



► Fit for Automotive

Get your start-up ready for the
automotive industry

INSIGHTS

//01

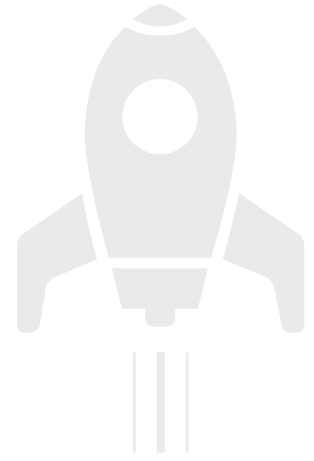
Start-ups in automotive business are increasingly becoming the focus of OEMs and investors.

//02

Start-ups must aim for automotive readiness (standards and regulations) while maintaining their agility and innovativeness.

//03

OEMs must expand their value chain with new, innovative players for sustainable success.



01 | The Start-up Boost

How start-ups can become automotive suppliers and why investors and OEMs should invest in and engage with start-ups.

Automotive OEMs (original equipment manufacturers) increasingly face challenges when it comes to developing or sourcing innovative solutions concerning digitalization, connectivity, and electrification. This innovation gap can be closed by exploring new options, such as increasing partnerships with start-ups and new technological players entering

the automotive field. However, integrating these solutions into the complex automotive ecosystem and highly complex supply chains remains a significant challenge for all stakeholders: start-ups, OEMs, and investors.

