

German Mittelstand Champions in Asia

CATCHING THE NEXT WAVE OF GROWTH

Gert Bruche & Bernd Venohr





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Table of contents

List of figures	5
Executive summary	8
Introduction	9
Research Findings	
1. Current Asia footprint of German Mittelstand Champions	12–19
1.1 A strong presence in Emerging Asia	12
1.2 Trend towards regional headquarters	16
2. Fast forward towards a multipolar Asia	20–28
2.1 A more balanced Asia 3.0	20
2.2 Five change drivers of Asia 3.0	22
2.3 Summary	28
3. Rebalancing towards Asia as a strategic imperative	29–35
3.1 Accelerating ‘insiderisation’	29
3.2 Reconfiguring the value chain and addressing the mid-market segment	31
3.3 Evolving organisation and management structures	34
Case studies	
4.1 Delo Industrial Adhesives – A Jump Start in Asia	38
4.2 ebm-papst Group – Mastering Globalisation	42
4.3 EOS GmbH Electro Optical Systems – Bringing Manufacturing Innovation to Asia	46
4.4 mSE Solutions – Facilitating Global Supply Chains	50
4.5 Pepperl+Fuchs – Southeast Asia as the Perfect Match	54
4.6 TÜV SÜD – Evolving with Asia	58
4.7 Additional case studies	62
Appendices	
5. Methodology	64–65
5.1 General information	64
5.2 Online survey	64
6. Profile of study participants	68–70
6.1 Survey participants	68
6.2 Personal interviews	70
7. Author biographies	72
References	76–77

List of figures

Exhibit 1: Presence of German Mittelstand Champions in selected Asian countries	13
Exhibit 2: Five-stage company globalisation model	14
Exhibit 3: Proportion of stage 2–4 companies per country in our sample	15
Exhibit 4: Country ranking by presence of most regional headquarters of Global Mittelstand Champions	17
Exhibit 5: Comparison of top 12 criteria for locating Asia-Pacific regional headquarters	18
Exhibit 6: Selected GDP growth rate forecasts of key Asian and Western regions	20
Exhibit 7: Macroeconomic data for the four key sub-regions composing multipolar Asia	21
Exhibit 8: Size and distribution of the middle class worldwide	23
Exhibit 9: Typical pyramid structure in emerging markets	24
Exhibit 10: Expect growth dynamics in different market segments	25
Exhibit 11: German Mittelstand Champions' revenue growth expectations in Asia for the next three years	29
Exhibit 12: German Mittelstand Champions' planned expansion of staff in Asia	29
Exhibit 13: Revenue distribution of companies in the survey sample	69
Exhibit 14: Industry distribution of companies in the survey sample	69
Exhibit 15: Job title and functional distribution of respondents in the survey sample	69





EXECUTIVE SUMMARY

INTRODUCTION

Executive Summary

German Mittelstand Champions (GMCs) have embraced the growth potential of Emerging Asia by building extensive sales and service networks and, in many cases, manufacturing operations and more selective research and development (R&D) functions in the region. But only a few have attained true 'insider' status, performing the full range of value-creating activities in the region.

A shift in gears is required to capture the next phase of growth in a more multipolar Emerging Asia with three strong sub-regions (Greater China including Hong Kong and Taiwan, ASEAN and potentially India), and to successfully compete with emerging mid-market challengers from China and those from around the globe. Our survey data shows that many companies have ambitious plans in Asia, yet their plans are still focused on building sales and service capabilities. They remain hesitant to shift manufacturing and – even more so – R&D activities to the region. This cautious approach may not be sufficient.

In many industrial and B2B sectors, the mid-market segment will be the largest and fastest growing sector in the foreseeable future. Most GMCs have thus far concentrated on the premium segment, whereas many local Asian competitors which started at the low-end segment have since entered the mid-market segment. Under this scenario, Emerging Asia, especially China, will be the key battleground for the determination of future global market leadership. To state the obvious hypothesis of our study: a company needs to be No. 1 in Asia (especially China) if it wants to defend its leading position in the world market.

The successful capture of mid-market segments through locally designed and manufactured products will in many cases require significant changes to all parts of the value chain, perhaps even necessitating the creation of a separate organisational unit (a dual business model). GMCs need to explore the necessity of becoming full insiders in the region by establishing stronger regional functions in Asia with the potential to acquire global mandates and to attract senior talent.

Introduction

For almost two decades, Asia has consistently outperformed other major world regions in terms of economic growth rates. Key contributors to this superior growth performance have been the rise of China to the second largest economy in the world, the solid growth of Southeast Asia's economies, and India's economic ascent post-liberalisation. As a result, the region's growing attractiveness has led many German companies to seek an active presence in the region.

In this context, our study, commissioned by the Singapore Economic Development Board, analyses the present footprint of larger and globally-active German Mittelstand companies, described as 'German Mittelstand Champions' (GMCs). Most of them are family-owned companies with annual revenues of up to €1bn, and in some cases even in the multi-billion Euro range (Venohr, Fear, & Witt, 2015, p. 6). The study also highlights emerging macro trends and provides recommendations for GMCs to best position themselves to capture expected future growth opportunities in Asia. The focus of the study is on Emerging Asia, especially China and ASEAN countries, with some consideration also given to India.

We draw on an online survey of some 80 German GMCs that are active in the region, and personal interviews with 22 top-level executives, mostly owners, CEOs or Board Members of GMCs operating in Asia. Our findings from both the survey and the personal interviews are combined with external research to develop a fact-based assessment of growth opportunities and challenges, and to generate concrete insights for company owners and top managers. For a detailed explanation of our methodology, please see chapters 5 and 6.





RESEARCH FINDINGS

Current Asia footprint of German Mittelstand Champions

1.1 A strong presence in Emerging Asia

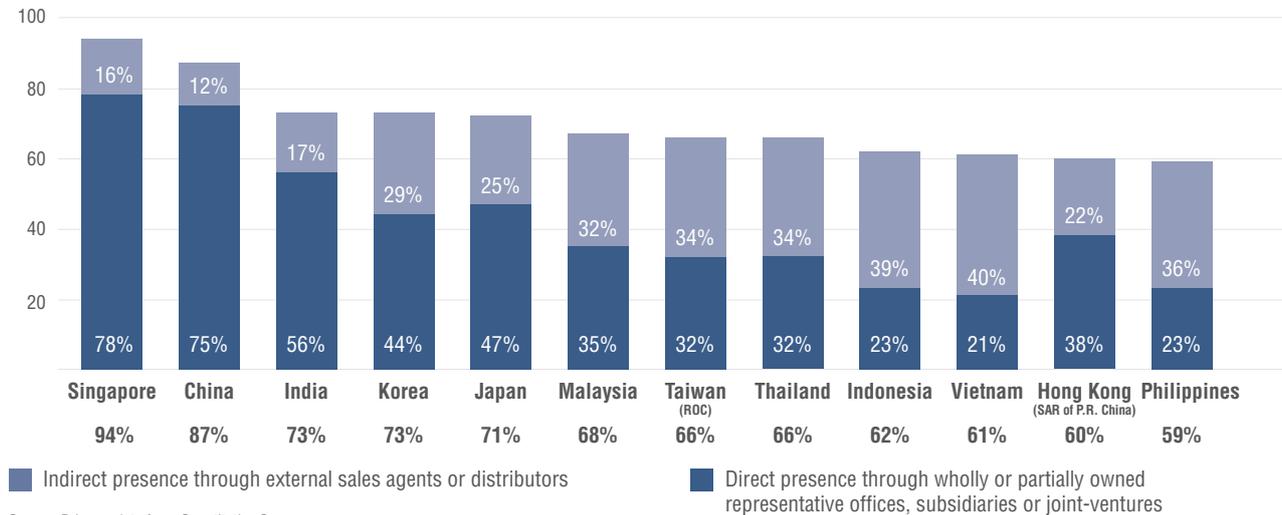
The attractiveness of Asia, especially Emerging Asia (the region excepting Japan and Korea) is well known. Many German companies have been quite active in the region. According to the latest survey by the German Chamber of Commerce, it is estimated that about 5,200 German companies currently operate in China (German Chamber of Commerce in China, 2015). German companies have invested about €48bn in the country (Deutsche Bundesbank, 2015, p. 23). While German capital stock in China is dominated by significant investments from large Germany-based multinational companies like Volkswagen, Siemens and BASF, many German Mittelstand companies have subsidiaries in China as well. About two-thirds of these subsidiaries have fewer than 250 employees; only 13.9% have more than 1,000 employees. 66.0% of these companies achieve a local annual turnover of under RMB250m (about €35m) (German Chamber of Commerce in China, 2015).

The machinery and industrial equipment sector as well as the automotive sector (respectively 25.8% and 14.9% of the companies surveyed) are the dominant areas of German business activity in China. German companies dominate the medium and high-tech sectors globally in numerous investment goods and durable consumer product market segments (Venohr, Fear, & Witt, 2015). China has therefore developed into a key market for German industry and a major source of growth. For 15.0% of companies surveyed, the Chinese market is already the largest market worldwide, while for 46.5% it is among the top 3 global markets. In terms of profit contribution, 11.6% report China as the biggest single market, while 44.9% report it as among the top 3 global markets (German Chamber of Commerce in China, 2014, p. 3).

The second most important key sub-region in Asia for German companies, as measured by the stock of German FDI, is the ASEAN region, consisting of ten countries: Indonesia, Malaysia, the Philippines, Singapore, Thailand, Brunei, Cambodia, Laos, Myanmar (Burma) and Vietnam. The stock of German Foreign Direct Investment (FDI) in ASEAN was worth €25.2bn in 2013, of which €13.7bn was invested in Singapore. This high share partly reflects the importance of Singapore as a location for company holdings under which operations in other Asian countries are consolidated (Deutsche Bundesbank, 2015, pp. 22–24). Many of the growth factors active in China play out in the ASEAN region as well, although the dynamics are quite different on a country-to-country basis, given the very different stages of development of the individual countries. Other important countries in Asia as measured by German FDI in 2013 are Japan (German FDI €14.4bn), Korea (German FDI €7.3bn) and India (German FDI €9.6bn). Estimates of the total number of German companies operating in the ASEAN region are not available, only those for selected countries like Singapore have been collected. It is estimated that as of March 2015 about 1,480 German companies are active in Singapore, most of them large and mid-sized Mittelstand companies (ACRA, 2015). This number has grown from about 400 companies some ten years ago.

Given their economic importance and growth potential, we focus on China and ASEAN, while reporting relevant results for other key Asian countries as well. Based on our survey, Asia accounts for about 20% of the global revenues of GMCs, more than the 16% revenue share reported by large German companies as part of the DAX 30 index (EY, 2015). 93% of all respondents reported that their companies have a direct presence via fully or partially-owned organisational units (representative offices, subsidiaries or joint-ventures) in Asia. On average, each GMC is active in four countries in Asia, with a direct presence. Many companies also work with external sales agents and distributors to address countries that are yet too small to justify a wholly-owned operation or to access specific customer groups in larger countries.

**Exhibit 1: Presence of German Mittelstand Champions in selected Asian countries
share of companies in the survey sample (in %)**



GMCs generally prefer to address foreign markets with their own sales and service subsidiaries. This inclination is partly driven by the business focus of these companies; instead of selling commodities or mass-market products, specific products and solutions are developed in close cooperation with customers. Companies with activities on site have a far better sense of market-specific customer requirements, and can tailor products and services to the needs and specificities of target markets abroad. In addition, wholly-owned operations ensure the best service across a product's lifecycle, are an essential source of innovation and offer attractive revenue potential in product-related services.

Our in-depths interviews demonstrate a typical pattern of expansion. Most GMCs have been active in Emerging Asia with their own operations since the mid to late 90s or early 2000s. As they are mainly active in B2B markets, expansion in Asia has been in many cases customer-led, both to follow their European customers (for instance, in the case of the large automotive OEMs) to Asia, and also to win new local customers in the region. Cost considerations were and are not the typical main driver for establishing operations in the region (German Chamber of Commerce in China, 2014, p. 3).

There are several well-known frameworks to analyse and describe the internationalisation patterns of globally successful companies. We adapt here a Five-Stage Model, which would usually apply to one-product companies or to larger business units of diversified companies. This framework was originally proposed by Kenichi Ohmae (Ohmae, 1990). Ohmae argues that in order to compete successfully globally, a company needs to increasingly transfer key activities and competencies to its main foreign markets and ultimately become fully globalised. They should develop and manufacture wherever they find the best resource base and sell all their products globally.

Exhibit 2: Five-stage company globalisation model

	Stage 1 →	Stage 2 →	Stage 3 →	Stage 4 →	Stage 5
Main thrust	Purely export orientated	Establish local marketing, sales and service operations (subsidiaries)	Add local manufacturing	Achieve 'insiderisation' by adding R&D	Achieve complete globalisation
Value chain split (headquarters/region)	Fully based in home country; all or part of local marketing, sales, distribution and on-site servicing outsourced to distributor/local agent, if necessary	Own representative office or branch with local sales (application engineering), service and marketing operations	Manufacturing operation is added (component production and/or final assembly)	Firm has 'cloned' itself: performs almost the full range of valuecreating activities in the region. It will also locate important infrastructural activities such as for instance IT, HR, finance in the region.	Worldwide network structure: local operations are 'centres of excellence' and fully integrated; people, raw material, technology and capital are sourced where they are best and cheapest; develop and manufacture products wherever they find the best resource base and sell globally
Governance (split of decision making power between global headquarters and region)	All management decisions are taken in the home country	Certain decisions are delegated from the home country headquarters to the country subsidiaries like distributor management, perhaps product portfolio or minor adaptation decisions, and recruitment of local staff	Additional responsibilities regarding the localisation of procurement and logistics and of local outsourcing of certain manufacturing steps are delegated to regional subsidiaries	Regional management will often control important decisions regarding investment, product and pricing strategy and core staff	Power is decentralised; global mindset; 'virtual headquarters' structure; board members are placed in key regions (that are either large markets; or resource hubs)

Source: Adapted from Ohmae 1999, EDB Mittelstand Navigator Model

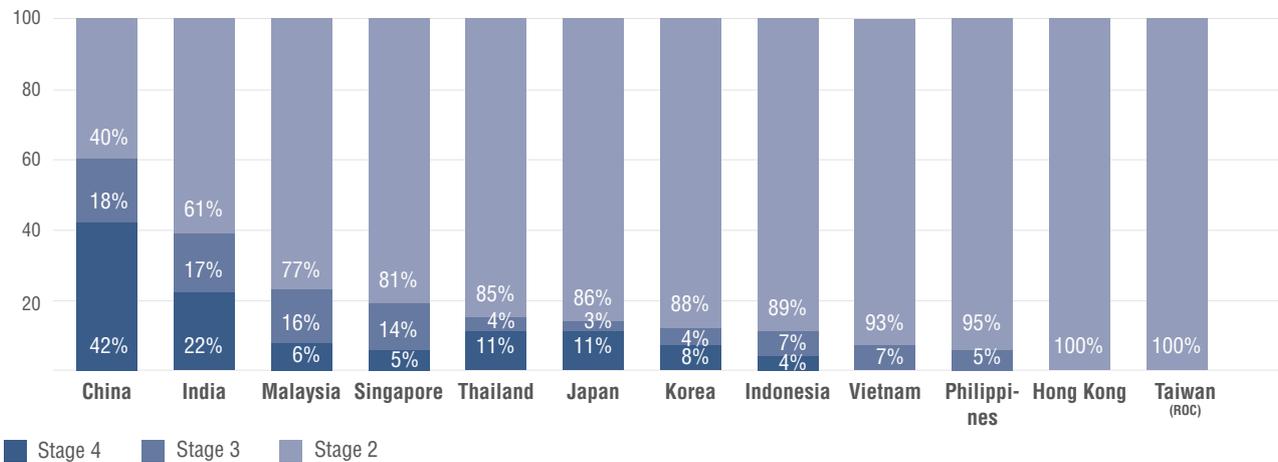
It is understood that the setting up of operations in Emerging Asia focuses on the main strategic sub-regions within Asia, namely (Greater) China, ASEAN and India (see more on this emerging multipolar structure in chapter 2). The transfer, geographic relocation or duplication of activities in strategic regions relates, on the one hand to the primary value chain of the company (in the case of the machinery industry, for instance: R&D, engineering and planning, manufacturing, logistics, marketing, and sales and service). On the other hand, it refers to governance aspects, especially shifting decision-making power for strategic and tactical decisions in key areas like product design, positioning and pricing, investments, and the hiring and firing of personnel (see Exhibit 2: Five-stage company globalisation model).

