Innovation in Asia

Impact on European companies of innovation in emerging Asia
Not only are the emerging countries in Asia new partners for Germany, they also offer new opportunities and present new challenges.

We live in the age of globalization. Half of the world’s population resides in Asia. The region’s rapid development – above all in China and India – will have a major impact on how the 21st century unfolds. Along with other countries, Germany will have to respond accordingly. In order to benefit from these changes, we should view Asia’s emerging countries as partners, opportunities and challenges in equal measure.

Asian countries are important partners, since the world’s problems can only be solved if everyone works together. Global crises, technological change and digital connectivity are impacting all societies equally. Moreover, people everywhere are concerned about the developments around them and are fearful of what the future might bring. There are no simple solutions. Joint efforts are required instead, if the world is to become more peaceful and just and, as a result, more socially stable and sustainable.

My husband, Reinhard Mohn, had a fundamental belief: We have to learn from the world, since learning from the world allows us to learn more quickly. How can Asia serve as a role model for Europe? Where does it offer opportunities for other countries? Where can we, too, learn from Asia? China and India have changed much more quickly in recent decades than societies in the west. Anyone who has not witnessed this transformation with their own eyes might have difficulty understanding how much can actually change for the better when people are given the chance to take their own lives in hand and become part of the modern world.

At the same time, their ability to change is what makes Asian nations a challenge for Germany: The German economy now faces new competitors and global power structures are shifting. Until now, Germany has benefitted from Asia’s rise, but there is no guarantee that the past successes will be repeated in the future. The relatively high level of prosperity and social stability that Germany enjoys today cannot be taken for granted; it must be achieved anew by each generation. For that to happen, we must look to Asia more in the future than we have in the past.

There are many good examples of how Asia can be included as a partner. Germany and Asia are becoming increasingly interdependent. The number of Asians who study and later work in Germany is constantly growing – as is the number of Germans living in Asia. Companies successful on a global scale are no longer at home only in their native countries, but everywhere where they have employees, customers and partners. Trade and investment are increasing in both directions. What we find, however, when we look behind the economic figures are, invariably, partnerships between people which can only succeed if they are based on respect, trust and appreciation. Ultimately, that is the fundamental force that changes things for the better, since nothing brings the world closer together than trusting partnerships and shared success!
Why can’t China make a ballpoint pen on its own? With that question, China’s Premier Li Keqiang ignited a discussion at the end of 2015 about the state of innovation in China. Ballpoint pens are not exactly high-tech products. Some 38 billion are produced in China each year, accounting for about 80 percent of the global market. Nevertheless, the People’s Republic is dependent on assistance from abroad to produce this everyday item. The minute ball in the pen’s tip must turn loosely, but not too loosely, if it is to spread the right amount of ink. That requires precision manufacturing, something that seems to be beyond China’s machine tools. The required technology comes from Germany, Japan or Switzerland. “This is the situation we face,” Li said, and declared that things must change.

Li’s appeal was an elegant mixture of exhortation and understatement. On the one hand, China owes its economic revival largely to technologies that have been developed in other countries. China’s success is globalization’s success, and “Made in China” actually means, in many cases, “Made by the World.” On the other hand, China is no longer just an importer of know-how, but also a key innovator, with its own supercomputers and satellite networks. By 2025, it wants to be among the technology leaders in key industries. Ballpoint pens are clearly not a disruptive challenge. The main hotbeds of innovation can be found elsewhere, in areas such as biotech, IT and environmental protection. Innovation, moreover, is not solely a question of technological progress: Social systems, international regulatory mechanisms and the financial world also need new approaches if they are to meet the challenges of the future.

New ideas and solutions are no longer coming from the West alone. Asia is now a driving force in the global innovation landscape. Japan and South Korea have long been industrialized nations, but the momentum today is coming mainly from emerging markets. China is the largest, but not the only driver. India is trying to make better use of its considerable economic potential and establish itself as the region’s second major player. ASEAN member states, such as Singapore, Malaysia, Indonesia, the Philippines, Vietnam and Thailand, are redefining their economic paths by focusing on innovation. Their success can be seen not least in the growing investments and commitments being made by international businesses hoping for access to the region’s new markets and talent.

