



goetzpartners

STRATEGY | M&A | TRANSFORMATION



AUTOMOTIVE SUPPLIERS: TOUGH CHALLENGES AHEAD

How to turn today's challenges into future opportunities

Suppliers face technology shifts, increasing complexity of operations, and a diversified competitive landscape

IMPLICATIONS

1) TECHNOLOGY SHIFTS

- Electrical powertrains and multi-material use require new competencies
- Hardware integration, connectivity, and autonomous driving solutions make software a key component

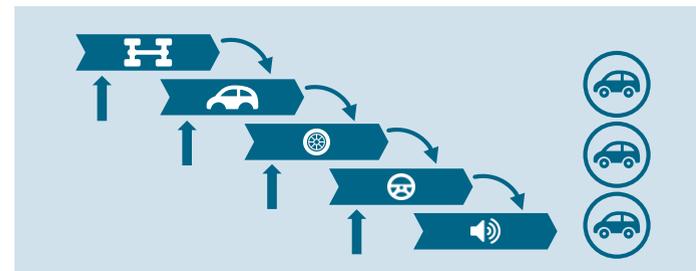
2) COMPLEXITY OF OPERATIONS

- Greater model variety, shorter time-to-market and integration of hardware into software solutions
- Need for agile R&D/production and hiring policies that reflect new skill set requirements

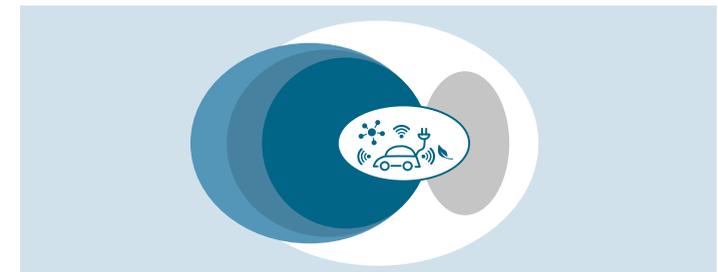
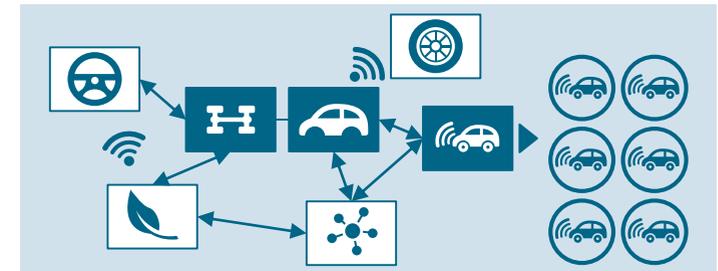
3) COMPETITIVE LANDSCAPE

- Technology shifts attract new non-automotive players
- OEMs face increasing competition from new entrants
- Supplier landscape is expected to be driven more by specialization

FROM...



TO...



Our approach: Suppliers should turn challenges into future opportunities

AUTOMOTIVE CHALLENGES

A GLOBALLY, GOVERNMENTS INTRODUCE STRICTER LAWS TO REDUCE CO₂ EMISSIONS

To meet targets, heavy investments in electrification and use of lightweight construction are required.

B DIGITALIZATION IS AN IMPORTANT DRIVER OF CHANGING CUSTOMER REQUIREMENTS

By 2030, today's trends towards car connectivity, mobility solutions, and autonomous driving will become standard. Buyers will demand varying models and a high level of customization.

C OEMs SHIFT FOCUS AND FURTHER REDUCE THEIR SHARE OF THE VALUE CHAIN

Customer experience replaces traditional performance parameters. Relevance of value-adding services increases.

IMPLICATIONS FOR SUPPLIERS

1 NEW TECHNOLOGIES AND SOFTWARE SOLUTIONS DRAMATICALLY CHANGE THE CAR AS WE KNOW IT

Electrified powertrains and multi-material use will substantially change the development process for cars. Software becomes a key component for OEMs and their suppliers.

2 INCREASING COMPLEXITY CONTINUOUSLY CHALLENGES AUTOMOTIVE SUPPLIERS

Integration of hardware components and software requires new expertise. Agile R&D and production processes are key to reducing time-to-market and handling greater model variety.

3 COMPETITIVE LANDSCAPE OF THE AUTOMOTIVE INDUSTRY FACES DISRUPTION

Digitalization attracts new players with (non-) automotive backgrounds. Suppliers can benefit from new opportunities, but need to free up cash for necessary investments.

STRATEGIC IMPERATIVES

DEVELOP FUTURE VALUE PROPOSITION

Analyze product portfolio, capture gaps in the value chain via organic and inorganic growth, and carve out future non-core business. Shape your business model to address new opportunities.

OPTIMIZE COST EFFICIENCY

Enhance process efficiency to counter increasing cost pressure to stay ahead of competition. Consistently combine site consolidations/shifts and operative excellence initiatives.

BUILD AN AGILE ORGANIZATION

Assess your company's degree of agility and benchmark against the automotive industry. Set targets and develop your customized "fitness" program to benefit from new opportunities such as increasing software relevance and new collaboration models.