While this common-sense framework has withstood the test of time, it needs to be modified with respect to phase 5. Empirical studies have shown, that not all successful globalisers have become borderless companies. Some have paid attention to their own "DNA" and legacy assets (Berger, 2006, pp. 44-19 and 218–220). There is no one-size-fits-all approach to competing successfully in the current global economy. Many German companies, selling products at the cutting edge of technology that need to be constantly upgraded, rely upon close cooperation between engineers and manufacturing workers when coordinating different phases of production from design to market. Physical proximity of all key functions and a highly skilled and experienced employee base, as well as trusted supplier networks are all key factors to success. Therefore German companies, instead of splitting their value chains and performing activities in locations where the required skills and materials are available at lowest cost, still favour an integrated value chain including a tightly-knit supplier base. This approach is of course

very different from the approach preferred by many US manufacturing companies, which outsource and offshore manufacturing operations to Asian contract manufacturers. German companies rely upon integrated value chains and pursue a dual strategy in globalisation – slowly building one or more international hubs over time with the objective of replicating their German home base (thus creating a “second home”), while still keeping significant manufacturing as well as product definition, R&D, design and logistical functions at their main German home base. Another key consideration in German companies’ preference for integrated value chains is the protection of intellectual property, given their position as global technology leaders.

Most of the companies in our survey started their expansion into Asia with a small and highly qualified sales force, then over time added service and logistic functions as well as product application and development expertise. In many cases, they began manufacturing operations at a later phase to better serve local markets and to be cost competitive in certain market segments relative to local competitors. All the companies in our sample are now operating at stage 2 at a minimum, as can be expected, given the focus of this study. A significant number of companies with operations in stage 3 can be found in China (18 % of companies there), India (17 %), Malaysia (16 %) and Singapore (14 %). In China, 42 % of the companies we surveyed are already operating in stage 4: in addition to sales, service and manufacturing operations, they also have local development and engineering functions. These numbers are a reflection of the strategic importance of the country. Such companies may therefore be classified as undergoing the process of becoming ‘insiders’ in China. In India, only about 22 % of the locally active companies surveyed can be classified as ‘insiders’. Thailand and Japan both trail behind at about 11 % each. If we take a company and cross-regional perspective, about 42 % of the companies active with one or more wholly-owned subsidiaries in the region are ‘insiders’; this means that they have one stage 4 operation in at least one of the key sub-regions of China, ASEAN or India. If we look at ASEAN alone, about 11 % of the companies active in this region have at least one stage 4 presence and can be considered as ‘insiders’. Only 3 % of the companies surveyed are ‘insiders’ in all three sub-regions.

Exhibit 3: Proportion of stage 2 – 4 companies per country in our sample



Source: Primary data from Quantitative Survey

Our results should be taken as a first indication only, as they are based on a short online survey. It is difficult to assess at surface level the exact nature of manufacturing operations reported in the study – whether the operations focus on certain components only or on the final assembly of certain products, whether they rely on imported components from Germany or are full replicas of the German ‘Stammhaus’ operations. R&D activities reported in our survey could simply be an extended workbench or focus on application development only, or focus on development of new products for the region or for global markets, or basic research as well. Full ‘insiderisation’ would have to mean the maintenance of comparable manufacturing facilities and R&D facilities to those in the home country, a situation that is still the exception for most German Mittelstand companies, in our experience.

Our survey results regarding the China footprint of German companies have been corroborated by a large-scale study of German companies active in China (German Chamber of Commerce in China, 2015). According to this study, 49% of the around 5,200 German companies operating in China maintain production facilities there (German Chamber of Commerce in China, 2015, p. 19). The study also reports that about 40% of the companies engage in or plan to engage in some form of R&D in China in the next 24 months (German Chamber of Commerce in China, 2015, p. 15).

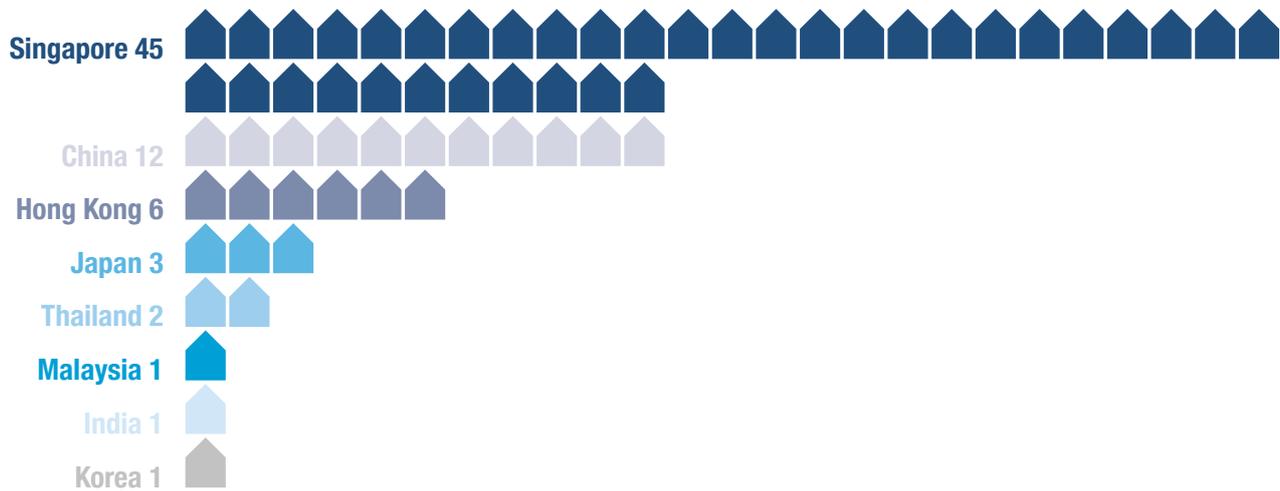
1.2 Trend towards regional headquarters

Establishing regional headquarters (RHQs) is one way for companies to deal with the challenges of coordinating their global activities. Usually, key objectives for establishing regional headquarters are to exercise greater control over a number of smaller country subsidiaries separated by vast geographical distance, as well as to shift some management responsibilities to these regional units to be closer to local market conditions so that faster decisions can be made (Amann, Jaussaud, & Schaaper, 2014). For the purposes of our study we have defined RHQs as explained in Box 1. 72% of the companies have already established one or more regional headquarters in Asia Pacific. The most favoured location for regional headquarters is Singapore.

Box 1: Definition of Regional Headquarter

A RHQ is a corporate unit with two or more country subsidiaries reporting to it. The management of the RHQ has relatively high decision-making autonomy in key functional areas like product portfolio and pricing, hiring of key personnel, and investment choices. RHQs are different from Regional Offices, lacking any important decision making power and executing only regional operating functions.

Exhibit 4: Country ranking by presence of most regional headquarters of Global Mittelstand Champions



Source: Primary data from Quantitative Survey

Our study has a Singapore bias, due to the fact that our surveyed companies have a presence in Singapore. The results of our survey are however confirmed by earlier studies. The 2011 Asia Pacific Headquarters Study conducted by the European Union Chamber of Commerce in China came to a similar conclusion: ‘most of their [of 67 survey respondents] Asia Pacific regional headquarters are located in Singapore, followed closely by Shanghai, Hong Kong and Beijing.’ (European Union Chamber of Commerce in China, 2011, p. 7). This study probably has a slight China bias, since most of the executives surveyed were based in China. An earlier study carried out in 2007 among more than 100 large multinational companies located in the Asia Pacific region corroborates these results, however. More than half of the study’s respondents ranked Singapore as their top location choice for establishing a regional headquarters, with China coming in a close second (Spire Research and Consulting, 2007).

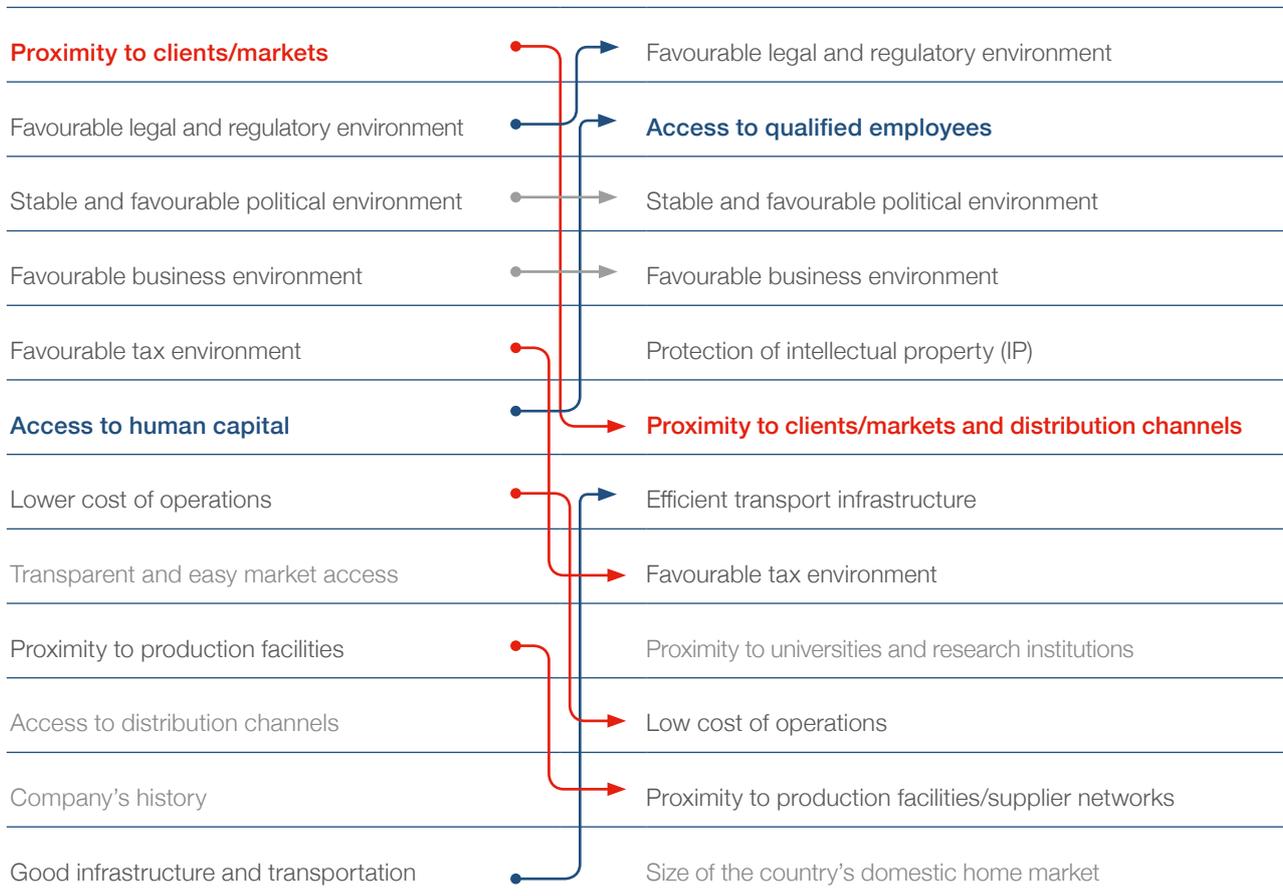
In the 2007 survey, many companies had already indicated the need to have more than one regional headquarter in Asia, given the enormous market potential, geographical space and cultural diversity of the region. This trend of establishing sub-regional headquarters was confirmed by our interviews and our survey. Of the surveyed companies that operate a regional headquarters in Asia, one quarter have split responsibilities into two or more sub-regional headquarters in Asia. An interesting case study in this respect is the evolution of TÜV SÜD (see case study in chapter 4.6). The company started to manage its far-flung Asia Pacific operations from one central regional headquarters in Singapore in 2006, and moved recently to five more decentralised sub-regional headquarters in Asia to further grow the business (ASEAN: Singapore; Greater China: Shanghai; Japan: Tokyo; Korea: Seoul; South Asia: Pune). TÜV SÜD Asia operations are overseen by Dirk Eilers, the member of the global board responsible for Asia, who is based in Singapore. Most large German multinationals like BASF, Bayer, Daimler or Volkswagen have a similar decentralised regional headquarters structure in Asia, with one member of the main board being responsible for Asia and/or China.

The choice of location for regional headquarters is driven by many factors. Singapore performs best on many key selection criteria, including a favourable legal and regulatory environment, as well as a stable and favourable political environment. China (and its corresponding favourite regional headquarter location, Shanghai) dominates, when proximity to the largest Asian market and its customers is of key importance.

Exhibit 5: Comparison of top 12 criteria for locating Asia-Pacific regional headquarters

Asia-Pacific Headquarters Study 2011

Own survey of GMCs 2015



Source: Primary data from Quantitative Survey; European Union Chamber of Commerce in China, 2011

Our in-depth interviews with the executives of larger companies that have a longer operating history in Asia support our hypothesis that establishing a regional headquarters is a critical step in a regionalisation strategy, helping companies to exercise better control over their country subsidiaries as well as to get closer to local market conditions. Given the much improved travel and communication infrastructure in the region, companies indicated that they favoured deploying key staff as close as possible to local markets and preferred to move from a more monolithic regional headquarters structure (with all key people located in one physical location) to a more virtual structure. Different cities in the same region are chosen for the location of certain business activities based on specific strengths and weaknesses in key areas of strategic importance. Some of these considerations could be the talent pool in a very specific field or the rigorous implementation of intellectual property protection laws, if R&D is undertaken locally.

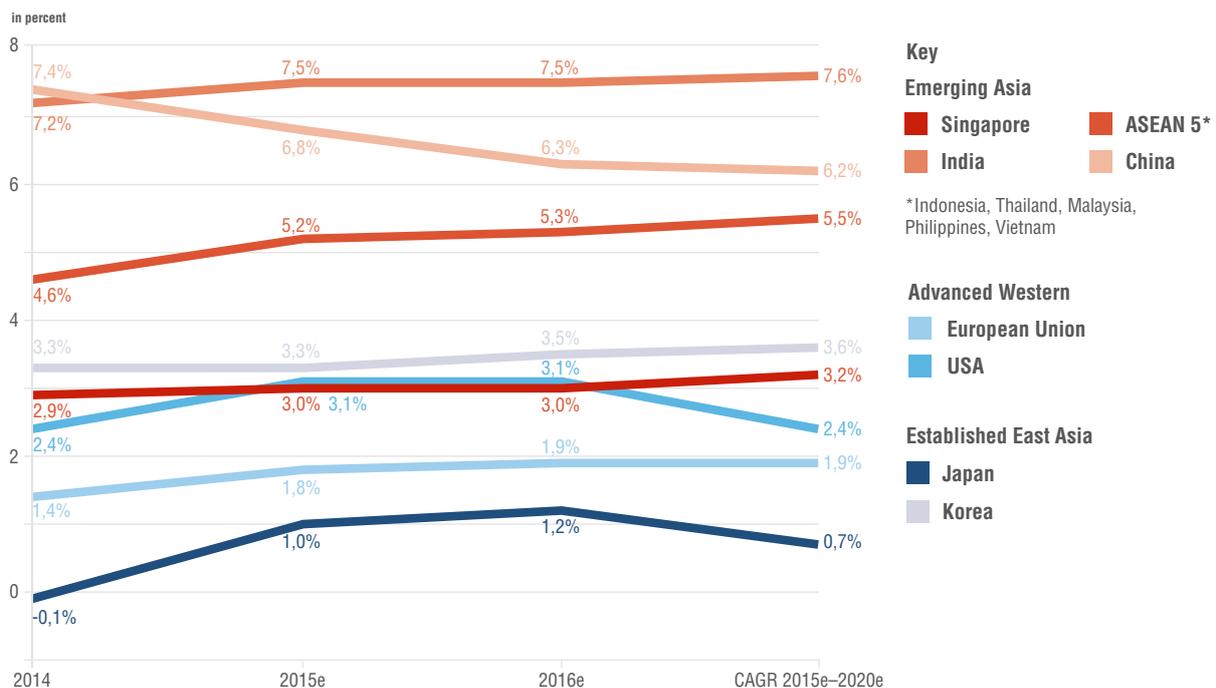
2 Fast forward towards a multipolar Asia

2.1 A more balanced Asia 3.0

While the return of Asia to the world economy started with the ascent of Japan, and later, Korea and other 'tiger' states ['Asia 1.0'], Emerging Asia became a growth pole of the world economy and the most important source of revenue growth for GMCs around the turn of the century [Asia 2.0]. China's share of growth is dominating an increasing number of market segments, and China has evolved into a '100-pound gorilla'. Only recently have the ultra-high growth rates of China come down to a new normal that is expected to approach ASEAN growth levels in the mid-term. Growth rates of the Indian economy are projected to overtake China in the next decade (see Exhibit 6). Currently, India's GDP per capita is still less than half of China's, the country is therefore much less at risk of falling into the 'middle-income trap'.

The middle-income trap has been observed in numerous emerging markets that have experienced much slower growth rates in line with the world average, or even stagnation after a period of very rapid growth. This occurs once the country has lost its low-cost edge due to rising wages and is unable to move into higher value-added markets due to lack of skills improvement (Pritchett & Summers, 2014). One key to sustaining higher growth rates than the world average for a longer period of time is continuous productivity improvements, which in turn depend on a market-oriented and business-friendly environment that fosters innovation. Key characteristics of such an environment include the protection of intellectual property rights, dominance of the rule of law, streamlining complex regulatory requirements, a stable financial system and supportive macroeconomic policies, as well as improvements in logistical and energy infrastructure and constant upgrading of the employee skill base (Kuroda, 2015). Most of the countries in Emerging Asia still face significant challenges when it comes to creating and further developing such business-friendly conditions.

