Standing on the Verge of Momentous Change:

Automotive Supplier Industry in Turkey

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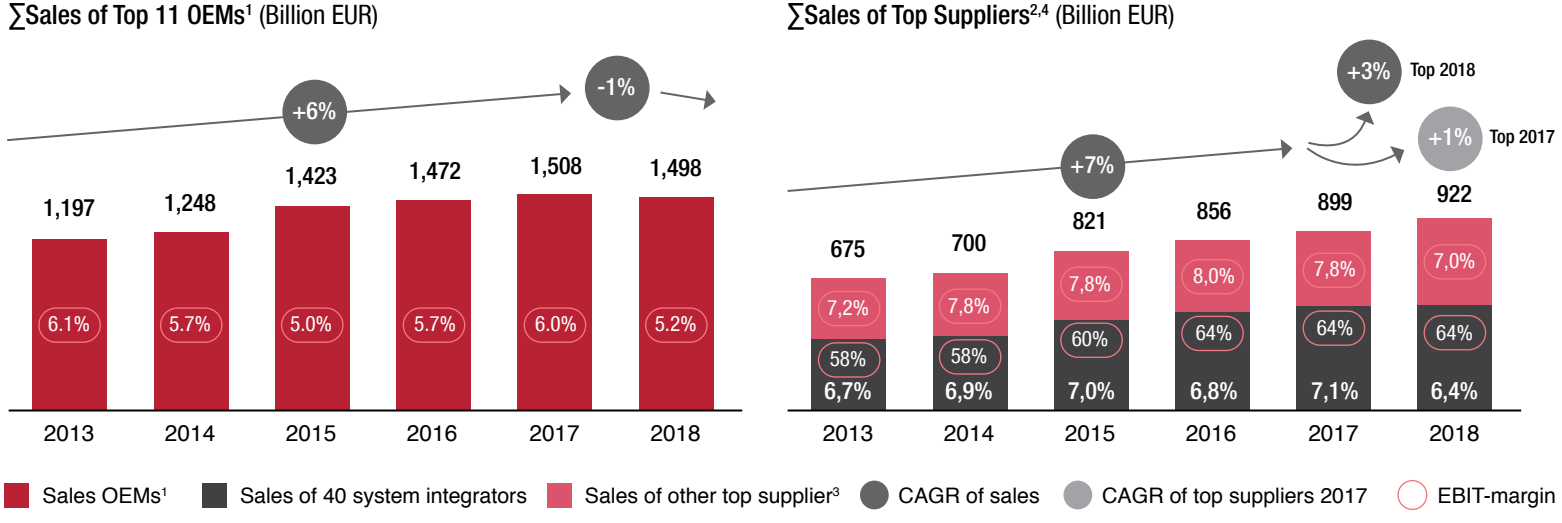
Contents

Introduction

After several years of continued growth, revenues and margins for OEMs and automobile suppliers are now under pressure (Exhibit 1). Companies are now dealing with deep-rooted shifts in the value chain and are being forced to play outside their traditional fields of expertise. Facing with competitive pressure from technology companies, OEMs and suppliers are now looking to reducing their cost base, making investments in technology and building up new competencies.

Exhibit 1



[1] Top OEMs: VW, Toyota, Daimler, GM, Ford, FCA, Honda, BMW Group, Nissan, Hyundai, SAIC Motors
[2] Sales are partly based on extrapolations / estimates
[3] Among others Bosch, Continental, Denso, Faurecia, Hyundai Mobis, Magna
[4] Joyson Group/Tenneco with sales growth 2017-2018 (purchase of Takata and Federal Mogul respectively)

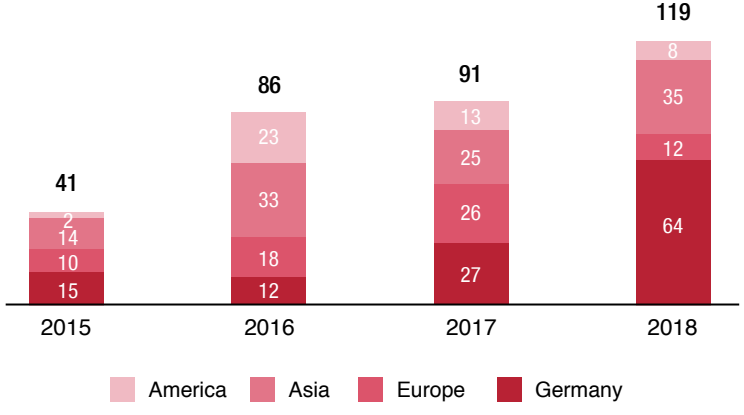
CAGR: Compound Annual Growth Rate

Source: Strategy& analysis

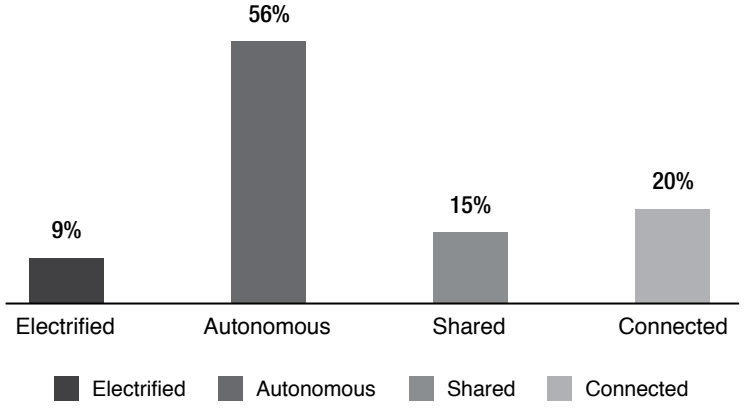
Major trends, signaling the future of the industry are clustered around connected, autonomous, shared and electric-drivetrain (CASE) technologies. These trends are inducing the value chain to alternate, and capabilities are transforming. New competitors, mainly software-oriented companies, are coming into play and new forms of partnerships are emerging (Exhibit 2). To address the new market reality, suppliers are in need of a solid understanding of the changing landscape and conclusions on whether and how to adjust their existing business models.