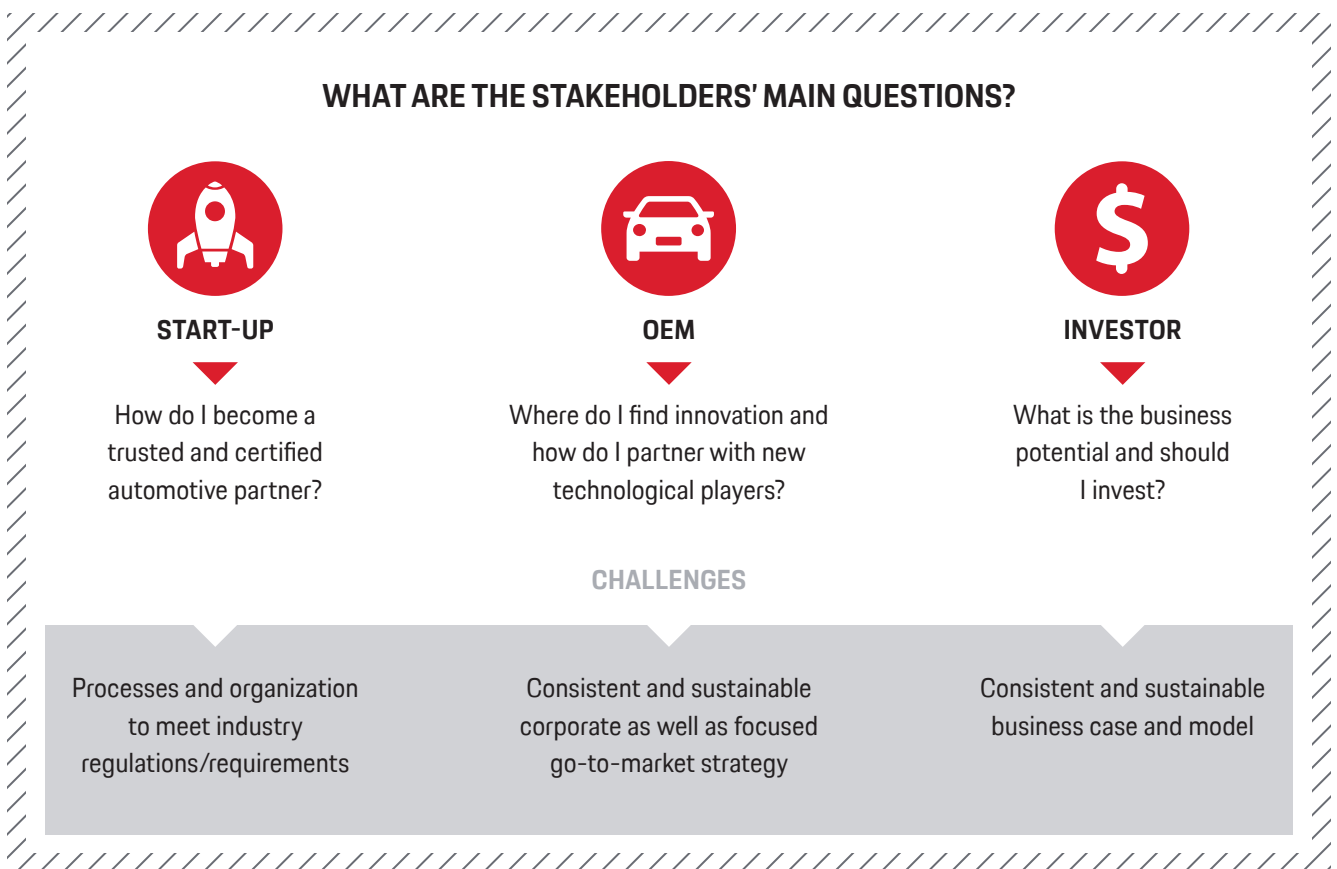


Figure 1. Overview of initial questions for the different stakeholders

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While the automotive industry seems to be overwhelmed by mega-trends such as connectivity, autonomous driving, shared services, and electrification¹, many start-ups and new technological players are at the forefront of innovation in the automotive field. Established and profitable automotive suppliers consistently deliver high-quality products to OEMs, but the real key driver of disruptive and visionary innovation is the continuously growing base of start-ups². Fast-growing companies such as DJI, Velocopter, and Waymo are an unparalleled force when it comes to innovative and disruptive ideas. Automotive managers have become aware of the potential competitive advantage those innovators bring to the table and recognize the scaling potential of the digital products and services these firms develop³. At the same time, a boom in venture capital has led to a strong increase of investors

financing ideas of visionary start-ups. All of this has resulted in a growing number of start-ups now establishing themselves as automotive suppliers.

While partnerships with new players seem promising, reality kicks in when start-ups and new technological players are confronted with the strict regulatory requirements, the complexity of hardware and software development, and the rigid requirements of automotive supply chains (see Figure 2)⁴. In order to address these challenges, Porsche Consulting has developed a flexible approach that helps start-ups get "Fit for Automotive" in the areas of strategy, certification, and process standardization while retaining the competitive advantage of fast moving start-ups.

