



GERMAN CHAMBER
of Commerce in China • Shanghai
中国德国商会 • 上海

German Business in China

Greater Shanghai Innovation Survey **2018/19**

In partnership with



Survey partners



The German Chamber of Commerce in China (GCC) is the representative body for German companies located in China. The GCC in Shanghai represents German companies in the Greater Shanghai area and in the neighboring provinces such as Zhejiang, Jiangsu, Shandong, Henan, Hubei and Anhui. The GCC | Shanghai is one of the largest German chambers in the world with nearly 1,600 members. It offers a wide range of business and social activities, tailor-made services, and networking opportunities.

The GCC | Shanghai continuously supports, facilitates, represents, and informs members and assists them in growing their businesses in China.



The Delegation of German Industry and Commerce in Shanghai represents the Association of German Chambers of Commerce and Industry (DIHK) in the Greater Shanghai region. On behalf of the Federal Republic of Germany, it represents the overall economic interests of Germany and focuses on the promotion of bilateral trade and investment between Germany and its region.



The Chair of Innovation and Entrepreneurship is one of the endowment chairs at CDHK (Sino German School for Postgraduate Studies), Tongji University. The work of this chair is comprised of research, education and industry collaboration in the fields of innovation, strategy and entrepreneurship. Tongji University is one of the oldest and most prestigious comprehensive universities in China, established in 1907 by the German government together with German physicians. Tongji University is especially renowned for its engineering, business and architecture programs.



goetzpartners is one of the leading independent advisory firms based in Germany, for all key issues of entrepreneurial activity: strategy, M&A and transformation. The combination of corporate finance and management consulting creates sustainable added value when determining and implementing valid courses of action reach decisions. goetzpartners has 14 offices worldwide, two of which are in China.

The parties would like to thank **Carolyn Han** (MSc Organizational Psychology) and **Jakob Bodensteiner** (TU Munich) for their research, analysis and contribution to this report, as well as **Huang Yunzhu** (M.A. Arts and Media), for graphic design.

Foreword

In terms of innovation, China took an important step in 2018. As the first middle-income economy, China has entered the world's top 20 most innovative economies in the renowned Global Innovation Index, a list compiled by Cornell University, INSEAD, and the World Intellectual Property Organization. Considering the fact that usually high-income economies lead the innovation landscape, China's recent rise in the ranking has been spectacular. Since 2016, China has been featured in the top 25 group and has consistently climbed the rankings to be 17th this year.

What does this mean for German companies' innovative activities in the Greater Shanghai region? Can they reap the benefits of a more fertile innovation ground and how do they cope with enhanced competition from local players, especially in a challenging regulatory environment? Since the launch of this survey in 2017 by the German Chamber of Commerce in China | Shanghai, in cooperation with Tongji University and goetzpartners Management Consultants, these questions have become even more decisive for German local business operations. As compared to last year's study, innovation is increasingly among the top priorities of doing business in China. Clearly, this topic is of high importance.

With this 2018/19 survey, we will continue to shed light on innovation behaviors in this fast-moving economy. Thanks to the participation of over 100 manufacturing companies, we can depict this year's evolution. Following recent developments such as the new cyber security law which took effect in June 2017, we investigated regulatory issues and their impact on innovation potential.

The survey will provide you with recommendations which we hope are useful for planning and fostering your innovation activities. We would like to thank all participants for their time and energy devoted to this survey. Without them, the insights on this important topic would not have been possible. We hope that you take these insights and keep the innovative spirit in this vibrant market alive.



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About this report

Background

For over 20 years, the German Chamber of Commerce in China has been committed to advancing Sino-German business relations. To provide German companies with leading market intelligence and industry insights, the underlying question of our daily operations is: *What is the near future going to be like for our member companies here in China?* We at the German Chamber of Commerce in China try to see the bigger picture: as part of the larger AHK network, we are in 140 locations in 92 countries, with about 47,000 member companies and want to anticipate market developments and, most importantly, present future-oriented and well-informed business strategies.

In 2017, we launched the Greater Shanghai Innovation Survey, in cooperation with Tongji University and goetzpartners Management Consultants with the intention to provide an in-depth, empirically founded understanding of the innovation behaviors of German companies. This year, thanks to the participation of more than 100 manufacturing companies, we can again present you with the characteristics and challenges of innovation of German companies in this fast-moving economy.

Research objectives

Specifically, this survey aims to find answers to the following questions:

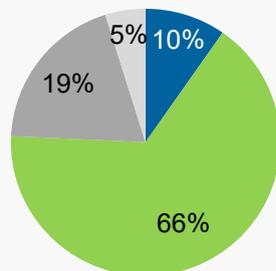
- ⇒ How important is innovation for German manufacturing companies in China?
- ⇒ What types of innovation are they engaging in?
- ⇒ What are the key drivers and challenges of doing innovation?
- ⇒ What are the characteristics of “German innovation made in China”, e.g. with respect to speed, local responsiveness, and innovation collaboration?
- ⇒ How are German companies dealing with restrictions imposed by the regulatory environment?
- ⇒ How do German companies in China engage in digitalization and Industrie 4.0?

Sample

The survey among German manufacturing companies in the Yangtze Delta was conducted between April and July 2018.

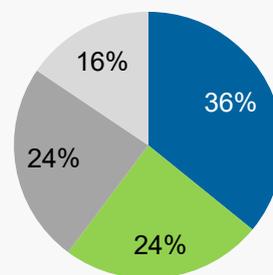
- The 103 respondents are mainly senior executives (66%) and middle managers (19%)
- The respondents have been working in their Chinese entity for an average of 8 years

What is your current position?



- Entrepreneur or company owner
- Senior executive
- Middle management
- Others

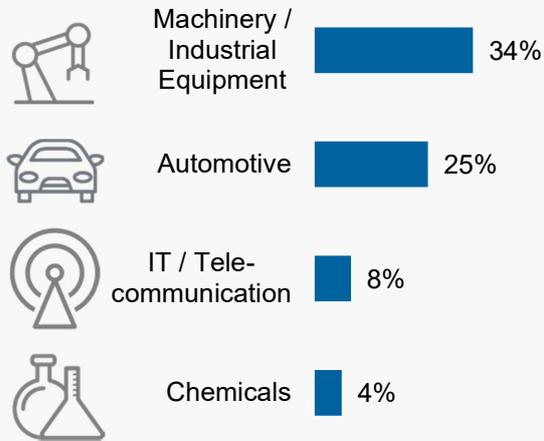
For how many years have you been working in your Chinese entity?



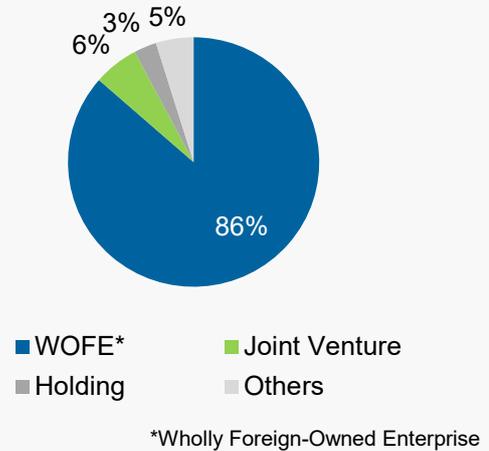
- ≤ 4 years
- 5-9 years
- 10-14 years
- ≥ 15 years

- Surveyed companies come from a range of industries, with Machinery / Industrial Equipment and Automotive accounting for 59%, which reflects the overall distribution of German companies in the Greater Shanghai area
- >80% of surveyed companies are wholly foreign-owned enterprises
- >50% of companies had an annual turnover of >RMB 250 million in 2017
- 67% of companies have been in China for >10 years
- 31% of surveyed organizations have ≥1,000 employees; 46% are small- and medium-sized companies (≤250 employees); 26% have 251-999 employees

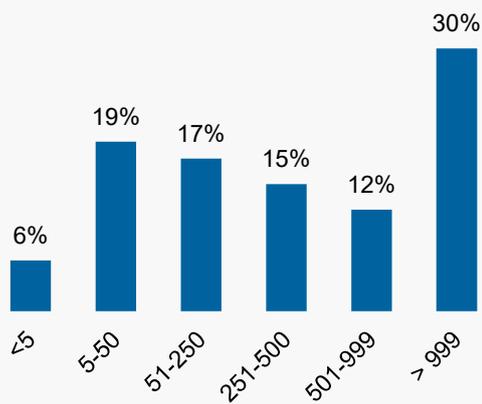
What is your main industry?



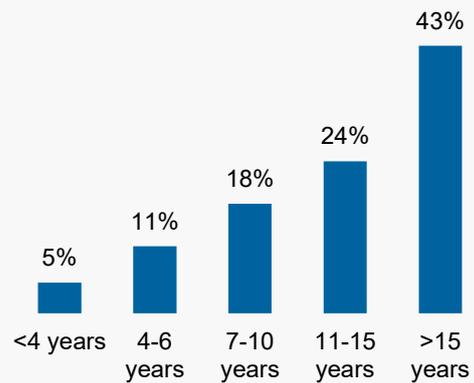
What is the legal status of your entity?



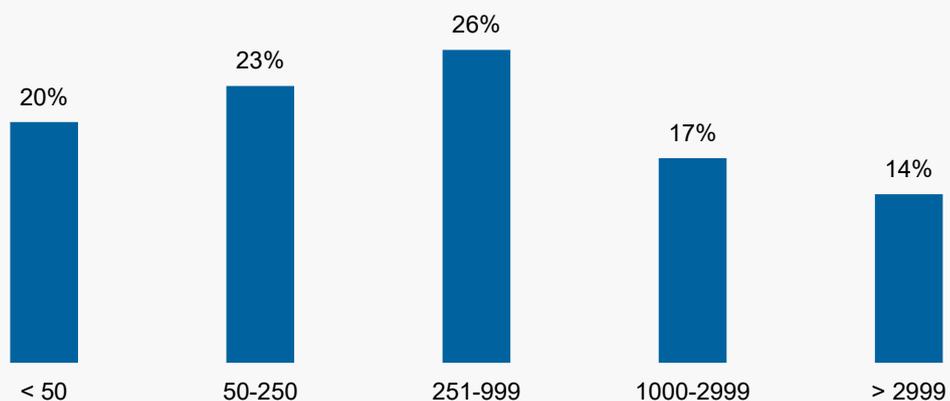
Please indicate your Chinese entity's annual turnover for 2017 in million RMB.



For how many years has your entity been present in China?



How many employees does your Chinese entity have?



Top Innovators

Innovation is considered one of the main drivers of competitiveness and long-term corporate success. Empirical research shows a positive correlation between innovation and company performance¹ and, as the results of this survey confirm, innovation performance is positively related to sales growth. Innovative companies demonstrate an above average sales growth within their industry in the past three years.

We used six indicators to measure innovation performance of the surveyed manufacturing companies. These **six indicators** all measure innovation output in terms of quantity, quality, timing, and speed.

Innovation scope

- (1) Types of innovation practiced in the organization

Product / process innovation

- (2) Number of new products/services launched in the last three years compared to competitors
- (3) Number of changes in processes in the last three years compared to competitors
- (4) Launch of innovative business models in the last three years compared to competitors

Pioneer disposition

- (5) Pioneer disposition to introduce new products/services in the last three years compared to competitors

Speed

- (6) Time to market of an average product/innovation in comparison to industry average

Based on the respondents' self-assessed performance within these six indicators, we have identified the **20% best-in-class innovators** – the so-called **Top Innovators**. Throughout the survey, we have specifically considered what Top Innovators do that differentiates these companies from less innovative companies.



¹ Prajogo (2006)

概述

背景

中国德国商会在华二十多年来，始终致力于推动中德经贸关系发展。为了向德国企业提供更好的服务，最新的市场情报和一流的行业洞察不可或缺，对此我们必须直面一个基本问题：未来二十年，企业运营将面临怎样的挑战？德国工商大会(AHK)在全球92个国家的140个地区拥有约47,000个成员企业。中国德国商会作为其中的一部分，努力以高瞻远瞩的视角，预测市场发展，提供面向未来的、及时的商业策略。

为了深入了解德国企业的创新行为，中国德国商会于2017年起携手同济大学和意志高驰咨询公司，对于上海及周边地区的德资制造型企业进行了创新调研。

今年，感谢百余家制造业企业的参与，我们得以再次向您呈现德资企业在这个快速发展的经济环境中面临的与创新相关的机遇和挑战。

研究目标

具体来说,这项调查解答了以下几项问题:

- 对于在华的德国制造型企业, 创新有多重要?
- 他们更注重哪些类型的创新?
- 创新的关键驱动力和面临的主要挑战是什么?
- “德国创新在中国”有哪些特色, 例如: 在速度, 本地响应和创新协作方面?
- 德资企业如何应对监管环境方面的限制?
- 在华德资企业如何开展工业数字化并推进工业4.0?

创新领导者

创新被认为是竞争力和企业长期成功的主要驱动因素之一。实证研究显示，创新与公司业绩之间存在正相关关系。正如我们的调查结果所证实的那样，创新绩效与销售增长呈正相关。创新型公司在过去三年中的销售增长均高于行业平均水平。

我们使用六个指标来衡量受访制造业公司的创新绩效。这六个指标从数量，质量，时间和速度等不同角度来衡量创新产出。

创新范围

(1) 企业所实践的创新类型

产品 / 流程创新

- (2) 与竞争对手相比，过去三年推出的新产品/服务数量
- (3) 与竞争对手相比，过去三年的流程变化数量
- (4) 与竞争对手相比，过去三年推出了创新商业模式

创新倾向

- (5) 与竞争对手相比，过去三年率先推出新产品/服务的倾向

速度

- (6) 与行业平均水平相比，平均产品/创新的上市时间

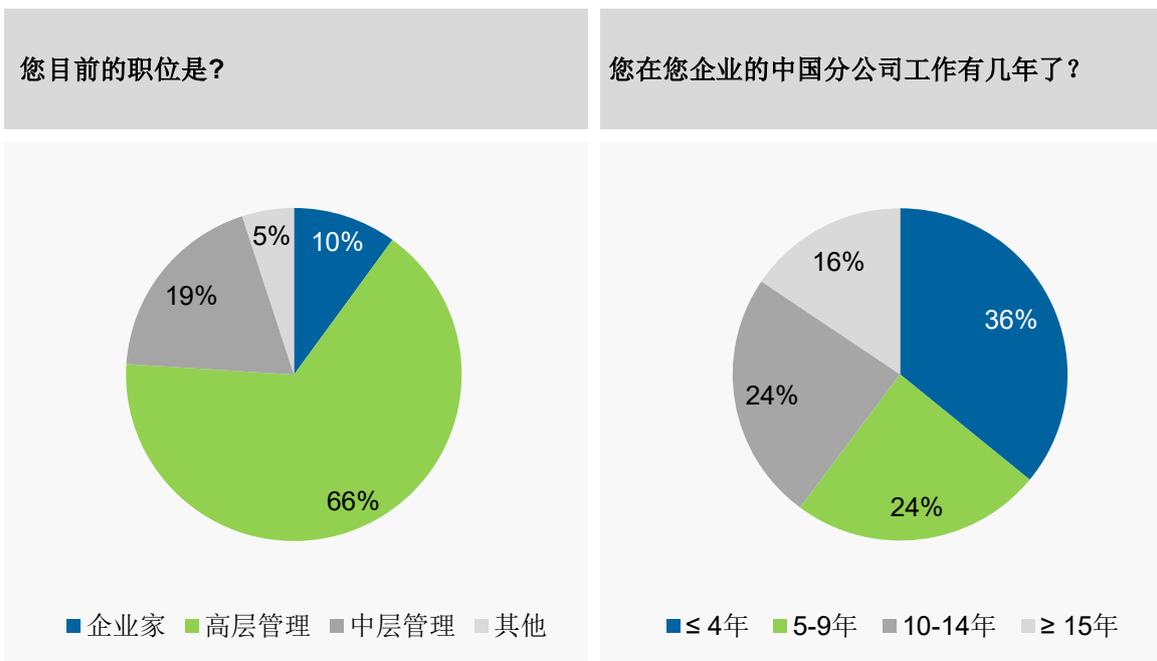
根据我们的受访者在这六个指标中的自我评估表现，我们确定了 **20% 的最佳创新者** – 即所谓的**创新领导者**。在整个调查过程中，我们深入研究了创新领导者与其它样本企业在创新层面的区别。