Exhibit 6: Selected GDP growth rates of key Asian and Western regions



Source: International Monetary Fund, World Economic Outlook Database, April 2015; GDP (constant prices) growth

Despite the generally moderating tendency, a significant positive growth differential of some three percentage points between Asia's emerging economies and the mature economies of North America, Europe and Japan is likely to be sustained and this needs to be addressed in companies' strategies. Asia and particularly Emerging Asia will therefore remain the most important source of regional growth for globally active GMCs in the coming decade. In line with this belief, all executives interviewed by us expect that the relative contribution of the region to overall sales will increase. However, major changes will transform and shape the region and its economies, and have to be taken into account while formulating and executing growth strategies.

The most fundamental change is the gradual emergence of a more multipolar Asian economy ['Asia 3.0']. While China will retain its unique leading position in the run up to 2020, India (admittedly as a wild card) is likely to catch up via higher growth rates and the ASEAN region could gain much ground through the establishment of the ASEAN Economic Community (AEC) leading to a single market, with free flow of goods, services, skilled labour, investments and capital. These developments will even out the 'China factor' over time and lead to more balanced opportunities in Emerging Asia.

Exhibit 7: Macroeconomic data for the four key sub-regions composing multipolar Asia

	Established East Asia (Japan, Korea)		China	India	ASEAN 5* ASEAN 5* Singapore		European Union	USA
Population (2015e)	177m		1,375m	1,276m	549m	5.5m	666m	321m
GDP (2014) (Purchasing Power Parity)	\$6,530tr		\$17,617tr	\$7,376tr	\$5,611tr	\$0,453tr	\$18,526tr	\$17,419tr
GDP per capita (2014) (Purchasing Power Parity)	\$36,790		\$12,880	\$5,855	\$10,381	\$82,762	\$36,700	\$54,597
Constant average growth rate of GDP (2009–2014) (at constant prices)	Japan 0.7%	Korea 3.1%	8.0%	6.4%	5.1%	4.2%	0.7%	2.1%
Estimated share of global GDP growth (2015–2020)	3.4%		25.1%	12.8%	7.0%	0.4%**	10.8%	11.8%

* Indonesia, Thailand, Malaysia, Philippines, Vietnam

** Singapore shares 0.4% of Global GDP with an equivalent share in Global GDP growth

Source: International Monetary Fund, World Economic Outlook Database, April 2015; Own calculations

Based on IMF forecasts, GDP growth rates in India will overtake China's in 2015, and India has been predicted to surpass China's and ASEAN's growth rates in the next decade. The executives interviewed for our study remain sceptical for the large part regarding India, despite the growth potential

of the country, based on their first-hand experience of operating in the country. Endemic problems in India like corruption, infrastructure bottlenecks, slow bureaucratic procedures and adversarial labour relations continue to challenge GMCs. The political leadership of the country faces enormous challenges in creating business-friendly conditions. The growth potential on the other hand is immense; India's middle class is growing rapidly and the demand for infrastructure needs in transportation, power, telecommunications and other fields is enormous. Outsourcing opportunities have moved beyond software and routine business process outsourcing to clinical research services, pharmaceutical manufacturing and engineering services, for instance. The decision by Foxconn, published in August 2015, to invest USD\$5bn in high-tech manufacturing facilities in India employing up to one million workers could lead to a high profile 'anchor investment' for India's new 'Make in India' policy (The Financial Times, 2015). The success or failure in implementing this decision by Foxconn will be closely observed as an indicator of whether India will finally enter the race with China to compete as an important manufacturing base.

With respect to ASEAN, there is broad agreement among experts and business leaders that the ASEAN Economic Community (AEC) marks a 'tipping point'. It is expected that 80–90% of the integration goals will be completed by the end of 2015. The AEC integration process will increase the longer-term attractiveness of the region by creating a unified market including the potential for dispersing production supply chains across the region. While sceptical of the timetable and implementation, and wary of countervailing non-tariff barriers (e.g. standards and domestic taxes), companies are nonetheless already starting to organise and plan for an integrated market (EY, 2015). If not executed with strong political will, AEC could remain a diverse set of single markets at different stages of the development cycle, with enormous cultural and linguistic diversity, and with strong national interests of single countries for the foreseeable future. GMCs will therefore still need to address the needs of single countries on a country-by-country basis while strategically preparing for closer integration of the region. Expected measures like the final abolishment of import taxes, standardisation efforts like the new ASEAN Medical Device Directive, expanding logistics networks across the region as well as the evolving web of Free Trade Agreements will make it necessary for companies to co-evolve their organisational structures to seize opportunities for synergies in selected functions across ASEAN as they arise.

We expect that the five drivers outlined below will shape the multipolar Emerging Asia.

2.2 Five change drivers of Asia 3.0

#1 Rising costs in China

Since 2001, hourly manufacturing wages in China have risen by an average of 11.9% a year, and have been projected to continue to grow by 12% per year between 2013 and 2020 in local currency (The Economist Intelligence Unit, 2014a). Some observers, like Shaun Rein, have proclaimed the 'end of cheap China' (Rein, 2014) and 'Factory Asia', but the situation is somewhat more nuanced. Firstly, China's labour cost increases are underpinned by productivity gains and an excellent infrastructure. Secondly, there is still a significant cost gap between coastal and inner provinces. In 2012, the highest earnings for factory workers were found in Beijing: 2.4 times greater than those in Jianxi, the region with the lowest labour cost (The Economist Intelligence Unit, 2014b). The multiple between highest and lowest worker income is projected to narrow to 1.8 by 2020 (ibid.). Thirdly, wage increases have been in principle welcomed by the Chinese Government, in support of one of its key objectives to refocus China away from

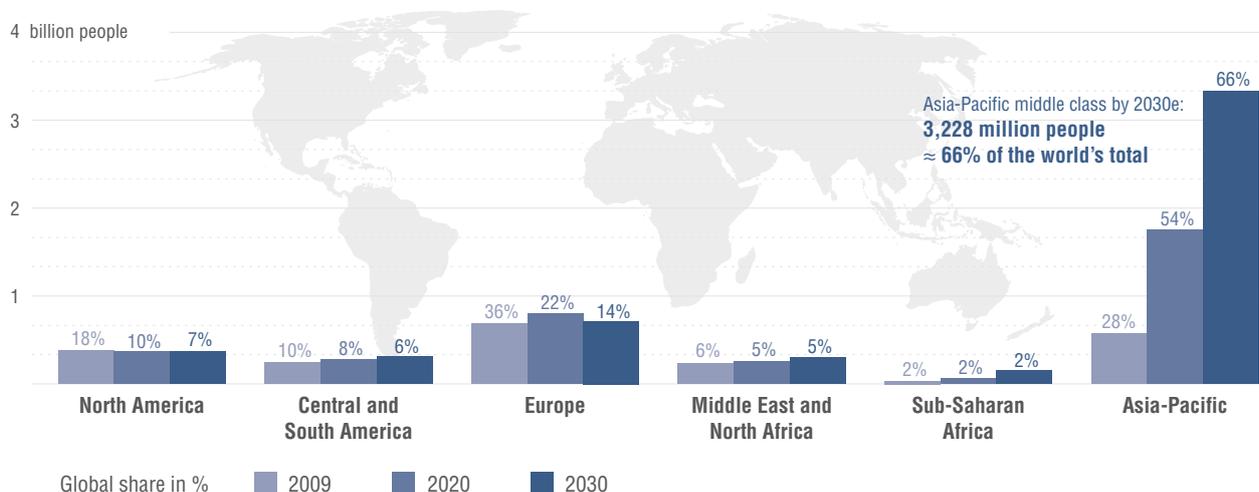
low cost to higher value-adding industries, and to move manufacturing from the coast to the west ('Go West Policy'). Fourthly, more importantly for GMCs, however, is the determination of the Chinese government to boost the transformation and upgrading of traditional manufacturing industries over the next ten years. In its 'Made in China 2025' strategy published in May 2015, the government revealed its ambition to push 'manufacturing China' to 'leapfrog' towards 'Industry 4.0' in the next ten years, a move which has been seen as a direct challenge ('Kampfansage') to Germany (Deutsche Bank Research, 2015).

China is becoming less competitive, especially in low value-added 'footloose' manufacturing industries like apparel, toys or electronics assembly, which are particularly sensitive to labour costs. It is forecasted that by 2019, manufacturing labour costs per hour in China will be 177 % of those in Vietnam and 218 % of those in India, up from 147 % and 138 % respectively in 2012 (The Economist Intelligence Unit, 2014b, p. 12). Whether companies active in these countries and the other ASEAN countries can benefit from lower labour costs on a sustainable basis will depend on their ability to develop an effective supply chain infrastructure. One factor in China's favour is its geographic size and internal disparity in costs. There will still be provinces that can offer significant cost advantages. Manufacturing labour costs in Jiangxi, Henan and Hebei are all expected to be under US\$4.5/hour in 2020 (ibid.). Given that they all have large labour pools and relatively well-developed infrastructure, these provinces could help to sustain China's competitiveness for high-volume, labour-cost intensive production.

#2 Growing consumer class and urbanisation

On the back of rising wages and the ongoing growth of the consumer class in China, India and ASEAN, urbanisation is generally considered to be the single most important growth driver for Emerging Asia. Based on the definition of 'middle class' as people earning between \$10–100 per day, Ernst & Young estimated that by 2030 two-thirds of the global middle class will live in the Asia Pacific region, up from just under one-third in 2009 (EY, 2013). A significant proportion of the new Asian middle class is expected to be at the upper end of the income bracket, with impressive spending power. This will accompany increased urbanisation across the region.

Exhibit 8: Size and distribution of the middle class worldwide



Source: Ernst & Young, Hitting the Sweet Pot. The growth of the middle class in emerging markets. 2013, Table 1

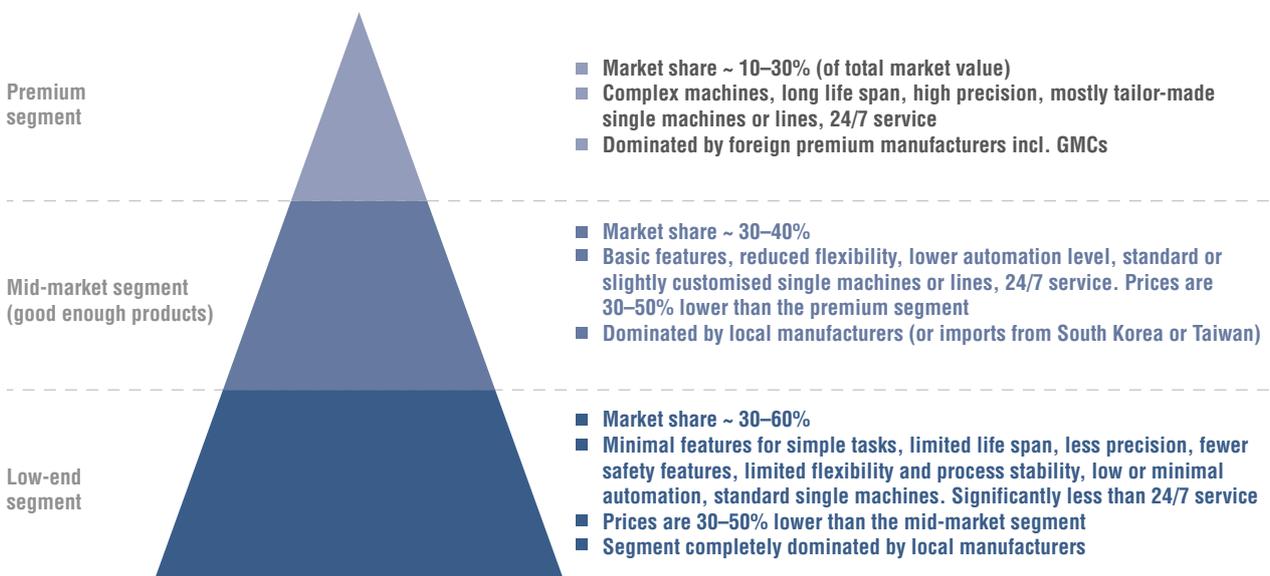
While the further rapid growth of the middle class will directly impact consumer-oriented industries mostly (B2C), it will also open further markets for German Mittelstand Champions in the B2B space. Companies that will benefit can be from a multitude of industries, from car suppliers of various tiers, to medical device manufacturers (due to increasing healthcare access), to logistics service providers (due to the rapid growth of online sales). Urbanisation will be supported by massive investments in infrastructural projects facilitated by the new Asian Infrastructure Investment Bank (AIIB).

#3 Mid-markets and 'good enough' products

The competitive landscape of many B2C and B2B markets in Emerging Asia seems to have changed fundamentally. In the first decade after China's opening up of its economy, most markets historically had two tiers: at the top, a very small premium segment served by global market leaders; at the bottom, a vast low-end segment served by local companies offering low-quality, undifferentiated products (typically 60–90% cheaper than premium ones). Around the turn of the century, 'mid-market' segments for 'good enough products' have become more important and have been rapidly growing in the last 15 years (Gadiesh, Leung, & Vestring, 2007).

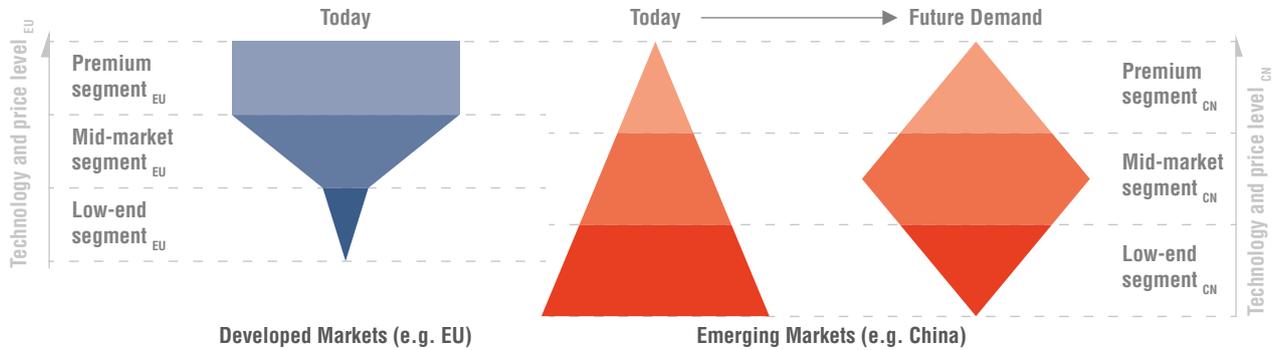
In a somewhat oversimplified way, whole sectors, markets or sub-segments can be conceived in a pyramid structure with three different performance, technology and pricing levels, using in our case the example of the manufacturing equipment industry (Mäder, 2014; Albeck & Woywode, 2013, p. 17; Roland Berger, 2011).

Exhibit 9: Typical pyramid structure in emerging markets



Sources: Adapted from Albeck/Woywode, 2013; Mäder, 2014; Berger, 2011

In many industrial sectors, the mid-market segment will continue to grow faster than the premium segment, while the lower end will shrink in absolute terms (Albeck & Woywode, 2013, p. 18; Roland Berger, 2011, p. 12). The larger the segment of the relevant industrial goods market, and the more it is dominated by standardised products, the more likely a strong mid-market segment will develop and be consolidated by Chinese cost

Exhibit 10: Expected growth dynamics in different market segments

Sources: adapted from Albeck/Woywode, 2013 p. 8 and 18

leaders. Mid-markets are typically populated by local Chinese players engaged in frenzied competition. Many companies interviewed for this study reported that they face a double-digit number of Chinese competitors in their market segments. A large-scale study of HSBC estimates that there are about 11,700 manufacturing-focused mid-market enterprises with an annual turnover of between \$50–500mil currently active in China (HSBC Bank, 2015, p. 6). For comparison: Germany has about 3,650 mid-market enterprises focused on manufacturing (HSBC Trinkaus & Burkhardt, 2015).

#4 Chinese ‘challengers’ in Asia and worldwide

It has been argued, that leading Chinese companies of today are the ‘New Japanese’. In the 1950s, Toyota was a small manufacturer of low-cost trucks and buses, Panasonic assembled entry-level bicycles and Honda specialised in lawn mowers. Yesterday’s Japanese beginners are today’s world-leading technology giants in automotive, carbon fibre, fibre optics, superconducting cables and critical components for printed circuit boards (Estin, 2010, p. 1). While major Chinese groups are now retracing the same path, there is one important difference: as already mentioned above, the reservoir of potential competitors from China (and potentially from India) is much larger than the number from Japan (or for the matter, from Korea) ever will be. A number of companies from Emerging Asia, mainly from China, have already achieved global market leadership positions, for instance, Huawei in telecommunications equipment, Lenovo in PC hardware, Sany in the concrete pump market, Haier in white goods, and Yingli Solar and Trina Solar in the photovoltaic industry. These companies are just the tip of the iceberg.