Exhibit 2

Country Comparison of OEM's Partnerships[1]



Purpose of OEM's Partnerships[1,2]



[1] Cooperation with an OEM as initiator was considered
[2] Sample from > 100 companies

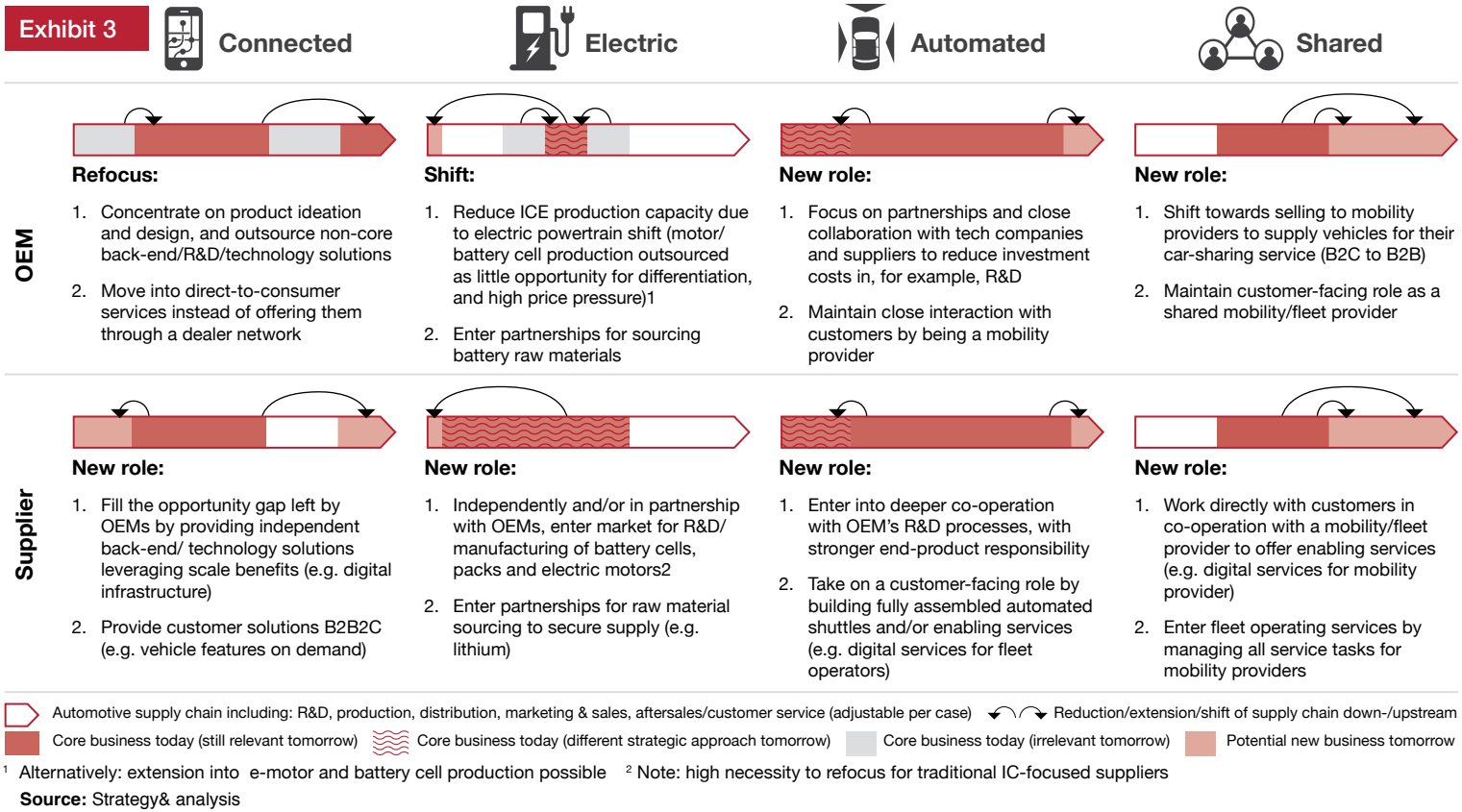
Source: Strategy& analysis

Global Trends in the Automotive Industry

Changing Nature of the Value Chain and Capabilities

Technology-driven transformation is inducing upward and downward mobility across the value chain by promoting formerly Tier 2 or 3 digital companies to Tier 1 and causing OEMs to lose their strategic standing. Thus, suppliers are in a position for exploring new software and service opportunities as their present-day core processes are becoming gradually irrelevant. At each point on the automotive value chain, including R&D, production, distribution, marketing & sales and aftersales/customer services, we expect to keep observing up/downstream movements and changing business models as illustrated (Exhibit 3).

Exhibit 3



[1] Alternatively: extension into e-motor and battery cell production possible [2] Note: high necessity to refocus for traditional IC-focused suppliers

Source: Strategy& analysis

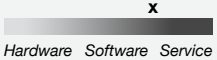
Particularly, for suppliers who are operating over traditional internal combustion-focused business, we are estimating an increasing number of R&D activities with OEMs over battery cells, packs and electric motors. Additionally, we present five potential new ways to play for suppliers to shift their business in the near future, together with success factors, which are necessary but not sufficient (Exhibit 4).