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FIRST SIGNS OF ROUGHER TONE BETWEEN AUTOMOTIVE SUPPLIERS AND OEMS
goetzpartners' 2016 GEAR study revealed that suppliers' satisfaction with OEM cooperation has deteriorated significantly. Innovation, project work and communication are key to improving cooperation and satisfaction.

A) Tightening CO₂ targets require investments in electrification and use of lightweight construction

OUTLOOK

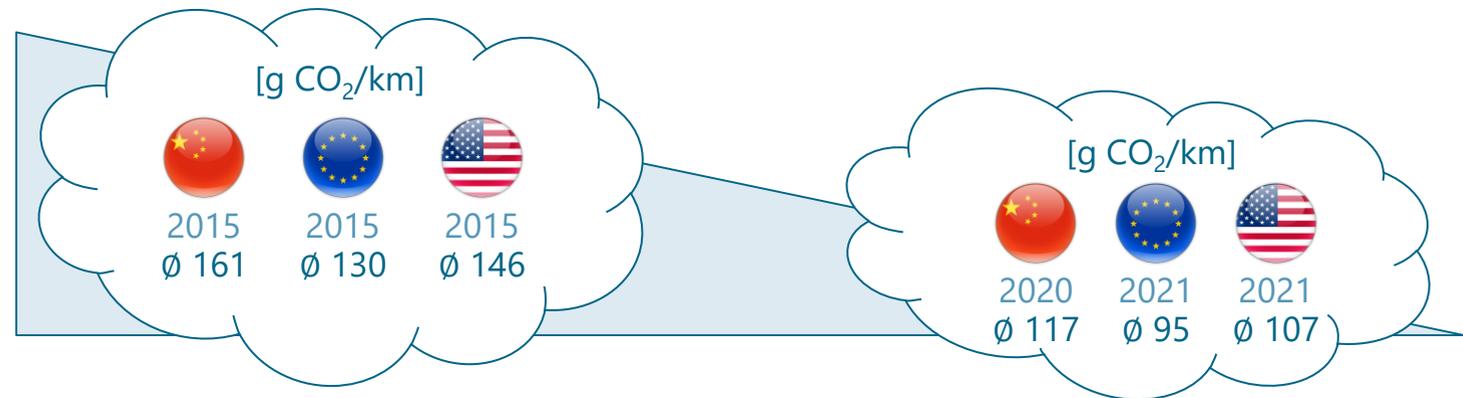
The three largest economies in the world have passed strong regulations with regard to CO₂ emissions. Europe, as a leading regulator, aims to reduce CO₂ emissions by 27% by 2021.

CO₂ targets can be achieved through:

Investments in engine efficiency – traditional combustion engines are optimized while alternative technologies such as electrical engines are developed.

Reduction in overall car weight – every car weight reduction of 100 kg results in a decrease of ~6-7g CO₂/km. Depending on costs and target customer groups, different degrees of weight optimization are pursued.

GOVERNMENTS AND CUSTOMERS EXPECT REDUCTIONS IN CO₂ EMISSIONS



HEAVY INVESTMENTS IN ENGINE EFFICIENCY

- CO₂ targets are difficult to meet solely through engine efficiency or lightweight materials
- Investments in alternative powertrains (e.g. hybrid or electrified) will become necessary

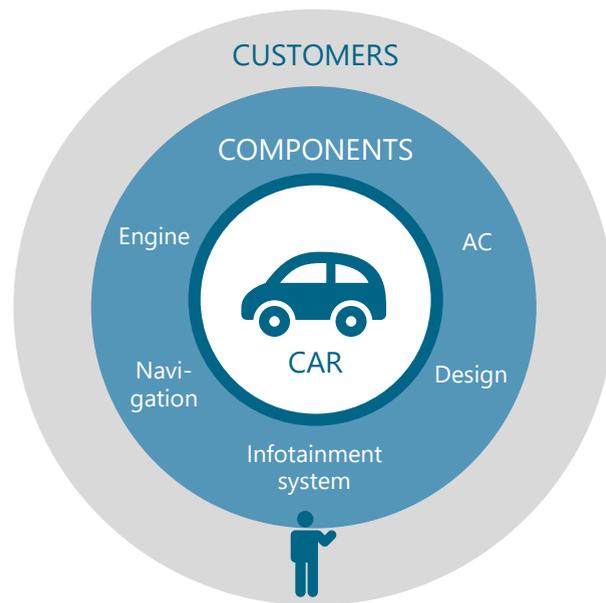


CO₂ REDUCTIONS THROUGH WEIGHT OPTIMIZATION

- Lightweight materials are hard to process but allow for new designs and product differentiation
- Electrified powertrains increase vehicle weight and trigger need for weight optimization