Compared to the ‘old’ Western & Asian multinationals and GMCs, the future ‘Global Challengers’ (Lang, Collie, Gocke, Zhai, Ullrich, & Moldenhauer, 2015), and especially, the so-called ‘mid-market challengers’ (Tse, Jullens, & Russo, 2012) rely on a different set of core competencies and resources. The combination of factors of large and rapidly growing home markets, fierce domestic competition, access to low-cost labour and high level of government support provide Chinese challengers with a platform for domestic and international growth. The typical internationalisation path of Chinese challengers, as can be observed in the manufacturing equipment industry, for instance, starts with expanding first ‘south-south’ inter alia to India or ASEAN countries and later to Latin America and Africa. As a second step, companies try to go ‘south–north’ i.e. to establish positions in advanced markets like the USA or Germany, a process which is currently still at an early phase (Impuls-Stiftung, 2014).

In addition to green field investments, M&A activities have been a preferred route by Chinese challengers to gain access to advanced technology, new brands and distribution capabilities, and to signal the intended move from the low and lower-end mid-market position (which they continue to rely on) into the premium market. The full-scale acquisition of a number of German companies like Kiekert, Schwing, Putzmeister, Koki Technik or ZF Friedrichshafen AG's Rubber & Plastics business unit, as well as strategic cooperation agreements between Chinese companies with German technology leaders like Kion, Emag and Stoll underpinned by significant investments are a testament to this trend (Bruche & Wallner, 2013; Hanemann & Huotari, 2015).

We expect ongoing consolidation of Chinese manufacturing companies to continue in the next few years. This will result in a rapid growth in the number of dominant Chinese mid-market players - all eager to expand abroad and able to access the necessary resources to do so. These emerging larger local players could be a direct threat to GMCs. In danger would be in particular GMCs operating in large market segments which are of strategic importance to China and have many established Chinese players, like the machine tools industry, wind energy related sectors, textile machinery, construction equipment, hoisting and lifting technology, or air-conditioning equipment (Albeck & Woywode, 2013, p. 6). On the other hand, to successfully execute a path to global leadership will be challenging for Chinese companies as well. Most of them are used to competing solely on price, with limited experience in understanding and addressing segment-specific needs of an internationally diverse customer base and linking those needs to R&D and manufacturing, as well as creating the required infrastructure in sales, service and distribution. In addition, local companies also have to cope with significant cost pressures due to rising wages in China.

In the sectors prone to mid-market competition (see driver #3 Mid-markets and 'good enough' products), the battleground is not only in China, but in other large Asian countries like India, Indonesia, Vietnam or the Philippines, and of course, in many other emerging markets like Brazil. A good case study in this respect is the experience of German machine equipment companies in India. German companies, despite their long presence in the country and very high reputation, lost their position as leading exporters to very price-aggressive Chinese companies that entered at the low end of the market and subsequently moved into mid-market segments (Automotive Products Finder, 2013; VDMA, 2010). Emerging markets have become the natural target markets for Chinese mid-market players that leverage their scale advantages and their familiarity with operating in immature institutional environments. If the mid-market players build strong customer relations in these countries and then manage over time to upgrade into the premium segment, GMCs run the risk of not only losing the Chinese market, but ASEAN, India and other emerging markets to Chinese competition.

#5 Shift of innovation to Emerging Asia

The need for market proximity and adapted products as well as cost efficiency has been behind the ongoing shift of R&D activities of larger multinationals to China, which started before 2000 with the establishment of R&D centres by companies like Microsoft, Fujitsu, Ericsson and Intel. A similar but smaller increase in the number of foreign R&D labs in India has been motivated more often by cost arbitrage opportunities, particularly in software, pharmaceutical R&D or engineering services. More than 80% of Fortune 500 companies have an R&D presence in China and currently some 1,500 centres are in operation, a figure that has been projected to grow by 20% by 2018 (Jolly, McKern, & Yip, 2015). Most of the

Chinese centres are largely operating ‘in China for China’ (and many Indian centres focus on providing routine R&D services). Some of the older and more mature centres have started to assume Asia-wide or even global mandates in selected areas as a result of a learning process. Although still in an early stage, a ‘new geography of innovation’ (Bruche, 2009) with Emerging Asia as a new contender on the global R&D scene is in the making.

In parallel to the shift of R&D activities of foreign companies into the country, China’s own companies have also enhanced their innovation capabilities. A recent study by McKinsey Global Institute (McKinsey Global Institute, 2015) has shown that China’s own business R&D has thus far been more successful in efficiency-driven industries like commodity chemicals, electrical equipment or construction machinery and in customer-focused industries like Internet software and services, household appliances or consumer electronics. The success in efficiency-driven industries is largely attributed to China’s extensive manufacturing ecosystem and unique scale advantages which allow companies to rapidly scale up and learn fast, supported by their high agility in manufacturing. The success in customer-focused industries is attributed to the huge scale of the domestic consumer market, the rapid increase of the online sales channel, the agility of Chinese entrepreneurs and a move beyond the ‘good enough’ products of the past to ‘cheaper and better’ products like Xiaomi’s smartphones.

According to McKinsey, China’s success in engineering-based industries like communications equipment, automotive manufacturing or commercial aviation and in science-based industries like semiconductor design or (branded) pharmaceuticals is mixed. With the support of the Chinese government in B2G (business-to-government) markets, Chinese companies have developed successfully through acquisition, transfer and assimilation of foreign technology, especially in high-speed rail, wind power and communications equipment. In other fields like the automotive and medical devices industries, Chinese companies still lag behind. While companies like Chery or Geely have been able to come up with ‘good enough’ car models on their own, it takes a decade or more – as exemplified by Hyundai – to cover the ‘last mile’ and achieve globally competitive quality standards. A range of constantly evolving different technologies also needs to be mastered at the product design and manufacturing levels. Product quality improvements rely on the experiential learning and incremental improvements of a highly qualified workforce, and represent often tacit knowledge that is difficult to obtain and transfer to latecomer companies. The acquisitions of Volvo by Geely and of Jaguar Landrover by Tata Motors can in this context be seen as attempts to leapfrog this competence gap (Bruche & Wäldchen, 2013).

There are no major Chinese companies so far in science-based industries despite China’s significant public investment in building a strong foundation for science and discovery. Major reasons include the formidable barriers in the form of complementary resources needed. For instance, the research-based pharmaceutical industry requires global development capabilities, global talent and knowledge resources for regulatory and reimbursement systems, and companies need to fund a multiple billion dollar process that can take more than a decade (Bruche, 2012).

While R&D centres of foreign companies in China and India are mostly motivated by market proximity or cost considerations, Singapore stands out as a third centre in Emerging Asia for carrying out R&D. In our quantitative survey Singapore ranks third after China and India with respect to the number of research units placed in Asia. A smaller number of GMCs have already placed sizeable product development and research operations in Singapore, closely connected with manufacturing sites in Singa-

pore and/or neighbouring ASEAN countries. Well-known examples include Pepperl+Fuchs, Rohde & Schwarz, Sick, IFM, Leica Microsystems, and Sivantos Group (formerly Siemens Audiology Solutions), all active in different sectors of the electrical engineering and electronics industry. These companies do not use Singapore as a workbench or for application development purposes alone, but to develop and manufacture entire products for the region and/or the global market.

The attractiveness of Singapore as an R&D location is confirmed by our analysis of the activities of German DAX companies in Singapore. Many of them already have placed research laboratories in Singapore or are carrying out joint research projects with universities and leading research institutes, especially in areas where Singapore strives to be world-class. Some of these areas include biomedical and chemical sciences, transportation/logistics, communications/media and certain manufacturing sectors like electronics/electrical engineering and environmental technologies (Singaporean-German Chamber of Industry and Commerce, 2014). Well-known high profile examples include the Asia Pacific Solutions & Innovation Centre (ASIC) by DHL/ Deutsche Post and the product development and testing operations of Infineon. Other German DAX companies active with R&D operations in Singapore are BMW, BASF, Bayer, Continental, Evonik and Siemens (ibid. & own research).

Companies interviewed stressed the availability of a highly qualified and culturally diverse engineering and science workforce, a strong network of globally competitive universities and research institutes, along with very well developed governmental support schemes and excellent IP protection as the key advantages presented by Singapore. Another key advantage relative to other Asian countries mentioned was employee loyalty. Most German companies are active in very specialised high-tech market segments and need to invest significantly in training for new employees in order to enable them to become productive contributors. Companies surveyed indicated much higher employee retention rates in Singapore than in China or India.

2.3 Summary

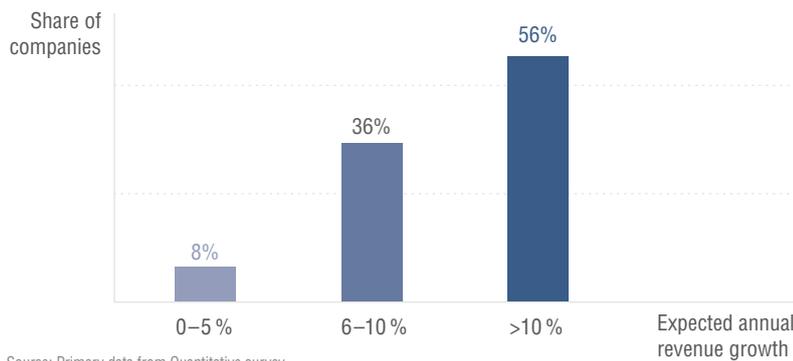
Taken together we see a multipolar Asia developing, in which the 'super market' and 'factory of the world' China will be increasingly complemented by India and ASEAN. Including 'established Asia' (Japan/Korea), the new multipolar Asia will account for about 50 % of the world's economic growth in the next five years. Intra-Asian trade and Asian production networks will grow further in importance. Innovation activities will be increasingly shifted to Asia. Mid-markets for 'good enough' products are at least for the next five to ten years the fastest growing category in many industrial goods segments. Chinese mid-market players grow increasingly into Global Challengers that threaten, among others, GMCs' strong position in an increasing number of segments. China's massive plan to leapfrog into Industry 4.0 in the next ten years is another important move that is of particular relevance to Germany's manufacturing industry.

Rebalancing towards Asia as a strategic imperative

3.1 Accelerating 'insiderisation'

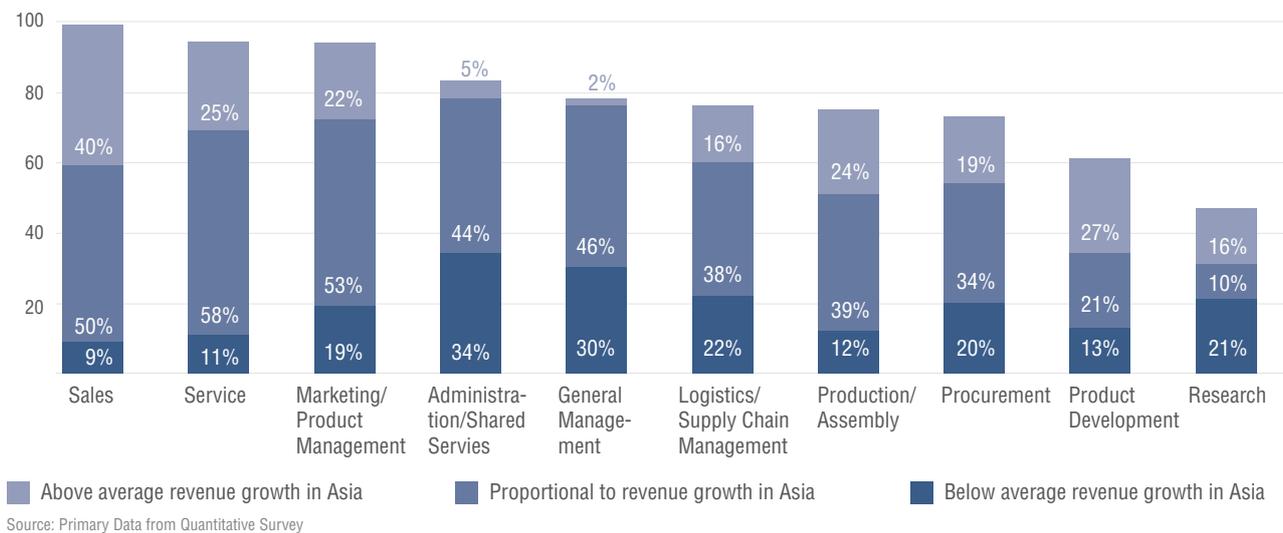
As we have seen, many GMCs have their internationalisation process well underway. Most companies have fairly optimistic growth projections for their Asia operations that are in many cases higher than the GDP growth rates forecasted for the various countries. The expansion model pursued

Exhibit 11: German Mittelstand Champions' revenue growth expectations in Asia for the next three years



seems to still be focused on strengthening sales and service operations, with less of a focus on becoming a stage 3 or even stage 4 company, if one looks at the planned increase in different staff functions.

Exhibit 12: German Mittelstand Champions' planned expansion of staff in Asia



We argue that it will be necessary for German GMCs to shift gears and enter the next stage: initiating the process of becoming a full insider in Asia. This will probably begin first in China, then in ASEAN (as well as in India, which we did not delve in-depth to in this study). Many companies may otherwise risk being marginalised on the global market mid-term, given the competitive dynamics described in chapter 2. Rainer Hundsdörfer, Chairman of the Board of Directors of ebm-papst, has best described the dynamic and the resulting imperatives for GMCs (see Box 2).

Box 2: Rainer Hundsdörfer on Chinese competition

'It is essential to make sure that our Chinese competitors stay in China and don't become too strong globally. So we have to fight them in China and make sure they don't become too successful in their home markets and start to use profits generated in China to build up R&D and a sales organisation outside of China ... If we don't defeat our Chinese competitors at home, it means that we do not reach the same market share which we have in Europe. Sooner or later they would be able to build up R&D and build up also a sales force in order to attack us outside of China.' (See case study in chapter 4.2)

While China is clearly by far the most important market and has become the competitive battlefield in which global winners are determined, it is also necessary to capture the unfolding opportunities in ASEAN (and India). To become an insider in ASEAN is more complex because of the many differences between country markets. We believe that the pursuit of manufacturing and even R&D localisation in ASEAN must be embedded in a pan-regional ASEAN strategy. According to a recent survey, 75.9% of large multinationals (41% with revenues of more than US\$10 billion, 37% with revenues between US\$1–10bil) active in the ASEAN region have a strategy that is focused on the ASEAN block. They already conceive of ASEAN as an identifiable entity that demands its own strategy (The Economist Intelligence Unit, 2014b, p. 14). This means, for instance, identifying common regional strategies for more cross-country standardisation of higher value/premium products sold to the more affluent buyers in large ASEAN cities in stage 2. Or in stage 3, developing a pan-regional manufacturing strategy that reduces complexity and offers advantages of economies of scale. An example is the planned centralisation of the upstream production stage of Siegwirk into one place (Indonesia), which will leave only downstream stages in the single country markets (see Box 3).

Box 3: Siegwirk's pan-regional ASEAN production strategy

Siegwerk is a market-leading manufacturer of inks with customers in the packaging and printing industries. The ink value chain has two main stages. The first is to produce the basic building blocks that go into ink, such as resins, solvents and colour ingredients ('upstream'). The second stage is to mix these building blocks to create specific types and colours of ink ('downstream'). Today, Siegwirk's factories across ASEAN each carry out both stages, from producing basic ingredients to blending them into final inks. But this is soon to change. Siegwirk is about to open a new factory in Indonesia that will do the bulk of the manufacturing for the first stage. These core ingredients will then be shipped across the region to local blending plants in the countries where the inks are needed. 'The idea is to make our production more efficient. Goods flow across borders in ASEAN relatively freely now. There's still a bit of local protectionism in some places, and cross-border regulations could certainly be a bit easier, but it's manageable. So putting our upstream manufacturing in one place makes sense'.

(Mike Van Breugel, CEO, South-East Asia, Siegwirk quoted acc. to The Economist Intelligence Unit – Redrawing the Asean map 2014b, p. 33)

Another way of pursuing pan-ASEAN opportunities is through the locating of various stages in the value chain according to the considerations of cost and talent availability. In such a scenario, one would, for instance, locate labour-intensive, lower-skilled manufacturing in low-cost countries like Vietnam or Indonesia, higher value-added manufacturing steps in Malaysia and R&D functions as well as highly automated manufacturing operations in Singapore. This configuration seems to be the preferred set-up of GMCs who are most advanced in becoming ‘insiders’ in the ASEAN region, like Pepperl+Fuchs, Rohde & Schwarz, Sick, Dorma or Bauer Maschinen.

To sum it up: a company that wants to stay a world market leader has also to be a market leader in Asia, especially in the key Chinese market. This requires, in many cases, an acceleration of the process of becoming a stage 4 company in China by establishing manufacturing and R&D operations locally. At the same time the new emerging opportunities in ASEAN countries must be addressed in a pan-ASEAN strategy through which companies will gradually build up an ‘integrated insider position’ across ASEAN and exploit opportunities along the way.