样本

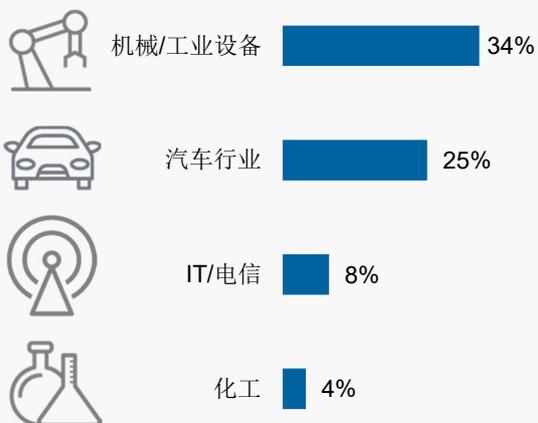
我们于 2018 年 4 月至 7 月期间，对位于长三角地区的德资制造企业进行了调研。

- 103 名受访者中大部分是高层管理者（66%）和 中层管理者（19%）
- 受访者在中国分公司的工作时间平均为 8 年

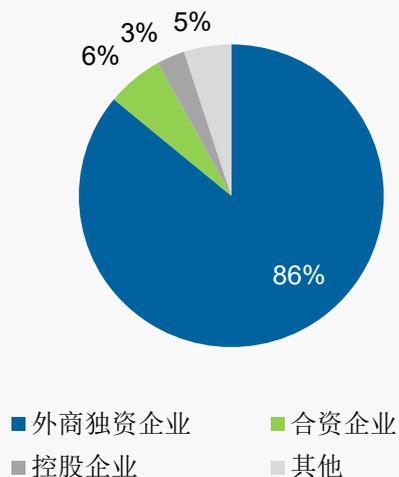


- 受访来自各个行业，其中机械/工业设备和汽车行业的企业占 59%，这反映了德国公司在大上海地区的整体分布情况
- 80%的受访企业为外商独资企业
- 超过 50%的公司 2017 年的年营业额高于 2.5 亿元人民币
- 67%的公司在 中国的经营时间大于 10 年
- 31%的受访企业有 1000 名员工；46%的企业为中小型企业(不超过 250 名员工)；26%的企业拥有 251-999 名员工

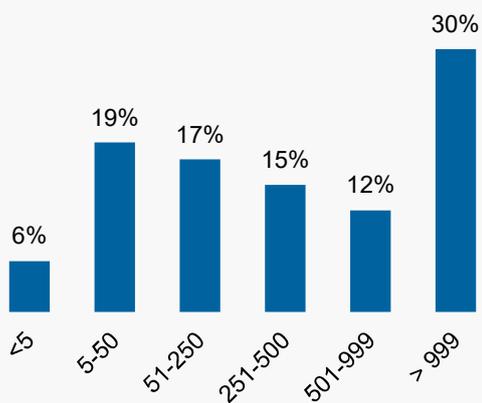
您从事的行业是什么？



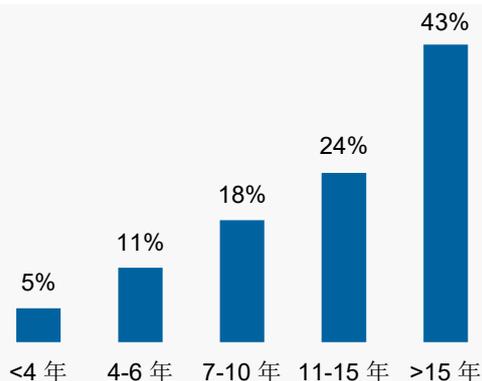
您所在企业的所有制性质是？



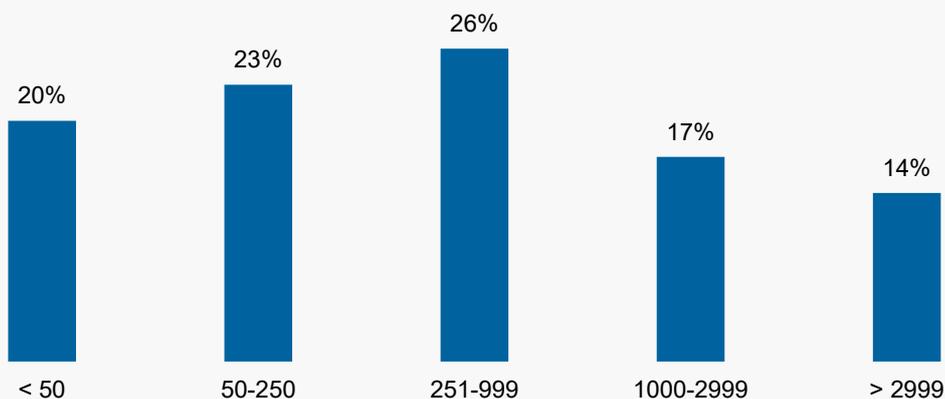
您所在企业的中国分公司在 2017 年的营业额为？（单位：百万元人民币）



您的企业在中国有几年了？



您的企业在中国有多少员工？



Executive summary

Innovation – a growing priority for German manufacturing companies in Greater Shanghai

Innovation, among the top three business priorities for more than 80% of surveyed manufacturing companies, continues to be a key driver of business activities in China. Surveyed manufacturing companies attach a higher priority to innovation when operating in a volatile market environment. The main motives for engaging in innovation are to differentiate from competitors, to better meet customer needs, and to increase revenues. While 83% of respondents see innovation among their top three priorities, only 43% claim to have a well-defined innovation strategy.

Manufacturing companies broaden the scope of innovation activity

Innovation efforts of German manufacturing companies in the Greater Shanghai region mainly concern the adaptation of existing products to meet the demands of the local market. However, the local development of products for world markets sees a significant increase compared to the 2017 survey, showing China's growing attractiveness as a R&D hub. Further, manufacturing companies will increasingly focus on business model innovation in addition to, or also instead of, product and process innovation.

Fast, but not fast enough

Around two thirds of surveyed manufacturing companies indicate to have a shorter time to market than their German headquarters. Looking at international competitors in China, respondents feel on par. However, 60% of surveyed manufacturing companies think they have a longer time to market than that of their Chinese competitors, putting them at a disadvantage for innovation success in this fast-moving economy.

Talent – a top concern for innovation and digital development

The largest barrier to innovation for surveyed manufacturing companies is human resources. For 61% of respondents, human resources pose a significant barrier to innovation – only 2% of respondents do not perceive human resources as a barrier. Dissatisfaction levels are especially high for the skills critical thinking, complex problem-solving, and creativity. Also, with regard to the digital development of their business activities, surveyed manufacturing companies mention lack of talent as a key challenge.

Headquarter influence challenges manufacturing companies

Headquarter influence is identified as one of the top barriers to innovation. Overall, surveyed manufacturing companies enjoy relatively little autonomy from headquarters in the extension or establishment of local R&D capacity, and the development of new business models. Only 13% of respondents say that headquarter influence is “not at all” a barrier to innovation.

Manufacturing companies increasingly engage in open innovation

90% – up from 82% in 2017 – of surveyed manufacturing companies collaborate with external partners in doing innovation. Most popular partners today are customers and suppliers. But companies become more open in their choice of innovation partners: Collaboration with knowledge partners such as universities, external consultants, and research institutes is increasing. Further, collaboration with competitors is growingly popular. Collaboration with start-ups shows the strongest growth. While in 2017, 8% of surveyed manufacturing companies worked with start-ups in innovation, this portion has grown to 19% this year and is expected to reach 41% within three years from now.

Manufacturing companies restricted by government policies

The regulatory environment brings a number of limitations to the innovation capability of German manufacturing companies in the Greater Shanghai region. Almost half of respondents expect the new Cyber Security Law to have a negative impact on their ability to innovate. With regard to intellectual property, a major portion of respondents is concerned about the actual enforcement of intellectual property protection laws. Data protection concerns and limited internet access are also among the top barriers to innovation.

摘要

创新—对在上海大区的德国制造业企业日益重要

超过 80% 的受访制造业企业将创新列入前三大业务优先事项，创新是企业在中国开展业务的关键驱动力。受访的制造业企业表示，当在不稳定的市场环境中运营时，创新就越发重要。创新的主要动机是与竞争对手形成差异，以更好地满足客户需求，并增加营业额。

83% 的受访企业认为，创新是他们优先考虑的三大问题之一，然而仅有 43% 的受访企业表示已制定明确的创新策略。

制造型企业进一步扩大创新活动规模

德资制造型企业在创新方面主要注重已有产品的本土化，满足中国市场的需求。与 2017 年的调研结果相比，德资在华子企业为全球市场开发产品的能力有显著提升，企业在中国进一步开展研发的意愿日益增强。此外，制造业企业将更加关注商业模式创新，而不仅局限于产品创新和流程创新。

快，但还不够快

约三分之二的受访企业表示，他们在中国开发同类产品所需的时间比德国总部要短，在中国的国际竞争者也都不相上下。然而，60% 的受访企业认为，与中国的竞争对手相比，他们开发同类产品需要更多时间，在快速发展的经济环境中，这不利于创新的成功。

人才—创新和数字化发展的重中之重

受访企业表示，创新的最大障碍是人力资源。61% 的受访企业认为，人力资源是创新的一大障碍，只有 2% 的受访者不这么认为。尤其在批判性思维、复杂问题的解决能力和创造力这三个方面，缺乏相应的高素质人才。此外，就企业商业活动的数字化发展而言，受访的制造业企业认为缺乏人才是一个严峻挑战。

总部影响力给制造业企业带来挑战

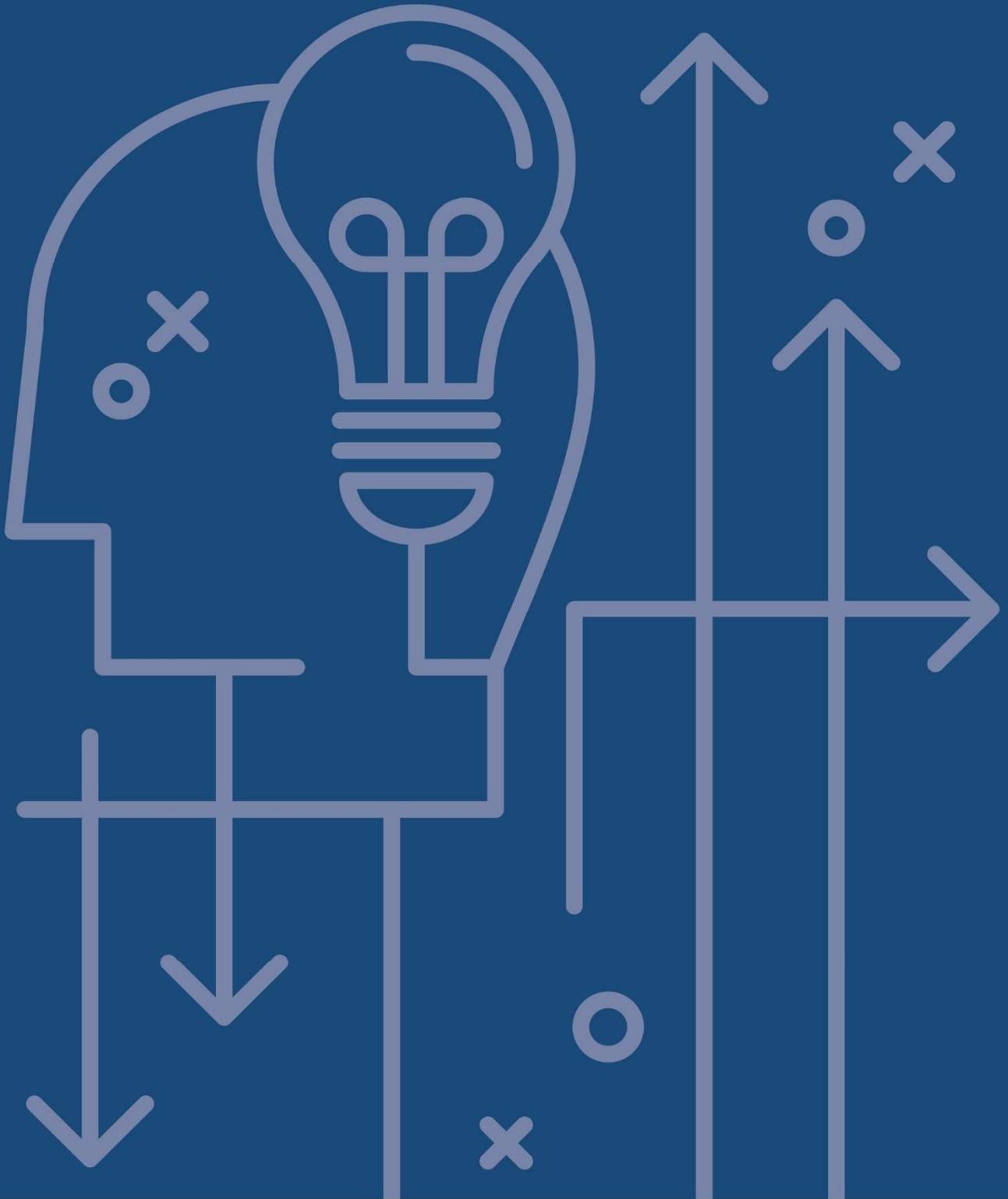
总部的影响力被认为是创新的最大障碍之一。总体上，受访的制造业企业在扩大或建立本地研发中心以及开发新业务模式方面能从总部获得的自主权较小。只有 13% 的受访企业表示，总部的影响力“根本不是”创新的障碍。

制造业企业越来越多地从事开放式创新

90%（高于 2017 年的 82%）的受访制造业企业与外部合作伙伴一起合作进行创新。他们在选择创新合作伙伴时变得更加开放：最重要的合作伙伴是客户、供应商和大学；与大学、咨询公司和研究机构的合作呈现出日益增长的趋势。此外，与竞争对手的合作也越来越受重视。与初创企业的合作意愿增长最为强劲。在 2017 年，8%的受访制造业企业与初创企业合作进行创新，这一比例已于今年升至 19%，预计三年内将达到 41%。

新的法律监管给制造业企业带来新的挑战

新的法律监管环境给在上海及周边地区的德资制造业企业的创新能力带来了一些挑战。近一半的受访企业表示新的网络安全法将对他们的创新能力产生负面影响。在知识产权方面，大部分受访者更关注知识产权保护法的实际执行情况。数据保护问题和有限的互联网接入也被认为是创新的最大障碍之一。



CHAPTER 1

INNOVATION ORIENTATION



Innovation orientation

“Fortune favors the bold.”

— *Virgil*

Roman poet (70 BC - 19 BC)

‘Innovation’ and ‘China’ – two terms that were hardly used in one sentence a few years ago – have now become a common combination. In 2018 and as the first middle-income economy, China has entered the world's top 20 most innovative economies in the Global Innovation Index¹. From 2017 to 2018, China has made a leap from position 22 to position 17 on the index. At the same time, Chinese companies such as Alibaba, Baidu, DJI, Huawei, Tencent, Xiaomi, and many more have secured spots in our minds as leaders in innovation.

German companies in China increasingly perceive domestic firms as equally or more innovative when compared to German enterprises. As the Business Confidence Survey 2017² revealed, more than 40% of German companies in China think that Chinese companies can become innovation leaders within five years. Increasing R&D spending – R&D spending of Chinese enterprises rose by 13% in 2017³ – and acquisitions of foreign high-tech companies – like Midea's acquisition of Kuka – are only two bricks that pave the way for China's innovation success.