Start-ups face high requirements from investors and the automotive industry

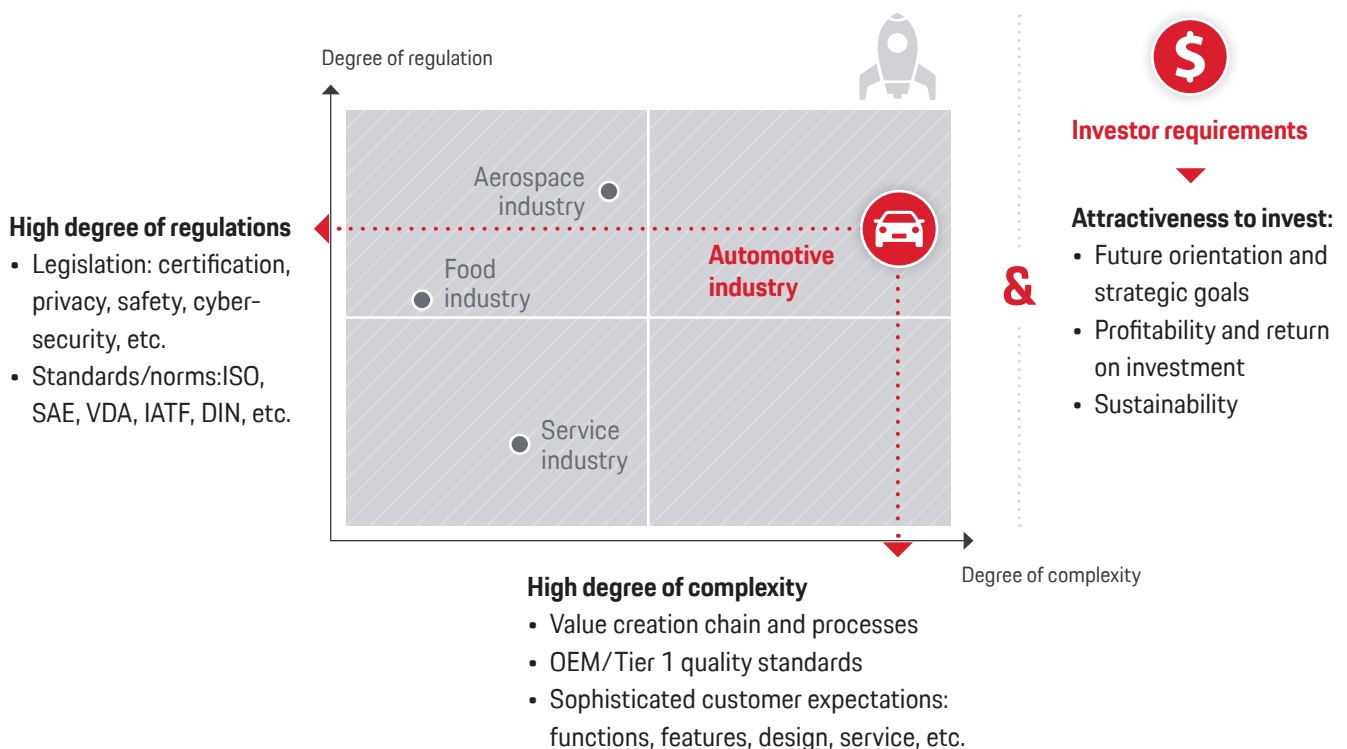


Figure 2. Automotive Industry within regulation and complexity

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¹ Statista-Umfrage, "Vorbereitung könnte besser sein", Handelsblatt, 08.07.2019 (Page 4)

² Kollmann, T., et al., „Geschäftsmodelle“, Deutscher Start-Up Monitor 2018, Oct. 24th, 2018 (Page 47)

³ Kollmann, T., et al., „Geschäftsmodelle“, Deutscher Start-Up Monitor 2018, Oct. 24th, 2018 (Page 26)

⁴ Kollmann et al., „Geschäftsmodelle“, Deutscher Start-Up Monitor 2018, Oct. 24th, 2018 (Page 53)

02 | Recognizing the Challenges

Challenges start-ups face on their way to becoming a tier-n supplier.

While visionary start-ups are at the forefront of product and service innovation, they frequently lack experience when it comes to professionalizing their business and setting up the organizational structures and processes to sustainably establish themselves in the automotive field. Regulatory, legal, and quality requirements combined with stringent demands on product robustness and reliability are significant hurdles for

start-ups to overcome. It is important to identify the central challenges faced by: start-ups when moving into a tier-n position, OEMs when integrating a new, promising technological player into their supply chains, and investors when deciding whether to commit themselves financially. The following presents a summary of these main challenges.

// STRATEGIC CHALLENGES

▶ **START-UPS' VISIONARY PRODUCT RANGE AND AMBITIOUS MARKET OBJECTIVES LACK CLEAR FOCUS ON CORE PRODUCT/SERVICE AND INDUSTRIALIZATION CAPABILITIES.**

Start-ups' Challenges | A major characteristic of start-ups is the visionary and innovative approach to the products and services they develop and plan to monetize in the future. But visionary characteristics and broad product ranges go hand in hand with complicated product development streams, a high degree of complexity, and industrialization efforts.