3.2 Reconfiguring the value chain and addressing the mid-market segment

Many GMCs, for instance in the machine engineering and investment goods sectors, utilise their traditional competitive advantages in technical performance, application know-how and service quality to acquire a dominant position in the premium segments of their markets globally. Based on this positioning, they have been able to charge significant price mark-ups. In chapter 2 we have argued however, that many of these successful companies could face a mid-term challenge to their global leadership position from mid-market challengers, especially from China. The threat also depends on the specific nature of the premium product segment, the degree to which current premium products exceed the needs of large customer segments (‘over-engineering’), creating an under-served demand for ‘good-enough’ products. Of course, size and growth rates of the specific mid-market segment are important to consider as well, in addition to the strength of the competition, and how fast mid-market competitors are able to close the product quality and performance gap.

A worst-case scenario from the perspective of a globally well-established GMC could be one where a Chinese challenger first consolidates its position in China, gains enough scale and generates enough profits for international expansion. It then attacks other developing markets (e.g. India) and ultimately moves into the premium segment by gradually improving its product offering and acquiring the necessary resources and capabilities over time. Such a development could push GMCs into a marginal ‘super premium’ niche position that will be hard to sustain in the long run (Mäder, 2014). A similar process where a ‘low end disruptor’ ultimately becomes overall market leader has been observed numerous times in mature developed markets as well (Christensen, 1997).

While we think it will be necessary for most GMCs to achieve an insider position in fast-growing Emerging Asia, the exact implementation of such a strategy will be driven by a myriad of company-and industry specific factors. The most prudent long-term solution could be to develop and implement a dual

business model, should a large, growing and long-term sustainable mid-market segment with prices 30–50 % lower compared to the premium segment exist. In this case, a fundamentally redesigned and fully localised value chain is necessary (see Box 4).

Box 4: Changes needed for mid-market business model

Significant changes are necessary in all parts of the value chain to develop a successful mid-market business (Mäder, 2014; Albeck & Woywode, 2013, p. 29 ff.):

- R&D and product design: establishment of a local R&D team to create 'good enough' products targeting the specific needs of mid-tier customers.
- Sourcing and production: establishment of a local manufacturing operation and supply chain.
- Branding and marketing: development of either a dual-brand strategy or creation of different product lines under a single brand and quality level but with reduced product features (e.g. 'value', 'core', 'premium').
- Pricing strategy: positioning of the respective brand(s) or product lines to match the segment needs.
- Sales and service organisation: development of a specialised organisation for the mid-market segment, taking into account different customer needs and service standards as well as the important role of local dealers and distributors in developing markets.
- Management: establishment of a specific organisation for the mid-market segment, led by executives preferably recruited and developed locally.

The experiences of a large number of multinational companies such as General Electric, Siemens and Otis illustrate how firms can localise the full value chain in China to lower manufacturing costs significantly, introduce 'good-enough' products and services, and broaden distribution networks to target customers located quite often in China's second and third-tier cities while still maintaining reasonable quality (Tsang & Chong, 2014). This has been done mostly through the development of new greenfield mid-market operations based (partly or fully) on localised functions separate from the core premium product businesses, or through acquiring local Chinese competitors with good mid-market product portfolios and outreach capabilities.

Based on our interviews, the most significant challenges to develop a successful mid-market business model are in the areas of R&D, branding, and organisational structuring. Typical hurdles mentioned in our interviews for shifting R&D functions abroad were lower education levels of locally available staff, the lower quality of suppliers, the lack of security of intellectual property, challenges in communication (language, time difference, culture), and efficiency losses caused by several small R&D sites rather than one large site. However, companies in our sample that have done R&D localisation also stressed the advantages of internationally organised R&D functions, which offers the possibility of improving market understanding, being closer to foreign customers, and last but not least, leveraging local skills and cost advantages.

In the area of branding, many companies fear that a simultaneous offering in the premium and mid-price segment could damage their image. One option by which to mitigate such risks is the adoption of a multi-brand strategy. Companies use their traditional name in the premium segment, and use a secondary brand for the new middle-market market. This allows the different business models to be clearly separated in the eyes of customers. However, this strategy also poses a potential risk of market cannibalisation.

Experience has shown that the biggest hurdle is cultural. It is very hard to manage two different business models in the same industry in one organisation because the two models (and their underlying value chains) can come into conflict with each other. The primary solution proposed to solve this problem is to keep the two business models (and their underlying value chains) separate in two distinct organisations to prevent the company's existing processes and culture from suffocating the new business model. The new unit can develop its own strategy, culture and processes, without interference from the parent company. Given the organisational and cultural challenges associated with developing a new greenfield business model, acquisitions or joint ventures should be considered as an option.

Box 5: Covering the mid-market with a dual approach via acquisition – the case of Trumpf

Some of the larger GMCs like Trumpf, Claas, Schuler and Mann+Hummel have addressed opportunities in the mid-market segment and have acquired local companies in China or in other emerging markets. In many cases, those operations continue to be run as separate entities. Trumpf GmbH + Co. KG, the world market leader in machine tools and laser technology/electronics, for instance, acquired in 2013 a majority stake (72%) in Jiangsu Jinfangyuan (JFY), a Chinese company. JFY is considered to be the market leader in China in terms of the number of units sold for punching and bending machines. The company is also increasingly active in laser cutting machines (TRUMPF, 2013; TRUMPF, 2014, p. 91). According to company statements, the best punching machine of the Chinese manufacturer currently costs 100,000 Euros, while the cheapest Trumpf-built machine costs 250,000 Euros. The acquisition will enable Trumpf to penetrate the middle-price segment, which makes up less than 10% of the German market, but represents around two-thirds of the Chinese market. Both product divisions, the Trumpf core business and the JFY mid-price brand, are managed separately but cooperate as well. JFY is delivering machine frames to Trumpf, while Trumpf supplies JFY with key components, e.g. its own solid-state lasers (ke NEXT, 2014; TRUMPF, 2014, pp. 100–101).

While Trumpf and others have chosen the acquisition route and a certain degree of separation between their premium and mid-market operations, other larger GMCs like ebm-papst group, Pepperl+Fuchs, Sick or Rohde & Schwarz have successfully localised their value chains in China and/or in ASEAN and decided against a dual business model. Their experience so far has been that it is possible to compete successfully in those markets with locally adjusted and/or designed products that are priced higher than challenger products but that can justify a price premium based on unique product features. They keep investing heavily in R&D, hoping to further differentiate their products from those of local players, expanding sales, service and networks to improve responsiveness to customers, and cut costs by taking advantage of local production resources.

3.3 Evolving organisation and management structures

In line with the rebalancing of the business towards Emerging Asia, GMCs need to adjust management processes and structures as well. While we have so far only dealt with shifting or duplicating primary value chain functions, a careful reconsideration of governance and company-cultural issues is necessary as well. Necessary changes in key areas will be very challenging, for example, decision making powers between the German headquarters and the new regional headquarters need to be redefined to facilitate optimal decisions balancing regional and global considerations, as well as to ensure the appropriate checks and balances. Another key challenge is the recruitment and retention of qualified local staff and management.

We propose to conceptualise these Asian operations as one or more Asian hubs that will be considered as a 'second home'. The latter will be integrated with the German headquarters and eventually be a cornerstone of a fully globalised company that could evolve into a 'differentiated network' as envisioned by Ohmae, where key value chain activities in certain locations are integrated globally, forming nodes that will then work as centres of excellence for the whole organisation.

To become an insider in Asia and create a second home base is a multi-year process, taking anywhere from five to ten years. GMCs that have opted for Singapore and are most advanced in this process like Rohde & Schwarz stress several key success factors (Ott, 2014):

- **Long-term strategic vision and commitment:** The location in Singapore is seen as an integrated unit within Rohde & Schwarz, rather than an offshore production site to save costs or a regional hub with sales and service responsibilities only. What is key in creating a second home and becoming an insider is to develop local R&D expertise and keep it closely linked to the manufacturing operations, with both functions operating at world-class standards. The Singapore-based Asian operations have a global mandate and full responsibilities for certain product groups worldwide. Needless to say, such a commitment is underpinned by significant investments in physical infrastructure as well as human resources (Rohde & Schwarz, 2014).
- **Adjustment to local conditions:** Like many GMCs, Rohde & Schwarz keeps its manufacturing operations close to its R&D operations. Its manufacturing facilities are located within a few hours' drive of Munich, where the primary R&D centre is based. The same structure was re-created in Southeast Asia: R&D is based in Singapore, while manufacturing operations are based in Malaysia. The degree of vertical integration, however, is much lower than in their European operations to take advantage of supply chain opportunities in Southeast Asia. In addition, certain critical parts are manufactured only in Germany in order to protect intellectual property.
- **People recruitment and retention:** The recruitment and retention of qualified employees is paramount, especially for high-tech companies, since experienced and talented employees are difficult to recruit and costly to replace. The company invests significant resources in people development and training, especially leadership development. The key objectives are to transfer Rohde & Schwarz values and culture to Asia, creating an attractive working environment in Asia to increase employee retention and maintaining strong, close bonds between the German and Singapore operations. In the critical area of R&D for instance, 10 young engineers and scientists recruited in Singapore were placed at the German 'Stammhaus' for 18 months for immersion into the culture and participation in one product

development cycle first-hand. Most of these individuals now occupy leadership positions in the Singapore-based R&D operations. Most leadership positions in the Asian operations are occupied by local managers with long tenures at Rohde & Schwarz.

- **Delegating decision making power:** The Singapore team has full product ownership for certain product groups that are shipped globally – from conceptualisation to R&D and manufacturing. This strategy results in a high level of employee empowerment and ownership in Singapore and interesting engineering jobs, but also requires a fundamental shift in the mindset of ‘Stammhaus’ to delegate decision making power. Decision making processes certainly become more complex as a result.
- **Globally unified processes:** Globally consistent roles and processes supported by an integrated ERP system and state-of-the-art communication systems are key in managing such an integrated operation.

As the review of success factors shows, building one or even several international hubs with the intention to replicate core German capabilities, i.e. the creation of a second home, with insider positions in key markets and specialised regional and global mandates is challenging. On the other hand, a second home strategy that exploits opportunities for synergies as they arise and builds more scale-efficient operations across ASEAN or even Asia as a whole allows for the attraction of higher level management talent – people who would not be available for the smaller scale businesses of country organisations. The second home will also serve as key knowledge centre(s) while senior leaders from the hub along with German management could form a corporate executive committee as suggested by Prahalad and Bhattacharyya (Pralhad & Bhattacharyya, 2011). It is this evolutionary process towards a global ‘differentiated network organisation’ that, in our opinion, can also secure the competitive position of GMCs against future competition from China. This long and potentially transformational path towards sustaining global leadership will be one of biggest challenges for GMCs over the next decade. GMCs who lack the management and financial resources to embark on such a path should actively explore partnering options.



CASE STUDIES





DELO INDUSTRIAL ADHESIVES – A Jump Start in Asia

Sabine Herold, Managing Partner of DELO Industrial Adhesives, together with Dr. Wolf-Dietrich Herold; Member of the Board of the German Industrial Association

» Please briefly explain DELO's business activities:

DELO manufactures tailor-made industrial adhesives with sophisticated characteristics for high-tech industries, e.g. the automotive, electronics or chip card industries.

We offer also complementary dispensing and curing systems for the proper application of our adhesives in high-volume manufacturing.

» DELO has been active in Asia since 1995, working with a distributor. Business really took off after you established your first representative offices and eventually your own subsidiaries in Singapore (2005) and Shanghai (2004). Your Asia revenue share grew from 0% to 40% in the last ten years, while overall revenues quadrupled in the same period. What explains your success in Asia?

It wasn't our initial intention to massively expand in the Asian market. We simply followed our European customers who had begun manufacturing in Asia.

Once active on the ground, we quickly learned that the demands of Asia's powerful consumer electronics industries match perfectly with DELO's core competencies. Our customers need meticulous bonding solutions for many consumer and B2B products like smartphones, SIM cards or RFID labels that are manufactured in high-volume manufacturing processes.

Asia Factsheet

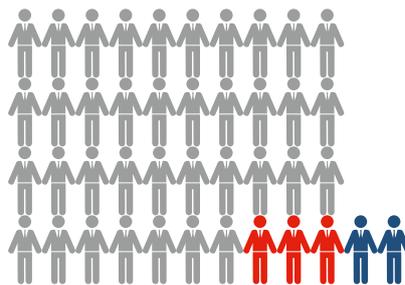
Global revenue

€ 74 million
in 2014/15



40%
Revenue share
from Asia

450 Number of employees



30
in Asia
overall

15
in Singapore

Main products/
services/solutions
for end customer
industries

Tailor-made industrial adhesives with sophisticated characteristics for high-tech industries, e.g. the automotive, electronics or chip card industries. DELO also offers also complementary dispensing and curing systems for the proper application of DELO Industrial adhesives in high-volume manufacturing

Of course, Asia was a new and foreign market for us when we started our expansion around 2004, opening up representative offices in Shanghai and Singapore! Since then, our revenue in Asia has started to grow dramatically. The 'secrets' of our success: we immediately liaised with well-established distributors, converting them into local allies, one per country. Ever since, these distributors with their local market knowledge have been our most loyal strategic and logistic partners.

In addition, we have built up our own local teams of highly-qualified sales engineers who provide professional technical support and know-how to our customers. They act as engineering consultants and assist customers at all stages: from the initial beginnings of a new project, starting with the specification of a product and the design of the assembly process, through to the full product life cycle. They help our customers to design bonding solutions and implement those solutions in their production processes with our products, adhesives, and dispensing and curing systems.

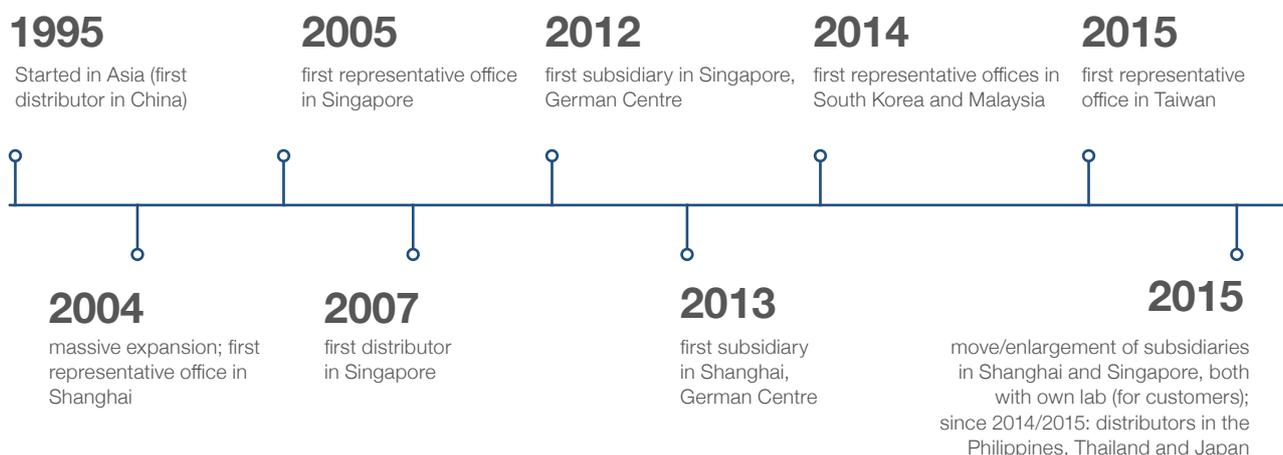
» **What is your present footprint in Asia and how do your Asian operations work together with your headquarters in Windach, a small town in the Munich area?**

Windach is our home base and our only location for R&D and all manufacturing. We have a very good employee base there with highly skilled people in all the areas we need, especially engineers, scientists, technicians and manufacturing staff as well as support staff. We have not found a better place yet globally for our business!

Researching, developing and producing solely in Windach also means protecting our know-how. So far there are no plans to relocate these activities in the foreseeable future.

Our own operations in Asia focus on providing technical support to our customers on-site. Our world-wide team of local sales engineers acts as engineering consultants as described earlier.

Overview of Asia footprint



Currently we employ about 30 highly qualified people in Asia. Our two main locations are Singapore and Shanghai; both locations have their own labs to test our solutions with our customers. In addition to this, we have representative offices in South Korea, Malaysia and Taiwan, and work with local distributors in the Philippines, Thailand and Japan.

» **What are the biggest hurdles you are facing in implementing your growth strategy in Asia?**

Our biggest challenge is the recruitment of new staff, given our ambitious growth plans. The system of scientific, technical and chemical education in Asia differs a lot from the German system. There are a lot of qualified people in Asia, but it takes us more time and requires far more job interviews to finally identify the perfect candidate for our company and our teams. Our medium-sized company is barely known in Asia and we are facing heavy competition from well-known global players.

Another challenge is mastering our supply chain, securing a reliable and fast supply of our products for our customers. Our production takes place exclusively in Germany. Establishing one or more logistical hubs in the region is a key challenge for us.

» **How do you see Asia evolving in your industry?**

We are already facing numerous good and qualified local competitors. Our adhesives, being chemical products, are more difficult to copy than mechanical goods. And we don't produce in Asia, so our recipes are kept safe in Windach. We focus very much on innovation. Each year we reinvest 15% of our overall revenue in R&D; 30% of our products are less than three years old on the market. We are very focused: constant innovation in niche markets combined with our excellent engineering knowledge is what we consider our competitive strength. We keep challenging emerging local competitors. We focus on those market segments that need heavy R&D investment, which smaller competitors cannot afford, and are volume-wise too small for our bigger competitors.