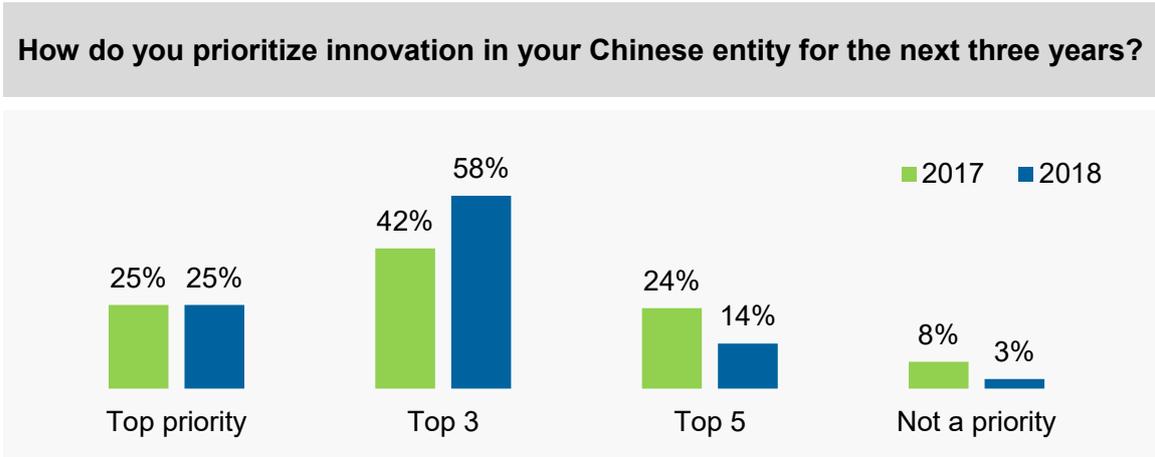
How are German manufacturing companies in Greater Shanghai dealing with this development?

¹ Cornell University, INSEAD, WIPO (2018)

² German Chamber of Commerce (2017)

³ China Daily (2018)

Increasing priority for innovation

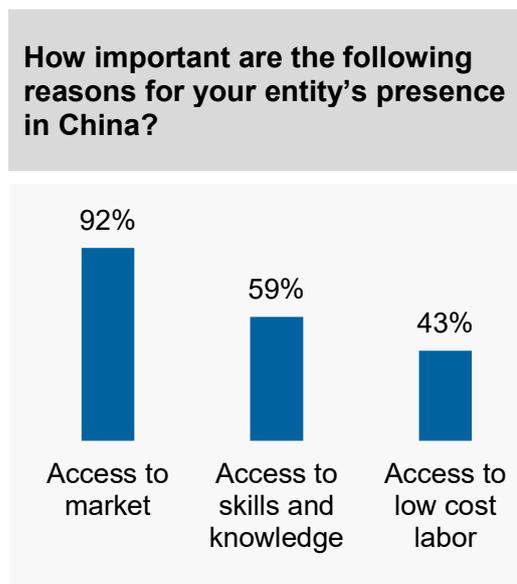


Innovation is the top priority for 25% of surveyed manufacturing companies and among the top three business priorities for another 58%. The portion of companies counting innovation among their top three priorities increased by 16 percentage points compared to 2017.

The survey results show no correlation between innovation prioritization and innovation performance, allowing the conclusion that Top Innovators do not perform better in innovation simply because innovation takes a higher priority in their organization.

Innovation as an important differentiator

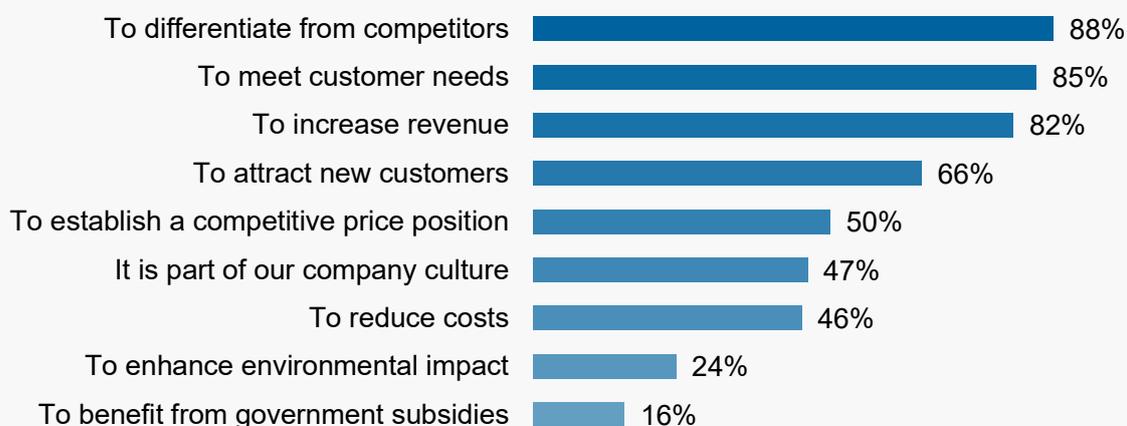
92% of surveyed manufacturing companies are in China to gain market access (vs. 59% to gain access to skills and knowledge and 43% to gain access to low cost labor). These market-seeking manufacturing companies face particular pressure stemming from the market size and the distinct market conditions. Many of the survey respondents perceive the market as fast changing and unpredictable, meaning that their customers show rapidly changing product preferences (71%) and tend to look for new products all the time (65%), which forces companies to innovate more.



This goes along the survey results, where findings show that manufacturing companies attach a higher priority to innovation when operating in a volatile market environment. 88% of respondents (up from 77% in 2017) consider innovation as important to differentiate from their competitors. 85% innovate to better meet customer needs and 82% expect innovation to lead to an increase in revenues.

Establishing a competitive price position and reducing costs are also important, but less significant as a motivation to innovate.

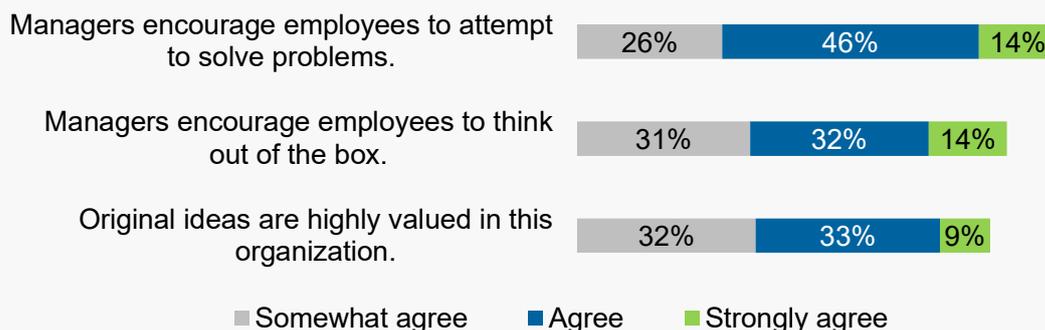
Why do you consider innovation important for your company in China?



A culture of innovation?

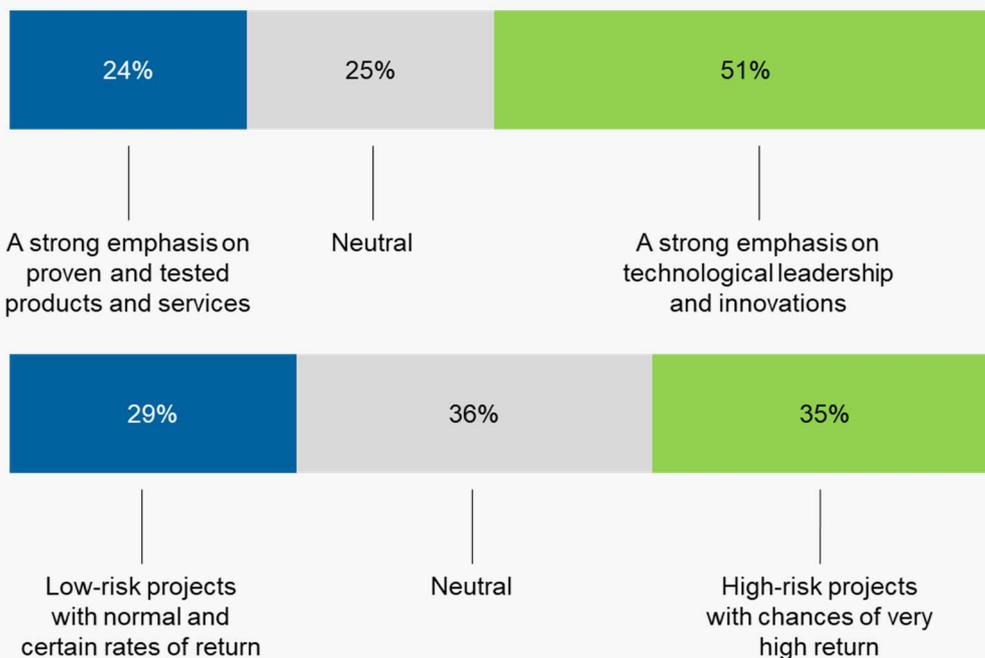
47% of respondents say that innovation is important for their Chinese entity because it is part of their company culture. It is worth looking closer at the characteristics of an innovation culture and analyze how management behavior and willingness to take risks encourage innovation.

To what extent do you agree with the following statements about the organizational culture of your Chinese entity?



The three statements above show the extent to which surveyed manufacturing companies encourage innovation through management behavior. 60% of respondents agree or strongly agree that managers in their Chinese entity encourage employees to attempt to solve problems; 46% agree or strongly agree that managers encourage employees to think outside of the box; 41% agree or strongly agree that original ideas are highly valued in their Chinese entity. These results suggest that management in many organizations focuses more on reactive problem-solving than on active generation of original ideas.

In general, top management of our Chinese entity favors ...



Half of the surveyed manufacturing companies indicate that the management of their Chinese entity favors technological leadership and innovations over proven and tested products and services.

Only one third of respondents, however, say that management prefers high-risk projects with chances of very high return over low-risk projects with normal and certain rates of return, indicating a rather cautious attitude.

Optimistic expectation of innovation output

Introducing new products appears to be vital for establishing and maintaining a competitive position. For the next three years, more than 80% of surveyed manufacturing companies expect an increase in the launch of new products in China and 89% expect an increase in the share of revenue generated by new products.

Over the next three years, does your Chinese entity expect an increase in ...

Launch of new products and services in China



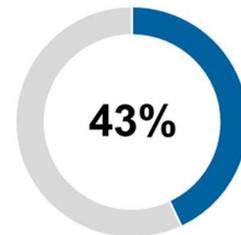
Share of revenue generated by new products and services



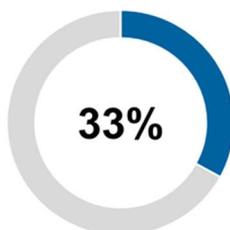
Translating strategy into action

While 83% of surveyed manufacturing companies see innovation among their top three priorities, only 43% claim to have a well-defined innovation strategy. Having a strategy is crucial in that it helps to focus efforts around objectives and priorities. Without a well-defined strategy, companies risk misdirected efforts and resources. The survey results suggest a correlation between having a well-defined innovation strategy and innovation performance: while 65% of Top Innovators have a well-defined innovation strategy, only 36% of their less innovative peers do.

"We have a well-defined innovation strategy."



"We have well-defined innovation processes."



One third of all surveyed manufacturing companies indicate to follow well-defined innovation processes. While 65% of Top Innovators claim to have well-defined processes for innovation, only 23% of the rest of the sample do so.



Organizations with a well-defined strategy are more likely to follow well-defined processes – 77% of those with a well-defined innovation strategy have clear processes for innovation in place, but only 13% of those without a well-defined innovation strategy.

Attitude towards innovation – Key takeaways

⇒ ***Innovation has become a strategic imperative for competing in China:***

Innovation ranks among the top three priorities for more than 80% of surveyed manufacturing companies, up 16 percentage points from 2017

⇒ ***Innovation not yet fully integrated in companies' strategies:***

Only 43% of surveyed manufacturing companies have a well-defined innovation strategy (vs. 65% of Top Innovators)

⇒ ***Introducing new products is vital for maintaining a competitive position:***

88% consider innovation important to differentiate from competitors; 85% innovate to better meet customer needs; more than 80% expect innovation to generate an increase in revenues;

for the next three years, most of the surveyed manufacturing companies expect an increase in new product launches and the share of revenue generated by new products



CHAPTER 2

INNOVATION ACTIVITY

Innovation activity

"In the new world, it is not the big fish which eats the small fish, it is the fast fish which eats the slow fish."

— *Karl Schwab*

*Founder and Executive Chairman of the World Economic Forum (*1938)*

Chinese strengths in innovation stem to a large part from rising technological capabilities, but are also grounded in internal structures and an ecosystem that enable high local responsiveness and flexibility. In addition, scoring relatively low in Hofstede's¹ cultural dimension of uncertainty avoidance, Chinese business leaders tend to be adaptable, entrepreneurial and comfortable with ambiguity.

Attempts to characterize Chinese innovation often result in the following attributes: incremental, 'good enough', customer proximity, bold trial and error and speed. With this approach, Chinese innovators made significant leaps and some managed to snatch away market share from established multinational competitors, not only in the consumer technology sector, but also for example, in the medical, automotive, and industrial equipment industries.

Speed, or time to market, is especially becoming more and more important for foreign companies in China to keep up with increasingly innovative local competitors, as foreign companies often lose valuable time due to a culture of over-engineering, stringent quality standards, and inflexible internal processes².

This chapter focuses on how German manufacturing companies in the Greater Shanghai region are asserting themselves on the Chinese market through innovation.

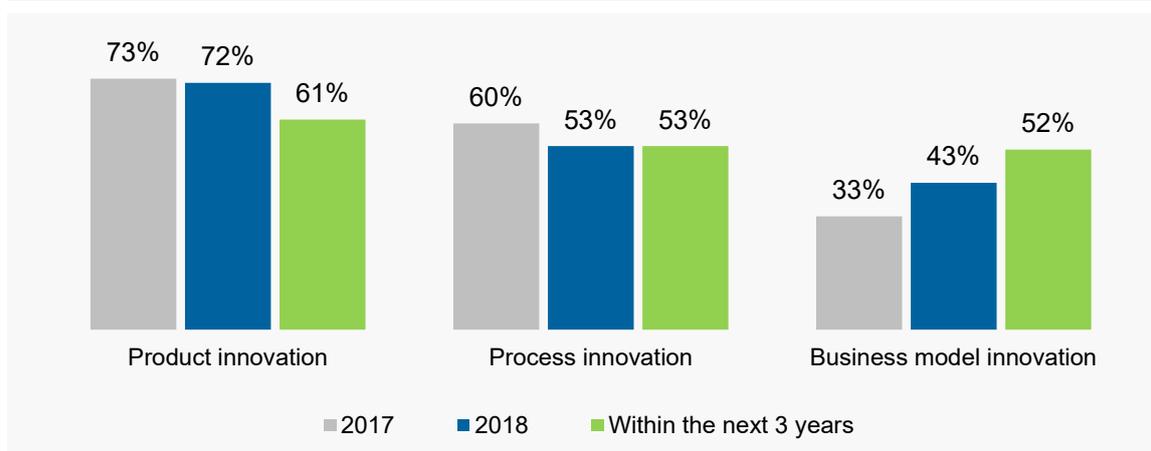
¹ Hofstede et al. (2010)

² Prud'homme & von Zedtwitz (2018)

Shifting focus of innovation engagement

German manufacturing companies in Greater Shanghai engage mostly in product innovation (72%) and less in other forms of innovation such as process innovation (53%) or business model innovation (43%). However, looking into the future, the data suggest a decreasing focus on product innovation and an increasing focus on business model innovation.

Which of the following types of innovation do/will you engage in?