The extent to which Asia develops successfully and sustainably will have immediate repercussions for the rest of the world. From a European perspective it is clear: Our own future depends on how well or poorly the transformation processes in other parts of the world progress. In the political, business and social spheres, Europe must be prepared for new competition and, at the same time, be open to new forms – and a previously unknown level – of international cooperation.

The Bertelsmann Stiftung would like to contribute by analyzing the developments taking place in different centers of innovation and highlighting the ways in which Germany and Europe can deal with the resulting changes and benefit from the momentum those changes bring. This publication is one study in a three-part series that also examines innovation in India and Israel. The series is predicated on the belief that, despite any attendant difficulties, the world’s increasing ability to innovate is one of the most positive developments of our time. If the world is to respond effectively to its diverse challenges, new solutions are needed on all levels – and soon!

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Asia’s transition from resource-driven, export-led economies to more sustainable growth models based on human capital development, new technology and innovation can be both a challenge and an opportunity for European countries over the next decade. Such development may have a direct impact on European companies in terms of employment, investment decisions, and trade patterns.

Against this as background, The Economist Intelligence Unit undertook a programme of research on behalf of The Bertelsmann Stiftung to seek the views of European companies on how innovation developments in Asia affect their businesses. The research also sought to identify the sectors and countries/regions in which innovation in emerging Asia is growing most quickly, and to review the response to this development among European executives and the perceived role of governments.

Some of the key findings of the research are:

- More than one-half of the respondents say Asian competitors and/or partners have become more innovative over the past three years
- More than one-half say that the rise in Asian innovation will spur European companies to greater innovation
- Asian technology innovation is growing quickly but from a low base, leading many European companies not to consider Asian competitors a threat in the marketplace at this point in time
- Two-thirds of European respondents expect to have more innovation-led collaboration with Asian competitors over the next three years
- European respondents are keen to adapt to the changes in Asia, with almost one-half saying they need to develop a local corporate culture in all major markets
- European respondents are changing their strategies in other ways as well, with about one-third saying they have entered new markets in the past three years, or have changed their product lines or business strategies, to compete with Asian rivals
- Asian government support for companies is an obstacle to European executives with 71% of them claiming such support puts their business at a disadvantage

Looking ahead, Asian innovation may rise even more rapidly if it can reap the benefits of European know-how. This will likely force European companies to become more innovative themselves, which will be necessary to remain globally competitive. Governments should therefore encourage free trade and cross-regional investment in innovation to the benefit of all.
This report is based on an online survey and extensive desk research carried out by The Economist Intelligence Unit in March, April and May 2016. The online survey polled executives of companies headquartered in select European countries. The survey sample had 200 respondents in total, of whom one-half (100) are executives at German-based companies and the others at companies based elsewhere in Europe.

The questionnaire focused on respondents’ views of how innovation in emerging Asia would affect their industries and companies. For purposes of this survey, emerging Asia was defined as China, India, Indonesia, Malaysia, Philippines, Taiwan, Thailand, and Vietnam.

The sample is cross-industry with a roughly equal distribution among automotive, heavy machinery, electronic equipment, information technology, medical equipment, petrochemicals, and life sciences. In terms of company size, 25% of the sample consists of companies whose global annual revenues are less than €50m, one-half (47%) are companies with global annual revenues between €50m and €500m range, and 28% are companies with revenues greater than €500m but less than €10bn. Of the 200 respondents, 16% are business owners, 22% group head of sales, 21% group head of marketing, 21% group head of business development, and 20% chief financial officers.

