



Scenario thinking	04
Critical uncertainties	06
Four possible scenarios for the future	08
Conclusions and outlook	12
Methodology	14
Contacts	16







# Scenario thinking

Scenarios offer a glimpse into the future and help to stress-test corporate strategy

Through the pioneer work of such German entrepreneurs as Robert Bosch and Gottlieb Daimler, Germany gradually established itself as a premium business location globally. "Made in Germany", originally introduced by the United Kingdom in 1887 to mark inferior goods and plagiarism, is today a brand synonymous of product reliability and quality. However, the rise of Artificial Intelligence, improvements in 3D-printing, gradual penetration by renewable energies, advanced robotics and the emergence of quantum computing are only the most prominent technological buzzwords that are set to make profound changes in the German enterprise landscape as we know it today.

In addition, the most recent elections in the U.S., France and Germany, among others, show that nationalistic and protectionist movements are on the rise.

The question that needs to be answered is therefore: how will German enterprises create value in 2030? How will changes in the spheres of society, technology, the environment, the economy and politics affect industry and in what way will companies have to adapt?

Whatever the future holds for enterprises in Germany, it will have far-reaching consequences not only for the various industry segments but also for society and politics.

In order to navigate the changing world of German enterprises and respond to both opportunities and risks at an early stage, an understanding of the future of enterprises in Germany is imperative.

The challenge is therefore to capture the complex interaction between the various

factors of influence such as the adoption of technology, the socio-economic climate, the bases of competition, and also the role of human beings, and German enterprises.

Scenario design provides the basis for decision-making in view of uncertainty by analyzing and structuring a multitude of driving forces into condensed critical uncertainties that will shape the future and have the potential to drive it in one direction or the other. Based on these critical uncertainties, scenarios are a means of reducing their complex interactions. They are narratives of alternative but thinkable futures that provide a sound basis for developing robust, future-proof strategies for anyone doing business in Germany.

Together with Deloitte industry experts, we developed four plausible scenarios to illustrate how enterprises in Germany will create value in the year 2030.

In a world in which German enterprises have become an **Integrated Platform Provider**, enterprises in Germany will benefit from demand for their integrated solution offerings and Germany's role as a global leader in innovation.

In the **Specialized Frontrunners** scenario, a fragmented portfolio of either products or services is offered, based on state-of-the-art technologies.

In a **Copycat** scenario, enterprises in Germany are focusing on efficiency gains to serve the mass market with conventional technologies and proven service models.

In a **Master Combiner** world, enterprises in Germany are late adopters, losing innovative leadership, and focusing on combining existing technologies and services into new offerings.

All of these scenarios demonstrate plausible versions of how the future of enterprises in Germany could play out up to 2030.

Let us explore each scenario in more detail to better understand the implications.

Enjoy the ride,  
Your

center  
for the long view



# Critical uncertainties

## Drivers that will shape German enterprises in 2030



At the outset of our exercise, we developed a holistic list of future-relevant trends and drivers that have the potential to affect German enterprises in their relative futures.

This was done with the help of expert interviews and Artificial Intelligence (AI)-based natural language processing algorithms. The drivers thus identified were then clustered into social, technological, economic, environmental, and political factors and rated by subject matter experts with respect to their degree of uncertainty and their impact on German enterprises. The resulting list of prioritized drivers formed the basis of our scenario analysis, since it enabled the determination of the most critical and influential uncertainties in the context of German enterprises.

According to our experts' ranking, the first critical uncertainty that will determine the future of enterprises in Germany is mastery of technological adoption, i.e., how fast and to what extent are enterprises in Germany able to develop and integrate exponential technologies, new ways of energy generation, and the concept of the circular economy into their value creation processes. On the one hand this could lead to German players quickly advancing in those exponential technologies and taking the lead globally, becoming an innovation leader. On the other, German players might adopt new approaches only gradually and prefer to follow the example of other markets becoming an innovation follower.