This trend already emerged from the results of the Greater Shanghai Innovation Survey 2017, where only 33% of respondents indicated to engage in business model innovation, compared to 43% this year.

Over the next three years, does your Chinese entity expect an increase in innovative business models?



While technological innovation has traditionally been a huge driver of competitive advantage and the core of innovation activity among manufacturing firms, there are limitations to a technological leadership strategy and companies that broaden their scope of innovation activity to remain competitive.

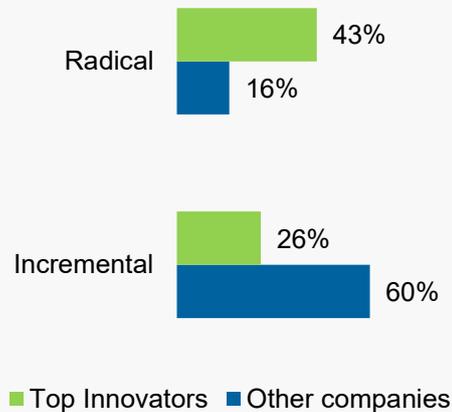
Incremental rather than radical

Half of the surveyed manufacturing companies indicate that changes in products and services in their Chinese entity are mostly incremental. Only one fifth of respondents claim to mostly engage in radical innovation.



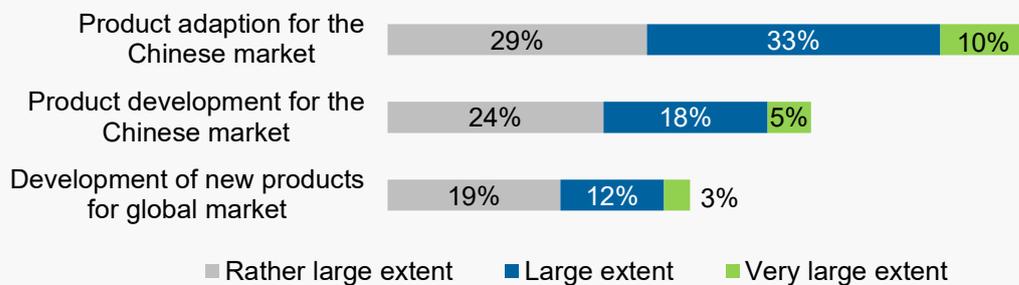
A comparison of radical versus incremental innovation between Top Innovators and their less innovative peers shows that Top Innovators engage significantly more in radical innovation than other companies (43% vs. 26%). They appear to bring a higher willingness to take risks.

Changes in products/services in our Chinese entity are mostly...



Product adaptation rather than product development

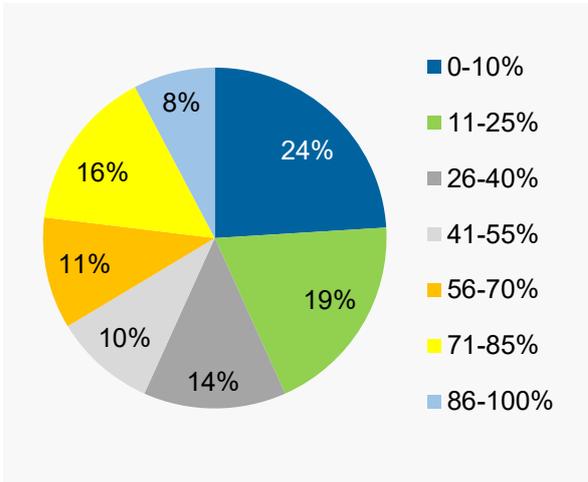
To what extent does your Chinese entity engage in the following activities?



Innovation efforts of German manufacturing companies in the Greater Shanghai region tend to lie in the adaptation of existing products to meet the demands of the local market. 72% of companies in our survey engage to a large (rather large, large, or very large) extent in product adaptation. 48% engage to a large extent in product development, while only 34% develop new products for global markets. However, the latter saw a significant increase compared to the 23% collected in the 2017 survey. This increase in local-to-global innovation activity shows China's growing attractiveness as a R&D hub, although, as revealed by the Business Confidence Survey 2017¹, concerns regarding intellectual property IP and technology transfer may still hinder R&D activities in China.

¹ German Chamber of Commerce (2017)

How much do products / services that were developed for the local market contribute to the turnover of your Chinese entity?



Product developments for the local market hold a significant turnover contribution for many of the surveyed manufacturing companies, again highlighting the importance of the local market and hence, the need to innovate locally. While for about one quarter of companies in this survey, products developed for the Chinese market account for less than 10% of turnover, more than half of the surveyed companies generate more than 25% of turnover through products developed for the Chinese market.

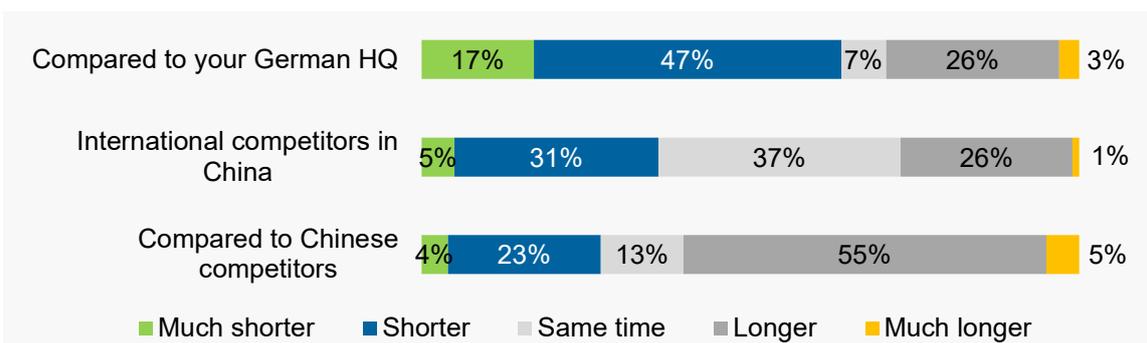
Fast, but not fast enough

A large portion of surveyed manufacturing companies indicates to have a shorter time to market compared to their German headquarters (47% shorter, 17% much shorter).

Benchmarking with international competitors in China, the respondents feel more or less on par – 36% feel they have a shorter time to market, 37% feel they have about the same time to market, and 27% think they have a longer time to market.

However, the survey results speak a clear language about time to market in German manufacturing companies in Greater Shanghai compared to their local competitors: 60% of companies in this survey think they have a longer time to market than their Chinese competitors.

How do you assess the time to market of an average product/service innovation in your Chinese entity?



Driving innovation by tapping into local know-how

Are the following options attractive to drive innovation?



Sentiments about driving innovation through mergers and acquisitions (M&A) are mixed. While 46% (45% in 2017) of surveyed manufacturing companies see the option of acquiring a Chinese company as attractive, only 14% (down from 24% in 2017) consider merging with a Chinese company an attractive option for driving innovation. About a quarter of respondents find investing in a Chinese company to drive innovation attractive.

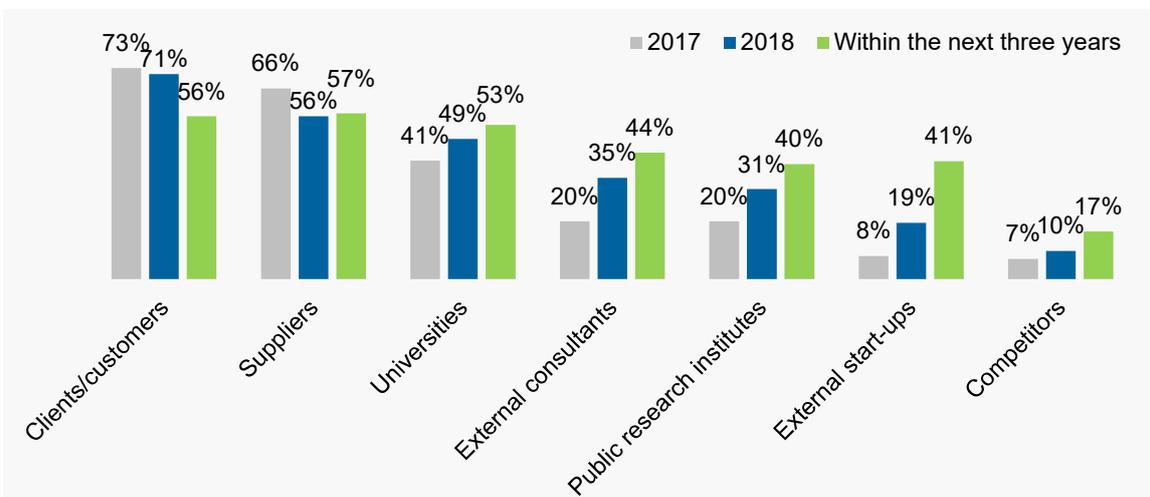
Overall, the perceived attractiveness of M&A with Chinese companies for innovation reasons has decreased compared to last year. However, in the mid-term a growing number of German companies can be expected to consider acquiring a Chinese company to strengthen their innovation portfolio, particularly in the mid-market or 'good enough' segment.

Teaming up

90% of surveyed manufacturing companies collaborate with external partners in doing innovation (up from 82% in 2017). Most popular innovation partners are customers, suppliers, and universities. While innovation collaboration with customers and suppliers exhibits decreasing popularity, collaboration with universities increased by eight percentage points compared to last year and is expected to intensify further. Further, a trend towards collaboration with other partners that do not belong to the value chain, such as external consultants and public research institutes, can be identified. This development underlines the importance of access to knowledge and skills, a key motive for presence in China for surveyed manufacturing companies. Further, collaboration with competitors is increasingly popular.

Collaboration with start-ups shows the strongest growth. While in 2017, 8% of companies in our survey worked with start-ups in innovation, this portion has grown to 19% this year and is expected to reach 41% within three years from now. Collaboration with start-ups may compensate for potential weaknesses in agility and radical innovation.

Which of the following external partners do you collaborate with in innovation?



Top Innovators exhibit a different pattern in innovation collaboration than their less innovative peers. First, Top Innovators collaborate on average with 3.4 different innovation partners while other companies collaborate on average with 2.5 different partners. Second, the portion of companies working with the following partners is higher among Top Innovators than among less innovative companies: customers (83% vs. 68%), and non-value chain partners such as universities (57% vs. 46%), external consultants (52% vs. 30%), and government or public research institutes (52% vs. 25%).

Challenges on many fronts

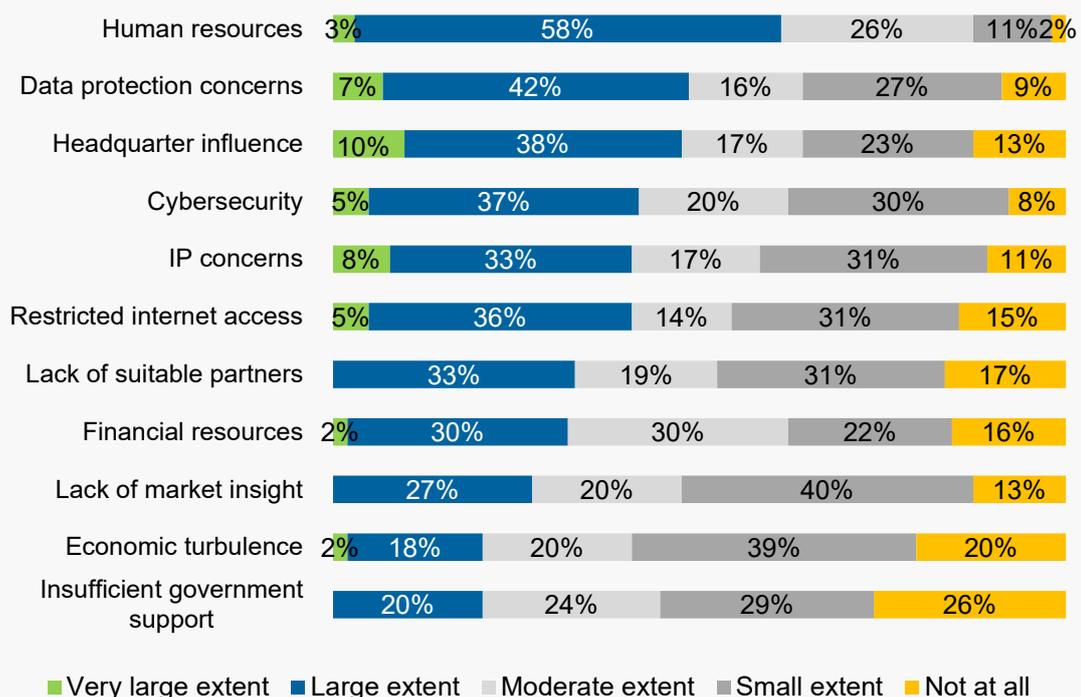
In their efforts to drive innovation, German manufacturing companies in Greater Shanghai see themselves confronted with a number of challenges. The largest barrier, in line with the results of the Greater Shanghai Innovation Survey 2017, continues to be human resources. For 61% of respondents, human resources pose a significant (rather large, large, or very large) barrier to innovation. Only 2% of respondents do not perceive human resources as a barrier to innovation.

This year’s survey also addresses to what extent data protection, cybersecurity, and restricted internet access represent barriers to innovation. All three topics appear to be sensible concerns for surveyed manufacturing companies when it comes to innovation. 49% perceive data protection as a barrier to innovation and more than 40% feel that cybersecurity and restricted internet access pose challenges for innovation.

In line with the 2017 results, headquarter influence is identified as a significant barrier to innovation. While in 2017, 37% of respondents perceived headquarter influence as a barrier, this percentage has reached 48% this year. Only 13% of respondents say that headquarter influence is “not at all” a barrier to innovation.

The protection of intellectual property continues to concern more than 40% of surveyed companies.

To what extent are these issues barriers to innovation for your Chinese entity?



Innovation activity – Key takeaways

⇒ ***Manufacturing companies broaden the scope of innovation activity to remain competitive:***

Two thirds of surveyed manufacturing companies in Greater Shanghai expect an increase in innovative business models over the next three years;

China-based innovation that results in new products for world markets is still scarce, but shows an upward trend and is expected to intensify over the coming years

⇒ ***Slow in innovation compared to Chinese competitors:***

60% of surveyed manufacturing companies think they have a longer time to market than their Chinese competitors;

only one fifth of respondents describe their innovation endeavors as “radical” – among Top Innovators this proportion is 43%

⇒ ***Knowledge and agility through collaboration:***

Almost all manufacturing companies in this survey collaborate with external partners, with most popular innovation partners being customers, suppliers, and universities;

Top Innovators collaborate more with partners that provide access to skills and knowledge (universities, external consultants, research institutes);

collaboration with start-ups is expected to intensify heavily

⇒ ***Challenges at many fronts:***

Biggest innovation barriers are human resources, factors related to the regulatory environment such as data protection concerns, cybersecurity, the protection of intellectual property and restricted internet access, and headquarter influence.

CHAPTER 3

INNOVATION SKILLS



INNOVATION SKILLS

“A smooth sea never made a skillful sailor.”

– Franklin D. Roosevelt

32nd President of the United States (1882-1945)

Attracted by a multitude of opportunities, foreign companies in China also face a myriad of challenges. For many years, one challenge has stood out and continues to worry organizations: the availability and retention of personnel. Foreign companies in China, once a preferred employer for Chinese graduates, seem to especially feel the pressure. Foreign brand reputation used to lend recruitment advantages, but while in 2008 more than 70% of Chinese university graduates expressed a willingness to work in a foreign company, this percentage went down to 28% in 2013 and reached 18% in 2017¹. Especially R&D positions in Chinese technology companies such as Alibaba, Tencent, and Xiaomi are more attractive than ever.

As the previous chapter revealed, human resources is also the biggest barrier to innovation for our survey respondents. For 63% of respondents, human resources is a concern in driving innovation.

This chapter aims to explore what specific skills companies are dissatisfied with and what measures they take to foster innovation capability.