We think that the ASEAN integration process could be very good for us in the long term, but we have not seen its effects yet. Each country has its challenges and import regulations when it comes to business. Singapore is for us the easiest place in Asia to do business. Japan as a market we cannot consider 'Asian', but 'Japanese'. It is extremely difficult to gain ground there as a foreign manufacturer. This is not comparable to any other Asian country. As a B2B supplier we observe production relocating from China to other Asian countries, e.g. Vietnam, as production costs in China rise. India is not yet on our map. None of our strategic industries can be found there.

- » Do you have a few pieces of advice for Mittelstand companies wishing to fully tap on the potential of Asia's growth markets?
 - First follow your European customers to Asia and then find local customers by tuning your European USPs to become USPs in the new market.
 - Find and establish a partnership with the most suitable and experienced local distributor (one per country is our recommendation). Make this distributor your strategic and logistical ally.
 - Relocate the most suitable candidate from your home market to the destination, someone who knows and understands HQ mentality from the beginning and give him/her the task to create a top team of locals that know the market inside out and understand the local language, mentality etc.
 - Make sure your own local team and the distributor work hand in hand: the in-house team providing technical support to customers, the distributor importing and selling.



EBM-PAPST GROUP – Mastering Globalisation

Rainer Hundsdörfer,

Chairman of the Board of Directors

» Please briefly explain the ebm-papst business activities.

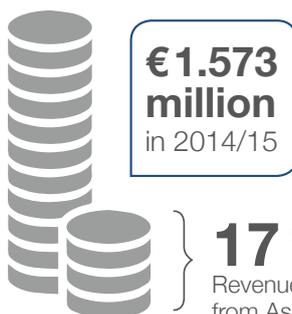
We are the world's leading manufacturer of electric motors and fans to be used for creating solutions in numerous application areas such as ventilation, air conditioning and refrigeration technology, household appliances, heating engineering, IT/telecommunications, and automotive and commercial vehicles. Would all our products suddenly come to a standstill, the world would quickly stop: data centres would overheat, food would quickly go bad, etc.

» One of your key strategic initiatives is to develop ebm-papst from an internationally active German company to a truly global enterprise: How far are you in this process of both regionalising key functions and creating a seamlessly integrated global network of operations?

ebm-papst is dominating the market in Europe, while the Americas and Asia are our main growth markets. We have started in both regions with sales, then application engineering and production, and established an operation very comparable to our core facilities in Europe. Today we are fully globalised: procedures and processes are identical worldwide; we have, of course, the same quality standards in all our operations and a similar product portfolio. Since two years ago, we have also established R&D operations in China and are about to do the same in the US.

Asia Factsheet

Global revenue

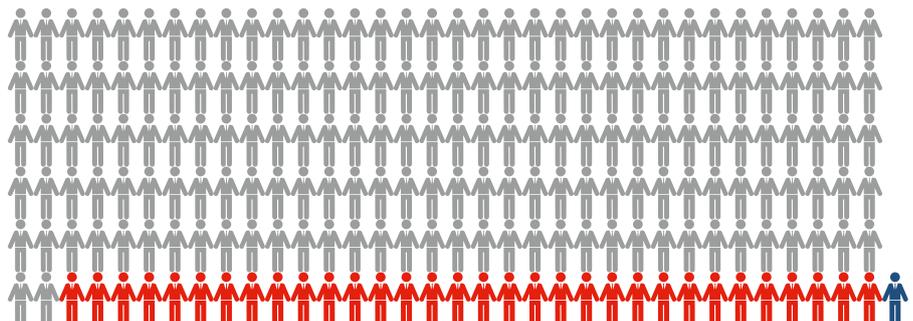


17%
Revenue share
from Asia

11.954 Number of employees

1.900
in Asia overall

45
in Singapore



» What specific role does Asia play in this strategic initiative?

ebm-papst has five competitors in Europe; in China we have more than 50. We are also the market leader in China, but we are not dominating the market as we do in Europe. It is essential to make sure that our Chinese competitors stay in China and do not become too strong globally. So we have to fight them in China to make sure they do not become too successful in their home markets and start to use profits generated in China to build up R&D and a sales organisation outside of China.

» You have been very outspoken about the need for German technology leaders to compete with Asian, especially Chinese competitors, head-on in the Chinese market. One of your strategic imperatives is: 'we have to venture into the lion's den'. Please share with us why you believe this is so important for German technology leaders?

If we don't defeat our Chinese competitors at home, it will mean that we have not reached the same market share that we have in Europe. Sooner or later they may be able to build up R&D and even a sales force to attack us outside of China. Today, of course, they already have European and American clients. But these are typically the large OEMs, which are very tough on them with prices, so the risk that they will be able to earn enough money to build a strong global sales and R&D organisation is currently rather small, but we have to observe their development very carefully regardless.

» What have been your successes and challenges in implementing this strategic thrust in China?

It is of course a challenge to build up the know-how and organisation we need for operating successfully in China, because in China employee fluctuation is still very high and very often you lose people

Main products/ services/solutions for end customer industries

Electric motors and fans to be used for creating solutions in numerous application areas such as ventilation, air-conditioning and refrigeration technology, household appliances, heating engineering, IT/telecommunications, and automotive and commercial vehicles.

Overview of Asia footprint

since

1996

Active with own subsidiaries in China, in India and in Singapore/South East Asia

● China:

main Asia operations are based here (fully operational unit including 17 sales offices, 2 factories; design and laboratory facilities; service operations; warehouses)

● India:

2 manufacturing units; 8 sales offices/application engineering; service operations; several warehouses

● Singapore:

sales office/application engineering; service; small distribution centre; admin functions for South-East Asia

before they really become effective. We are already very well established as a quality manufacturer and quality leader overall. Given the growing demand for high quality products, our market share is growing and we are also defeating more and more of our Chinese competitors. In the meantime we have established a strong R&D department in China. Our Chinese company has started to develop their first own products specifically designed for our Chinese customers' needs.

» How do you see Emerging Asia evolve?
Will China succeed in moving up the manufacturing value chain?

Yes, I believe China will succeed in moving up the manufacturing value chain. They have already started and are well on their way. The quality of their products is rising; their competence is rising and that is good for us, because our higher quality products are required for more sophisticated end products and applications. There are several companies, who might be a good illustration of how China is moving forward. Look at Huawei, dominating more and more the IT-Telecom market, or the automotive manufacturers or companies like Haier, who don't want to be low end white goods suppliers, but who aim to become a top quality company like Miele.

» Will the ASEAN integration process create additional growth in Southeast Asia?

I'm sure it will, if the integration process is successful and tariff and non-tariff barriers come down, and the individual member countries 'do their homework' to create good conditions for doing business for us. ASEAN also has a large population, and I think this large population also wants higher living standards. The region will require specific products and local production; this will, of course, spur industrial growth, leading to more and better paid jobs, and so on.

» Will 'Make in India' finally work?

India is difficult. I think the approach is very good. However the big hurdles are still corruption and a very difficult bureaucracy, which slows everything down in the country. So far we have seen only some slight improvements. The business climate after the election of the new government and prime minister has been very positive, but it remains to be seen if this will actually lead to the necessary changes.

So yes, I think it will finally work, but it will take time.

- » Do you have three short pieces of advice for Mittelstand companies wishing to fully tap on the potential of Asia's growth markets?
- Focused commitment on the most important market; in most cases this will be China for a start. Don't waste your capacities on a difficult market, which is – for most of us – Japan.
 - Establish as fast as possible a competent in-house sales organisation and, if it fits your product portfolio, also application engineering to really customise the products for specific Asian needs.
 - Establish as soon as possible your own manufacturing unit or a Joint Venture in Asia to manufacture 'in the region for the region'.



EOS GMBH ELECTRO OPTICAL SYSTEMS – Bringing Manufacturing Innovation to Asia

Terrence Oh, Vice President, Asia Pacific

- » Please briefly explain the EOS's business activities.

We are one of the global leaders in industrial 3D printing technology and the global market and technology leader for metal and plastic, powder-based, and high-end Additive Manufacturing (AM) solutions.

- » EOS started its Asian operations 2006 in Singapore with a sales and service team. How has the business developed since it entered Asia?

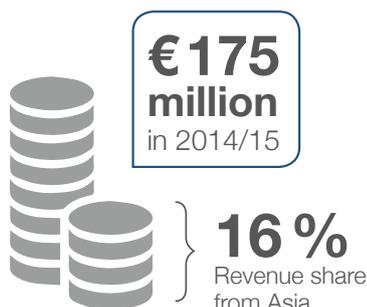
During the initial years, the business growth was relatively slow. Since about six years ago, as the market became more aware of AM, we have been consistently growing more than 30 % per year. Being present on the ground has helped us very much. Now about 16% of our global revenues are generated in Asia.

We opened our first technology centre outside Germany in Singapore in 2006. In 2013, we opened another technical centre in Shanghai. Singapore is our RHQ for Asia and coordinates sales/marketing and service for Asia, including Greater China.

The main activities provided out of our two technical centres include training, building of benchmark products for potential customers, machine installation, and maintenance and repair as well as technology demonstration. We have installed a number of our key plastic and metal AM systems in these two centres, which offers us a number of advantages: it enables us to closely work with customers, whether in doing pilot production runs or to see if our technology can be used in their manufacturing processes.

Asia Factsheet

Global revenue



550 Number of employees



In addition to our two main technical centres, we also have sales offices in India and Korea. In total we currently employ 43 staff in Asia.

» **What are some of the key challenges in selling your advanced manufacturing equipment solutions to companies based in Asia?**

We need to educate our customers: Many prospects still compare AM technology to conventional technologies. As a consequence, the focus is on large throughput. Compared to conventional technologies AM currently still has a lower throughput, yet it offers a broad variety of advantages: the technology supports product customisation and functional integration, which reduces the number of subsequent assembly steps. It enables a high part complexity, bionic as well as lightweight design. AM also helps to reduce R&D times and manufacturing costs.

» **How do these challenges differ between the more established manufacturing countries like Japan, and Korea, and Emerging Asia (especially China, India and some of the Southeast-Asian countries)?**

The challenges for each country differ. In Japan, exposure to AM has been taking place from quite some time ago. However, most of the activities related to AM are still focused on R&D and prototyping. Korea and Singapore are in a more or less similar stage of awareness of AM, with most of the applications focusing on prototyping.

China is the most advanced market right now, applying AM in actual production processes, for instance, in the area of Aerospace and Tooling. Some of our largest global customers are based there. When it comes to Additive Manufacturing, China has made a leapfrog jump, and in a period of three to four years has moved from prototyping to AM-based serial production. There is significant government-

Main products/services/solutions for end customer industries

Founded in 1989, EOS is the global technology and quality leader for high-end Additive Manufacturing (AM) solutions. As the leading pioneer of Direct Metal Laser Sintering (DMLS™) technology, EOS also provides a unique polymer AM portfolio. For these industrial 3D Printing processes, EOS offers a modular solution portfolio including systems, software, materials, and technical and consulting services. EOS is the partner of choice for industrial AM production, enabling sustainable solutions for the industry. Customers utilising EOS AM solutions gain many benefits from the paradigm-shifting technology: lightweight structures, cost reduction based on functional integration, individualisation as well as accelerated product development and production. In general, EOS serves currently serves the following industries: aerospace, medical and other industries including tooling, automotive and lifestyle.

Overview of Asia footprint

since **1996** Active with subsidiary in Singapore

since **2013** Active with subsidiary in China

Singapore
main Asia operations based in Singapore (sales and service office, a technical centre and regional headquarters)

Shanghai/China:
technical centre and sales and service office

India and Korea.
branch offices

tal support for applying advanced manufacturing technologies in both industrial sectors and educational institutions.

India is on a similar path but is about four years behind China.

As for the rest of Southeast Asia, they are either only beginning to explore AM or have still have not yet been exposed to such a technology.

- » How do you see Asia evolving?
- » Will China succeed in moving up the manufacturing value chain?

Based on my assessment, I do believe that China will work very hard to move up the manufacturing value chain and will eventually succeed. China intends to evolve from being 'the factory of the world' into a knowledge-driven economy based on innovative products and services. Industrial 3D printing technology will play an important role in this process. The two industries most likely to lead the wide-scale implementation of this technology will probably be aerospace and tooling (mould & die).

- » Will the ASEAN integration process create additional growth in Southeast Asia?

Yes, the integration process will create additional growth in Southeast Asia. However, for AM to be integrated into manufacturing processes (as opposed to prototyping), this will be most likely be spearheaded by MNCs instead of SMEs. The Singapore government has been quite active in supporting its manufacturing base to move into AM through the sponsorship of research activities at universities, for instance. Unfortunately, we don't see a lot of businesses actually adopting these technologies in their manufacturing operations. I think there is still a lot of potential to better support businesses in actually adopting the technology. For instance, by making local companies aware of support programmes. Singapore can stay world class in a few manufacturing sectors like speciality chemicals and high value electronics, but it has to continue to put in strong efforts to do so.

- » Will 'Make in India' finally work?

Based on the current situation, it appears to be moving in a positive direction. We see some interesting applications in the area of aerospace. 'Make in India' is still facing some challenges it has to overcome, e.g. red tape and reducing import taxes and tariffs.

- » Will 'Established Asia' (Japan and Korea) still stay as an industrial powerhouse and innovative hub?

Japan and Korea will very likely continue to be industrial powerhouses and innovative hubs in the future. However, with the quick adoption of AM in the picture, it is also very likely that China and India may join the ranks in the near future, at least in certain key industries.

» Do you have three short pieces of advice for Mittelstand companies wishing to fully tap on the potential of Asia's growth markets?

- Be able to adapt to the culture and pace of work in Asia. The pace in Asia is much faster than in Europe. Customers in Asia expect faster responses to their questions and need for support, but the time taken for European and German companies to respond is deemed too slow in many situations.
- The selling model of Mittelstand companies is not that important. It is the buying model of customers in Asia that counts. Some examples of these differences include payment and delivery terms (lead times, freight terms, etc.). In addition, price competition is heavy. You have to be prepared for that.
- Given the pricing pressure and heavy competition, Mittelstand companies must be willing to go local (localisation of manufacturing value chain). This could be difficult for some as it will require upfront capital investment, pose significant management challenges and there will always be fear of infringement of intellectual property in some countries, such as China. In addition to this, being as close to the market where the bulk of the business is coming from, and the level of import tax and duties are important considerations for choosing the right location.



MSE SOLUTIONS – Facilitating Global Supply Chains

Christian Zott,

CEO and owner of mSE Solutions

» Could you please briefly explain the business activities of mSE Solutions?

For almost 28 years, the mSE Solutions Group has been providing globally operating manufacturing companies from a wide range of sectors with consulting and IT implementation services in the area of supply chain optimisation. As globalisation has increased, mSE Solutions has been (and still is) concentrating on the optimisation of supply chains across different companies and locations – from the suppliers and the value-added processes at the production and distribution stages right through to handover of the products and services to end customers. We help global players creating the right supply chain processes and supporting IT systems to optimise their supply chains in line with changing supply conditions and end customer demands.

Our service portfolio is divided into three areas of equal size: consulting services, implementation services and support services for customised solutions. mSE Solutions has had its own software solution for supply chain management right from the start. As a result, it has successfully added cloud services to its core business over recent years.

» mSE Solutions started its Asian operations in Singapore in 2003, which is quite unusual for a mid-sized consulting company. What brought you to Singapore?

mSE Solutions established its first business relationships in Asia 18 years ago when it undertook a project on behalf of Siemens, which at that time was still active in semiconductor manufacturing. Southeast Asia emerged at that stage as the global hub for semiconductor manufacturing – virtually the whole

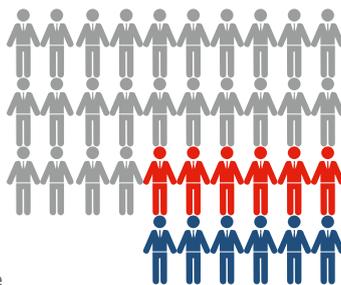
Asia Factsheet

Global revenue



18%
Revenue share
from Asia

120 Number of
employees



24
in Asia
overall

24
in Singapore

Overview of Asia footprint

Active with subsidiary mSE Pte Ltd in Singapore. Additionally, Zott has established several other businesses based in Singapore; they are active in the F&B and fine arts sector and employ an additional 25 people.

Main products/services/
solutions for end
customer industries

Consulting and IT implementation services
in the area of supply chain optimisation.

semiconductor supply chain is now based here. For the past 12 years, mSE Solutions has been represented in Singapore by its own subsidiary. Three years ago, the Group invested in its own premises in the CBD (Central Business District), right next to Chinatown.

We define ourselves as a partner who will stand shoulder to shoulder with our customers in all project phases: we support them from the initial vision and strategy phase, in the development and implementation of the IT systems, right through to run-time support for the solution. Our efforts to extend our business into Asia and America (which happened simultaneously) were driven by the demands of our customers, mostly European-based companies helping them to integrate their global supply chains.