In addition to technological drivers such as Artificial Intelligence, nano-engineering, and quantum computing, there are also social, political, economic, and environmental drivers that underlie this critical uncertainty. In particular, the evolution of energy prices is

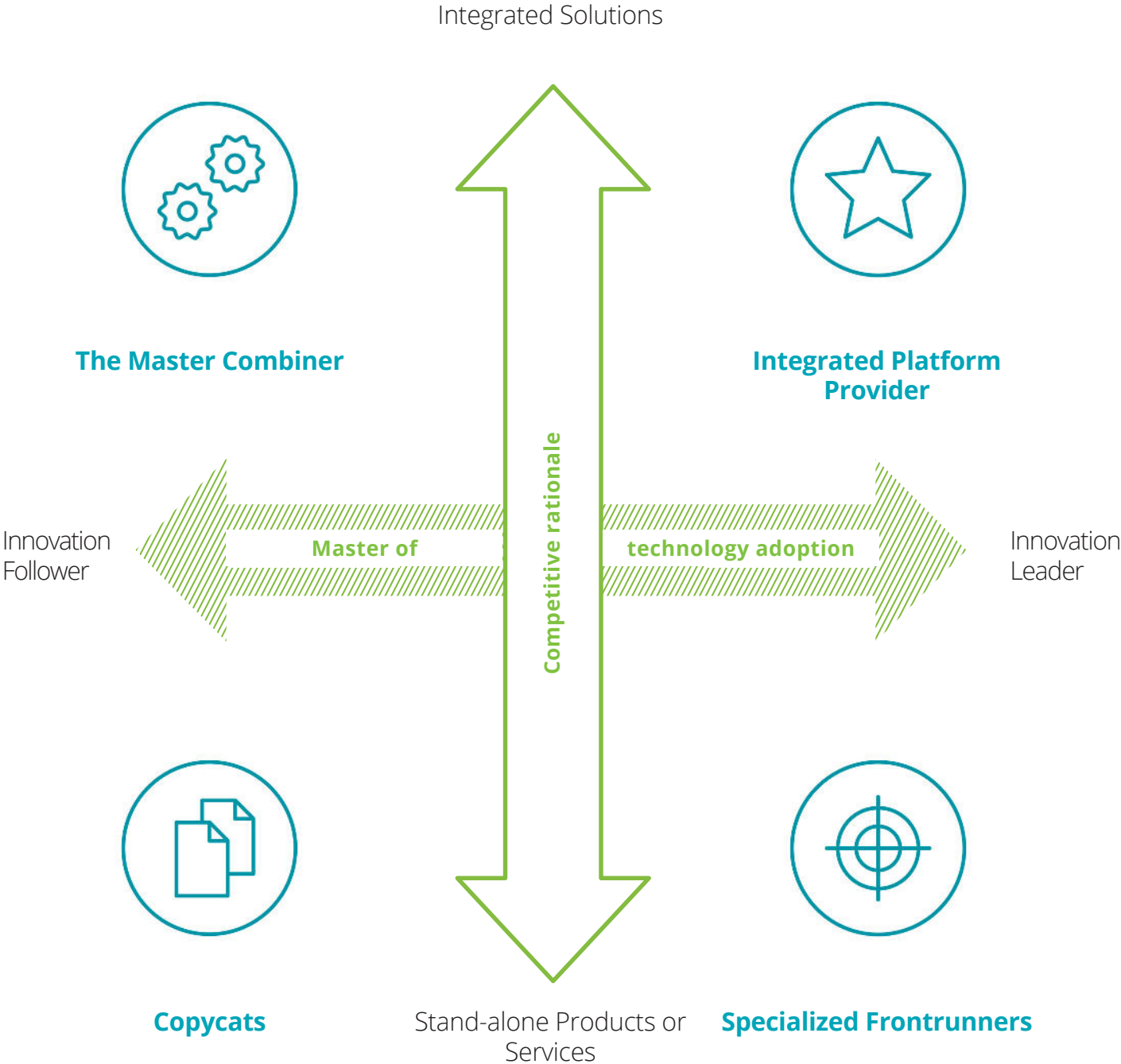
critical in this respect. Rising oil prices and falling electricity prices might be the push towards the integration of new value creation methods and vice versa. The same applies to the availability of capital: if capital remains relatively cheap, investment in research into and the development of exponential technologies will be encouraged.