Exhibit 4

Five New Ways to Play for Auto-Industry Suppliers

1 Smart Infrastructure Enabler

Digitally-enabled traffic solutions for integrated mobility systems to governments/ institutions (e.g. city councils)

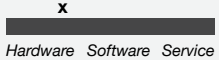


Success factors[1]:
- Technology excellence
- Integration capabilities
- System adaptability

Example: Intelligent traffic-management system for a Chinese city that integrates transport information for all travel options

2 Automated Shuttle Manufacturer

Fully assembled shuttle for public and corporate institutions (e.g. city councils/ shuttle service provider)

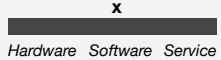


Success factors[1]:
- Production excellence
- Cost efficiency / lean SC[2]
- Fast time-to-market

Example of international automotive supplier: autonomous, electric, shared people mover in co-operation with mobility start-up and system provider

3 Platform Provider

Platform-as-a-service for business partners (e.g. OEMs, (public) mobility providers, fleet operators)

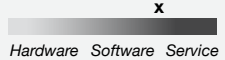


Success factors[1]:
- Agile development
- Flexible & open domain
- Customer centricity

Example of global industrial supplier: PaaS[3] for the Internet of Things with end-to-end solutions incl. hardware, software and services

4 Mobility Intelligence Provider

Mobility software services and centralized data analytics for fleet operators and mobility service providers

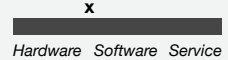


Success factors[1]:
- Real-time data analytics
- Service integration
- Customer centricity

Example of German OEM's mobility service company: fleet management software for intelligent mobility solutions

5 Vehicle Feature on Demand Provider

Product-as-a-service for end consumers through e.g. mobility providers, allowing for direct monetization



Success factors[1]:
- Partnership management
- Customer centricity
- User experience

Example of manufacturing company/ supplier: fully automated "valet parking" (parking and car return upon user's request via app)

Low to high focus areas

[1] Outlined success factors are most relevant ones but not limited to these [2] Supply chain [3] Platform-as-a-service

Note: x = key success factor

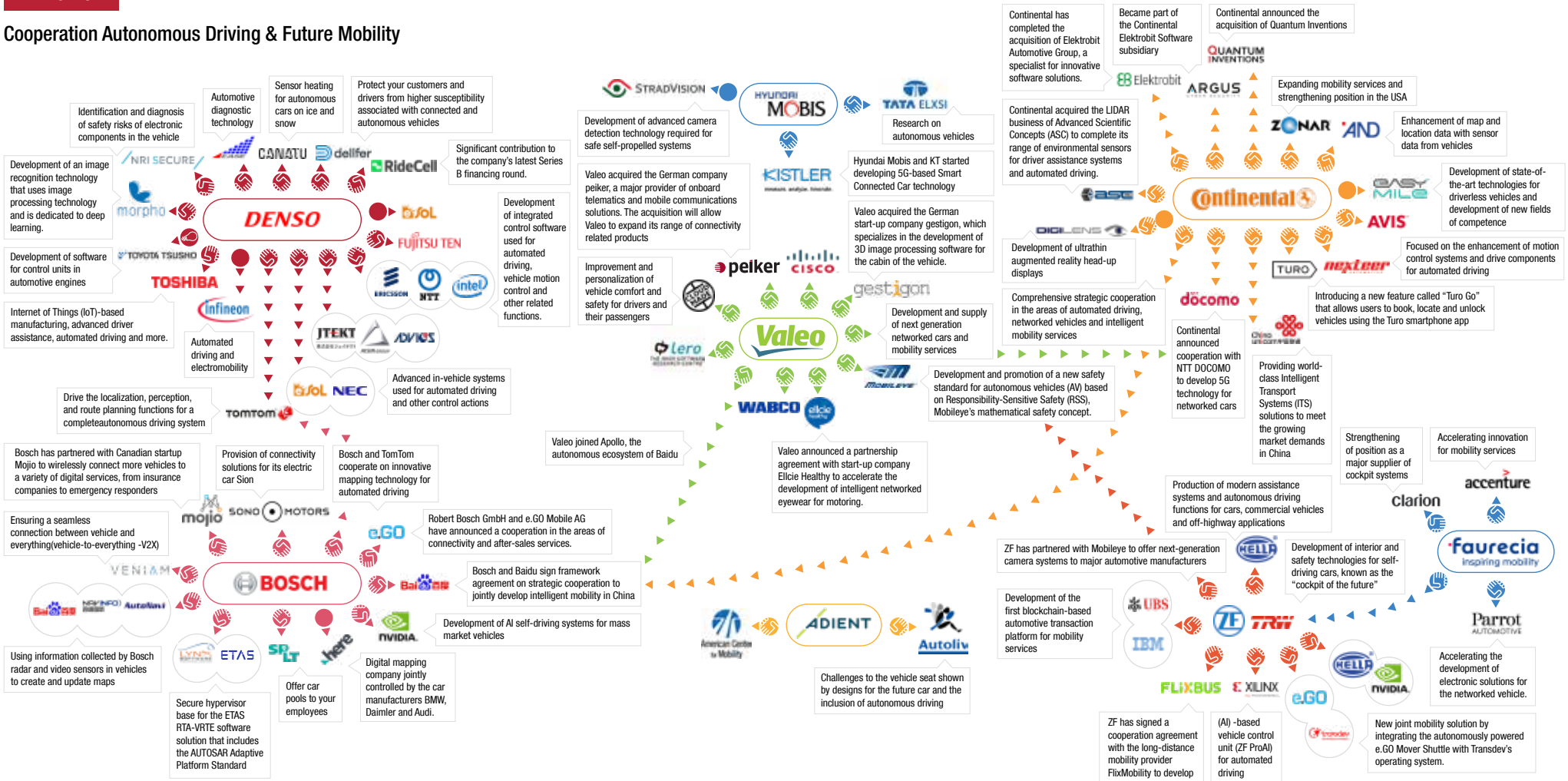
Source: Strategy& analysis, Siemens.com, Alphabet.com, Boschservicesolutions.com, Microsoft.com, Continential.com, Zf.com, Mahle.com

New Partnerships and Increasing Volume of M&A's

In order to gear up for the new era, acquisition of software competencies or partnership agreements are becoming more and more widespread among the industry players, namely OEMs, system integrators and auto suppliers. Yet, the underlying reason is now different than aggressive sales growth or geographical expansion. Henceforth, M&A activities are targeting portfolio extensions towards software and electrics / electronics intensive areas, ultimately leveraging the acquired know-how to make existing products fit for the future. The intertwined figure (Exhibit 5) illustrates how leading system integrators are opening up new business areas through strategic acquisitions. In Turkey we can also observe similar partnerships (e.g., around the national car project).