OEM/Investors' Challenges | This frequently collides with the requirements of OEMs and investors. They require more than various minimum viable products that lack quality and maturity level and might be difficult to industrialize on a large scale. Potential customers and investors therefore require a clear product and customer focus — whether luxury, premium, or mass-market — that ultimately defines subsequent product characteristics, such as quality, price, or production processes.

// R&D CHALLENGES

▶ **FAST PROTOTYPING ABILITIES AND HIGH FLEXIBILITY LEAD TO INSUFFICIENT SYNCHRONIZATION WITH LONG AUTOMOTIVE PRODUCT DEVELOPMENT PROCESSES.**

Start-ups' Challenges | Start-ups' agile and "fail fast and often" mentality enable them to continuously develop ideas and bring them to life by prototyping and experimenting. OEMs, however, require tier-n suppliers to be perfectly aligned with their processes of product creation and production run-up. Synchronization and alignment with OEM procedures are crucial and pose challenges for start-ups with insufficient structures and experience in the automotive process environment. Furthermore, product life cycles usually last for half a decade or longer. This also holds true for R&D cycles which often feature 40 to 50 months of product development. Start-ups must therefore invest in high-quality prototypes and pilot production tools while not generating profits and potentially without security about the subsequent future.

OEM/Investors' Challenges | OEM customers rely on the ability of suppliers to connect into those long product life cycles and cannot afford to lose suppliers shortly before or during initiating serial production of vehicles. Additionally, a great amount of effort is required to integrate new suppliers into competence fields like software development, with its hundreds of millions of coded lines, or hardware testing.

// PRODUCTION CHALLENGES

▶ EXPERIMENTAL PRODUCTION MAY NOT SUFFICIENTLY SUPPORT AUTOMOTIVE SUPPLY-CHAIN STABILITY.

Start-ups' Challenges | In most start-ups and young enterprises, product development and production facilities are planned, built, and operated in an experimental fashion. When entering the automotive supply chain these firms are suddenly confronted with rigorous OEM delivery conditions and contractual obligations. Producing and delivering the goods in a stable process environment with high demands on quality, quantity, and cost competitiveness represents one of the severest challenges for start-ups.

OEM/Investors' Challenges | For OEMs, the stability of the logistics system is essential as JIT supply chains require reliable delivery. Additionally, investors will carefully examine the delivery capabilities of a start-up, as contractual OEM requirements can lead to expensive obligations when supply demands are not met.

// QUALITY AND CERTIFICATION CHALLENGES

▶ START-UPS' LACK OF QUALITY COMPREHENSION STRUGGLES WITH STRICT PROCESS CULTURE AND HIGH QUALITY AND CERTIFICATION STANDARDS.

Start-ups' Challenges | While start-ups mostly lack stable product development processes and quality management systems, OEMs accept suppliers only when certification requirements are fulfilled. This is usually based on a contractual agreement that specifies the requirements in accordance with ISO9001, VDA 6.3, or IATF16949. Getting certified according to those standards represents a substantial burden for start-ups and consumes workforce capacities, considering the demands of different markets across the globe.

OEM/Investors' Challenges | For OEMs it is crucial that parts and components fulfill the high regulatory standards and requirements in a global context. As a result, OEMs contractually force suppliers to produce components and parts that reliably serve their purposes during the average life span of a vehicle and additionally fulfill regulatory standards in different markets all over the world. Ensuring that start-ups with very limited regulatory expertise fulfill the rigid automotive regulation requirements therefore poses a major challenge for OEMs.

// ORGANIZATIONAL AND CULTURAL CHALLENGES

▶ AGILE WAY OF WORKING AND IMMATURE ORGANIZATIONAL STRUCTURES COLLIDE WITH HIERARCHICAL ORGANIZATIONS AND RIGID DECISION-MAKING PROCESSES.

