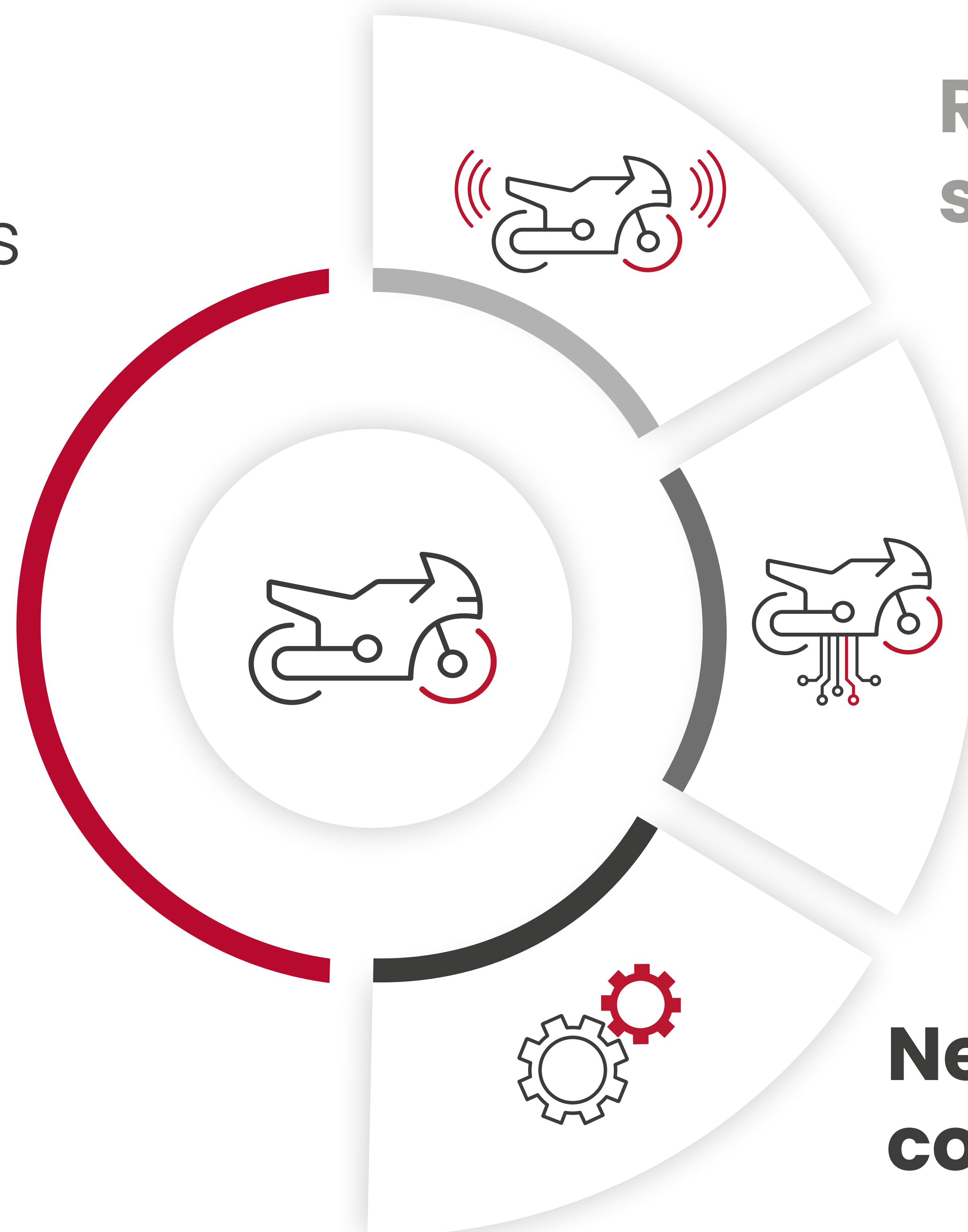


...in parallel, they have to constantly update their technology offerings while ensuring compliance with the latest emissions and safety standards

## EVOLUTION: IMPROVEMENT OF EXISTING TECHNOLOGY

### UPDATE TO EU5

OEMs and suppliers are constantly **improving their engines and aftertreatment systems** to comply with the latest emissions regulations in most developed countries



**Rider assistance systems**

**Connectivity**

**New transmission concepts**



# FEV Consulting understands the challenges of the 2-wheeler market and can support you in shaping your business for success

## YOUR CHALLENGES

### MARKET PULL

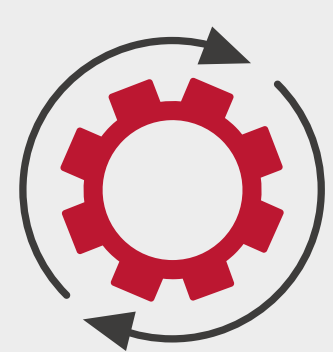


Market development



Customer needs

### TECHNOLOGY PUSH



Solutions & trends



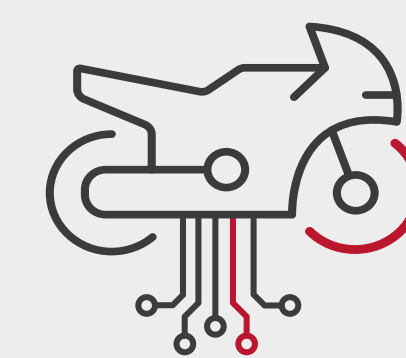
Competitors & substitutes



Connectivity & digital services

**FEV**  
CONSULTING

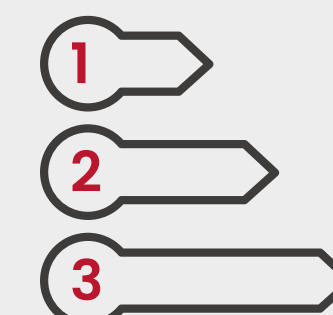
## OUR SOLUTIONS



Strategic & technological advice



Analysis of market environment & business model generation



Supply chain analysis & technology roadmap creation



Benchmarking & strategic costing

**FEV**  
CONSULTING



**GET IN TOUCH WITH US!**



**MIRKO  
ENGELHARD**  
PRINCIPAL



**ANDREA  
PANTALEO**  
SENIOR CONSULTANT