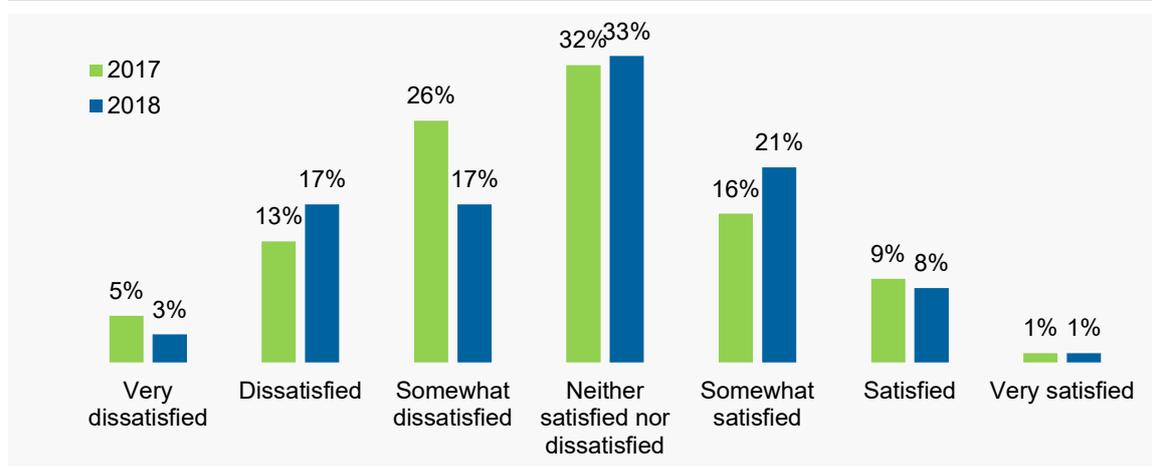
¹ Prud'homme & von Zedtwitz (2018)

Low satisfaction with innovation capability

Next to gaining market access, access to skills and knowledge is a major motive for the presence of our surveyed manufacturing companies in China (59%). Consequently, the quality of skills and knowledge is of high importance.

The results of the Greater Shanghai Innovation Survey 2018/19 reinforce last year's message: German manufacturing companies in Greater Shanghai are rather dissatisfied with the innovation skills of their employees. While 21% of respondents are somewhat satisfied, only 9% are satisfied or very satisfied. While satisfaction improved somewhat compared to last year's results, the numbers still bear witness to a serious problem for German manufacturing companies in the Greater Shanghai region.

How satisfied are you with the innovation capability of your local employees?



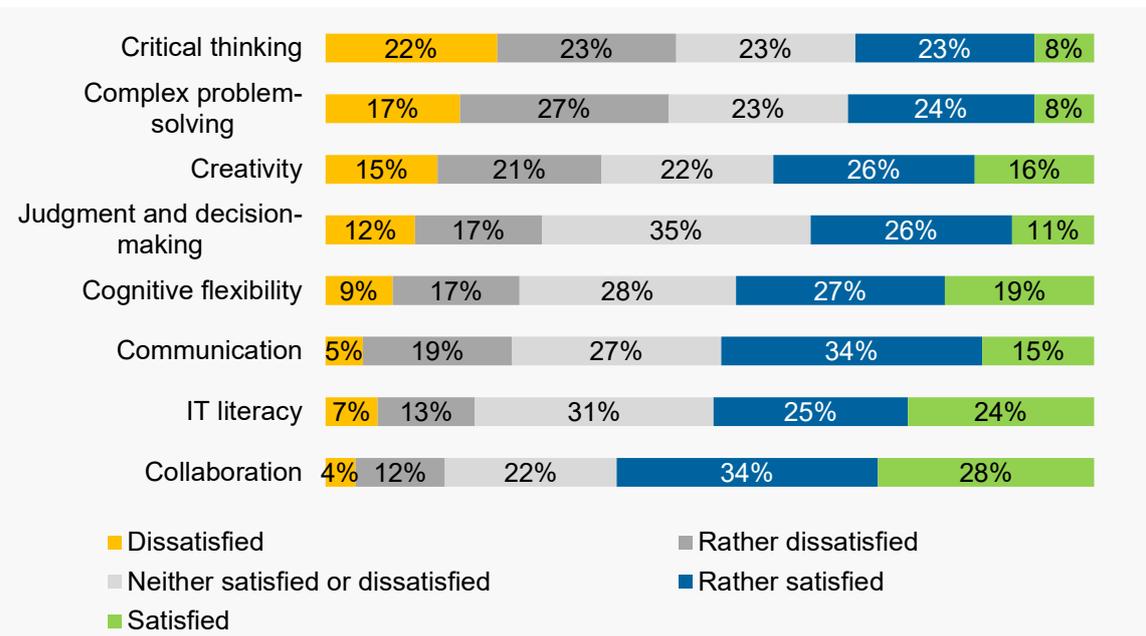
52% of Top Innovators are somewhat to very satisfied with the innovation capability of their employees vs. 23% of their less innovative peers. The reasons may lie in any of the areas of attraction, selection, development, and retention.

The core problem: ways of thinking

Dissatisfaction levels are especially high for the skills critical thinking, complex problem-solving, and creativity. These skills also head the list of top skills needed by 2020, as analyzed by the World Economic Forum¹. Reasons for skill shortages in these areas are manifold. The nature of the education system and the socio-cultural context are two important causes.

¹ World Economic Forum (2016)

How satisfied are you with the following innovation-related skills of your local employees?



The skills in the chart above can be clustered in three groups¹:

<i>Ways of thinking</i>	<i>Ways of working</i>	<i>Tools for working</i>
Critical thinking	Communication	IT literacy
Problem-solving	Collaboration	
Creativity		
Judgment / decision-making		
Cognitive flexibility		

Taking this cluster perspective of innovation skills, we find that the highest levels of dissatisfaction concern employees' ways of thinking rather than their ways of working or their ability to use tools for working. This has implications for training and development, as ways of thinking are generally harder to change than ways of working like communication and collaboration or to learn tools for working like IT literacy.

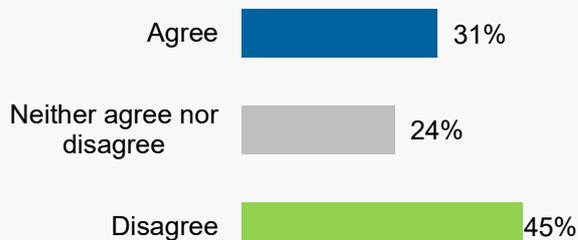


Top Innovators report higher satisfaction with several skills compared to their less innovative peers: cognitive flexibility, complex problem-solving, and critical thinking. These skills may be particularly important for innovative outcomes.

¹ Binkley et al. (2012)

Allocation of manpower not fit for innovation

“My company is dedicating the optimal manpower towards innovation in China.”

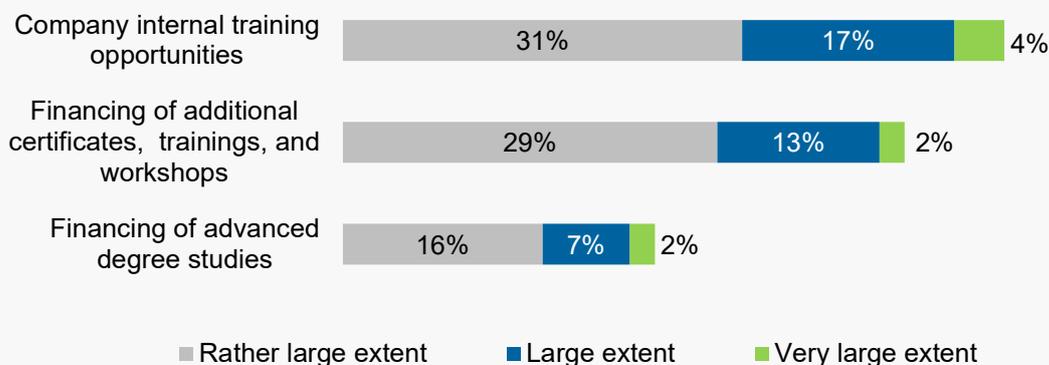


One third of survey respondents think that their company allocates the optimal manpower to innovation in China. However, a larger share, 45%, believes that manpower is not allocated to an optimal degree for innovation.

In contrast, 61% of Top Innovators agree with the statement that their company is allocating the optimal manpower towards innovation.

Active efforts to strengthen innovation through training

To what extent does your Chinese entity strengthen innovation capability through training and development?



All of the surveyed manufacturing companies strengthen innovation skills to some extent through training and development, mostly in form of internal trainings.



74% of Top Innovators provide internal innovation-related trainings to a rather large to very large extent, while only 45% of less innovative companies do so. This is one indicator for the effectiveness of innovation trainings.

Innovation skills – Key takeaways

⇒ ***Employee skills critical for innovation success:***

German manufacturing companies in Greater Shanghai are rather dissatisfied with the innovation skills of their employees;

52% of Top Innovators are somewhat to very satisfied with the innovation capability of their employees vs. only 23% of their less innovative peers – the reasons may lie in any of the areas of attraction, selection, development, and retention

⇒ ***Training innovation skills is a challenge:***

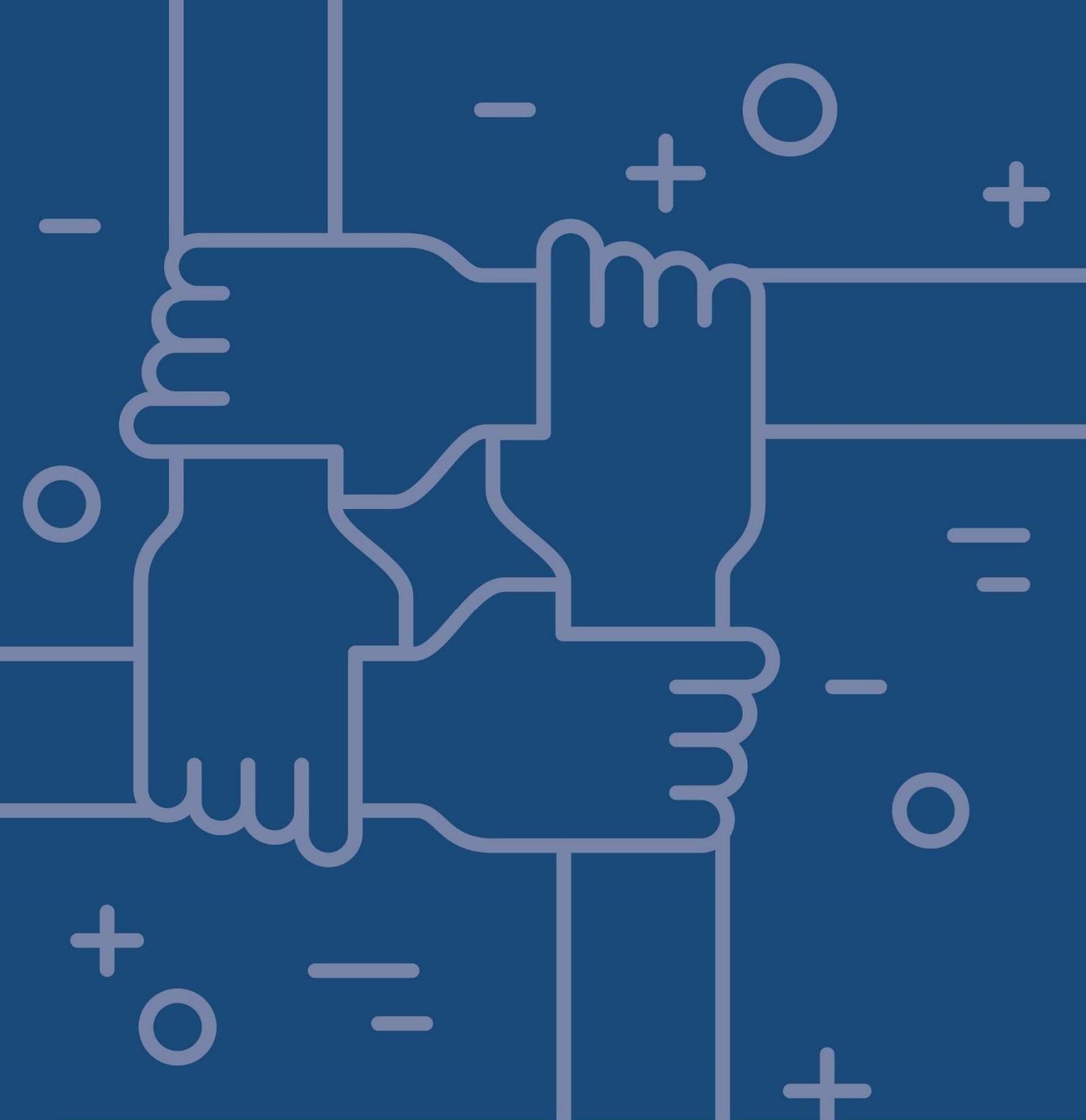
Satisfaction levels are especially low for the skills critical thinking, complex problem-solving, and creativity – all these three skills are ways of thinking and as such rather hard to change;

if organizations need innovative employees, they should pay attention to recruit people with a disposition to be innovative

⇒ ***Innovation training pays off:***

All of the manufacturing companies in this survey strengthen innovation skills to some extent through training and development, mostly in the form of internal trainings;

74% of Top Innovators provide internal innovation-related trainings to a rather large to very large extent, while only 45% of less innovative companies do so, indicating that innovation training does pay off



CHAPTER 4

HEADQUARTER INFLUENCE

HEADQUARTER INFLUENCE

"Freedom is nothing but a chance to be better."

— *Albert Camus*

French philosopher (1913-1960)

Autonomy provides organizations the freedom to develop and implement entrepreneurial initiatives and to respond to local market needs. While subsidiaries tend to adopt autonomy-seeking behavior, headquarters usually strive for more centralization.

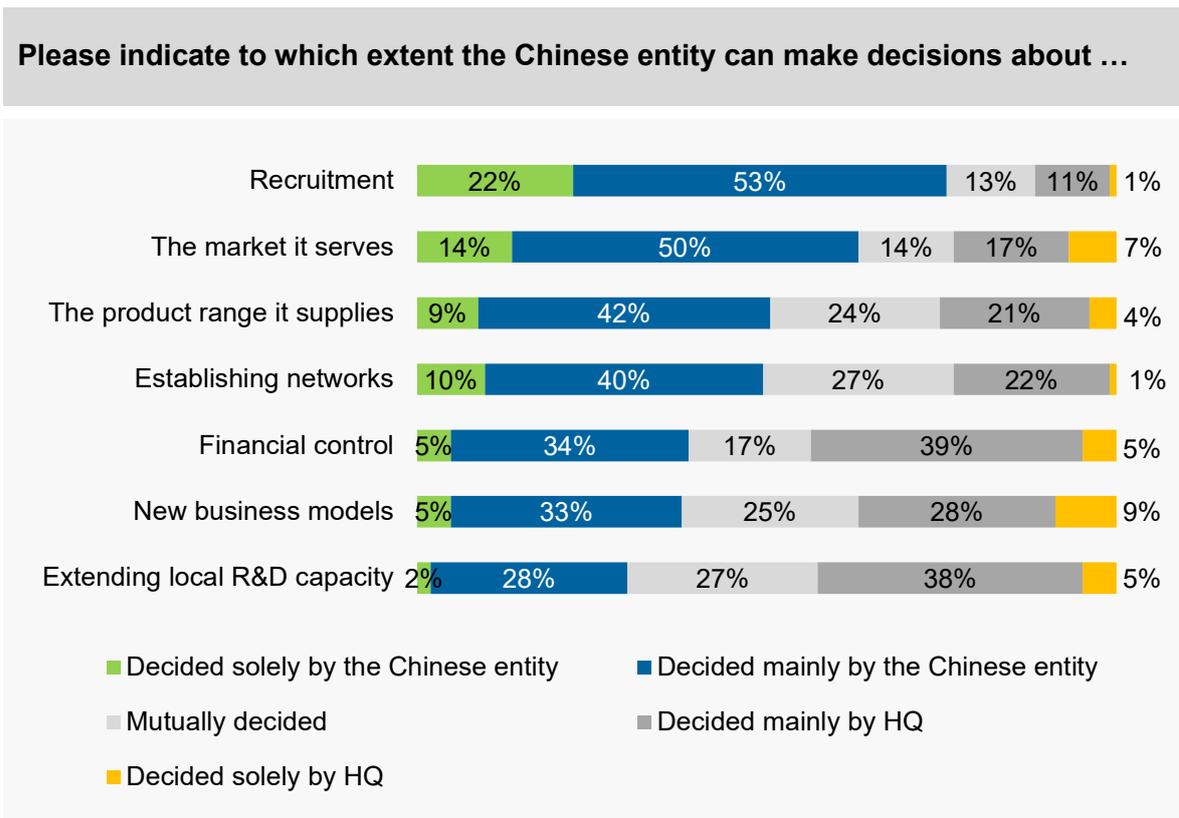
This was also experienced by a German multinational chemical company when starting to regionalize its R&D activities¹: Historically, the company had conducted R&D at its global headquarters in Germany. Under the company's new regionalization strategy, 25% of its R&D were put in Asia, for example through the establishment of an Innovation Campus in Shanghai in 2012. For this chemical company, regionalizing R&D also meant shifting decision-making authority away from Germany, but, as a top manager in the Asia Pacific organization recalls, "this was something that was resisted internally". He doubts being able to develop "a good feel" for the industry if decision makers are not in China, but in Europe or the United States.