Furthermore, the Deloitte experts identified the rationale for competition as the second critical uncertainty for German enterprises up to 2030. The question here is whether enterprises in Germany will evolve their go-to-market approach by offering integrated platform solutions to their clients or remain manufacturers of specialized products, technology developers, and service providers.

Looking at this critical uncertainty we find a variety of drivers influencing developments in this respect. Applying, for example, a technical perspective, the question of whether organizations will be able to handle the substantial investment costs and the complexity associated with building integrated and digital platforms is both uncertain and has great impact at the same time.

Furthermore, the willingness of clients to hand over the responsibility for delivering a project to a single integrated solution provider is critical to this development. Here the extent to which the sharing economy, i.e., the more intense utilization of assets by sharing ownership and usage, penetrates the German enterprise is a social and economic driver that must be closely observed. The combination of both critical uncertainties results in four plausible but highly distinct visions of the future which are illustrated here.

Fig. 1 – Scenario matrix to describe the future of German enterprises



# Four possible scenarios for the future

The days of German enterprises as we know them today may be numbered

## Scenario 1: Integrated Platform Providers

This is a world in which enterprises serve as integrated solution providers by combining state-of-the-art technology and engineering products with customer-centric services. As a result of this development in recent years, German enterprises now own the complete value chain and offer integrated solutions to their global end-customers on their integrated and solution-focused platforms. As a consequence, however, smaller market players struggle to keep up with the big organizations, since the building of platforms that meet market demand is highly cost-intensive.

In 2030, the national education and research landscape is the basis of this German success story. The education system enhances Germany's dominant position by empowering the workforce with the required skill set. A

consequent focus on solution-driven and life-long learning leads to a shift in mind-set from product- to customer-centricity. The workforce is now fully digitalized and embraces these opportunities.

Furthermore, German politics invested heavily in the digital infrastructure in the early 2020s. Not only were roads and bridges extended in scope but also the expansion of broadband internet and nationwide Wi-Fi have made Germany a digitalized country. This provided the breeding ground for the continuing competitiveness of German enterprises.

All in all, German enterprises in 2030 are in top shape and they are market leaders in all sectors, setting standards in global technology and service.







## Scenario 2: Specialized Frontrunners

This is a world in which German enterprises are either manufacturers, technology developers, or service providers, offering cutting-edge solutions to their customers. By 2030 the building of integrated solution platforms combining hardware and software has proved to be too costly and too complex for a single enterprise to manage. German enterprises have seen large organizations fail in the attempt to do so. Thus German enterprises have formed alliances to compensate for the lack of integrated capabilities (service providers have looked for manufacturers and technology developers and vice versa). Compatibility of hardware and software components from various market players has become a key competitive advantage in the global market. In this market environment, German enterprises accordingly focus on niches with highly innovative products or services. Some players have even become a specialized

vanguard in their segment and are experiencing global demand for their products or services. However, it is difficult to leap-frog innovation, as most R&D spending is used up fulfilling the compatibility requirements of diverging standards. By 2030, Germany is still managing to establish world-class research in high-end niches. However, the focus on application program interface (API) compatibility limits their effectiveness. The education system focuses on the retraining and upskilling of the German workforce to provide the national market with the needed talent. In general terms, German enterprises are able to compete on a broad basis at the global level, but are held back by the fragmentation of offerings.



### Scenario 3: Copycats

German enterprises focus on goods or services that have already been implemented by incumbents. The market share of these “copycats” is in decline due to technological lags. By being the extended workbench of integrated platform players and copycats in the field of service as outsourcing partners for leading market players enterprises focus on efficiency gains. Enterprises have limited global reach as they do not offer integrated solutions. They focus on the limited domestic market and a few emerging markets, so scalability across markets is difficult. Shrinking markets and decreasing economies of scale reduce funds for the R&D budget. Furthermore, they have limited access to global capital markets, which cannot be fully counterbalanced by lower capital intensity. This has triggered an exodus of enterprises to

more business-friendly and technologically advanced markets. Players invest in efficiency measures, and more and more workers are being replaced by technology, leading to significant layoffs due to the increased level of automation. Qualification of the workforce and the development of the infrastructure are dependent on public institutions, since enterprises do not have investment funding. However, they are in need of the engineering skills required to increase efficiency and of service skills to perform outsourced tasks. Smaller players are able to compete with the larger players because they are quick to adapt new technologies and service concepts. In conclusion, German enterprises focus either on products or on services that are already implemented by other (global) players.