The Economist Intelligence Unit bears sole responsibility for the content. The findings and views expressed in the report do not necessarily reflect the views of the Bertelsmann Stiftung. Kim Andreasson was the author of the report, and Aviva Freudmann was the editor.
Anecdotally and statistically, evidence of a rise in Asian innovation is everywhere. According to the Organisation for Economic Co-operation and Development (OECD), gross domestic spending on R&D as a % of GDP increased from 2.1% in France and 2.4% in Germany to 2.3% and 2.9% respectively between 2000 and 2014. Comparatively, the rate increased from 1.9% in Taiwan and 0.9% in China to 3% and 2% respectively during the same timeframe, indicating that emerging Asia is quickly catching up.1

“China must rely on innovation to achieve continuous and healthy economic development,” President Xi Jinping underscored in December 2014 during an inspection tour in eastern Jiangsu Province to set tone of future intentions.2 In 2015, Asia also became the top regional destination for corporate R&D spending with US$166 billion, which accounted for 35% of the global total, according to PwC research.3

The Economist Intelligence Unit’s survey of European executives confirms this view: Slightly more than one-half (53%) say Asian competitors and/or partners have become more innovative over the past three years, only 10% say they have become less innovative.

One reason for the rise in innovation in emerging Asia is technology adoption, both within organisations and among individual users. In the survey conducted for this report, technology is cited by 37% of respondents as a leading driver, trailing only better education at the secondary level (41%).

An example of technology adoption in manufacturing is given by the growth in the market for robotics. Asia (including Australia and New Zealand) was by far the biggest market for robotics in 2014, with about 139,300 industrial robots sold, an increase of 41% over 2013. By comparison, industrial robot sales in Europe, the second largest market, increased by only 5% to 45,600 units.

Another measure of emerging Asia’s rise is China’s outward FDI flow, which grew from US$7bn in 2011 to US$116bn billion in 2014.4 The European Union is a big recipient and annual investment by Chinese companies grew from next to nothing in 2000 to €14bn in 2014 with Germany being the second largest recipient of Chinese investments during the period.5

Asian innovation also benefit from ongoing improvement in the region’s technology sector. Respondents take a particularly pos-
itive view of developments in this area, with 64% saying that information technology is the most innovative industry in emerging Asia. This is likely in part due to cutting-edge IT services in India provided by companies such as Tata Consultancy Services, Infosys, and Wipro combined with e-commerce and social media initiatives in China such as Alibaba and WeChat. The two countries are also perceived by respondents as the most innovative in emerging Asia, likely for this reason.

Moreover, the view of Asian innovation from inside the IT industry is more positive than the view from other industries. For example, IT executives see their industry as much more innovative (83%) compared to the overall sample (64%). And China as a country is considered much more innovative by respondents in the IT industry (72%) compared to the overall sample (60%).

This conclusion is supported anecdotally as well: Alibaba, the Chinese e-commerce giant, was initially valued at more than US$200bn when it listed on the New York Stock Exchange in 2014, making it among the 20 largest companies by market capitalisation in the United States. In 2015, the company won the corporate award at The Economist Innovation Awards. Also in 2015 three Indian companies (Hindustan Unilever, Tata Consultancy Services, and Sun Pharma Industries) made the list of the world’s 100 most innovative companies by Forbes.

Technological progress in Asia can also be measured by adoption rates of new technologies. According to the International Telecommunication Union (ITU), mobile–cellular telephone subscriptions in the region increased from 22.6 per 100 people in 2005 to 91.6 in 2015; in Europe the equivalents were 91.7 to 120.6. China has now overtaken the US as the largest market for smartphones. In view of the rapid uptake—albeit from a much lower base—Asian companies appear to be more flexible in meeting this demand due to their proximity to such consumers: in the survey only 39% of European respondents thought their company was stronger than their Asian competitors in terms of flexibility/agility, the lowest confidence out of six different areas.

The rise in Asian innovation clearly will affect non-Asian players. What does Asian innovation mean for European competitors in particular, and how are they responding to this challenge?

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5. rhg.com/wp-content/uploads/2015/06/ChineseFDI_Europe_Full.pdf
Both foreign companies operating in China and Chinese enterprises could improve productivity through cooperation and competition,” said German Ambassador to China Michael Clauss in a 2015 interview Xinhua, the official press agency. European respondents agree that increased Asian innovation in their industry over the next three years is likely to spur their companies to greater innovation (55%).

A significant proportion of survey takers (28%) also say that increased Asian innovation will also cause them to seek partnerships with Asian companies.