The consequences of not moving decision making authority to China can be costly, shown in the following example of another company from the chemical industry: Managers from the Chinese subsidiary reported to German headquarters that the Chinese electric car market was starting to take off, but executives at headquarters ignored these reports, insisting that electric bikes offered the bigger market opportunity in China. As a result, the company continued developing batteries for electric bicycles while China turned into the world's largest market for electric cars.

As these examples from the chemical industry suggest, the influence of headquarters plays an important role in developing local innovation capability and, according to the survey results, is a key barrier to innovation for German manufacturing companies in the Greater Shanghai region.

¹ Tremblay, J. (2018)

Little autonomy in innovation related decisions



Looking at the surveyed manufacturing companies, a considerable portion enjoys wide autonomy when it comes to decisions about the markets they serve (64% decided mainly or solely by the Chinese entity) and the products or services they supply (51% decided mainly or solely by the Chinese entity). Also, recruitment is mostly the responsibility of the Chinese entity with recruiting decisions being made mainly or solely by the Chinese entity in three quarters of surveyed companies.

In other areas, Chinese entities of German manufacturing companies in Greater Shanghai enjoy less freedom. One such area is financial control. For 44% of surveyed manufacturing companies, financial control lies mainly or solely with headquarters.

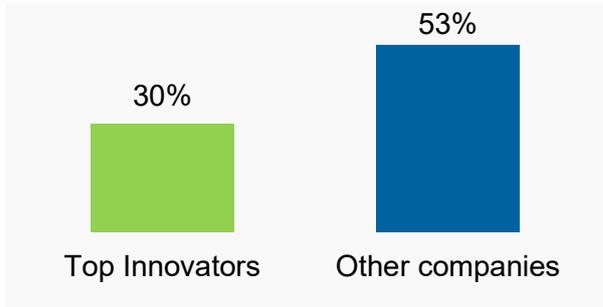
Looking at decisions concerning the extension or establishment of local R&D capacity and the development of new business models, only about one third of Chinese entities of German manufacturing companies make decisions mainly or only on their own. Headquarters tend to keep a short leash, which, in some cases, may be the result of an uncertain regulatory environment.



Top Innovators enjoy considerably higher autonomy than their less innovative peers with regard to the products and services they supply, establishing networks, developing new business models, and extending local R&D capacity.

Headquarter influence less of a barrier for Top Innovators

HQ influence considered a barrier to innovation to a large or very large extent

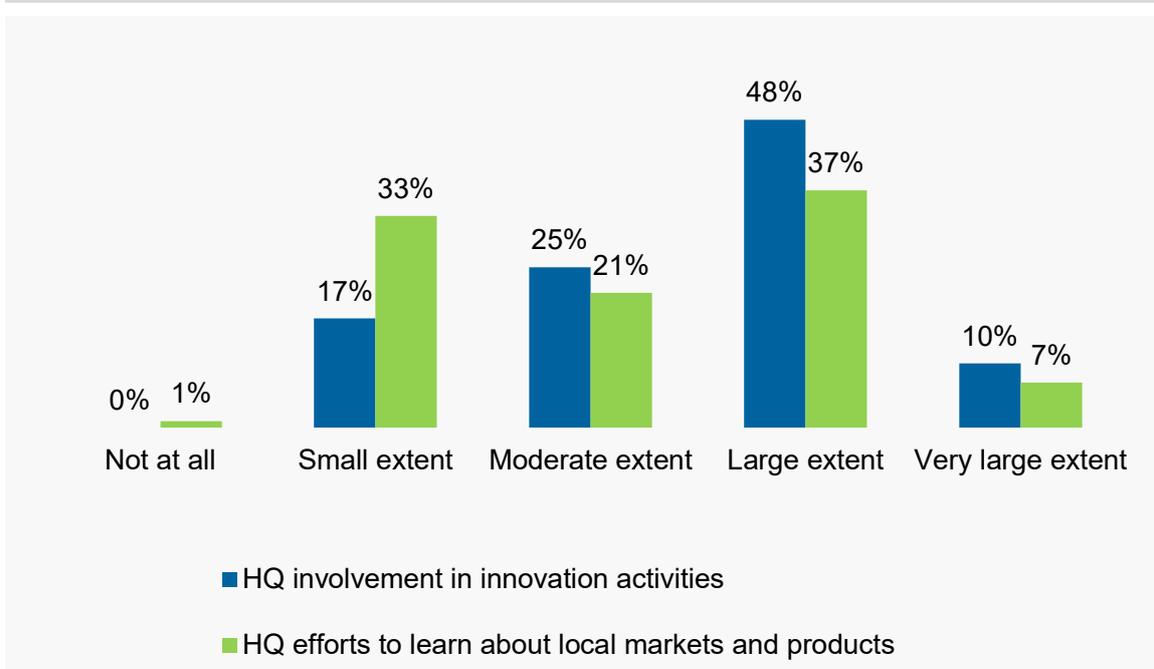


Since Top Innovators have more autonomy in several areas, they consider headquarter influence as less of a barrier to innovation than other companies. While only 30% of Top Innovators consider headquarter influence do be a barrier to a large or very large extent, more than half of the rest of the sample does.

Headquarter attention: involvement in innovation

Headquarters' attention is an important mechanism to raise a subsidiary to an important player in the organization and spur its development¹. In the underlying survey, headquarter attention is looked at from two angles. First, headquarter involvement in innovation activities and efforts to learn about local markets and products, and, second, the number of visits of headquarter executives to the Chinese entity.

To what extent does the following occur in your Chinese entity?



¹ Ambos & Birkinshaw, 2010

For a large percentage of companies, headquarters play an important role in innovation activities: 58% of surveyed manufacturing companies say that headquarters are involved in innovation activities to a large or very large extent.

However, only 44% of respondents indicate that headquarters demonstrate efforts to learn about local markets and products to a large or very large extent.

Headquarter involvement without the corresponding active efforts to genuinely understand the local market may lead to tensions between the Chinese entity and headquarters and to headquarter influence being perceived as a barrier to innovation.

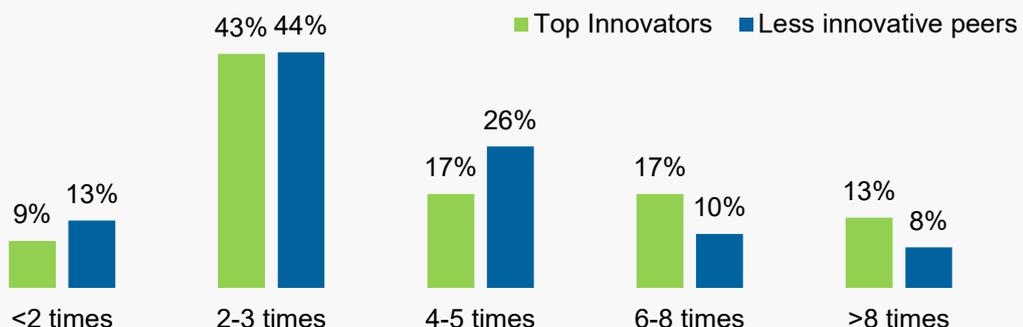
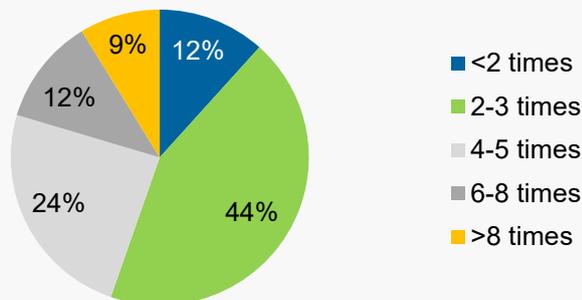
Headquarter attention: visits to China

About half of surveyed manufacturing companies receive up to three visits per year from headquarters and another quarter of companies receive four to five visits per year. Around 20% of companies receive six or more visits annually.



30% of Top Innovators receive six or more visits per year compared to only 18% of their less innovative peers.

How often does HQ' top management visit your Chinese entity per year?



Headquarter influence – Key takeaways

⇒ ***Headquarters keep the leash short in innovation-related areas:***

Surveyed manufacturing companies in Greater Shanghai enjoy wide autonomy when it comes to decisions about the markets they serve, the products they supply, and recruitment, but less freedom in finance, local R&D, and new business models

⇒ ***Autonomy drives innovation:***

Top Innovators enjoy considerably higher autonomy than their less innovative peers with regard to the products and services they supply, establishing networks, developing new business models, and extending local R&D capacity

⇒ ***Headquarters involved in innovation activities – but efforts to understand local markets are limited:***

In a large share of surveyed manufacturing companies, headquarters play an important role in innovation activities: 58% of surveyed companies say that headquarters are involved in innovation activities to a large or very large extent – however, only 44% of respondents indicate that headquarters demonstrate serious efforts to learn about local markets and products

CHAPTER 5

DIGITAL TRANSFORMATION



DIGITAL TRANSFORMATION

"The biggest impediment to a company's future success is its past success."

— *Dan Schulman*

*CEO of Paypal (*1958)*

Industrie 4.0 is full of potential for manufacturing companies. It may improve the flexibility, speed, productivity, and quality of production processes and lay the foundation for the adoption of new business models and other innovations¹.

The difficulty lies in assessing the potential impacts and developing strategies to take advantage of the opportunities brought by digitalization and Industrie 4.0. While the heart of the Industrie 4.0 idea is the application of information technology to production, every organization may have its own definitions and hold individual expectations. Companies may perceive the disruption for value chains, people and business models as more or less fundamental².

The general attitude towards digitalization differs strongly between countries, especially comparing Asian and European nations. In Germany, only 48% of the population see digitalization as rather positive, while in China 83% of the population do so³.

¹ Rüßmann et al. (2015)

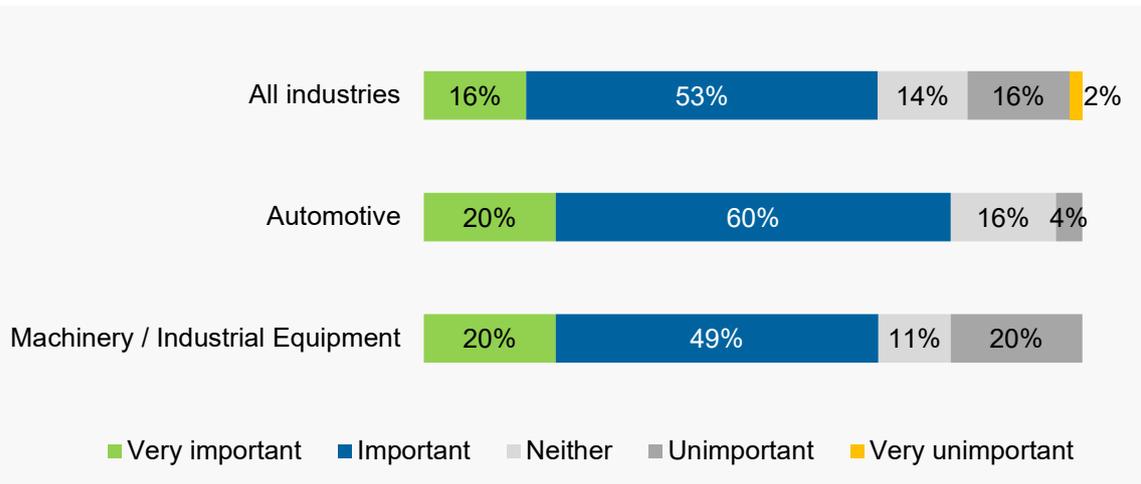
² Gates & Bremicker (2017)

³ Heuzeroth (2018)

Industrie 4.0 perceived as important for business

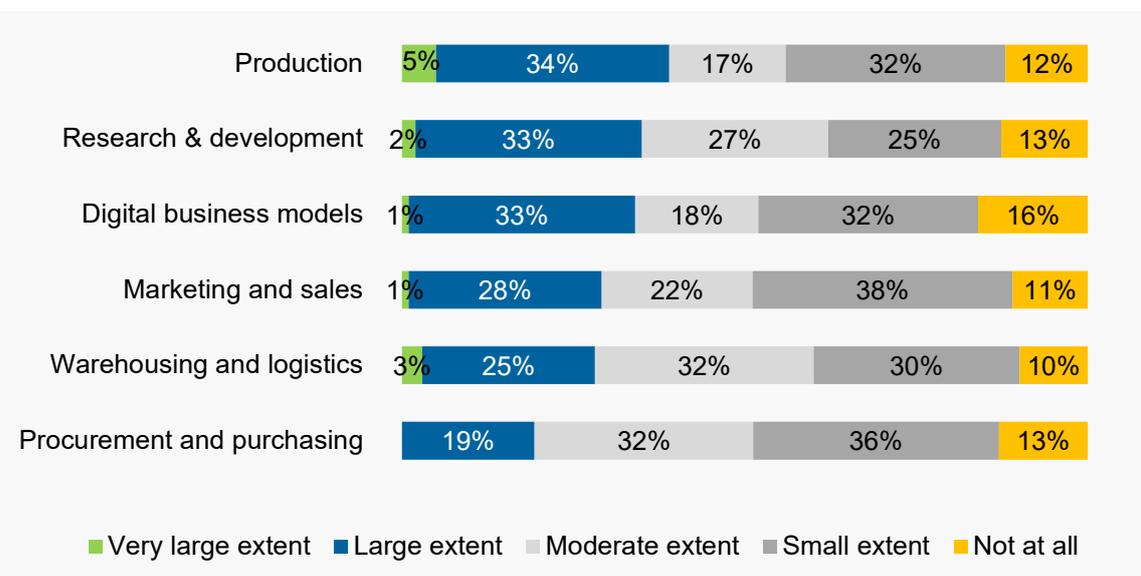
Surveyed manufacturing companies clearly consider Industrie 4.0 important for their industry. About 70% of all respondents think that Industrie 4.0 is important or very important for their industry, and 80% of respondents from the automotive industry say so.

Please assess the importance of Industrie 4.0 for your industry.



Looking at different business functions, about one third of German manufacturing companies in the Greater Shanghai region are implementing Industrie 4.0 components in their operations. Implementation is most prevalent in the areas of production, R&D, and business modelling.