Start-ups' Challenges | Start-ups usually feature a high degree of agility in their organization, which often goes hand in hand with an undefined split between functional and leadership positions. An automotive supplier, on the other hand, needs to staff adequate positions with clear responsibilities that are able to excel in the system of automotive development and can actively participate in formalized automotive decision-making processes. Furthermore, start-ups are in need of a flexible and scalable organization and processual framework, while still maintaining the fast-mover advantage and start-up flair.

OEM/Investors' Challenges | Start-ups' customer interfaces, such as those used in sales or research and development, are frequently mixed, making it difficult for hierarchical OEM structures to identify the right counterpart. This can lead to misunderstandings and an unsatisfying work climate between OEMs and the new technological innovator.

03 | Paving the Way

With the Fit for Automotive approach Porsche Consulting combines measures to elevate start-ups and technological players to automotive readiness and to support OEMs as well as investors' acquisition and corporation processes.

In order to help boost a start-up or a technological player to automotive fitness, Porsche Consulting addresses the aforementioned challenges and requirements by developing a holistic concept that focuses on pragmatic short- and long-

term solutions. This so-called "Fit for Automotive" approach guides start-ups on their way to becoming a certified automotive supplier and supports OEMs and investors with a qualification process for new technological players.

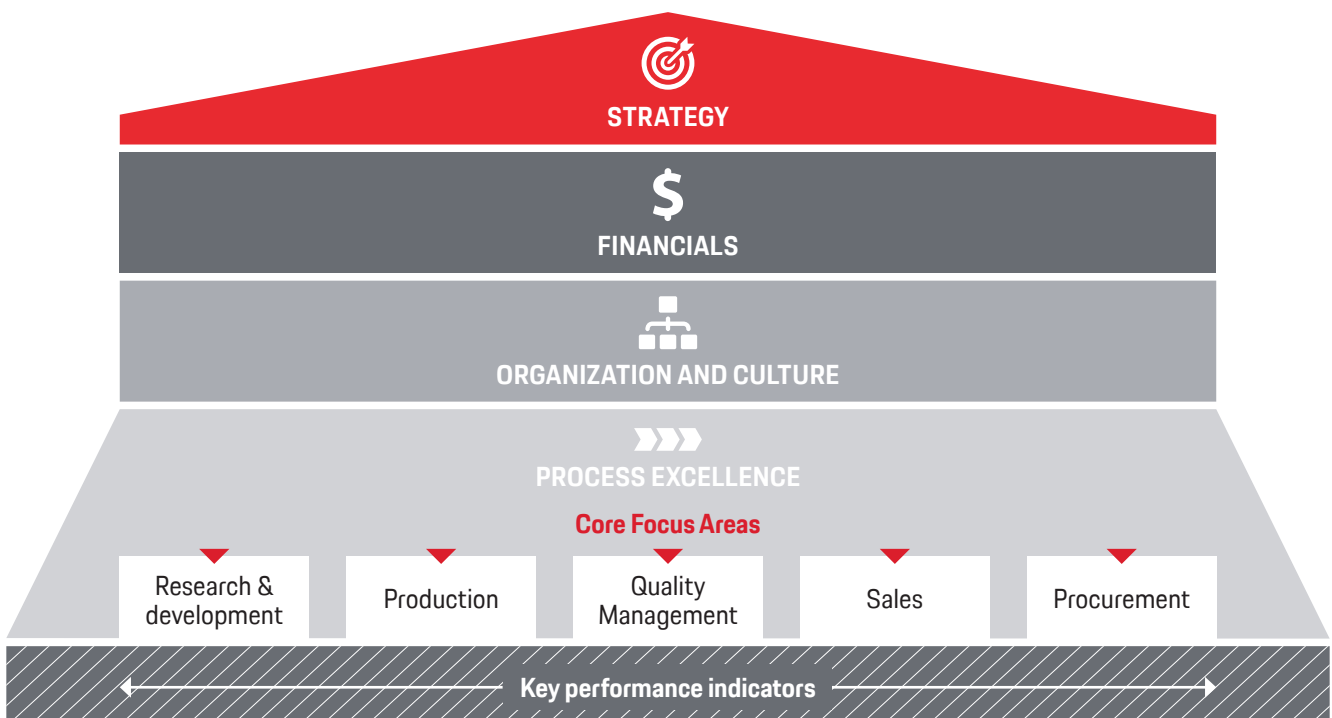


Figure 3. Porsche Consultings' Fit for Automotive framework

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After assessing "strategy", "financials", "organization" and "culture", and "process excellence", the approach identifies problem fields in those areas and develops a targeted action plan to achieve automotive readiness.