» How has the Singapore operation helped you to grow your business globally?

As soon as you go to a meeting in Singapore you know straight away: 'You are in Asia, but somehow not in Asia'. The island city-state, which has around four million locals and another two million inhabitants in the form of expatriates from Europe, the USA and Australia, is an international melting pot. Here, people come together to live and work in close proximity to one another. In Singapore, business is done in a direct and unconventional manner and so it is different from virtually every other economic metropolis.

However, substantial differences exist when it comes to setting up business deals with local market players compared to international ones. Where subsidiaries of a foreign firm are concerned, the final decision concerning a potential collaboration still lies firmly with the parent company in the vast majority of cases. As a result, any direct contact with local representatives must be regarded more as a way of getting a foot in the door than as a way of sealing the deal. Singapore has helped us to develop some of our most important international business relationships. This generally happened in two stages. Firstly, small pilot projects generated in Singapore led to major projects at parent companies. Secondly, being also based in Singapore helped us to convince European and US companies that we can do global projects.

» How is Singapore integrated within your global network? Who does what? How do your operations in Germany, the USA and Asia work together?

We mostly work for global companies that have global supply chains. Practically all project teams are put together on a cross-site basis. At the Singapore site, all our staff are fully integrated in global projects: account managers have responsibility for major global projects, consultants and software engineers are involved in projects all across the globe.

» What are some of the key challenges of managing and expanding your business in Asia?

Many global players are looking for a hub location in Asia or have already chosen one. Within this context, it is very important to grasp the sheer scale and size of Asia. Aside from the enormous size of

the markets, the geographical distances involved are a key reason why companies use Singapore as a base for the Southeast Asia Pacific region and choose to develop the Chinese and Indian markets separately.

There are all kinds of reasons why Singapore was – and is – such an attractive choice as a hub (i.e. supply node) for the Asia Pacific region. Singapore has demonstrated that whenever one door closes another five open. The reason for this is that the city-state is managed just like a company. Politicians react to external economic factors with incredible speed, there is a superb education system, the unemployment rate is extremely low, as is the crime rate, and – last but not least – the various religious and ethnic groups are the perfect example of how to achieve a peaceful coexistence.

However, there is currently no comparison between a logistical hub in Asia and the kinds of production, warehousing and distribution centres found in Europe and the USA. The free trade zones that have been set up in Europe means that it takes no time at all and, in particular, no effort (compared with what is currently possible in Asia) to supply end customers directly using a lean system of distribution that sometimes only involves a single stage.

When it comes to choosing a hub location in the future, the Asian countries best positioned will be those that are able to develop free trade agreements faster and more sustainably than their competitors. Singapore is going to extreme lengths to further its status as a bridge into Europe. The EU free trade agreement with Singapore (EUSFTA: EU–Singapore Free Trade Agreement) that is currently being scrutinised by the European Court of Justice will highlight just how important Singapore is to European companies as a sales and distribution location. More importantly, if a free trade zone comprising Southeast Asian countries were to be established, Singapore would continue to play the key role within the ASEAN region. If these changes do actually take place, it will become possible to control the flow of goods quickly and efficiently from Europe using a two-stage distribution process. As far as mSE Solutions and its customers are concerned, that is another strategic reason for continuing to believe and invest in this location in the future.

» Do you have three short pieces of advice for small and medium-sized companies wishing to tap the full potential of Asia's growth markets?

That question can only be answered precisely by referring to the particular industry concerned. At a more general level, I can offer the following advice:

- If possible, companies should approach the market by entering into partnership with a local cooperation partner, particularly as far as sales and distribution is concerned. Here, you have to question the mindset that says you should try to do it all on your own.
- You have to be aware of the cultural aspects that are peculiar to Asia. For example: there are different types of 'yes' and it is important to recognise when 'yes' simply means that the person you're talking to has grasped a particular concept and when 'yes' indicates a willingness to enter into future cooperation. In particular, it is very important to take into account of the differences that exist between the various Asian countries; there is no uniform 'Asian culture'. Asia is much bigger than Europe and the cultural gap between one country and another may well be greater than the differences we see between northern and southern Europe. It is also necessary to familiarise yourself with the peculiarities of the specific country concerned.
- Focus on getting the right people on board and create an attractive environment for them. The level of long-term dedication and loyalty shown by employees in Southeast Asia, particularly towards foreign companies, is lower than what we are used to in Europe, although it is considerably higher than in Mainland China.



PEPPERL+FUCHS – Southeast Asia as the Perfect Match

Dr.-Ing. Gunther Kegel, CEO of Pepperl+Fuchs GmbH

- » Please briefly explain the Pepperl+Fuchs' business activities.

We have two main divisions. The Factory Automation Division is a manufacturer of industrial sensors as well as other electronic components that are used in a variety of industrial applications. The Process Automation Division focuses on intrinsically safe explosion protection components used in the protection of hazardous-area applications. Both divisions are amongst the global leaders in their respective market segments.

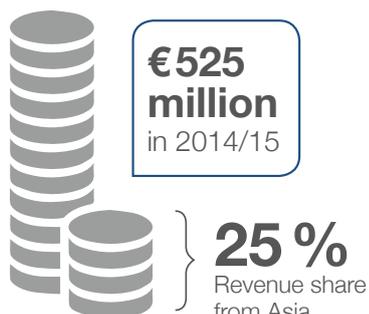
- » In addition to your global HQ in Mannheim you have decided to create your North American HQ in Twinsburg, Ohio and your Asian HQ in Singapore. Can you briefly characterise the roles of each HQ and how they are connected?

The concept of the triad, popular in the early 90s, inspired us to globalise our activities early on to create a strong presence in the USA and in Asia in addition to our corporate centre in Mannheim, Germany. Since the world is not standing still and has become much more complex and dynamic at the same time, we are continuously evolving our global structure.

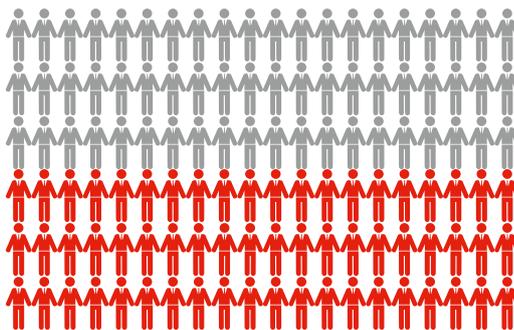
Today we are organised into two market divisions, focused on creating high-value-added products and solutions for a variety of customer industries. R&D, product development, product management, sales and application engineering are decentralised in the two divisions, which are run as profit centres. Manufacturing procurement and logistics are centralised globally as centres of excellence and are run as cost centres

Asia Factsheet

Global revenue



5.200 Number of employees



2.600
in Asia overall

1.000
in Singapore



supplying the divisions. Quite untypical for a German Mittelstand company is the fact that our supply chain is mostly based in Asia, with more than 50 % of our employees working there.

Relatively cheap and effective communication technologies like video telephony enable us to work in a very decentralised manner on each of the functions and carry out activities wherever we have the right people on the ground. Our technological platform development is still focused here in Mannheim, but everything else is pretty much decentralised and located as close to our customers as possible.

The regional level helps us to bundle critical functions (e.g. warehousing or product development) when each individual country is too small. This regional split again is continuously evolving: e.g. we have split our two divisional sales organisations in Asia across two sub-regions: North Asia (China, Japan and Korea) and South Asia (ASEAN and India). This is due to cultural differences and geographic distance issues.

- » You have been active in Singapore since 1979 and now employ more than 2,500 people in Asia, mainly in Singapore, Indonesia, Vietnam and China. In 2014 you even decided to expand your operations in Singapore by building a global logistic hub there. How has the role of Singapore evolved for Pepperl+Fuchs over time?

My predecessor had experience in the watch industry and experienced first-hand its collapse due to Asian competitors. So we decided we had to be in Asia and started a small manufacturing operation in Singapore in 1979, which was quite unusual at that time. Over time we added all other functions like sales, application engineering, R&D, procurement and support functions. In SG we still do the core part of our manufacturing value-added, complex printed circuit board assembly; our plants in Indonesia and Vietnam are focused on components manufacturing and final assembly. The three operations are run as one unit basically. Singapore for us is the perfect hub with world-class logistics capabilities as well. That's why we are building our Global Distribution Centre here.

Main products/
services/solutions
for end customer
industries

Electrical explosion protection and
sensor technology

Overview of Asia footprint

since
1979
active with
subsidiaries in Asia

Main Asian operations are based in Southeast-Asia in the countries of Singapore/Vietnam/Indonesia (sales/application engineering, product design, R&D, several component manufacturing units and assembly operations, service operations, procurement, logistic centre, admin functions). Two smaller plants in China and India. In both countries Pepperl+Fuchs has sales and service subsidiaries as well.

Sales and service subsidiaries in [Japan and Korea](#)

- » What do you see as key challenges for Singapore as hub for high-value manufacturing in Southeast Asia?

Singapore has one big advantage: that it still has a strong manufacturing base in a variety of industries. You can create a fully functioning manufacturing operation there, with all critical functions available to develop and manufacture products at world-class level. We still think it is important as a manufacturing company to have such an ecosystem. There are enormous cost pressures, so the focus has to be on high-value manufacturing and innovation and finding the right network structure with neighbouring ASEAN countries. Singapore as a small country has to pick its battles as well: in which manufacturing and service sectors does it want to be and can it be world class?

- » How do you see emerging Asia evolve?
- » Will China succeed in moving up the manufacturing value chain?

China has to be successful to ensure social stability and will eventually succeed, although I expect a lot of bumps in the process. The era of easy growth is over. I expect lower growth rates in the future. The political leadership understands the need for Chinese companies to switch from cheap manufacturing to more high value added manufacturing and provides a lot of support. The infrastructure is there and is continually developed.

- » Will the ASEAN integration process create additional growth in Southeast Asia?

I think this is very much a long-term project, given the enormous cultural, political and economic differences between the participating countries. Contrary to China, which has a strong political leadership, we are talking about individual countries with their own issues to solve.

- » Will 'Make in India' finally work?

I am sceptical, based on our experience on the ground. This will be a very long and slow process compared to China's. The main problems for us are the massive corruption and the lack of infrastructure for higher value manufacturing that is competitive on the world market. Since India is a federal democracy, they have great difficulties funding and implementing the necessary infrastructure projects.

- » Do you have some advice for Mittelstand companies wishing to fully tap on the potential of Asia's growth markets?
 - Don't look at Asia as one continent; business-wise, treat at least China and the rest of Asia quite separately.
 - You need to think globally and watch your Asian – especially your Chinese – competitors. They may be soon your most important competitors on the world market



TÜV SÜD – Evolving with Asia

Dirk Eilers, Member of the Board of Management, TÜV SÜD AG responsible for the Certification Strategic Business Segment globally as well as the Asia Region (ASEAN, Greater China, Japan, Korea and South Asia Regions)

» Please briefly explain the TÜV SÜD's business activities.

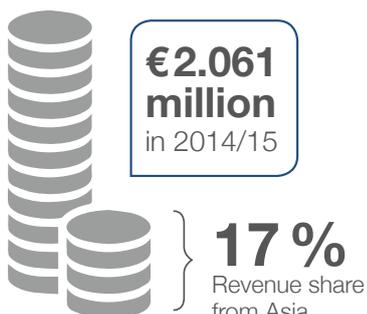
We are one of the world's leading technical service organisations, focusing on consulting, testing, certification and training. TÜV SÜD has 150 years of experience. We provide solutions for companies in a wide range of industries. Our service range includes the inspection and certification of industrial plants, the testing of consumer products to ensure their safe functioning in compliance with official standards, and the provision of management system certification and occupational health and safety services.

» You personally have been active in Asia since 1995 and are now a member of the TÜV SÜD board permanently based in Singapore, responsible for TÜV SÜD Asia overall and one Strategic Business Segment, Certification, which is headquartered in Singapore as well. Both moves, to have a board member permanently placed in Asia and to run a global business out of Asia, are still unusual, even for large German companies. What are the advantages and challenges of such a structure?

Being based in Singapore has given me enormous direct insights into the dynamics of Asia, which is for us the most promising region in the world. The decision of our supervisory board to place me in Singapore has shown that we have a real commitment to Asia. For us it makes sense to run our strategic business segment Certification from Singapore as well, since 3,800 of our 5,500 employees in this segment are based in Asia. Our local staff is really motivated by this sign of commitment. Our local customers know that we are here to stay. When I started in the region in 1995, we had 200 employees, now we have 5,400 people.

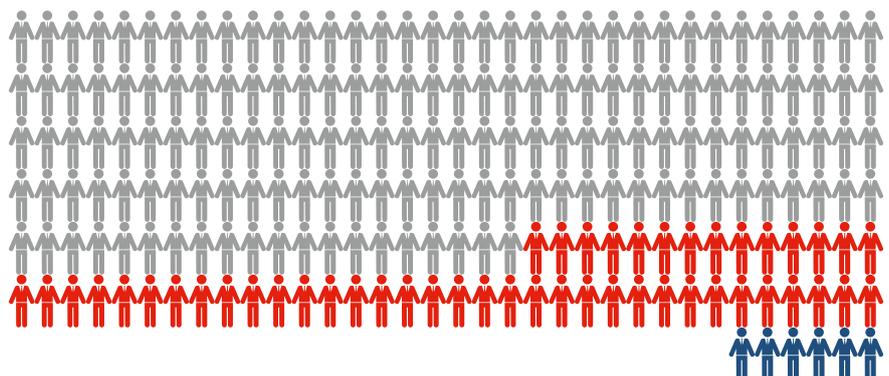
Asia Factsheet

Global revenue



22.954 Number of employees

5.400 in Asia overall
500 in Singapore



In addition, as an 'outside insider', I can bring a global first-hand perspective to our board meetings at our German headquarters. This is appreciated by my colleagues as helpful input for many corporate decisions.

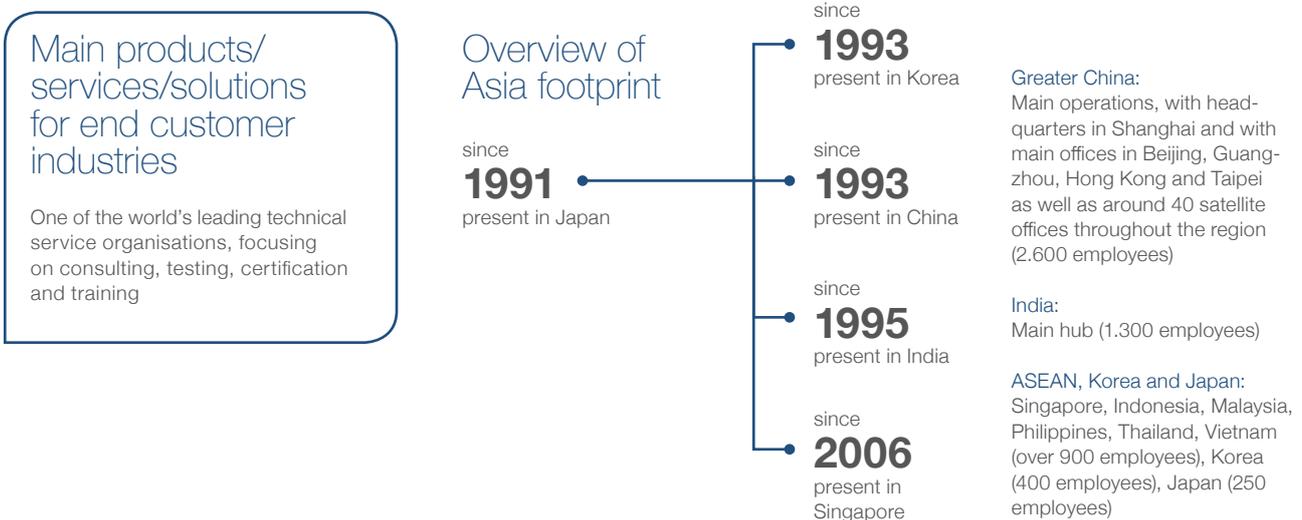
» Please describe how the structure of your Asian business developed over time from one regional headquarters in Singapore (between 2006 and 2010) to five more decentralised regional headquarters in Asia (ASEAN, Greater China, Japan, Korea and South Asia) to further grow the business?

We were a relative latecomer to Asia in our industry due to our old statutes, which forced us to concentrate on Germany. We started a quick catch-up process in 1991, opening our first operation in Japan and quickly expanded in the region with a number of local subsidiaries.

In 2006 we created a RHQ for Asia in Singapore to harmonise key business processes in HR, accounting, etc. and to realise economies of scale. This was done successfully and we have now fully harmonised business and support processes globally.

Due to our success in the region, our operations became too big and diverse to steer through one central unit. Because Asia is so diverse, we decided to create five small regional headquarters, each led by a regional CEO, all of whom report to me. Whenever possible, our divisions have local country operations that have a dual reporting role: primarily to the regional division heads, secondarily to the country head.