Exhibit 5

Cooperation Autonomous Driving & Future Mobility



Source: Strategy& analysis

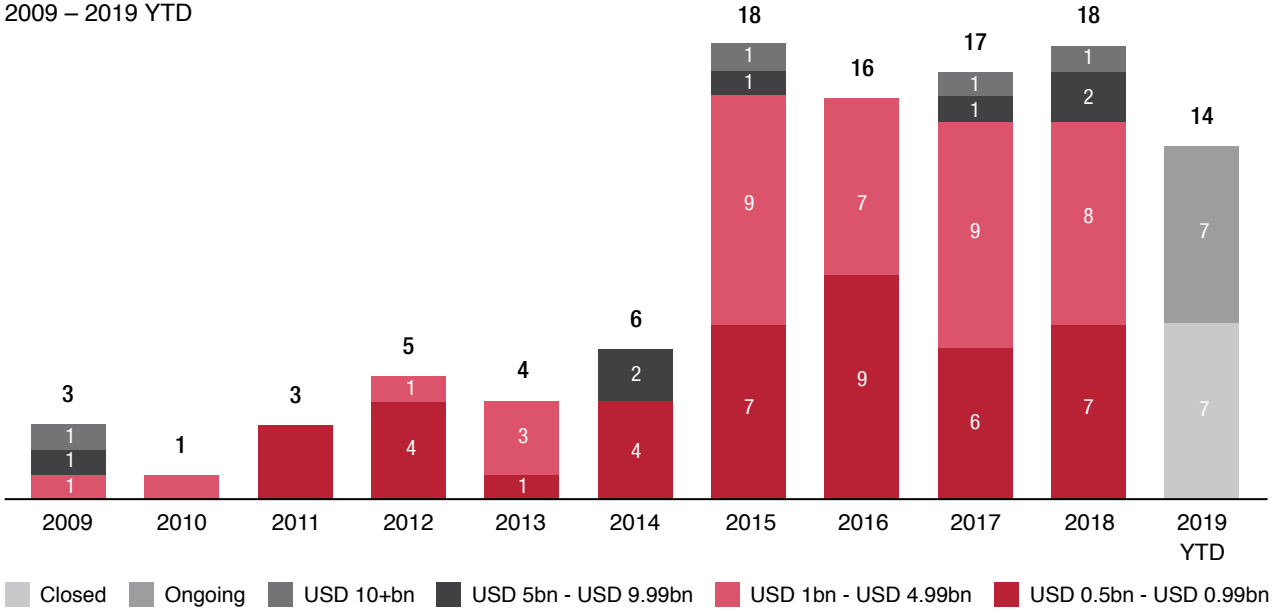
(Strategic) partnership | Strategic investment (e.g. M&A) | Investment | Others

Historically, companies investing in cost leadership have always gone for M&A to achieve economies of scale through industry consolidation. In conjunction with the rising new trends explained above, our observations suggest that the amount of mega deals are increasing in the industry (Exhibit 6). It is also worth mentioning that supplier sales growth is often accelerated by M&A in all markets across the globe including countries that have historic organic industry growth. However, targeted expansion of the product portfolio, concentrating on the positioning in the future, has already started to be considered as strategically much more important than revenue growth through M&A.

Exhibit 6

High-Level Overview of the Consolidation Trend

Amount of Mega Deals and Deal Value
2009 – 2019 YTD



Source: Strategy& supplier database (data status 2010 – 2018), Thompson Reuters, Cap IQ, Mergermarket.com

Fiat Chrysler and **Peugeot owner PSA Group** have announced the merger of two companies on **October 31, 2019.**

The deal would create the world's **third-largest automaker** and help spread the huge cost of **developing electric** and **autonomous vehicles**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Automotive Suppliers in Turkey

The Turkish automotive industry faces similar challenges as is the case globally: declining volumes and margins. The downward trend at the center of the value chain is spreading out to lower levels in recent years.

In 2018, sales from production went down by 0.7% and 2%, compared to 2017 for OEMs and auto suppliers, respectively. For the period between 2014 and 2018, Top 10 auto supplier's sales having even dropped by 1.6% annually on average (Exhibits 7&8).

Export volumes experienced negative growth in the first half of 2019, compared to the same period in 2018. In this period, exports of auto suppliers dropped by 3%.