First, it is relevant to assess the start-up's overall readiness and performance across the core focus areas—strategy development, financials, organizational design and culture as well as process excellence (e.g., in R&D, production, quality, sales)—in light of the automotive industry requirements.

Second, it is important to jointly develop future target states with all stakeholders, carefully considering the various requirements of the start-up, investors, and OEMs. Focus

should be placed on flexible and scalable solutions that help the start-up retain its first-mover advantage.

Third, and with a clear understanding of the major challenges and target state, it is crucial to develop an actionable roadmap with key initiatives and measures that lead the start-up to automotive readiness. Each challenge area should be addressed by dedicated fields of action that target the specific needs of the start-up on its way to becoming a certified and trusted automotive supplier. These individual measures should be tailored to the demands of all relevant project stakeholders and tracked with key performance indicators. The following pages showcase an extract of record-proven and effective fields of action.

Strategy

► Evaluate and refine mission and vision

Mission and vision statements are powerful tools to provide purpose, direction, and an identity to its stakeholders, whether employees, managers, or customers. It is crucial to provide practical steps toward a future-oriented mission and vision by setting a clear focus on value creation, unique selling propositions, and customer engagement. Additionally, offering integrative concepts for communicating those statements within and outside of the organization helps get employees and managers on board.

► Define sustainable strategic goals and KPIs

Especially early on, start-ups often lack the ability to translate their mission and vision into sustainable strategic goals underlined by clear and quantifiable KPIs. With the aspired target state of the start-up in mind, the focus should be on developing the key strategic goals and further implementing corporate KPIs to allow management to steer the company in a data- and measure-driven way.

► Create customer metric system and a prioritization map

A customer metric system relies on such metrics as revenue and R&D power to evaluate the potential customer base and identify the most promising target customer for start-ups. A prioritization map furthermore segments those customers into A/B/C prioritization categories using a scaling system based on those metrics. This method is highly relevant for effectively scaling a fast-growing business, a challenge many start-ups face. This approach allows start-ups to identify and prioritize the most relevant customers, reduce effort spent on low-value customers, and ultimately scale their business faster and more efficiently.

Financials

► Define a clear financial accounting and KPI structure and establish an understanding for working capital management

Start-ups often come from a position where financials and the tracking of their own financial situation do not play a major role. When fast growth kicks in, these young enterprises are in need of an easy and scalable financial structure that helps them steer their business activities. Supporting start-ups with the creation of a comprehensible accounting system is key. Furthermore, it is relevant to provide specific measures

that help set up a straightforward and easy-to-understand financial KPI structure. Such a system facilitates easy extraction of the key indicators for the start-up's financial health, thereby providing customers and investors with the central numbers required to correctly assess the start-up's future potential. Additional focus should be on establishing an understanding for effective working capital management and considering an easy and fast monitoring of cash flow, current assets, and current liabilities. This will help the start-up decrease expenses for working capital and increase the return on asset investments.

Organization and Culture

► Define future-oriented organizational structure

Agile and open working structures are a central characteristic of start-ups, but serving automotive OEMs as a supplier and scaling for rapid growth requires a stable and future-oriented organizational setup. Building a solid organizational blueprint is one foundation for future success and makes organizations fit for successful customer relationships, and the ability of mass producing goods in stable quality and quantity. Here it is crucial to conduct an assessment of the current organizational structure for transparency on all functions, to develop a future-oriented organizational blueprint and define clear roles and responsibilities. Establish core management committees to create staff commitment for executing and implementing the future organization.