Taiwan, whose R&D spending is among the highest in the world, is a particularly popular target of such searches. Foreign companies often seek to partner with Taiwanese firms such as Hon Hai Precision Industry Co., Ltd., also known as Foxconn, an electronic components manufacturer for Apple and Nokia, amongst others. Such companies may also be one reason why respondents representing IT companies are more likely to do business in Taiwan (48%) than the sample average (23%).

Yet curiously, despite the search for Asian partners, many European respondents say they do not take Asian competition seriously—at least not yet. Four in 10 respondents consider Asian-based companies to be competitors in Asian markets; however, another 40% do not currently see Asian-based firms as competitors at all. Only 10% see them as serious competitors in global markets and even fewer – 6% – in European markets.

One reason may be that the rate of innovation in emerging Asia (primarily China and Taiwan) is higher now than it was a decade ago, but the level of innovation in Asia is still not necessarily higher than the level in Europe. Stated differently, Asian innovation may be growing more rapidly than in Europe, but this growth is starting from a lower base. With that in mind, European respondents tend to say that their own companies are stronger in technology innovation (64%) and financial resources (52%) than their Asian counterparts.

“The rise of the East will be uneven,” states an article by the World Economic Forum based on its 2015-2016 Global Competitiveness Report. In part, governance issues loom large in parts of the region, although the article also points out that emerging Asia also has some ways to go – compared with world leaders –
in innovation. “Capacity to innovate also topped the list of concerns in China, as the country grapples with how to manage the transition from the ‘efficiency-driven’ stage of economic development to the ‘innovation-driven’ model that characterizes advanced economies.” Emerging Asia therefore has some way to go before it catches up with world leaders in innovation.

Adding to these observations, the Global Innovation Index 2015 (GII), which assesses 79 innovation-related policies and data and is co-published by Cornell University, by leading graduate business school INSEAD, and by the World Intellectual Property Organisation, ranks China only in 29th place among 141 countries, followed by Malaysia in 32nd, and Vietnam in 52nd. These index results support the view that while Asia has made progress in becoming innovative, it still has some distance to go, which is likely the reason European executives currently do not see Asian firms as serious competitors at this point in time.4

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3http://www.chinadailyasia.com/nation/2015-10/08/content_15326943.html
4https://www.globalinnovationindex.org/content/page/GII-Home
RISING INNOVATION IN EMERGING ASIA

Even though many respondents currently do not view companies in emerging Asia as serious competitors some European companies and organisations are preparing for a faster–growing and more innovative region. Most respondents (66%) agree with this view and say their company should have more innovation-led collaboration with Asian companies over the next three years; only 6% say it should be less.

In further measures to counter the competitive effects of rising Asian innovation, European companies have replaced workers with technology (28%), and have cut costs to operate more efficiently (26%). IT executives in particular are somewhat more likely (31%) to cut costs and operate more efficiently compared to the overall sample (26%). Conversely only 2% of respondents say they have sought protection or support from their government.

An increasingly important factor determining the rate of innovation, in Asia and elsewhere, is the appearance of national laws requiring companies to store data in the country where data will be used. These data localisation policies—are usually justified on the basis of national security or cyber–security—can have a chilling effect on innovation, particularly for multinationals with data stored in a range of countries. In emerging Asia, Indonesia and Vietnam have passed data–localisation rules. Asian countries are not the only ones to pass such laws. The European Commission published a cloud–computing strategy in September 2012 which could be the basis for moving data to European clouds. The prospect of restrictive national data policies may be one reason why IT executives surveyed believe Asian innovation has had a negative effect on their company over the last three years (41% of IT executives compared to 30% of the total sample).

The EIU survey also shows that over the past three years, European businesses have made strategic expansions to new markets to compete directly with Asian rivals (32%) and changed their product line or business strategy (31%).