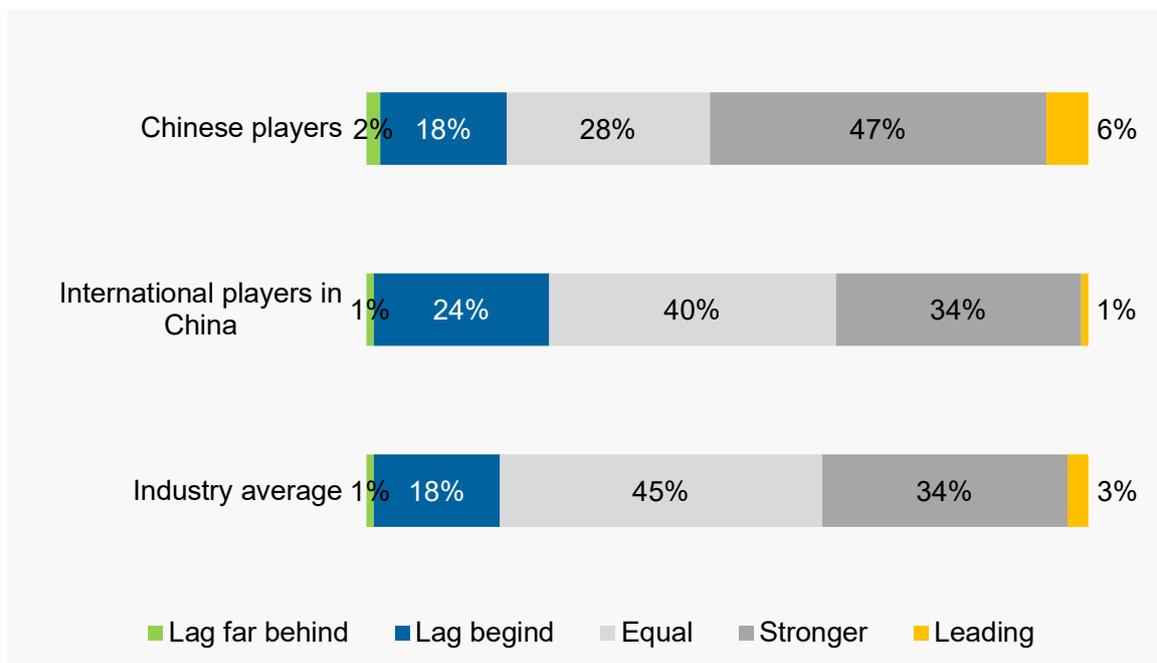
To what extent are you engaging in digitalization and Industrie 4.0 in below functions?



Confident about digitalization level

A large portion (53%) of surveyed manufacturing companies assess their digitalization level as stronger than the level of digitalization of Chinese competitors. However, the percentage drops when respondents are asked to compare their digitalization level to international players or the industry average.

Please assess your Chinese entity's digitalization level compared to your competitors.

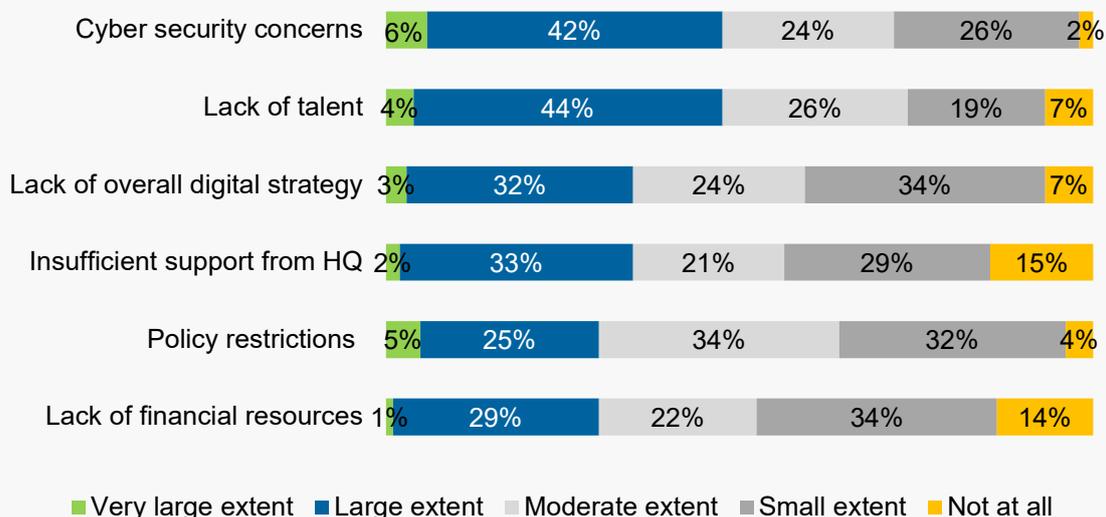


Talent a top concern also for digitalization

The top challenges for the digital development within German manufacturing companies in Greater Shanghai are the concerns around the Cyber Security Law and lack of talent. Almost half of all respondents consider these two issues a challenge to a large or very large extent.

Another 36% say that the lack of an overall digital strategy and insufficient support from headquarters are concerns in their digital development.

To what extent do below challenges matter for the digital development within your Chinese entity?



Top Innovators are less concerned by insufficient support from headquarters and lack of financial resources. However, a larger share of Top Innovators sees policy restrictions as a reason for concern.

Digital transformation – Key takeaways

⇒ ***Implementation of Industrie 4.0 in single functions:***

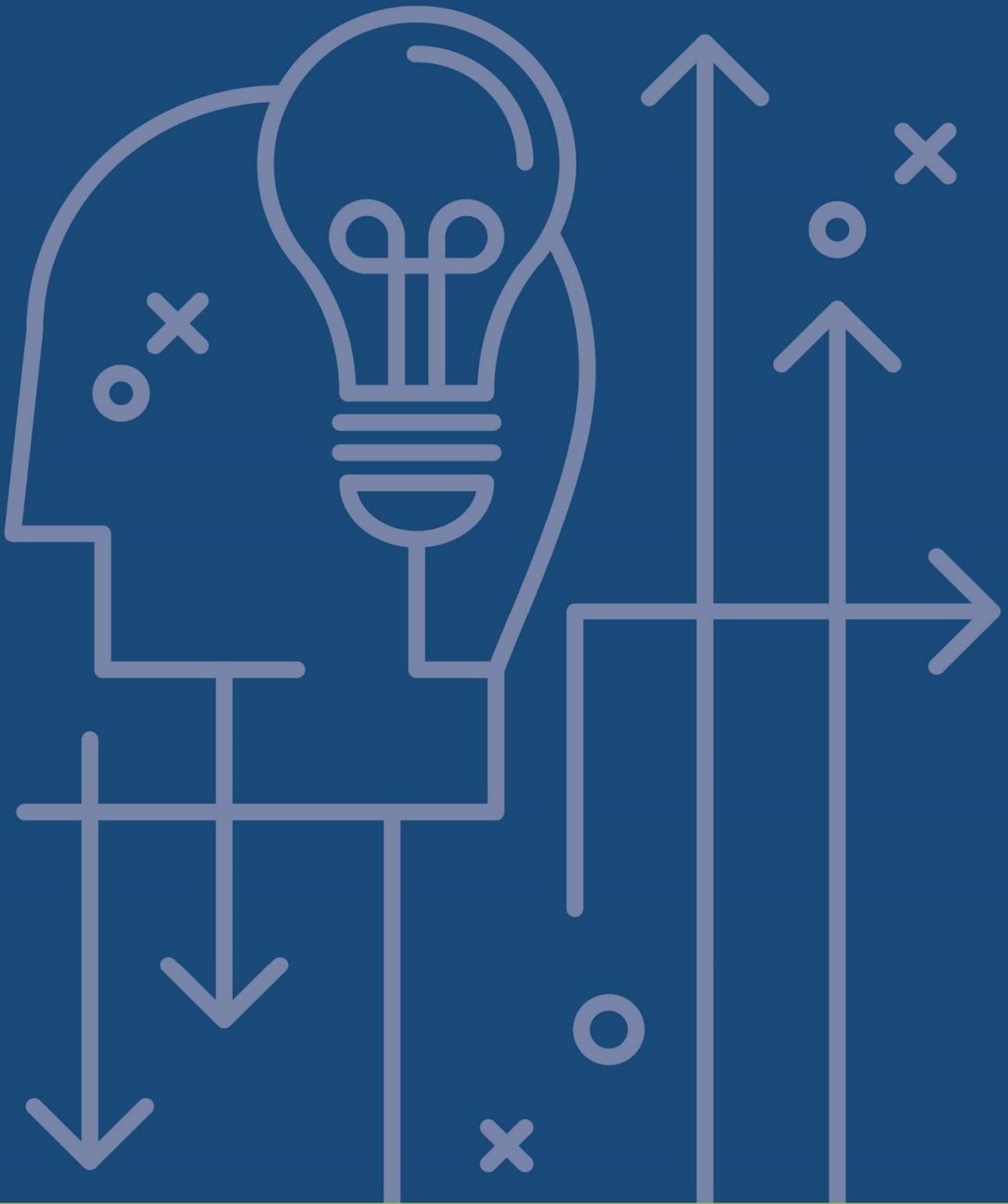
About 70% of all surveyed manufacturing companies think that Industrie 4.0 is important or very important for their industry; engagement is most prevalent in the areas of production, R&D, and business modelling, with more than one third of surveyed manufacturing companies implementing digitalization and Industrie 4.0 components

⇒ ***Human resources a challenge also for digitalization:***

Top challenges for the digital development within respondents' Chinese entities are cyber security and a lack of talent; almost half of all respondents consider these two issues a challenge to a large or very large extent

⇒ ***Leading innovators see policy restrictions as a challenge in their digital development:***

A larger percentage of Top Innovators compared to other companies sees policy restrictions as a reason for concern, very likely to be connected with data protection concerns



CHAPTER 6

REGULATORY ENVIRONMENT



Regulatory environment

"Control leads to compliance; autonomy leads to engagement."

— *Daniel H. Pink*

*American author (*1946)*

Next to human resources and headquarter influence, barriers to innovation are mainly concerning the regulatory environment. Data protection, cybersecurity, the protection of intellectual property, and restricted internet access are all issues that put German manufacturing companies in Greater Shanghai at a challenge in doing business, especially in being innovative.

Some recent developments in the regulatory environment prompt us to take a closer look.

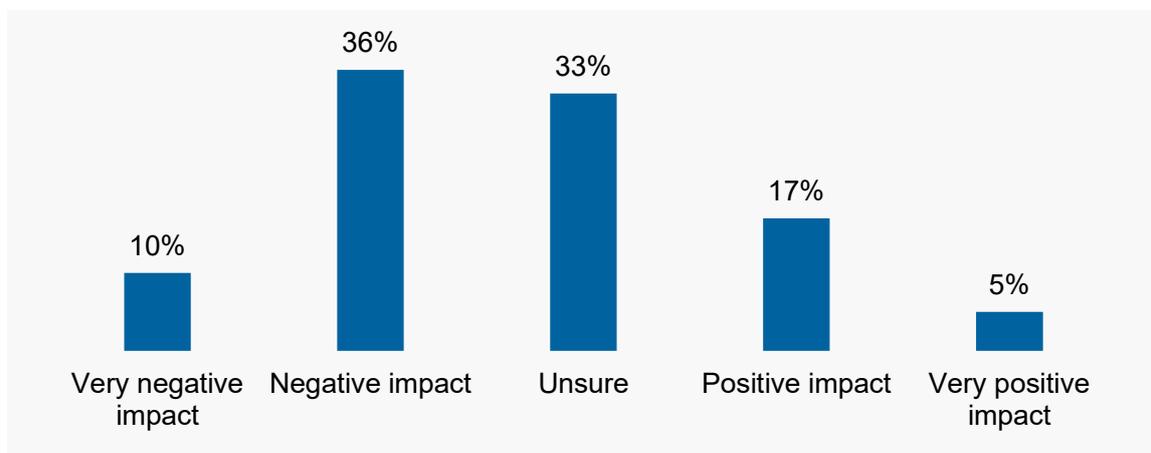
There is, for one, the new Cyber Security Law (CSL) that came into effect in June 2017; a sweeping piece of legislation followed by a slew of more specific implementing rules and guidelines, some of which still not formally issued. The new rules are supposed to tighten up the safety of computer networks, improve data privacy and restrict the overseas transfer of “personal information” and so-called “important data”, i.e. data closely related to national security, economic development and social public interests. The new cybersecurity framework comes with a number of concerns for German companies: It is likely to put stringent new requirements on technology companies and other businesses reliant on information technology as well as on the flow of data between Chinese subsidiaries and global headquarters.

While the CSL is a reason for concern for many German companies, IP protection shows some improvement. In the past few years, the Chinese leadership has made enhancing IP protection a national priority and has proposed a series of guidelines and plans to better incentivize quality patents and the commercialization of inventions. Foreign companies are not the only ones to enforce IP protection in China. Many Chinese enterprises have developed to a level where they rely on IP protection as much as foreign companies.¹

¹ Prud'homme (2017)

Cyber Security Law met with uncertainty

What impact are you expecting the Cyber Security Law to have on the innovation performance of your Chinese entity?



46% of surveyed German manufacturing companies in Greater Shanghai expect the CSL to have a negative impact, while one third of respondents are unsure. Less than a quarter of respondents are confident that the law will have a positive impact on their innovation performance.

The new CSL norms also the use of Virtual Private Networks (VPN). The rules, some of which are still in drafting stage, restrict the use of cross-border VPNs to only internal work purposes and under the condition that companies purchase the service from the official carriers who are currently the only ones licensed to provide such services.

Do you consider a VPN an essential part of conducting your daily business?

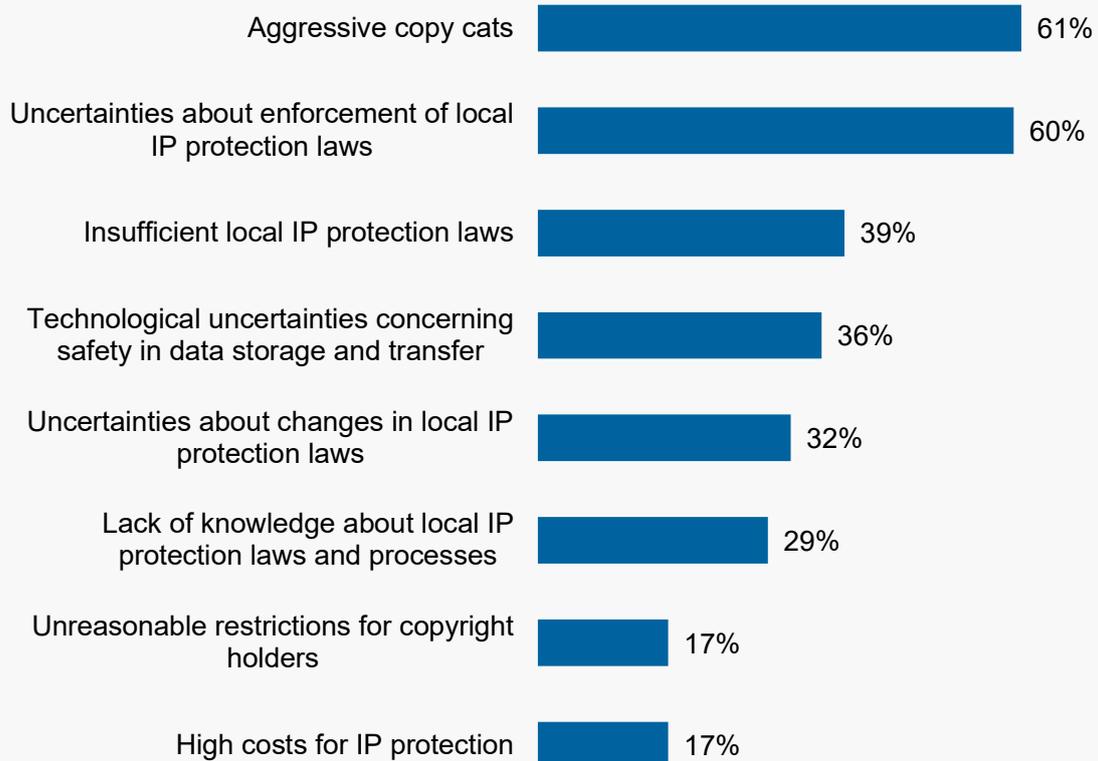


The restriction of VPN usage under the new CSL is a worrisome development for German manufacturing companies in Greater Shanghai, with 86% of respondents considering a VPN an essential part of conducting their daily business in China.