► Provide a talent-acquisition strategy

Attracting, developing, and retaining the right talent is essential to a start-up's success and even more important in an increasingly competitive labor market. Help start-ups set up a talent-acquisition strategy to achieve effective employer branding. Furthermore, the approach should improve the use of outbound communication channels and set up a smooth onboarding process, with the objective of attracting the most suitable candidates.

Process Excellence

► Develop process framework for certification readiness and quality fulfillment

Before suppliers are permitted to deliver products to OEMs they must present a rigid process documentation according to international certification standards such as ISO9001, IATF16949, or VDA 6.1, 6.2 or 6.4. Fulfilling the wide range of requirements is costly, and a qualified workforce must be able to implement the necessary certification measures. It is essential to define the relevant certification requirements in each case as well as walk through the certification process and find a clear path to quality excellence, ensuring scalability and keeping costs at a minimum.

► Create proprietary product creation processes in research and development

Implementing a product creation process that fits the R&D cycles of automotive manufacturers is essential for planning security and orientation. Find an approach that provides guidance for the complexity of setting up such a process environ-

ment. Establish clear milestones with set deliverables to help deliver the required output at the right time as well as identify and solve complications before they turn into major supply chain problems. Furthermore, an OEM is able to track product development, provide productive feedback, and even offer support in the often-tense industrialization and preproduction phase.

► Set up robust process map for stable and reliable production and manufacturing

Production in just-in-time and just-in-sequence supply chains relies heavily on maximum standardization, process optimization, and efficiency. Here it is important to consider the entire production value chain from inbound logistics, manufacturing to outbound logistics. The optimization and improvement of production settings has been a core capability of Porsche Consulting for many years and has been applied and tested in projects around the world.

Automotive industry requirements and standards for start-ups and technological players