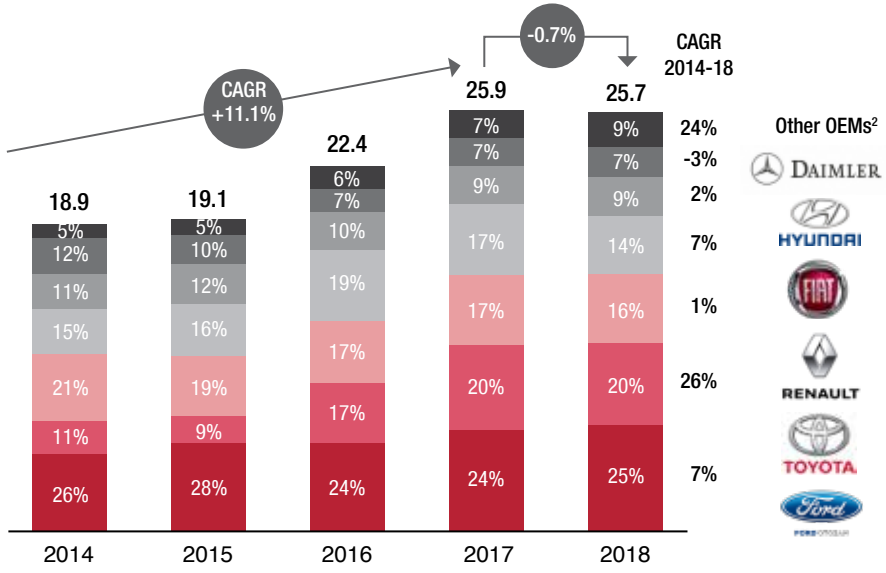
According to our discussions with industry leaders, there are two underlying reasons that hinder the future growth and pave the downward trend for automotive suppliers in Turkey:

1. Firstly, suppliers in Turkey are facing several challenges in the adoption of new technologies, resulting in low value-added products and drop in profits given increasing demand for technology-based products globally.

2. Secondly, there is a lack of strategy on a firm and country level. The lack of strategy results in trying to get through the day, but not considering on which market positioning (way to play), capabilities and products are required in the future to remain competitive. Investments are either not made at all or are still not made in the right areas.

Exhibit 7

Top 10 OEM Sales[1] – Turkey (Billion USD)



[1] Sales from production
[2] Otokar, BMC, Honda, Man - They make less than 10% of Top 10 OEMs Sales

Source: Istanbul Chamber of Industry, Desktop Research, Strategy& Analysis

Exhibit 8

Top 10 Automotive Supplier Sales[1] – Turkey (Billion USD)

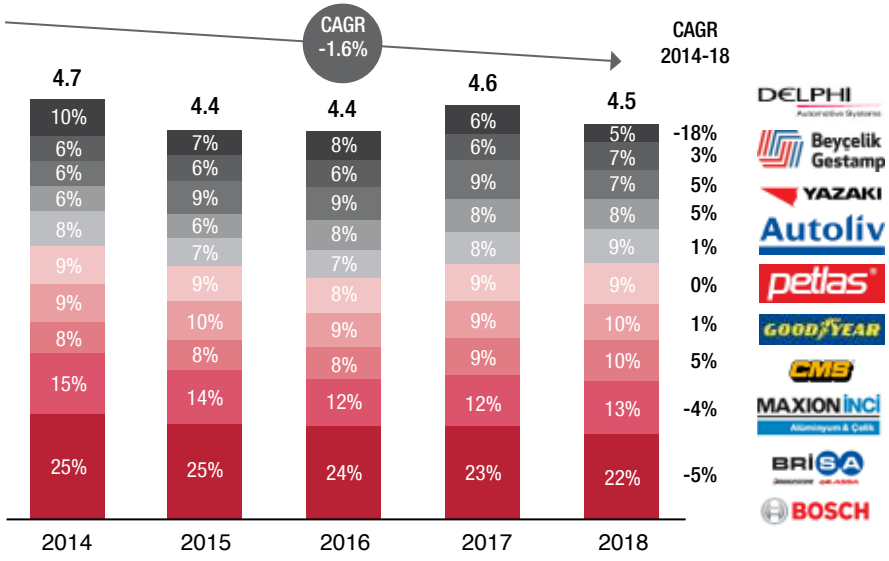
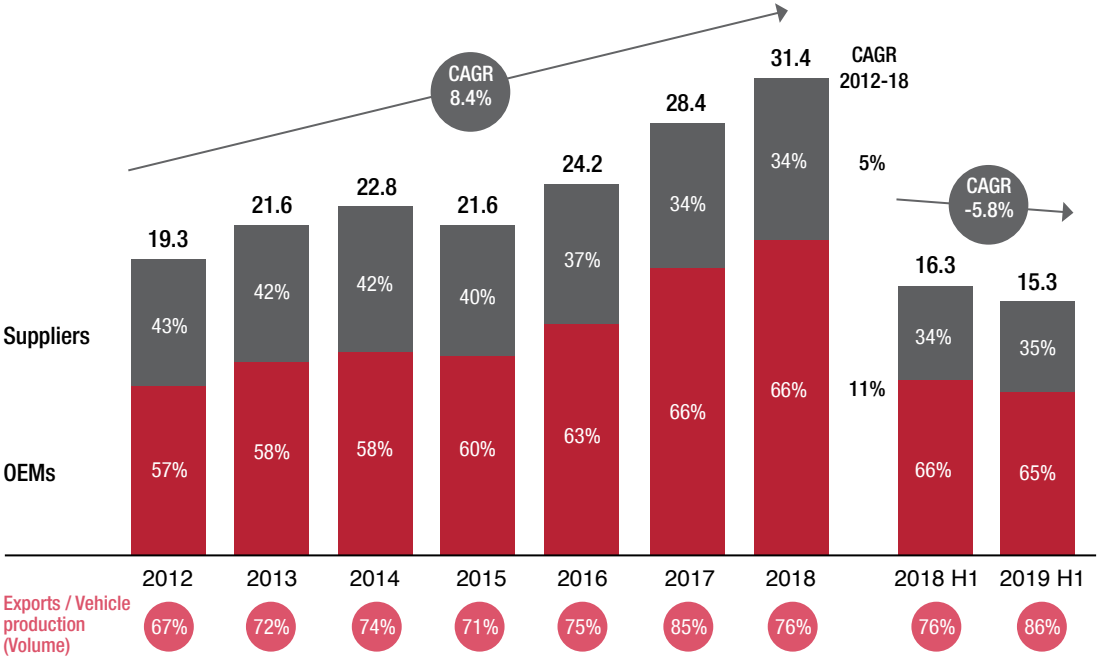