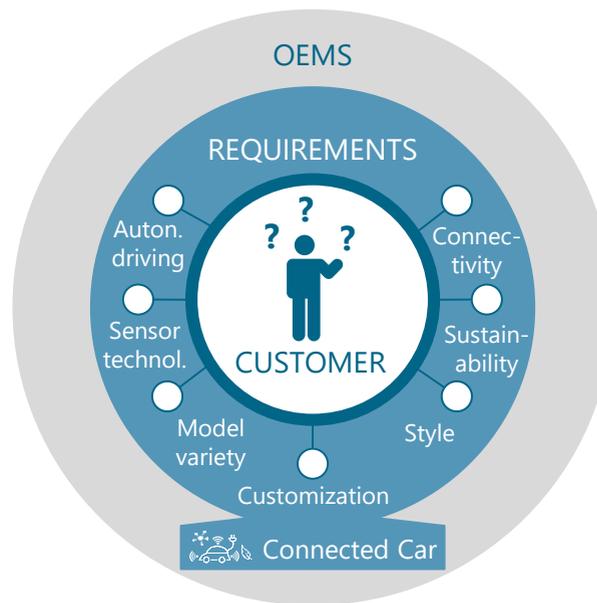
B) Digitalization is an important driver in changing customer requirements

FROM PRODUCT-CENTRICITY...



- ▶ Focus on product, product features, and add-ons
- Products and solutions oriented to car

...TO CUSTOMER-CENTRICITY



- ▶ Focus on customers and their user experience
- Products and solutions oriented to customer demand

OUTLOOK

The concept of autonomous driving will develop further and become a part of the user experience. It is estimated that by 2030, one fifth of all new cars sold will be self-driving.

Sensor technology will allow users to constantly assess and connect to the environment (e.g. V-2-V^[1] and V-2-I^[2] communication).

Car models will vary based on the purpose of travel (10-minute commute to work, long distance, leisure).

The car is perceived as a second living room and requires customization of observable features (e.g. design, seats) as an expression of customers' personal styles and ways of living.

Customers seek sustainable products and materials to satisfy their "green" consciousness.

Connectivity as a must-have: customers connect the car with their digital lifestyles and the digitalized world.

C) OEMs shift focus and further reduce their share of the value chain

OUTLOOK

In order to differentiate themselves, OEMs are forced to focus more on customer-centricity and less on car manufacturing.

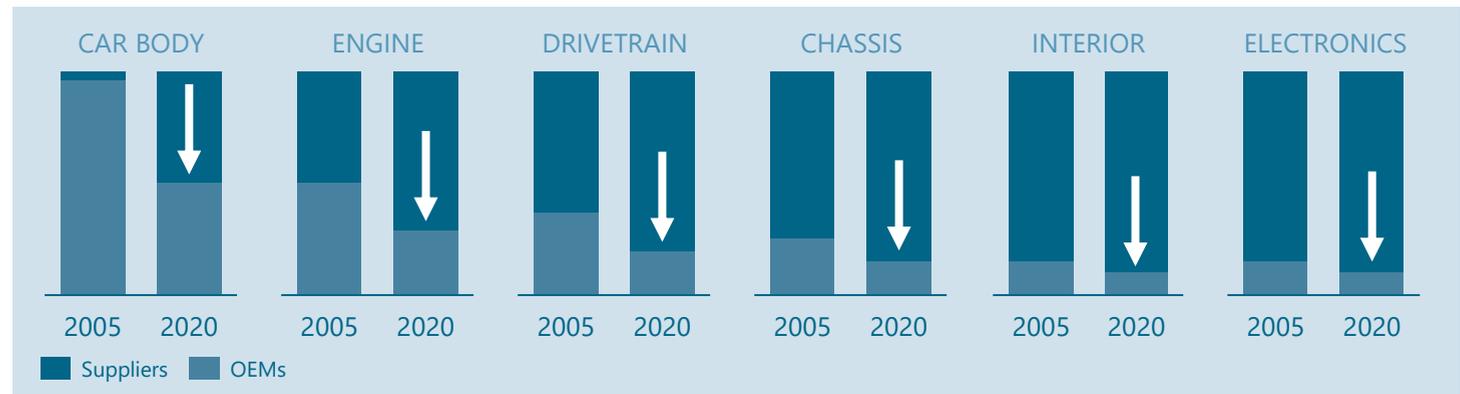
Reduced OEM presence in the production value chain creates opportunities for suppliers, but also entails serious challenges such as the need for dedicated process and software know-how.

Customer experience and value-adding services replace traditional performance parameters (such as engine power) due to a reduced focus on driving itself and a greater focus on comfort while spending time in the car.