Similarly, European respondents to the EIU survey seem keen to adapt to the new Asian conditions. Few say they are strongly rooted in their European home country (5%); instead almost one–half say they need to pursue a local corporate culture in all their major markets (48%) or that they need to actively pursue a global corporate culture (47%).
The same trends apply to how respondents organise their research and development activities. Most respondents (59%) consider their R&D activities in Asia to be equal in importance to their R&D activities elsewhere. R&D activities also tend to be integrated into global R&D activities (41%). In addition, more than one-quarter (28%) say they develop products for the global market in Asia. Only 5% of respondents say they avoid transferring technologies from headquarters to Asian R&D centers, despite ongoing concerns among policy-makers about such activities. Following from this, most respondents (65%) say they recruit the best scientists and engineers, regardless of origin, at all their R&D locations.

One reason for this globalised approach may be a continued belief in strong demand for European exports. For example, the German government’s high-tech roadmap, which was updated in 2010 as the High-Tech Strategy 2020, calls for focusing R&D on priority sectors with the aim of boosting exports. 7

At the heart of the high tech strategy is Industry 4.0, which has secured €200m in funding until 2020. 8 The Industry 4.0 project, which seeks to integrate information and communication technologies in manufacturing, originated with a 2013 report titled “Securing the future of the German manufacturing industry: Recommendations for implementing the strategic initiative”. 9 The report advocates measures to promote automated manufacturing and to make Germany a leading exporter of smart manufacturing technologies.

This example shows that innovation-led collaboration remains far from global, as country policies often favour domestic development for export. The German example is not unique. A report from the Information Technology and Innovation Foundation (ITIF), a Washington, D.C.-based think-tank, ranks 56 countries—which together comprise almost 90% of the global economy—on the extent to which their policies support or weaken global innovation. The report identifies Balkanised consumption or production markets, and weak intellectual property protections, as factors that weaken global innovation. And it finds that India, China, and Thailand are among the countries whose policies are more negative than positive for global innovation.10

In this ranking, on the other hand, Taiwan—in 15th place—is seen as a net contributor to innovation. The rest of emerging Asia rates poorly, with Malaysia ranked 39th and China 44th, in part because of China’s many regulations that hinder participation in the global innovation system. For example, localisation policies in China and elsewhere, which pressure foreign companies to localise economic activity in order to be able to compete in a country’s market, create barriers to innovation, as well as barriers to trade.

3https://www.bmbf.de/files/Umsetzungsempfehlungen_Industrie4_0.pdf

In order to address emerging Asia’s innovation surge, what kind of corporate culture does your company need? Figures in percent

- We need to pursue a local corporate culture in all of our major markets
- We are a global player and thus need to actively pursue a global corporate culture
- We are strongly rooted in our European home country and should stick to our tested corporate culture and values
- Other, please specify

Which of the following statements applies to your company’s current R&D activities in Asia? Select all that apply. Figures in percent

- They are equal in importance to our R&D activities elsewhere
- They are integrated into our global R&D
- They develop products for the global market
- They lead our global R&D activities
- They mainly adapt products or processes to Asian markets
- We established R&D centers in Asia in response to political pressure
- We avoid transferring technologies from headquarters to our Asian R&D centers

How has your company’s human resources strategy changed in response to Asian innovation? Select up to three. Figures in percent

- We recruit the best scientists and engineers, regardless of origin, at all our R&D locations
- We recruit Asian scientists and engineers mainly for our Asian R&D facilities
- We recruit Asian scientists and engineers for all our global R&D locations
- We increasingly recruit Asian scientists and engineers to work in our European R&D facilities
- We hire fewer Asian scientists and engineers
- Other
- Don’t know
For now, Europeans executives seem unconcerned about the impact of a rise in Asian innovation, but a further innovation spurt could change the picture. In our survey, 37% agree that a rise in Asian innovation heightens competition for their companies, about the same proportion (34%) who disagree. Similarly, respondents are split on how Asian innovation has affected their companies over the last three years: 35% say that Asian innovation has had a positive effect on their business, 30% claim a negative effect, and 31% cite no effect.

Whether data localisation rules or other trade protection measures are the culprit, a significant proportion, 71%, of European respondents claim that Asian government support puts their business at a disadvantage.