## Scenario 4: The Master Combiner

This is a world in which German enterprises are in the midst of the storm of globalization. They offer integrated solutions by combining existing technologies with proven customer-centric services. Trend scouting and configuration skills secure survival, as enterprises copy technologies and service models using a fast follower approach, with a clear focus on integrated and pragmatic offerings by using and applying solutions provided by other market players. However, new technology is adopted slowly, in small steps. Players focus on competitive advantages based on leveraging pragmatic engineering and service skills to hold their own in the highly price-focused global competition, where they try to constantly expand size to leverage economies of scale in their pursuit of efficiency.

R&D spending is focused more on evolution than on revolution. Technology is used to automate more and more processes in manufacturing and services, so as to reach efficiency goals, in turn leading to an increasing number of lay-offs. The German workforce is under great pressure from the global workforce. Pragmatic thinkers, with skill capabilities that enable them to deliver high performance, are in demand. On the one hand, smaller enterprises can quickly adapt new technologies and service concepts and thereby compete with the big players, but on the other the establishment of integrated solutions constitutes a real challenge for them. In conclusion, German enterprises offer integrated solutions by combining existing technologies with proven customer-centric services.





# Conclusions and outlook

The future of German enterprises will have a tremendous impact on the German economy, its society, and its politics.

Looking at the final set of scenarios, what may first strike the reader is how divergently the futures of German enterprises might play out as a result of different levels of mastery of technology adoption and the competitive rationale. The scenarios not only have significant implications for enterprises but go far beyond this and impact the lives of millions of people, employees and students. While the four scenarios paint highly divergent pictures of the future, each nevertheless has distinct implications for decision-makers across industries.

In the **Integrated Platform Provider** scenario, enterprises are innovation leaders who offer integrated solutions.

- Manufacturers combine leading German

engineering skills with new customer-centric thinking.

- Energy networks become more decentralized and individual due to alternative energy generation and innovative management systems.
- Financial services offer real-time service at the highest level based on new technologies and cutting-edge infrastructure.
- The combination of advanced technology and new offerings raises healthcare standards in Germany substantially.
- In the telecommunications and technology sector, enterprises own network technology, domain infrastructure, and the customer relationship.

In the **Specialized Frontrunners** scenario, enterprises are stand-alone producers or service providers who act as an innovation leader in their respective industry.

- Manufacturers supply state-of-the-art engineering products to integrated solution providers, and form alliances.
- Collaboration between suppliers and users of energy is crucial, since exponential technology has increased the demand for energy.
- Financial markets have become less agile, due to the need for alignment between the banking infrastructure and service providers.
- In healthcare, German players deliver white label products to connected care providers.



- In the telecommunications and technology sector, the ownership of cutting-edge infrastructure, networks, and the customer relationship remains largely divided.

In the **Copycats** scenario, German enterprises are innovation followers who offer stand-alone products or services.

- Manufacturers engineer and make products for incumbents, acting as an efficiency-driven extended workbench.
- The energy landscape remains largely centralized and transition to alternative energies has slowed down significantly.
- Incremental developments are limited to niche financial services applications with far-

reaching consequences for the established players.

- The lack of innovation and service-centricity has led to substantial problems in Germany's healthcare system.
- German telco and technology enterprises develop digital infrastructure and networks incrementally, without moving into adjacent services.

In the **Master Combiner** scenario, German enterprises are innovation followers who offer integrated solutions.

- Manufacturers excel in integrating existing technologies.
- The energy transition slows down due to the

relatively late integration of energy generation and energy usage management systems.

- Established enterprises in the financial service sector adapt quickly to new technologies and incrementally improve financial offerings.
- German players combine existing technologies into digital and connected healthcare solutions.
- Despite incremental improvements in infrastructure and networks, TMT enterprises excel with integrated offerings.

However, we can already today observe players making bets on how the future will play out. What bets are you willing to make?