Exhibit 9

Export Volumes of OEMs and Suppliers (Billion USD)



Source: Turkish Exporters Assembly, Turkstat, Automotive Manufacturers Association, President of the Republic of Turkey Investment Office, Strategy& Analysis

Understanding the Problem of Technology Adoption

The transition from traditional systems to high-tech systems is the primary challenge for the Turkish automotive suppliers, mainly producing mechanical systems. Our discussion with industry players reveals that suppliers in Turkey are notoriously timid in engaging R&D activities. In particular, they are concerned to face potential technical challenges and to spend time and resources to overcome them. Additionally, as the process of adopting new technologies takes time to adjust and monetary returns are only realized in subsequent years, the shift to innovation tends to be put on hold, causing a low technological progress observed among the Turkish supplier companies.

The problem involves multiple actors and their interaction with each other. Firstly, OEMs in Turkey are either direct investments of global OEMs or joint ventures. This leads the decisions on technology and innovation to be led by global organizations rather than the local entity. Furthermore, local production is mainly based on combustion engines and not EV/Hybrid technology.

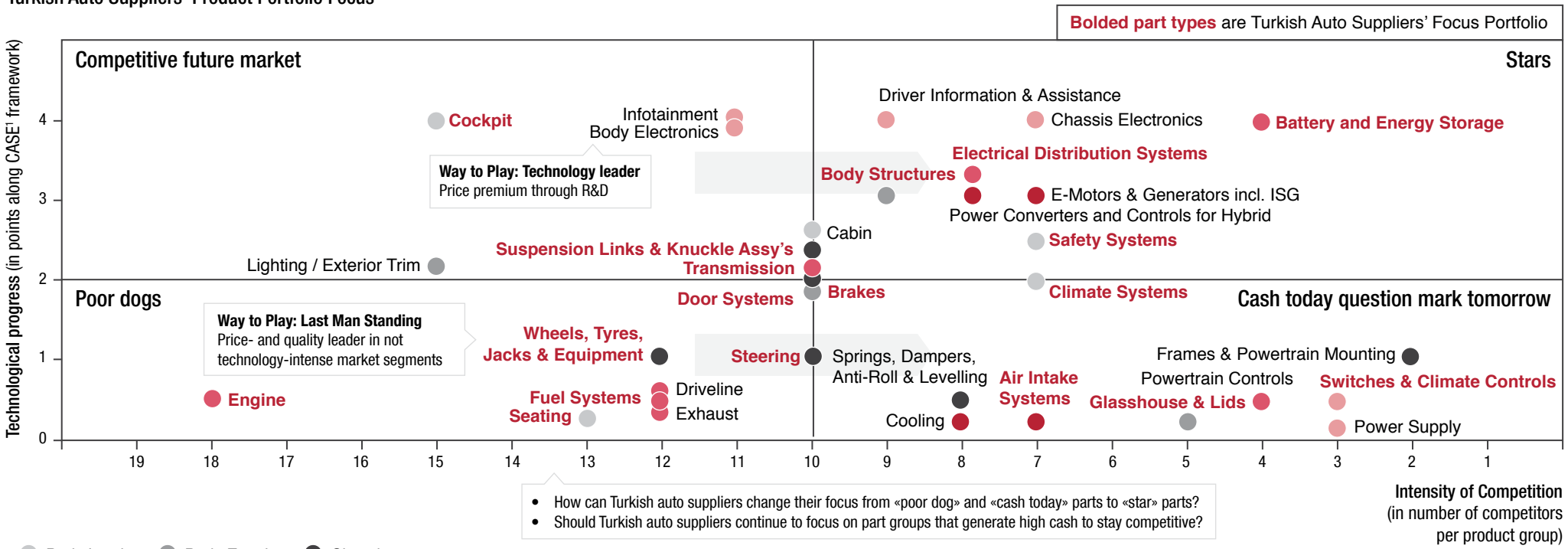
Secondly, it is the input / factor market that speeds up or hinders the technology adoption of Turkish automobile suppliers. On the labor side, auto suppliers are now competing for talent with digital companies and the market is running short of skilled-labor. Furthermore, the current level of collaboration between suppliers, universities and start-ups is not sufficient to create an efficient and sustainable innovation environment.

Thirdly, government-backed funds and incentives have not been utilized by companies in a way that enhances innovation level in the industries. Mainly, the government is providing funds and incentives in two forms: 1) tax incentives and supports, which enable companies to pay lower tax, social security premiums and 2) cash grants, which are direct and non-refunding cash injections for approved project(s) of the companies. Generally, the most common form of government-backed funds and incentives is tax incentives, and this has not provided the desired level of impact for fostering innovation. In terms of cash grants, support is provided either for the improvement of a (current) product or production process improvement purposes.

As these incentives and funds provided to companies have not created the expected impact from innovation perspective, governmental funding mechanisms has recently been shifting to be provided for mid-high and high technology level products and technological development itself. In order to create an innovative environment, it is also critical to increase the level of education, adopt supportive organizational / management structure, and facilitate access to relevant funding – particularly the access of small-scale companies and start-ups.

Exhibit 10

Turkish Auto Suppliers' Product Portfolio Focus



[1] Along the dimensions: Connected, Autonomous, Shared, Electric (CASE)

Source: Strategy& Analysis

Exploring the Right Direction: Firm and Country Level Strategy Requirement

As competitive pressures mount and new players show up with new competencies, auto suppliers are left with hard choices – about what products and services to keep or cut, what customers to serve and what capabilities to invest in. Our discussion with industry players indicates that the future way-to-play will be either technology leadership or cost leadership. Yet, auto suppliers are not focusing on their differentiating capabilities and determining strategic options.