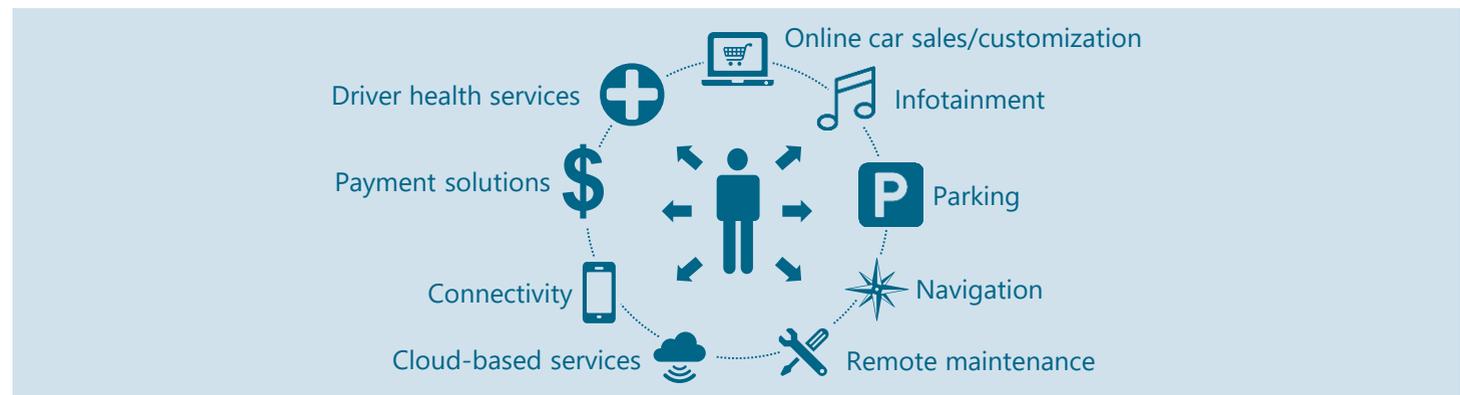
OEMs CHANGE FOCUS

PAST SHARE OF VALUE CHAIN

FUTURE SHARE OF VALUE CHAIN



EXAMPLES OF VALUE-ADDING SERVICES WITH POTENTIAL TO REPLACE TRADITIONAL PERFORMANCE PARAMETERS



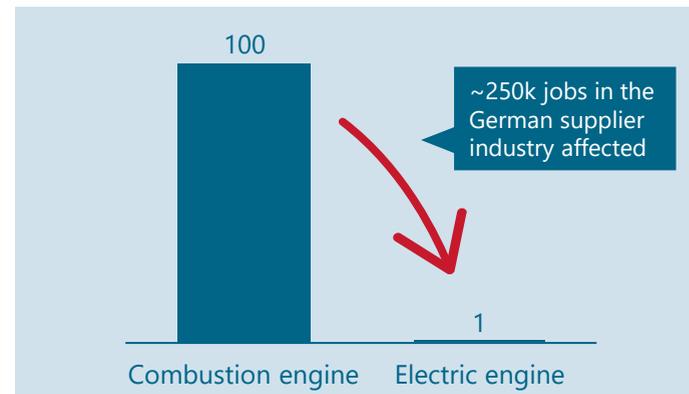
1) New technologies and software solutions dramatically change the car as we know it

CHANGES IN PRODUCTION THROUGH ELECTRIFICATION

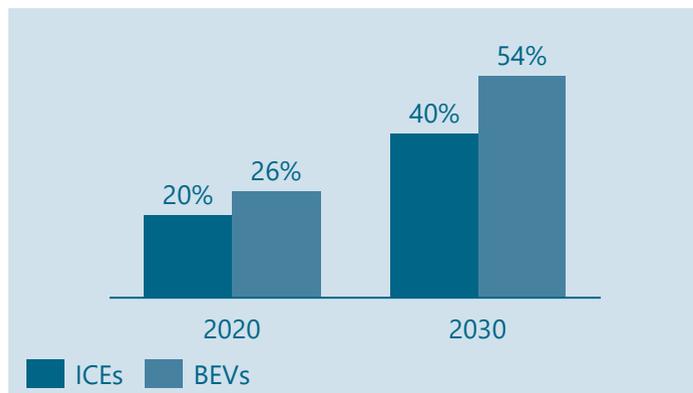
SHARE OF ELECTRIC VEHICLES IN TOTAL REGISTRATIONS^[1]



MOVING ENGINE PARTS [#]



U.S. DEPART. OF ENERGY – WEIGHT REDUCTION TARGETS



LINES OF SOFTWARE CODE [millions]



[1] BEV or PHEV

Source: VDA press release, 12/2/2016; Frankfurter Rundschau, 12/28/2016; Volkswagen Website; NYC Aviation Website; New York Times, 9/26/2015; Final report of the U.S. Department of Energy, 2/21/2013; Computerbild, 4/5/2015; NASA Website; BAE Systems Case Study; goetzpartners analysis

OUTLOOK

The shift from pure combustion engines towards electrified powertrains will change the development process for cars as well as inspection and maintenance measures.

First, various components will become obsolete, which will affect ~250k jobs (31%) in the German supplier industry.

Second, weight reduction will drive the share of multi-material processing (e.g. carbon and aluminum).

Third, there will be a drastic increase in software use coupled with requirements to integrate connectivity solutions, autonomous driving and electrified powertrains.