# Methodology

## Introduction to scenario design and methodology

The methodology of this study on the future of enterprises in Germany is based on earlier achievements developed by Deloitte. A seven-step scenario development approach (see image) applies the guiding scientific principles of objectivity, reliability, and validity. The study is the outcome of a series of workshops involving industry experts from Deloitte Germany as well as experienced scenario practitioners from the Center for the Long View (CLV).

Scenario design starts by identifying the focal question of the underlying issue. Since we could tell an infinite number of different stories about the future of enterprises, we first had to agree on the issue or strategic challenge we wanted to address. This enabled us to support the decision-making of our key entrepreneurial clients in an appropriate way. Scenarios are tools for shedding light on the strategic challenge, while the focal question sets the scope of the scenarios. In the present case we focused on the question "How will German enterprises operate in 2030?".

Scenarios are a way of understanding the dynamics that shape the future. Therefore, in the second step, we pinpoint the forces that drive the focal questions. Driving forces are fundamental sources of future change. They shape the course of events and history and dramatically enhance our ability to imagine future scenarios. These drivers can be grouped into five categories, known as STEEP forces, as they consist of Social, Technological, Economical, Environmental and Political forces. Since most issues involve more than

one of these categories, they are only handles. In order to derive our driver list, we also conducted expert workshops using CLV Deep View, an artificial intelligence (AI)-based trend-sensing and analysis machine. CLV Deep View helps to avoid the bias of the traditional approach, which often has a built-in tendency based on the character, mood, or preference of the scenarists.

As part of the workshop series, we identified in a third step the critical uncertainties for the focal question. Not all driving forces are uncertain, some may be predetermined. These are the trends already in the pipeline, unlikely to vary significantly in any of the scenarios. Critical uncertainties are driving forces with the potential to tip the future in one direction or another. They have two fundamental characteristics: they have an unusually high impact and are uncommonly uncertain or volatile. Initially, all uncertainties appear unique, but by stepping back, we can reduce bundles of uncertainties to bundles that serve as the building blocks for creating our scenario sets.

The scenario framework was developed in the next step by focusing the entire list of related uncertainties into two orthogonal axes. We then defined a matrix consisting of crossing and independent axes that allowed us to define four very different, but plausible, quadrants of uncertainty. In the underlying study, we used the quality of the relationship between the mastery of technological adoption and rationale of competition as critical uncertainties.

In the fifth step we developed the scenario narratives by using the previously investigated