This new structure allows us to develop the right service approach for each market and push responsibilities to be as close to customers as possible. I am personally still based in Singapore with a small staff group and a few coordinating functions.



- » How do you see Asia evolving?
- » Will China succeed in moving up the manufacturing value chain?

They have no other chance. The development of Japan or Korea can serve as a blueprint. These countries started out as low cost locations and were able to move the value chain up through innovative products as labour costs increased. You can see already some globally very successful and innovative Chinese companies. This transformation from low cost to higher value is complex in China, because China is so diverse. The innovation pressure is highest in the coastal areas, whereas the west of China is and will be a low-cost location. It will be a big challenge for the country. But the government, which is still an extremely important force in China, understands the challenges and is actively creating a support infrastructure like research institutes. The active role of the government in the economy sometimes leads to decisions that also pose risks for our businesses.

- » Will the ASEAN integration process create additional growth in Southeast Asia?

Quite frankly, I am sceptical regarding short or medium-term positive effects. There are a lot of discussions, but very little actual progress. The countries are economically and politically very diverse. There is good potential in the region, but it will be a very long process. Each of the ten countries has its own challenges and priorities, which will always come first.

- » Will India finally enter a sustained growth phase?

India has of course great potential; for example, many well educated people and a huge domestic market. The big problems for us are corruption and the federal political system, which is for foreign companies almost impossible to understand and to work with. Our experience is, once you are able to handle the culture, you can operate successfully. Growth is much slower but steadier than it is in China.

- » Will 'Established Asia' (Japan, Korea) continue to be an industrial powerhouse with strong innovation potential?

We consider these markets as important as well, since a number of world-class companies are based there. They will grow much slower than the rest of Asia, more like Europe and the USA, but in a more stable and predictable manner.

» Do you have three short pieces of advice for German Mittelstand companies wishing to fully tap the potential of Asia's growth markets?

- Asia is not one market but many. Be sensitive to the enormous cultural and economic differences between the countries. As a newcomer it is important to pick a good local partner as a start and then over time create your own operations. If you are already active, I encourage you to build a regional hub with some headquarter functions in one of the more developed regions like Singapore or certain areas of China. This will really give a push to your operations in Asia.
- Actively use the German and European business network in place like the Singaporean–German Chamber of Industry and Commerce (SGC) and the German Centre. They provide excellent start-up support for setting up operations and help you to find local partners. In Singapore itself, the EDB is really helpful and acts as a trusted advisor. Unfortunately they are mainly active in Singapore.
- Don't put all your eggs in one basket in Asia, especially by focusing only on China. Spread your business risk in the region.

4.7 Additional case studies

Companies

Bauer Group	DHL	Dorma	Erbe
Festo	Haribo	Heraeus	Infineon
Mann+Hummel	Pepperl+Fuchs	Rohde & Schwarz	Sick
Siemens	Trumpf	Uhlmann	Zwick Roell

Source: EDB; <https://www.edb.gov.sg/content/edb/de/Erfolgsgeschichten.html> (German)

APPENDICES



5.1 General information

The Singapore Economic Development Board (EDB) commissioned this study in cooperation with Prof. Dr. Gert Bruche and Prof. Dr. Bernd Venohr in order to provide recommendations to the strategic and structural decisions of German Mittelstand Champions on how to best capture growth opportunities in Asia.

Bernd Venohr acted as overall project leader and carried out the online survey and management interviews. Gert Bruche developed the overall study approach and the macro framework for the study with Bernd Venohr, and co-authored the final report. Andreas Herzig (team leader) and Helga Saathoff-Fetteroll (Executive Assistant) supported their efforts.

EDB funded the study and contributed to insights that formed the basis of the five-stage company globalisation model.

Margit Kunz, Deputy General Manager of Singaporean-German Chamber of Industry and Commerce (SGC), and Hanna Boehme, Managing Director of the German Centre for Industry and Trade Singapore Pte Ltd, supported the distribution of the online survey to Singapore-based executives. In addition, Eva Puchala, German Representative of AHK Singapore/Vietnam/Philippines assisted in the distribution of the survey to Germany-based executives.

The participating executives were top-level managers of German Mittelstand Champions with strong track records in the Asian market. Their experience has been collected through both a written quantitative survey as well as personal interviews, and was subsequently analysed through a comprehensive approach consisting of quantitative and qualitative research as well as external intelligence. In addition, selective expert interviews were undertaken. Jürgen Kracht, Chairman of Fiducia Management Consultants, Hong Kong, provided inputs on China. Pieter Jooste, President & CEO Asia Pacific, Trox Technik and Dieter Sichelschmidt, Member of the Executive Board, dorma+kaba Holding GmbH + Co. KGaA supported the design of the survey based on their extensive operating experience in Asia Pacific.

5.2 Online survey

The online survey, which focused on quantitative data analysis, was targeted at Asia-focused functional heads and regional business unit heads of German Mittelstand Champions located both in Singapore and in Germany. The Singapore survey data collection was carried out in cooperation with the Singapore-German Chamber of Industry and Commerce and the German Centre for Industry and Trade Singapore. Both organisations distributed the online questionnaire to their members and respective tenants. In addition, the online questionnaire was distributed to functional and business unit heads with a focus on Asia-Pacific, who are based in Germany. For this purpose, contacts from EDB were used.

The survey was distributed under the heading 'Asia 2.0 (focus: Southeast Asia) – Opportunities and challenges for the German Mittelstand'. It consisted of 29 questions in three areas: general company information; current company footprint in Asia; plans for expansion in Asia. In total around 597 company executives were invited to participate (345 Singapore-based; 252 Germany-based). Care was taken that only one executive from each company was approached. In total we received 82 valid responses, 55 from Germany-based executives, 27 from Singapore-based executives. Not all the questions were answered by all respondents. There were no significant differences in the results between these two sub-groups.

The management interviews conducted face-to-face were aimed at refining and deepening the insights gained through the quantitative online survey. Prof. Bernd Venohr interviewed 22 senior executives of German Mittelstand Champions operating successfully in Asia. The interviews lasted between one and two and a half hours and were conducted in person at the companies' headquarters in Germany. The interviews were semi-structured with an outline of about 15 questions. Certain company executives featured in the case studies were interviewed a second time, mostly over the phone and in writing.



PROFILE OF STUDY PARTICIPANTS

Profile of study participants

6.1 Survey participants

The membership base of the Singaporean–German Chamber of Industry and Commerce (SGC) and the tenant base of German Centre for Industry and Trade Singapore Pte Ltd allowed for a diverse and experienced respondent group of Senior Executives based in Singapore. The membership base of the Singaporean-German Chamber of Industry and Commerce (SGC) consists mainly of Singapore-based Senior Executives from German-based companies active in Singapore (Singaporean-German Chamber of Industry and Commerce, 2015).

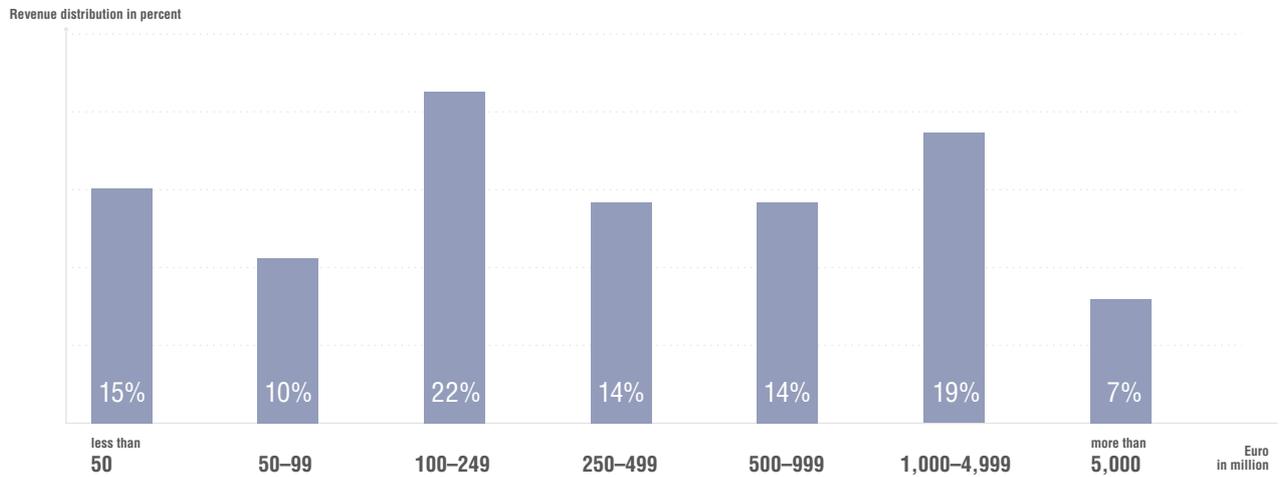
Tenants of the German Centre for Industry and Trade Singapore Pte Ltd are mostly smaller to mid-sized Mittelstand companies (German Centre Singapore, 2015). 140 Mittelstand companies with a total of 700 employees are working from this centre. We again approached the most senior executives of these companies based in Singapore.

For the German side of the survey we used the contact list of EDB. This list contains the names of owners and senior managers of small and large Mittelstand companies who are active in Singapore.

The main target group of the survey are so called 'Mittelstand Champions', small to mid-sized, mostly family-owned companies with annual revenues of up to €1bn and with a leading global position in their market segment (EDB, 2014/2015, p. 46; Venohr, Fear, & Witt, 2015; for a slightly different definition by Simon, 2012, p. 83). Even larger family-owned companies, in some cases with revenues in the multi-billion euro range, consider themselves quite often to be part of the Mittelstand, because they share the same set of values. Typical Mittelstand values and management practices are the will to stay independent, a focus on quality products, long term anchoring in local communities and sustainable consensus-oriented relationships with their most important stakeholders. Most of these companies are active in high-value manufacturing and associated service businesses, covering a broad spectrum of industries like mechanical and electrical engineering, automotive, pharmaceutical, medical and chemical products. Due to their strength in innovation, global footprint and orientation to fast-growing emerging markets, almost all of them are already active in Asia and face significant issues of how to grow their business in the face of emerging strong domestic competitors.

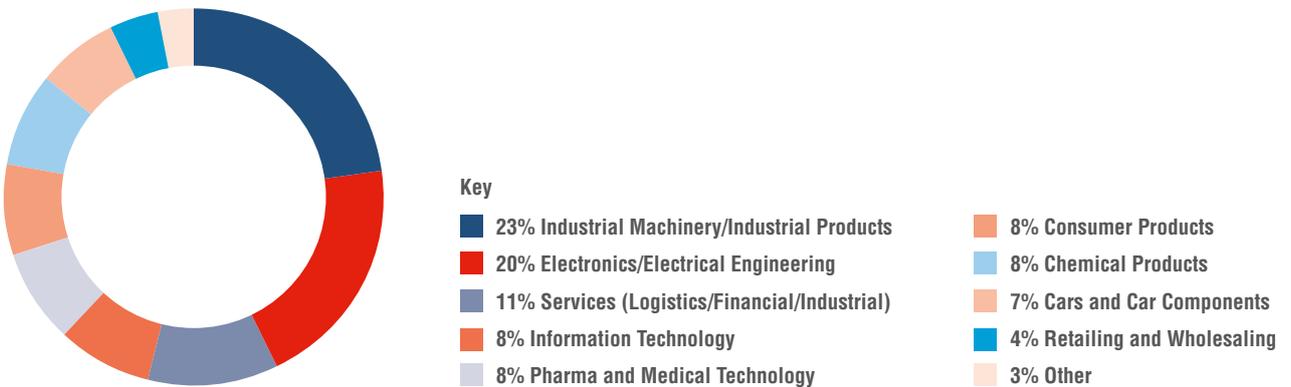
We took care to preselect companies from the membership, tenant and EDB contact list that belong to this target group.

Exhibit 13: Revenue distribution of companies in the survey sample



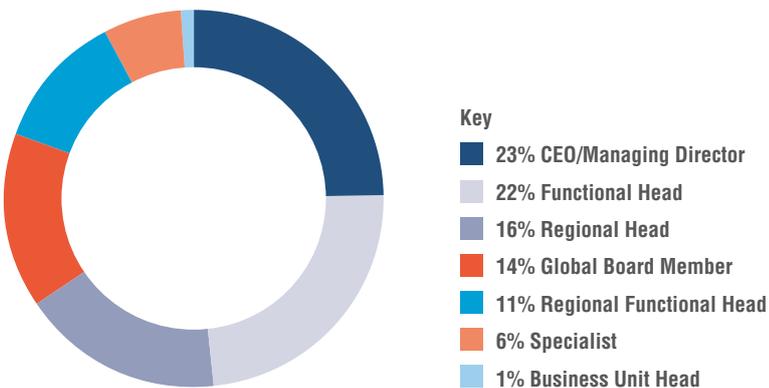
Source: Primary data from Quantitative Survey

Exhibit 14: Industry distribution of companies in the survey sample



Source: Primary data from Quantitative Survey

Job title and functional distribution of respondents in the survey sample



Source: Primary data from Quantitative Survey

6.2 Personal interviews

Company	Interviewee	Position
Aesculap AG	Prof. Dr. Hanns-Peter Knaebel	CEO
Armaturenfabrik Franz Schneider GmbH + Co. KG	Rolf Kummer, Tim Kohler	Managing Director, Chief Sales Officer
BAUER Maschinen GmbH	Dieter H. K. Stetter	CEO
Delo Industrie Klebstoffe GmbH+Co. KG	Sabine Herold	Co-CEO and Co-Managing Partner
DORMA Holding GmbH + Co. KGaA; dor- ma+kaba Holding AG (as of September 1, 2015)	Bernd Brinker	Member of the Executive Board (CFO)
ebm-papst Mulfingen GmbH & Co. KG	Rainer Hundsdörfer	Chairman of the Board of Directors
EOS GmbH	Terrence Oh	Vice President Asia Pacific
Hans Turck GmbH + Co. KG	Ulrich Turck	CEO and Managing Partner
KSB Aktiengesellschaft	Erhard Bingel	Vice President Global Key Account Management
LAUDA Dr. R. WOBSEr GMBH & CO. KG	Dr. Gunther Wobser	CEO and Managing Partner
Leica Microsystems GmbH	Knud Müller	Member of the Executive Board (CFO)
MANN+HUMMEL GMBH	Thomas Fischer, Josef Parzhuber	Chairman of the Supervisory Board, Group Vice President & CEO Asia Pacific
MAURER AG	Dr. Holger Krasmann	CEO
mSE-Management Solutions u. System Engineering	Christian Zott	Managing Partner
Pepperl+Fuchs	Dr. Ing. Gunther Kegel	CEO
N. N.	N. N.	CEO and Managing Partner
R. STAHL AG	Martin Schomaker	CEO
ROHDE & SCHWARZ GmbH & Co. KG	Peter Riedel	Group President & COO
SICK AG	Reinhard Bösl	Member of the Executive Board
TRUMPF GmbH + Co. KG	Dr. Gerhard Rübling	Member of the Executive Board
TÜV SÜD AG	Dirk Eilers	Member of the Board of Management
ZIEHL-ABEGG SE	Peter Fenkl	CEO

7 Author biographies



Professor Dr. Gert Bruche

Gert Bruche is a distinguished expert in international strategy, innovation and company organisation, with particular focus on the Asia Pacific region. His professional career has included senior management positions in industry, academia, the United Nations Development Programme and in management research. Notable stations include assignments as Managing Director in China and as Director of Global Marketing for a major German multinational, Dean and Vice President of the Berlin School of Economics and Law, and leading a research team at the International Institute of Management, Science Center Berlin. He also acted as a Director for several Pan-Asian Executive

Training programmes for a multinational client at Nanyang Business School, NTU, Singapore.

As co-founder and Managing Partner of BGM Associates GmbH he currently advises German and international clients, particularly in the field of life sciences and medical devices, as well as Chinese authorities on issues of foreign direct investment. He publishes widely on China and India-related business and innovation issues in international journals, and teaches as professor of International Management at the Berlin School of Economics and Law.

Bruche holds a Master's degree (Dipl. Ing.) from the Technische Universität Berlin, and a Doctorate in economics from the Freie Universität Berlin.



Professor Dr. Bernd Venohr

Bernd Venohr is considered one of the foremost experts on the success model of German Mittelstand companies. His work has been covered in major national and international media like the Financial Times, The Economist and Time Magazine and he has given numerous keynote speeches on this topic globally. As a consultant he works with owners and top managers of mid-sized companies on strategic and organisational issues. Main topics include developing and implementing growth strategies (focus on innovative business models), organisational design and governance (including succession) and M&A. Between 2005 and 2008, he was a tenured Professor of Strategic Management at the Berlin School of Economics and Law. Before taking up this academic position, he spent about 20 years in industry as Managing Director at Accenture (2000–2005) and Bain & Company (1987–2000), where he started his career. At Bain & Company his last position was Senior Partner and Member of the worldwide Board of Directors.

Venohr studied Business Administration at the Johann Wolfgang Goethe University in Frankfurt, where he also completed his Ph.D. degree. He holds an MBA from Northwestern University, Chicago.

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