2) Increasing complexity continuously challenges automotive suppliers

RATIONALE

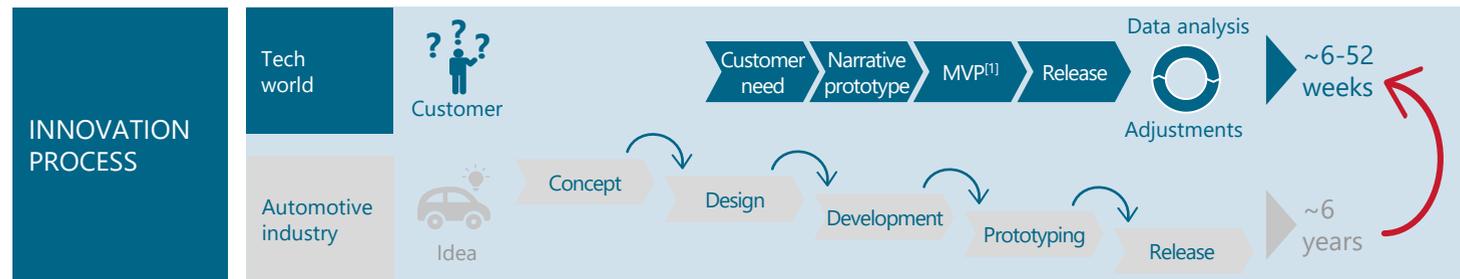
OEMs increase replacement rates to quickly adapt to fast-changing customer requirements.

Similarly, OEMs accelerate new model launches in order to penetrate new vehicle segments as quickly as possible (e.g. hybrid, SUV, ultra-luxury, etc.).

Suppliers require agile R&D and production processes to reduce time-to-market and enable greater model variety.

As a result, the agile, sprint-based approach of software development with frequent prototyping, review and revision must be integrated into the traditional "waterfall" engineering lifecycle of suppliers and OEMs.

REPLACEMENT RATES, NEW LAUNCHES, AND INNOVATION PROCESS

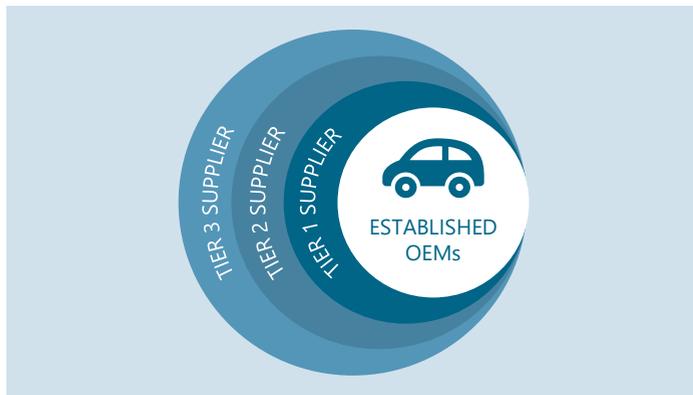


[1] Minimum viable product
Source: BofA Merrill Lynch Global Research (U.S. market); goetzpartners analysis

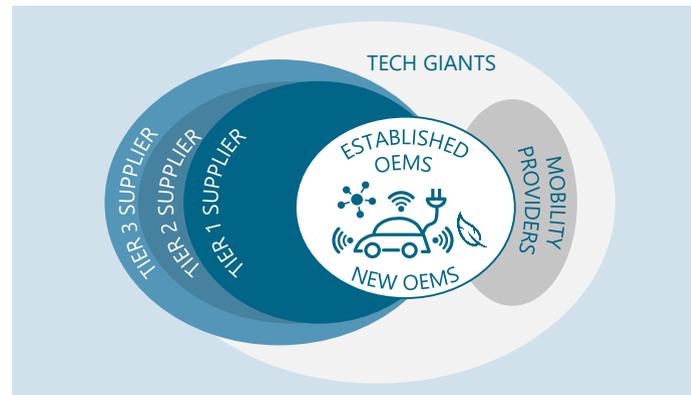
3) Competitive landscape of the automotive industry faces disruption

COMPETITIVE LANDSCAPE AND CAPITAL MARKET SNAPSHOT

PAST CAR-CENTERED COMPETITIVE LANDSCAPE



FUTURE DIGITAL COMPETITIVE LANDSCAPE



MARKET CAPITALIZATION 2016 [bn €]



CASH RESERVES 2016^[1] [bn €]



[1] Cash and cash equivalents [2] Based on IPO valuation
 Source: Annual Reports 2015 of BMW, VW, Daimler, Bosch, Continental, Schaeffler, ZF; Statista.de; Onvista.com; Nasdaq.com; Bloomberg.com; goetzpartners analysis

RATIONALE

In the past, OEMs competed with each other and the role of suppliers was clearly defined. A much more complex landscape is evolving, with the relevance of established OEMs decreasing due to new (tech) entrants.

Large Tier 1 suppliers will drive consolidation to enhance their roles as system integrators. Smaller suppliers will pursue specialization to cope with increasing pressure.

The changing competitive landscape will also result in new interaction between OEMs and suppliers as well as increasing price sensitivity due to low-cost, country-based OEMs.

Capital markets show a stronger belief in new players. Techs have deeper pockets to change the competitive landscape through M&A activity.

First signs of a rougher tone between automotive suppliers and OEMs

RATIONALE

goetpartners' GEAR study periodically examines suppliers' level of satisfaction with their supplied OEMs.