The Turkey's Automobile Joint Venture Group unveiled its first domestically-produced electric vehicle "TOGG" in December 2019, stating that it aimed to produce up to 175.000 electric vehicles per year in a project experted to cost USD 3.7 billion over 13 years. This project shows Turkey's direction for electric vehicle production and therefore, in order to keep up with this strategic direction, suppliers should adapt innovation-based strategies going forward.

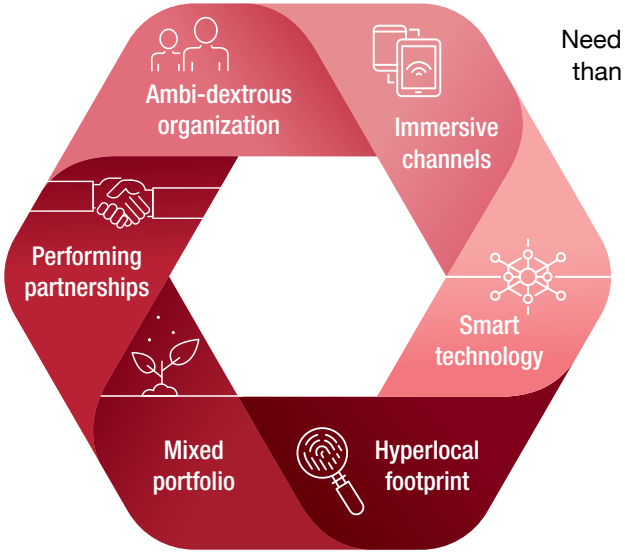
Exhibit 11

Focusing on Selected Capabilities

"Industry **workforce will be cut by at least 50%** by 2030 and employees who remain will need very different skills"[1]

Need for collaboration to stem high costs: tech companies have on average **a 10% higher R&D spend** than auto suppliers[2]

One German OEM aims to have **half** of its revenue coming from **digital offerings by 2020**[3]



Need for omni-channel excellence: e.g. more than 70% of train tickets are already bought **online** (via app, computer)[4]

Suppliers show strong growth of **+450% in M&A activity for software** related competencies[5]

Need for **optimized global sourcing as labor costs make up ~30%** of total interior parts costs when manufactured in Western Europe[6]

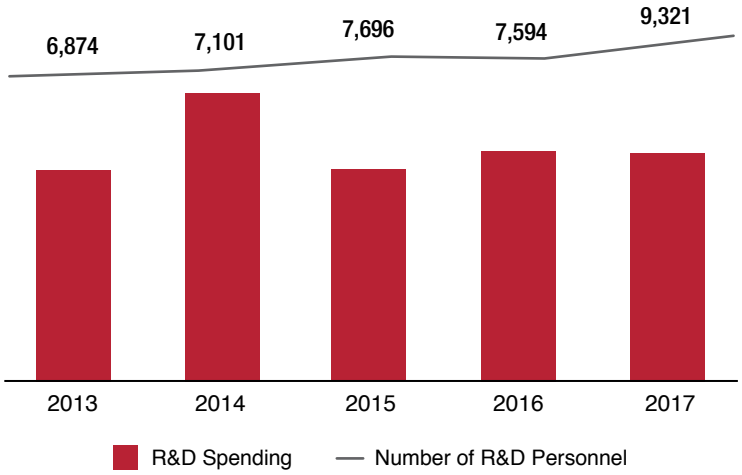
[1] PwC Strategy& report "Transforming vehicle production: How shared mobility and automation will revolutionize the auto industry by 2030"
[2] Strategy& analysis based on annual reports of several technology companies and suppliers; average R&D spent as percentage of revenue in 2018: 16% tech. vs. 6% supplier
[3] Strategy& analysis based on OEM press releases
[4] Tagesspiegel press release on Deutsche Bahn tickets
[5] Strategy& analysis
[6] PwC Strategy& report "Capabilities-driven restructuring – A manufacturing footprint strategy for a commodity automotive supplier industry"

Turkey as a country is not alone with a requirement for a clear vision and strategy. Even those countries that are leaders in automotive industry have the same problem: the future is not clear. Nevertheless, they take initiatives to assume leadership in some areas. Turkey is already positioned as an important hub for global players that invest in engineering and R&D; such as AVL, FEV, Idiada and Ricardo. Additionally, there are multiple R&D incentives in actions and companies are increasing the number of R&D personnel. Yet, the problem lies in that there is no unifying force, partially backed by the government, to induce roles and responsibilities on the value chain. Without such structures or forces, the production market ends up in “everyone-fighting-with-everyone” industry model and companies are operating with a low level of specialization.

Exhibit 12

Turkey’s Research & Development Landscape

Turkey R&D Personnel and R&D Spending Development - Automotive
(Headcount, Million USD)



Source: Turkstat, President of the Republic of Turkey Investment Office, Strategy& Analysis

Conclusion: Opportunities on the Horizon and Key Lessons

Opportunities

OEMs: Existing close relations with local and global OEMs and understanding their future needs plays a crucial role for Turkish automotive suppliers. Our discussion with industry players reveals that the subsystems of motor, electronics and software are becoming new focus areas. Particularly, OEMs are demanding autopilot, battery cooling systems, electronic and body control unit, camera sensors and electric motors to be produced locally.

Location advantage: Turkey is well-known with its strategic location. There are two important takeaways for Turkish auto suppliers. Firstly, companies from South Korea, Japan and China which are targeting EU market can be addressed to create joint ventures. They are looking for regions of production having close distance to assembly plants in EU region. Thus, Turkey offers a great place to produce and Turkish auto suppliers have a remarkable chance to increase their know-how through having partnership with companies from East Asia. Secondly, Turkish auto industry has a huge potential to serve EMEA region and to penetrate the market with urgent delivery features, especially given also the customs union with the EU.