There is no shortage of examples of government support in emerging Asia. In China’s Thirteenth Five-Year Plan (2016), for instance, innovation is one of five focus areas as the country aims to move up the value chain through information and communications technology (ICT).

In China, support for specific initiatives or entrepreneurs is also made at the local government level. Shanghai, for instance, is one of Asia’s most aggressive municipalities in supporting local firms. In April 2016 it announced new rules that will cover up to RMB 6m (approximately €800,000) of venture capital losses in case of a bad investment. Beyond mainland China, the National Development Council (NDC) of Executive Yuan, Taiwan, started the “HeadStart Taiwan” programme in August 2014 to accelerate technology innovation and entrepreneurship. The initiative includes deregulation, and the building of Taiwan Startup Stadium (TSS), a physical cluster located in downtown Taipei. At the heart of Malaysia’s strategy to develop the ICT sector is the Multimedia Super Corridor (MSC), a Special Economic Zone initiative launched in 1996 to attract multinational companies but also to support local innovation: As of December 2013 there were just over 2,500 companies active in the MSC, of which 75% were Malaysian-owned, with the remainder either foreign-owned (23%) or joint ventures (2%). About two-thirds (66%) of MSC company revenues comes from the local market, while 34% is derived from exports.

Europe is engaged in this race as well. About one-third of European respondents say their company (31%) and/or industry

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**As a European company, to what extent do you agree or disagree with the following statement?**

Rate each area on a scale of 1 to 5, where 1=Strongly agree and 5=Strongly disagree

A rise in Asian innovation heightens competition for European companies

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**How has Asian innovation affected your company over the last three years?**

Figures in percent

- Very positive effect on our business: 10
- Slightly positive effect on our business: 25
- No effect on our business: 31
- Slightly negative effect on our business: 19
- Very negative effect on our business: 11
- Don’t know: 5

**In your view, does Asian government support for Asian companies put your company at a disadvantage?**

Figures in percent

- Yes, considerably: 33
- Yes, slightly: 38
- Don’t know: 9
- Not at all: 21
(30%) receives considerable policy support (eg, trade protection, tax-advantaged R&D investments, export incentives) from their government. Another one-third (30% and 40% respectively) say they receive minor policy support.

Beyond national government support for innovation in Europe, the European Commission promotes R&D related to information and communication technologies. Under the 7th Framework Programme for Research and Technological Development, the commission spent €51bn between 2007 and 2013. Under Horizon 2020, the initiative to improve the region’s competitiveness from 2014 onwards, the Commission raised its commitment to €70bn.

Survey respondents say that the most useful types of government assistance to promote innovation at their company are intellectual property agreements (47%), tax breaks (42%), and free trade agreements (37%). IT executives are more keen on intellectual property agreements (66%) than the overall sample (47%), likely due to fear of intellectual property theft in emerging Asia.

Consistent with this emphasis on European free trade and intellectual property protection, the 2013 EU–China Summit highlighted the launch of negotiations of a comprehensive agreement which aims at a stronger legal framework that includes protection to investors and their investments. More recently, a draft free trade agreement between the European Union and Vietnam echoes the same sentiment in which intellectual property protection is a key topic. Such measures may also help to spur future technological transformations, as European companies gain confidence in the legal and operating environment in emerging Asia.

That, in turn, could put to rest any ideas that innovation is a zero-sum game, in which technological progress by local companies necessarily puts competitors headquartered elsewhere at a disadvantage. Instead, such agreements shine a spotlight on the mutual benefits of innovation, wherein technological advances in one company can spark ideas for equally innovative solutions elsewhere, to the benefit of all.

European companies are therefore likely to benefit from rising Asian innovation under such trade agreements, assuming they are willing to transfer knowledge to the region, which the survey conducted for this report already indicates that they are. This way, Asian innovation may rise even more rapidly as it can reap the benefits of European knowledge. This in turn will likely force European companies to become more innovative themselves and also opens the opportunity to able to bring Asian innovations that they have invested in to the world, which will be necessary to remain globally competitive. Over the next five to 10 years, the role of government should therefore be to further encourage free trade and cross-regional investment in innovation rather than pursuing policies that hinders it.

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