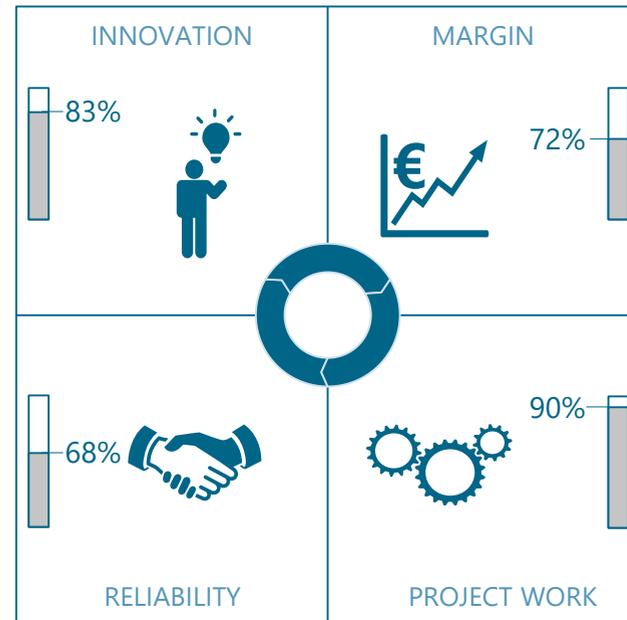
2016 edition of the GEAR study revealed a decrease in the overall level of satisfaction.

goetpartners senses an increasingly rough tone between OEMs and suppliers, mainly triggered by suppliers' dissatisfaction with their margins and a lower quality of cooperation during project phases.

The key future success factors for suppliers lie in active innovation management, improved cooperation with the OEM, and stricter cost control, e.g. through modularization, production flexibility, or OPEX optimization.

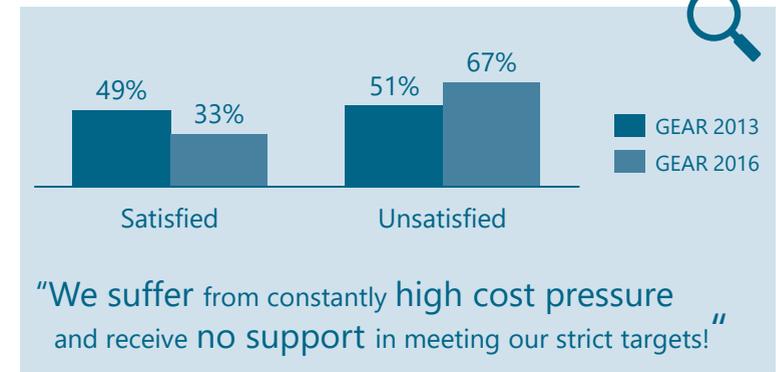
goetpartners' GEAR STUDY 2016 RESULTS

CRITERIA FOR SUPPLIERS' OVERALL SATISFACTION



Bar indicates impact of the criterion on overall satisfaction with the OEM;
% = Frequency of being mentioned by supplier

SUPPLIERS' SATISFACTION WITH MARGINS



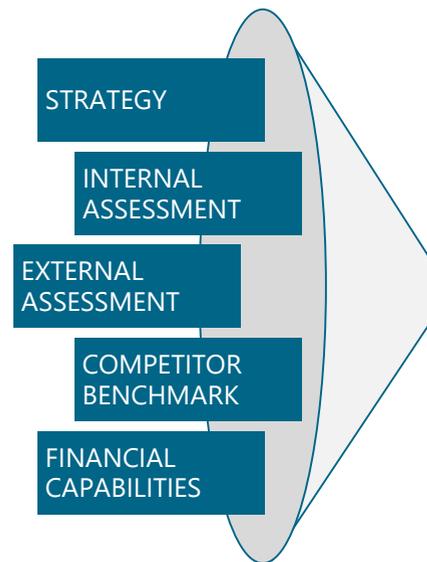
SUPPLIERS' SATISFACTION DURING PROJECT PHASES



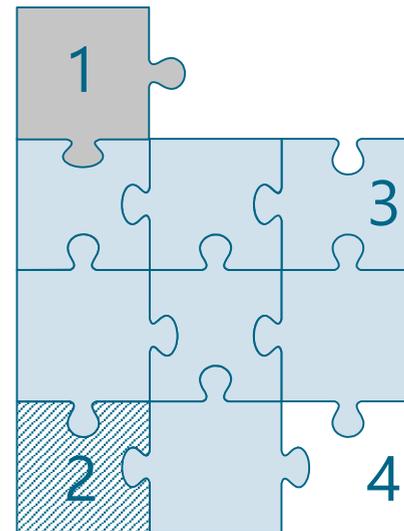
Strategic imperative: Challenge current portfolio to sharpen your value proposition