Building on existing capabilities: In the last decade, Turkish auto suppliers gained an important experience on how to develop products and vehicles. Furthermore, the industry already achieved standardized quality levels. By choosing the right partner for joint ventures, Turkish auto suppliers can aim for extending their product portfolio to technology-intensive products.

Strong Labor market: To attract global auto suppliers looking for cost reduction, the Turkish labor market has a lot to offer. On average, a Turkish engineer with the similar skill set costs up to %66 less compared to its peers in EU. Additionally, Turkish workers are not reluctant to work overtime and have better absenteeism rate compared to Europe that makes hourly labor cost very competitive.

Key Lessons

Strategy on Firm Level: Auto suppliers should decide on their strategy over cost leadership or technology leadership. Changing product portfolio and opening up new product lines require reallocation of resources and solid evaluation of future financing plan together with timeline assessment for required competencies.

Strategy on Country Level: Government and companies should work together to set up the value chain positioning and organize division of tasks in order to prevent «everyone-fighting-with-everyone» industry model. Tax incentives or subsidy policies should be set out to increase firm-level granularity on the value chain.

Roadmap Design: Firms should engage in roadmap planning, setting target levels and implement commitment to these levels. The measure of success should be clear. (E.g. investing significant part of the sales revenue in R&D, while maintaining the level of the international competitors in terms of EBIT margins).

Partnerships: Firms should be open to new partnerships with digital / technology companies, learn from them and update their cultural mindset accordingly.

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TAYSAD

Established in 1978, TAYSAD is the sole and most competent representative of the Turkish automotive supplier industry. With more than 450 members, the association represents 65% of the output of the automotive supplier industry and 70% of the industry's exports. 80% of members operate in the Marmara region; 12% in the Aegean region and 8% in other regions of Turkey. 450 TAYSAD members employ more than 200,000 people.

25% of members have foreign partners who hold varying levels of shares. TAYSAD is a member of CLEPA, the European Association of Automotive Suppliers (www.clepa.be). In addition, the association has a reference position within Turkey for domestic and international OEM's, Tier 1 Suppliers and institutions being the representative of Turkish Automotive Parts and Components Suppliers.

TAYSAD holds ESCA Silver Label and ISO 9001 Certificates.

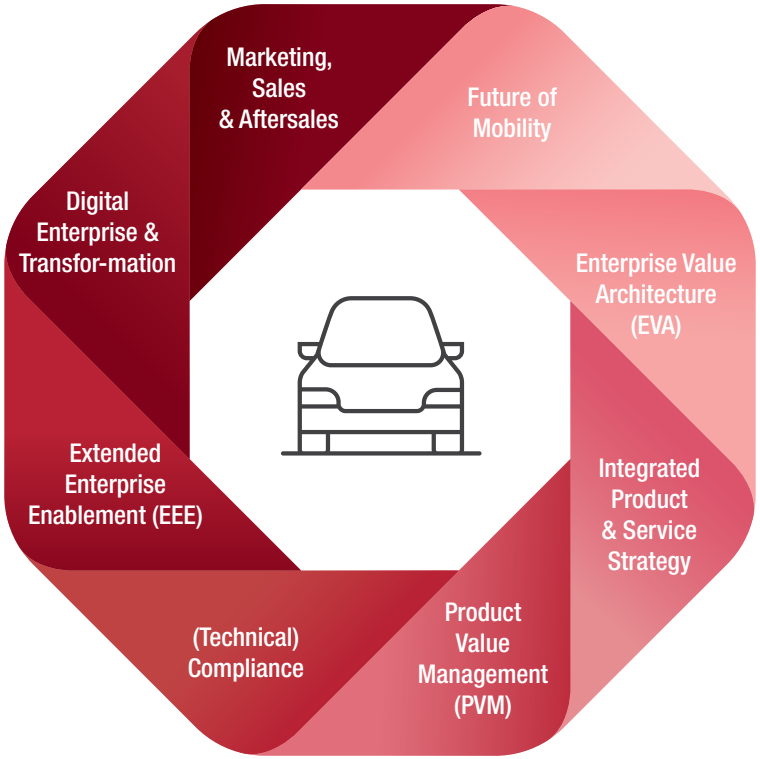
Automotive practice service offerings

- Distribution and retail strategy (offline and online)
- Dealer business model and direct sales
- Market entry strategies for new players
- Ownership vs. usership models

- Digitization strategy and target picture
- Digitization of core processes (e.g. predictive maintenance, digital supply chain, RPA1)
- Digital transformation acceleration (e.g. org set-up, governance, KPI's, tracking)

- Organization, product & process maturity assessment
- Enablement through preventive, reactive and sustained solutions
- From supplier nomination to End of Production

- Risk analysis along product lifecycle
- Prioritization of risk mitigating measures
- Implementation of best practice technical compliance management system to ensure conformity with technical compliance standards



- Mobility-as-a-service strategy and ways-to-play
- Capability requirement definition, development & sourcing (incl. supplier selection)
- Go-to-market, pilot set-up, launch support and scaling

- Development and realization of value creating inorganic strategies
- Enterprise portfolio review
- Improvement of strategic positioning and business performance
- Optimization of balance sheet and tax structure

- Product and service strategy, opportunity sizing & proposition design
- (Digital) unit set-up, capability building and talent
- Roadmap, risk assessment and (digital) portfolio management/ divestiture

- Transparency over cost and customer value
- Technical and commercial opportunities for cost reduction and value creation
- Creation of holistic PVM organizations (i.e. strategy, operating model, methods & tools, resources)

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