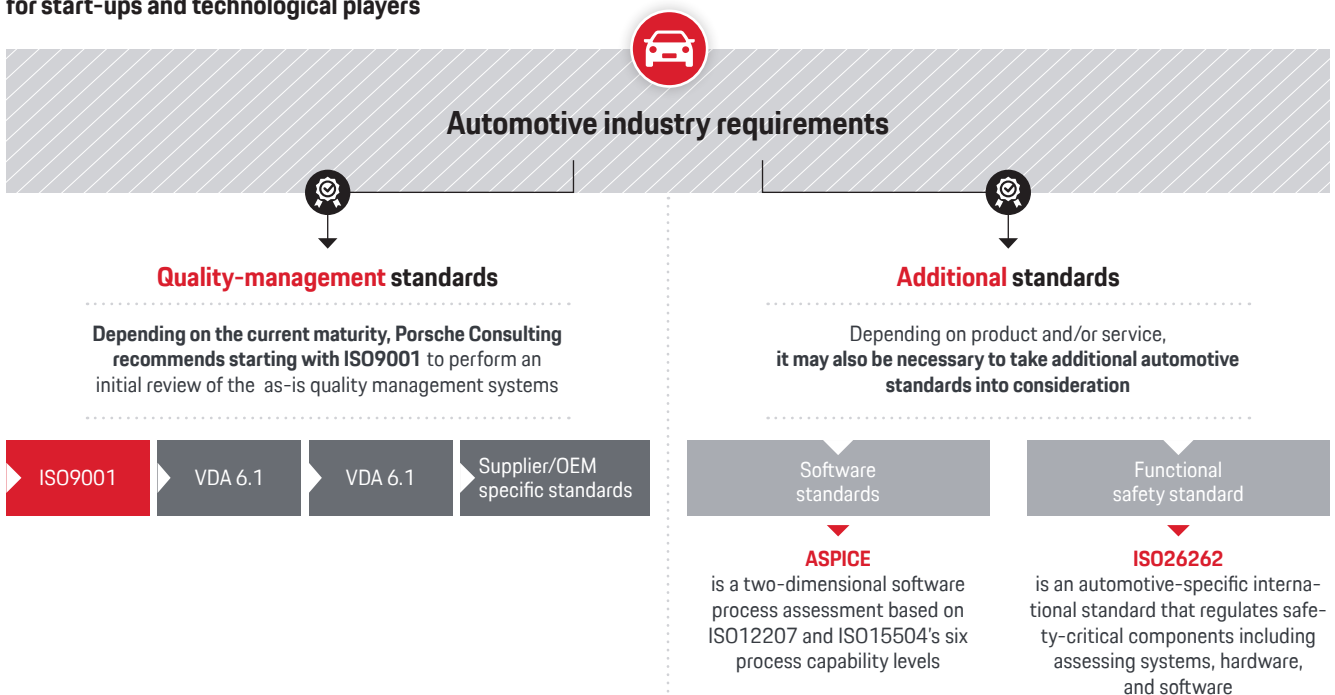


Figure 4. Overview main automotive industry standards for new players

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04 | The Implementation

The "Fit for Automotive approach" has been developed in various projects, answering key questions, supporting OEMs and investors, and guiding start-ups as well as technological players through multiple stages to become a high-performance enterprise.

In the **first stage** of a start-up's life cycle, "the Fit for Automotive approach" supports start-ups and their potential investors in establishing a platform for successful and sustainable supplier relationships. The assessment has been developed for and executed in a variety of projects with aspiring start-ups and technological players. It provides specific answers to questions posed by investors, OEMs, and start-ups concerning strategy, financials, organization, processes, and culture.

In the **second stage**, "the High Performance Enterprise approach" guides mature start-ups on their way to scaling products and transforming their business.

**PORSCHE CONSULTING
CASE STUDIES**

"The Fit for Automotive approach" makes start-ups and technological players that are eager to supply the automotive world fit for a tier-n position.

Porsche Consulting has already conducted various consulting projects with start-ups and technological players to qualify them for the automotive industry. Each project had its own specific focus: whether it was designing a new strategy, a new organization, and new processes or supporting an ODD (operational due diligence); whether it established a whole product creation process with interfaces to subsidiaries and customers or assessed the entire corporation's capabilities in quality standards.

Fit for Automotive approach

STAGE 01



What is the business potential and should I invest?

We help investors with their investment decision.



Where do I find innovation and how do I partner?

We establish start-ups as qualified and certified suppliers.



What is the business potential and should I invest?

We help investors with their investment decision.

HPSU

High Performance Enterprise (HPE) approach

STAGE 02



How do I sustainably scale my product and incorporate a global business DNA?

We bring start-ups' scaling potential on the road.



How do I transform the business into prosperity?

We help setting up sustainable structures and processes.

HPE

Figure 5. Overview two stage approach

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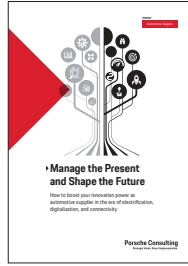
IN BRIEF

- 01** To close the innovation gap, OEMs must partner with start-ups and new technological players must enter the automotive field.
- 02** Three stakeholders can benefit from the success of start-ups in the automotive business: the start-ups themselves, the OEMs, and investors.
- 03** Start-ups must understand automotive requirements to industrialize their ideas, products, and services.
- 04** OEMs and investors need to understand visionary start-ups with their agile organizational structures and innovative development processes.
- 05** The appeal of a new player for OEMs and investors is determined by the interaction between its strategy, business model/plan, organization, and excellent processes.

Further reading



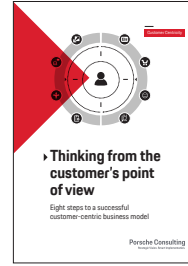
Strategy Paper
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Strategy Paper
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White Paper
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White Paper
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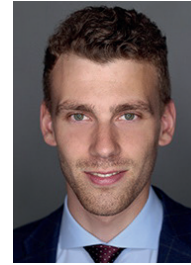
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