DERIVATION OF FUTURE VALUE PROPOSITION

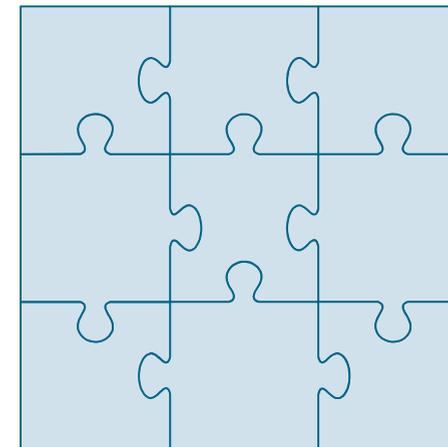
ASSESS STATUS QUO



DESCRIBE CURRENT SETUP



SHAPE VALUE PROPOSITION



1 CARVE OUT non-core business

2 RESTRUCTURE business operations

3 ADJUST product portfolio

4 M&A to extend product range

OUR APPROACH

Analyze portfolio and derive fields of action to create pathway for reaching derived value proposition

Identify non-core business and pursue carve-out to free up cash

Restructure current business operations with future relevance to enhance competitive positioning

Adjust current production processes to target future product portfolio

Complement reshaping of product portfolio through supplementary M&A activities

Through its unique value proposition of offering management consulting and corporate finance, goetzpartners covers all areas

Strategic imperative: Defy cost pressure by optimizing your manufacturing footprint

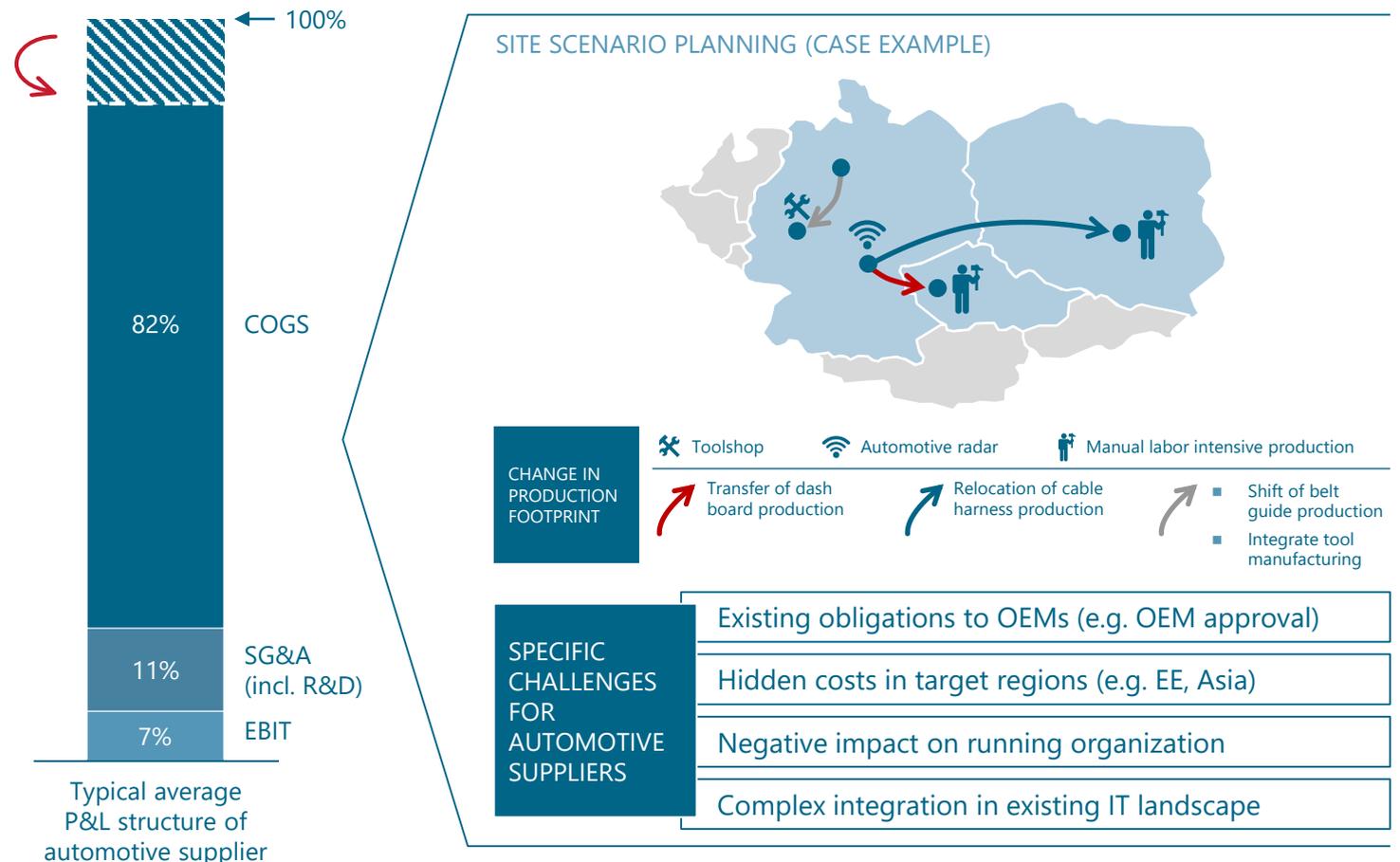
OUR APPROACH

Apply detailed scenario planning to set up a target operating model by analyzing different scenarios, including variations in timing, site shifts, and implementation models