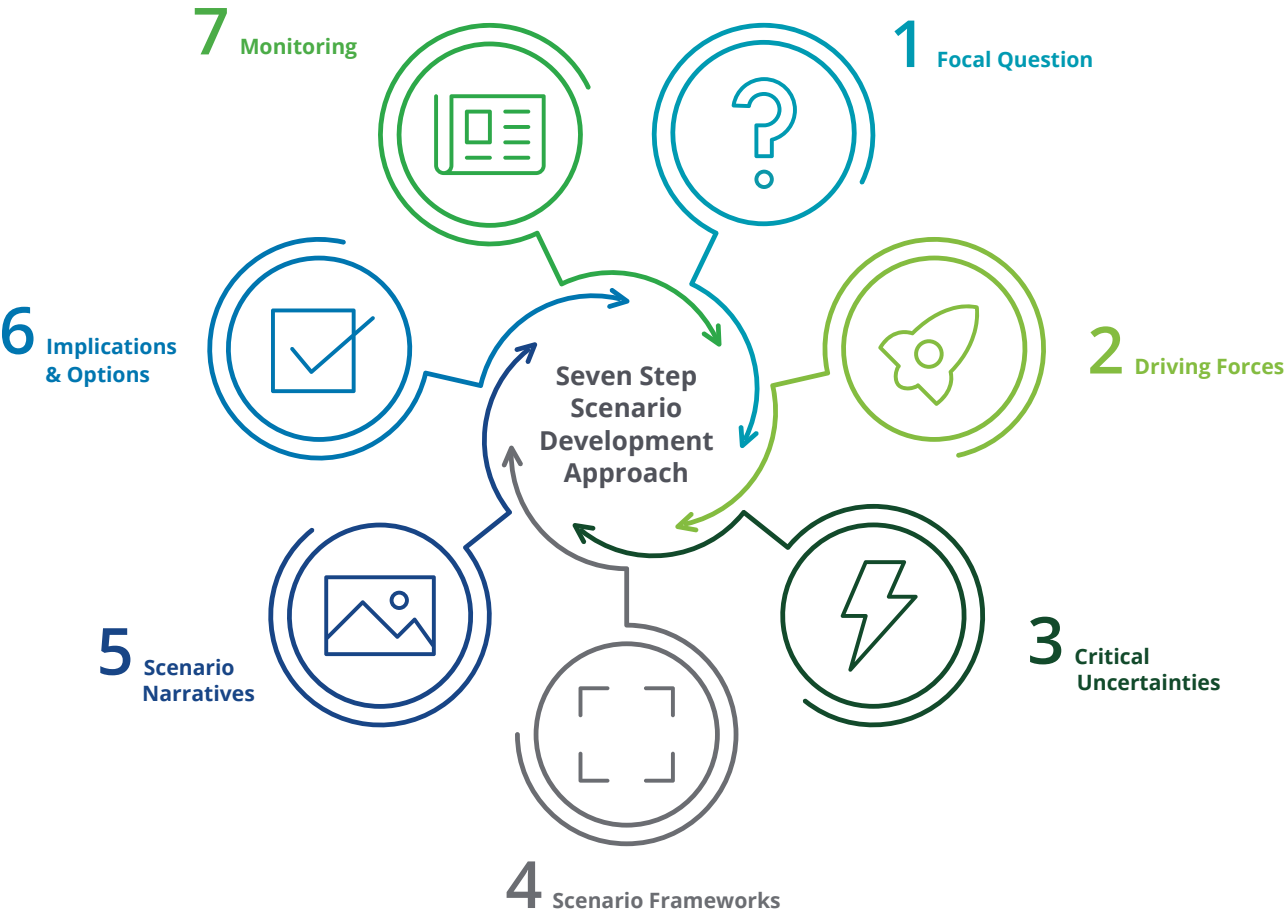
drivers that became characters in the stories developed. It is not our goal to tell four different stories, one of which we — as futurists — hope will be true. We recognize instead that the real future will not conform to any one of the four scenarios, but that it will contain elements of all of our scenarios. Our goal is to pin down the corners of the plausible futures. These corners are exaggerated — the outer limits of what is plausible. Thus our scenarios will have a near-caricature quality.

We then use these scenarios to derive implications by investigating the impact on various types of German enterprises and describing the German economic landscape of the future.

In the seventh step, we then monitor how the future plays out.



Fig. 2 – Seven step scenario development approach



# Contacts



**Haymo Spiegel**

Partner  
Center for Industry 4.0

Tel: +49 (0)711 16554 7432  
hspiegel@deloitte.de



**Dr. Florian Klein**

Head of Center for the Long View  
Monitor Deloitte

Tel: +49 (0)69 97137 386  
fklein@deloitte.de

**Authors: Haymo Spiegel, Dr. Florian Klein, Andreas Schühly and Niclas Vieten**

# Deloitte.

This communication contains general information only not suitable for addressing the particular circumstances of any individual case and is not intended to be used as a basis for commercial decisions or decisions of any other kind. None of Deloitte Consulting GmbH or Deloitte Touche Tohmatsu Limited, its member firms, or their related entities (collectively, the "Deloitte network") is, by means of this communication, rendering professional advice or services. No entity in the Deloitte network shall be responsible for any loss whatsoever sustained by any person who relies on this communication.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. Please see [www.deloitte.com/de/UeberUns](http://www.deloitte.com/de/UeberUns) for a more detailed description of DTTL and its member firms.

Deloitte provides audit, risk advisory, tax, financial advisory and consulting services to public and private clients spanning multiple industries; legal advisory services in Germany are provided by Deloitte Legal. With a globally connected network of member firms in more than 150 countries, Deloitte brings world-class capabilities and high-quality service to clients, delivering the insights they need to address their most complex business challenges. Deloitte's approximately 263,900 professionals are committed to making an impact that matters.