Concerns about enforcement of local IP protection laws

Aggressive copy cats are a major issue causing concerns about IP protection for German manufacturing companies in the Greater Shanghai region. While companies are not so much worried about the existence of IP protection laws, it is more the actual enforcement of such laws that causes uncertainties.

Which of the following issues are causing concerns about IP protection in China?

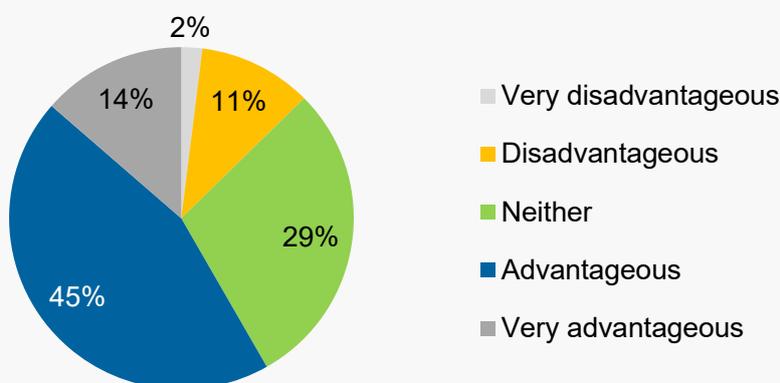


Made in China 2025 overall advantageous for innovation plan despite request for equal opportunities

Made in China 2025, an initiative to comprehensively upgrade the Chinese industry, creates challenges as well as opportunities for foreign companies in China. While on the one hand, greater competition from Chinese companies and a push for Chinese companies to buy locally can be expected, foreign companies supplying critical technology in the priority sectors can also benefit from the initiative.

60% of surveyed German manufacturing companies expect the Made in China 2025 initiative to be advantageous or very advantageous for their innovation plan. However, quite a large portion of respondents also says the initiative will bring neither advantages nor disadvantages. This may also indicate some degree of uncertainty about Made in China 2025. 13% of respondents think the initiative is disadvantageous for their innovation plan.

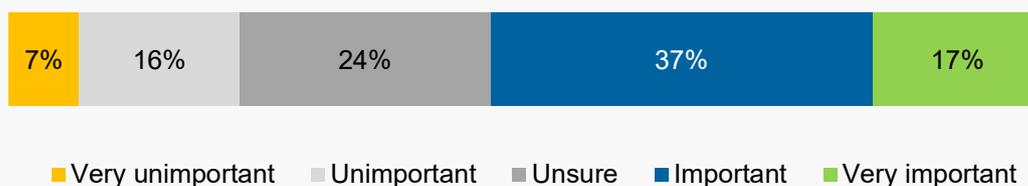
To what extent is the Made in China 2025 strategy advantageous to your Chinese entity's innovation plan?



Support from German government is desired

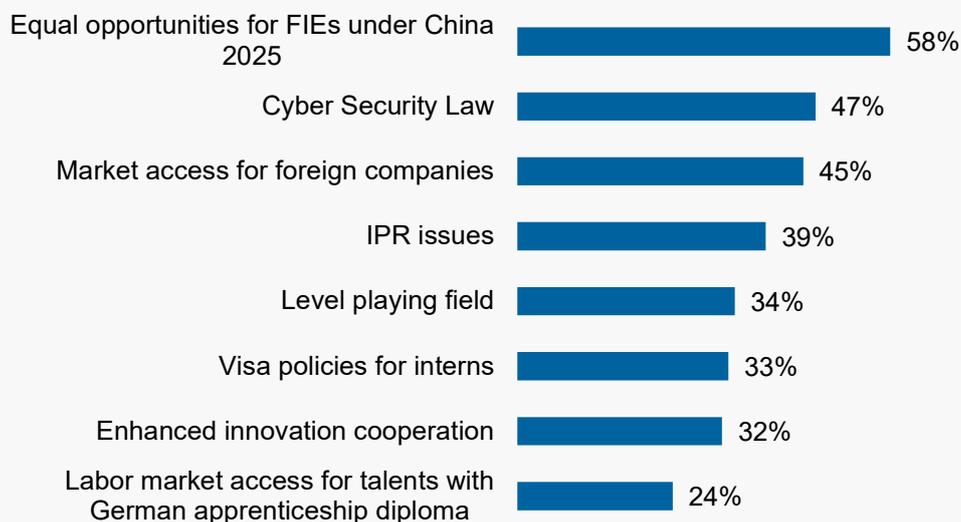
More than half of surveyed manufacturing companies consider support from the German government important or very important for their entity’s ability to innovate in China. Only about one quarter believes governmental support is not important.

How important do you consider German governmental support to ensure your company’s ability to innovate in China?



Although German manufacturing companies in Greater Shanghai perceive Made in China 2025 as rather advantageous for their innovation plan, they particularly wish for governmental support to achieve equal opportunities for foreign invested enterprises under the initiative, indicating that German companies, or foreign companies in general, feel at a disadvantage. They further voice the opinion that the German government should also act upon restrictions issued with regard to cybersecurity and push for improved market access for German companies.

What current innovation issues do you consider urgent for the German government to act upon?



Regulatory environment – Key takeaways

⇒ ***Negative impact of the new Cyber Security Law:***

46% of surveyed German manufacturing companies expect the law to have a negative impact on the innovation performance of their Chinese entity, while one third of respondents are unsure

⇒ ***Concerns about enforcement of IP protection laws:***

Aggressive copy cats remain a major issue causing concerns about IP protection for German manufacturing companies in Greater Shanghai; while companies are not so much worried about the lack of IP protection laws to fight these copy cats, it is rather the actual enforcement of such laws that causes uncertainties

⇒ ***Companies wish for support from the German government:***

Equal opportunities for foreign invested enterprises under Made in China 2025, gaining better market access, and the concerns around the new Cyber Security Law are the top three areas where more than half of the surveyed manufacturing companies consider support from the German government important or very important for their company's ability to innovate in China

Conclusions and recommendations

With this study, we aimed to establish an up-to-date understanding of how German manufacturing companies in the Greater Shanghai region engage in innovation in their daily business operations. The data shed light on what Top Innovators do differently than other companies, helping us to derive learnings and managerial recommendations.

The following recommendations can be helpful for developing an innovative organization in China.

Further, to truly flourish, innovative companies in China need to be placed in an innovation ecosystem that supports innovation in all its forms. This requires strong institutional support. Therefore, the last concluding remark is addressed to the Chinese government which plays a key role in creating a transparent and reliable innovation ecosystem for local and foreign companies in China.

Top innovative German companies in China:

- ⇒ Have well-defined innovation strategies and processes
- ⇒ Engage in open innovation
- ⇒ Collaborate with knowledge partners: universities, external consultants, research institutes
- ⇒ Provide internal innovation-related training
- ⇒ Enjoy more autonomy from HQ
- ⇒ Are willing to take risks

1. Speed up

"In the new world, it is not the big fish which eats the small fish, it is the fast fish which eats the slow fish.", Karl Schwab, Founder and Executive Chairman of the World Economic Forum, once said. Where could this apply better than here in China, where foreign as well as local companies are facing constantly changing customer needs, emerging market opportunities that do not wait long to be exploited, and new regulations that challenge old ways of doing things? To recall, 60% of surveyed German manufacturing companies think they have a longer time to market than their Chinese competitors. Organizations do not necessarily have to adopt the same speed as many Chinese innovators who are known for their trial and error mentality, yet, German companies could benefit from moving up a gear.

2. Make innovation a strategic priority

Innovation is a strategic priority for most of our surveyed manufacturing companies, but only 43% of them actually have a well-defined innovation strategy (about the same as last

year) and 33% have well-defined innovation processes. The survey results confirm: the existence of both a well-defined innovation strategy and processes for innovation correlate with innovation performance. We therefore encourage German companies, if they consider innovation a priority for their business, to give the same priority to developing an innovation strategy as they do to developing an overall business strategy, since, ultimately, innovation may have the power to create and maintain competitive advantages in this fast-moving Chinese market. Finally, the alignment with the global innovation strategy will ensure the strategy's sustainable success.

3. Balance know-how protection and agility

Having raised the importance of autonomy for innovation last year, this year's research reinforces the message: headquarters who grant more autonomy have more innovative Chinese subsidiaries. Granting more autonomy means leaving decisions in certain areas to the local subsidiary, especially regarding the establishment of networks, the development of new business models, and the extension of local R&D capacity. However, while subsidiaries tend to adopt autonomy-seeking behavior to develop agility and to seize local market opportunities, headquarters usually strive for more centralization to keep control, protect know-how, and minimize risks. Finding the balance is a challenging process. Instead of simply letting the subsidiary go its own way, a coordinated process, a trust-based relationship, and strong capabilities on the side of the subsidiary are required to make it a success. Finally, local entities should be given the opportunity and resources to act in accordance with local market requirements.

4. Engage in open innovation

To speed up the development process and tap into new knowledge domains, companies will have to diversify their portfolio of innovation cooperation partners and engage in open innovation. Just as diverse teams produce more creative results than teams with members from a homogeneous background, companies benefit from teaming up with external partners to generate new ideas and marketable solutions.

Collaboration can be especially helpful to close potential gaps, compensate for potential weaknesses, and, ultimately, create synergies. Next to innovation collaboration with customers, especially collaboration with universities, external consultants, and public research institutes – all sources of knowledge and skills – are associated with higher innovation performance. Collaboration with start-ups may lend companies access to latest developments in new domains and

bring agility to the organization. The choice of suitable collaboration partners requires a solid understanding of the local innovation eco-system.

5. A need for an improved regulatory landscape

People and organizations always look for the best breeding ground for doing innovation. However, in the 2018 Global Innovation Index¹ comprising 126 nations, China ranks 100th in the category “regulatory environment”. Similarly, the results of this survey suggest that German manufacturing companies in the Greater Shanghai region show reservation in doing innovation, to a large part because of deep-rooted barriers to innovation in the regulatory environment.

An improved regulatory environment could also lead to more autonomy from headquarters which in turn facilitates innovation performance. This would not only benefit German companies, but also enhance collaborative innovation with Chinese partners that will eventually benefit China’s economic growth and ongoing transformation towards an innovation-driven economy.

The German Chamber of Commerce in China | Shanghai encourages Chinese authorities to:

- (1) Increase **transparency** and ensure **fair implementation** of rules and regulations in general, and address concerns regarding the new **Cyber Security Law** in particular.
- (2) Proactively address concerns surrounding the protection of intellectual property. In particular, surveyed manufacturing companies raised concerns about the **enforcement of IP protection** laws especially in regard to innovation activities.
- (3) Ensure **equal treatment of foreign companies under Made in China 2025**. Equal opportunities and market access are key to a flourishing innovation landscape.

¹ Cornell University, INSEAD, WIPO (2018)

结语

通过此次研究，我们旨在深入了解在上海及周边地区的德资制造业企业是如何在日常业务运营中进行创新。这些数据揭示了顶尖创新者与其他企业的不同之处，帮助我们总结经验并提供管理建议。

以下的建议对在中国发展创新型组织有一定的帮助。

在中国最具创新能力的德国企业：

- ⇒ 有清晰的创新战略和流程
- ⇒ 敢于承担风险
- ⇒ 与诸如大学、外部顾问、研究机构等知识合作伙伴一同协作
- ⇒ 提供内部与创新相关的培训
- ⇒ 享有更多总部给予的自主权

在中国，企业想要真正的蓬勃发展，企业需要建立一个支持各种形式创新的机制，这需要强有力的制度支持。因此，中国政府在为本土企业和外国公司创造一个透明的创新环境方面，起着至关重要的作用。

1. 加快步伐

世界经济论坛(World Economic Forum)创始人兼执行主席卡尔·施瓦布(Karl Schwab)曾表示：在新时代，不是大鱼吃小鱼，而是快鱼吃慢鱼。这句话充分体现在中国市场。在中国，外国和本土企业都面临着客户需求不断变化，新兴市场不断被开发，新的监管制度挑战着传统的行为方式。60%的受访德国制造业企业认为，与中国竞争对手相比，他们的新产品需要更多的时间上市。德资企业不一定要拥有与那些极具试错精神的中方创新型企业同等的速度，然而德国企业依然可以从加快步伐中获益。

2. 把创新作为战略重点

创新是我们调查的大多数制造业企业的战略重点，但只有 43%的企业有明确的创新战略(与去年差不多)，33%的企业有明确的创新流程。调查结果证实：明确的创新策略及流程与创新绩效相关。因此我们鼓励德国公司：如果他们认为创新是他们业务的重点，那么制定创新战略与制定整体商业战略应同等重视。因为在快速发展的中国市场，创新可能是企业创造和保持竞争优势的源泉。最后，与全球创新战略相符合将确保战略的可持续成功。

3. 平衡对专有技术的保护和灵活性

在去年提出自主创新的重要性之后，今年的研究更是强化了这一点：总部适当的放权将使其中中国子公司更具有创新力。赋予更多的自主权意味着将某些领域放权给其子公司，特别是在建立网络、开发新的商业模式和扩展本地研发能力领域。虽然子公司往往自主寻求灵活发展并抓住当地的市场机遇，但是总部尤其是中型企业的总部，通常力求更加集中，以保持控制，保护专有技术并尽量减少风险。寻求其中的平衡点是一个具有挑战性的过程。比起自由放任，总部应该通过互相协调，建立相互信任关系，培养子公司的能力使其获得成功。最后，总部应给予分部一定的机会和资源，让子公司依据当地市场需要行事。

4. 参与开放式创新

为了加快发展进程，开拓新的知识领域，企业应该与不同的合作伙伴合作，参与开放式创新。比起只有相同背景的团队，多元的团队能产生更有创造性的成果。同样的道理，与外部合作伙伴的合作，企业能从中获益，从而产生新的想法和营销方案。

合作有利于缩小潜在差距，弥补潜在弱点，并最终产生协同效应。除了与客户的创新合作还有与大学、外部顾问和公共性研究机构的合作——所有知识和技能的来源直接影响创新绩效。与初创企业的合作可以让公司获得新领域的最新发展，并为企业带来灵活性。选择合适的合作伙伴需要对当地的创新机制有扎实的理解。

5. 对于更好的监管环境的诉求

人们和企业总是在寻找创新的最佳温床。然而，据 2018 年全球创新指数(Global Innovation Index¹) 结果，在对 126 个国家的评估中，中国在“监管环境”这项中排名第 100 位。同样，我们的调查结果表明，在上海及周边地区的德资制造业企业在创新方面表现出保留态度，很大程度上是因为监管环境中存在阻碍创新的根本性障碍。

良好的监管环境可以使总部赋予子公司更多的自主权，从而促进创新。这不仅有利于德国企业，也有利于中方企业的中德合作创新，最终促进中国经济增长和创新驱动型经济转型。

¹ Cornell University, INSEAD, WIPO (2018)

中国德国商会 | 上海呼吁中国政府:

- (1) 提升新**网络安全法**的**透明度**，确保各项新法律法规的**公平执行**。
- (2) 积极解决知识产权保护相关问题。特别值得一提的是，受访的制造型企业对**知识产权保护法**,特别是其在**创新活动方面的实施**提出了担忧。
- (3) 确保在《**中国制造2025**》等一系列国家战略背景下，对**外国公司一视同仁**。
平等的机会和市场准入是创造繁荣创新格局的关键。

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