Simulate communication strategies with OEMs, including handling of production part approval processes, aid payments and long-term commitments by using goetzpartners' "intelligent wargaming" based on non-cooperative game theory

Implement operational excellence through pragmatic roll-out planning and KPI tracking (considering random failures), as well as goetzpartners advisory with respect to local specifics and regulations

EXAMPLE: SUSTAINABLY LOWER COGS WITH FOOTPRINT CONSOLIDATION/SHIFT



Strategic imperative: Build an agile organization to become fit for the future

goetpartners AGILITY DIAGNOSIS AND TRANSFORMATION

goetpartners revealed a **strong correlation between the agility index^[1] and financial performance**. Agile leaders show 2.7x performance of weaker players

IMPLEMENT PROVEN AGILITY FITNESS PROGRAMS

COMPANY PERFORMANCE				
	STRATEGIZING	PERCEIVING	TESTING	IMPLEMENTING
PURPOSE & STRATEGY	3.8	3.7	3.5	3.6
LEADERSHIP & PEOPLE	3.8	3.6	3.4	3.3
COORDINATION & COLLABORATION	3.9	3.9	3.7	3.2
VALUE ADDED OPERATIONS	4.0	3.8	3.5	3.4
STRUCTURE	3.8	3.7	3.3	3.4

INDUSTRY BENCHMARKING				
	STRATEGIZING	PERCEIVING	TESTING	IMPLEMENTING
PURPOSE & STRATEGY	4.6	4.9	4.7	4.9
LEADERSHIP & PEOPLE	4.5	4.5	5.0	5.0
COORDINATION & COLLABORATION	4.0	4.8	5.0	5.0
VALUE ADDED OPERATIONS	5.0	4.8	4.7	4.9
STRUCTURE	4.3	4.9	4.0	4.9



- Fact-based DIAGNOSIS^[1] on cross-functional level (incl. all regions, units, and hierarchies)
- BENCHMARKING against internal units/ regions, competitors and car industry
- SETTING OF TARGETS and PRIORITIES based on company-specific degree of agility

- Execution of proven goetpartners AGILITY FITNESS PROGRAM based on previous target setting
- SHARED LEADERSHIP and CROSS-FUNCTIONAL TEAMS to handle speed and complexity of customer interfaces
- Continuous FEEDBACK LOOPS to improve performance and react to changing customer requirements

FROM CONSTITUTION ...

... TO PERFORMANCE

OUR APPROACH

Build an agile organization by conducting a fitness test to assess the company's degree of agility and reveal improvement potential

Benchmark the agility degree internally against relevant competitors and the automotive industry

Set targets and priorities to derive a customized fitness program across five company dimensions and four frameworks

Implement shared leadership models and define small, cross-functional teams to ensure full impact across the organization and avoid uncoordinated efforts

Set up feedback loops to rigorously measure, learn, and adapt to changing customer requirements

[1] The Agile Performer Index© developed in cooperation with Prof. Christopher Worley (NEOMA Business School)
Source: goetpartners analysis

About goetzpartners

ADVISERS FOR STRATEGY, M&A AND TRANSFORMATION

goetzpartners is an independent advisory firm for all key issues of entrepreneurial activity: strategy, M&A and transformation. This unique approach makes clients measurably more successful. The combination of corporate finance and management consulting creates sustainable added value when determining valid courses of action, reaching decisions and implementing them. Boasting a vast wealth of business experience, goetzpartners advises clients in all key industries world-wide: Business Services, Energy, Financial Institutions, Healthcare, Industrials & Automotive, Retail & FMCG and TMT.

CHALLENGERS WITH PERSONALITY

For the key business issues of strategy, M&A and transformation, standard solutions are rarely the right answer. On every project, goetzpartners ensures that there is always sufficient scope for proven methods to be combined with individual and client-specific approaches. Our consultants lay the foundations for excellent results by trusting their own opinions and experience and taking a strong stance on the entrepreneurial challenges to be resolved.

NETWORKERS AT THE HIGHEST LEVEL

Our far-reaching network of contacts, grown over decades, involves top decision makers in business and politics, and produces extraordinary advisory outcomes. Our close working relationship with prominent members of society opens up wide-ranging new perspectives. goetzpartners thinks beyond borders and connects the right people with the right ideas. That way, goetzpartners creates valuable synergies for all involved.

EXPERTS ON COURSE FOR SUCCESS

Founded in 1991 by Dr Stephan Goetz and Stefan Sanktjohanser, goetzpartners today ranks among the 10 best-performing advisory firms in Germany (Lünendonk®). goetzpartners has received awards three years in a row as part of the "Best of Consulting" contest by the renowned German magazine "WirtschaftsWoche", most recently in the in the "Project Excellence" category (2016). Internationally, the company operates in 11 countries out of 14 offices with more than 350 professionals.



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