

Supporting Singapore's Way Ahead



A German Business Perspective

 PartnerForSingapore

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Text and Editing

Robin Hoenig
Tim Philippi
Jens Rübbert
Brenda Yeong

Design

Dexel Pte Ltd
<https://dexel.sg/>

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A. Foreword



Message

by **Mr Jens Rübbert**

President, and

Dr Tim Philippi

Executive Director Singaporean-German
Chamber of industry and Commerce(SGC)

For many German companies, Singapore has a headquarter function for Asia, and many use the city-state as the gateway to access regional markets. The SGC is excited to present the paper “Supporting Singapore’s Way Ahead- A German Business perspective” which provides insights in how to safeguard Singapore’s hub function in the medium and long run. The paper identifies current industry trends, opportunities and risks, and policies that are important for German companies in Singapore. We hope that the Singaporean and German authorities find this paper useful in their policy-making process and continue to be open for dialogues with the German business community on Singapore's future development.

We would like to thank the SGC Board and the SGC Advisory Council Members for their valuable input into the paper.

Mr Jens Rübbert
President, SGC

Dr Tim Philippi
Executive Director, SGC

B. About the SGC, the SGC Board and the SGC Advisory Council

The Singaporean-German Chamber of Industry and Commerce (SGC) is part of a network of 140 offices of the German bilateral Chambers of Commerce (AHKs) abroad in 92 countries. AHKs are institutions of German foreign trade promotion. The Association of German Chambers of Industry and Commerce e. V. (DIHK) coordinates and continuously develops the network of German Chambers of Commerce Abroad. They are proportionately funded by the Federal Ministry of Economics and Energy affairs (BMWi). The SGC is a bilateral chamber and one of the largest national Business Chambers in Singapore with a membership of about 600 representatives from a variety of industries from Germany and Singapore. The SGC is a valuable and well-established networking platform and well connected with authorities in Singapore and Germany. Through its active industry committees SGC gives a voice to businesses. With its distinct service unit and trade fairs arms - DEinternational and Fairs & More respectively - the SGC builds a primary source for receiving reliable information on the German and Singapore business environment as well as bilateral trade relations. DEinternational serves clients in their business needs e.g. searching for business partners, organising business missions and business trips, finding staff members, and providing market analysis. DEinternational works in many areas such as energy efficiency, water management, Industrie 4.0, smart city development, research and many more.

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Introduction

In light of the COVID-19 pandemic, trade developments, and the restructuring of value chains, new challenges and opportunities have arisen for Singapore regarding its function as a regional hub for business. With currently about 2,000 German companies in Singapore providing close to 45,000 white collar and technical jobs, it is important to develop a strategy that mitigates risks and helps the city-state to leverage new business opportunities to ensure that Singapore remains a relevant and competitive hub for companies in the years to come.

The objective of this paper is to identify what keeps Singapore relevant for German companies in the medium and long run.

This paper describes current challenges and key trends in the region, including the implications and management of the pandemic, geopolitical developments, the US-China trade conflict, China's dual circulation strategy and business relocation activities.

From a German business perspective, this paper firstly identifies the comprehensive relationship between Singapore and Germany by outlining the trade and investment relationship as well as why German companies see Singapore as an attractive business hub for the region and showcases key investments from different sectors.

Secondly, it elaborates on Germany's Indo-Pacific Strategy that seeks to support cooperation in pandemic management, supply chain diversification, and collaboration in areas such as technology and innovation, among others. This provides an important basis for cooperation between the German and the Singaporean government.

Thirdly, this paper suggests a path for Singapore to take advantage of Singapore's and Germany's complementary competitive advantages - namely digitalization and cybersecurity for Singapore, and R&D-intensive manufacturing and green technology for Germany.

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COVID-19

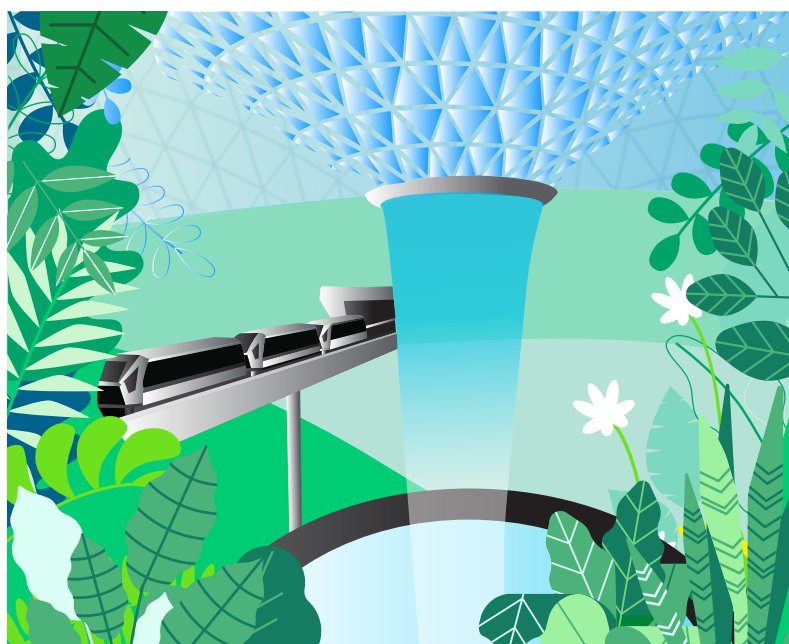
We continue to see the impacts of COVID-19 in the region. In response to the global health crisis, governments around the globe have had to implement unprecedented measures to protect the lives of their citizens and workers, including quarantine and self-isolation, social distancing, closure of non-essential businesses, mass testing, contact-tracing and travel restrictions.

In turn, in Singapore, this has changed the way we live, created demand and supply-side shocks, and disrupted supply value chains and global production networks. While growth rates have rebounded last year, much uncertainty about how the post-pandemic economy will look prevails.

a. Travelling for business – striking the balance

Travel restrictions against the backdrop of the pandemic are an important consideration for many German companies as they use Singapore as a headquarter for the Asia-Pacific region. Since headquarters host a variety of corporate functions that require a physical presence in different markets, such as sales, marketing, and government affairs, the ability to conduct business travel is essential.

This is further underlined by results from an SGC flash survey on COVID-19 and travel restrictions, where all respondents (100 per cent) stated that they need to travel for business purposes. A further SGC survey showed that not being able to travel has resulted in companies not being able to fulfil their headquarter function (69 per cent) and a decline in sales and revenue (38 per cent) (Figure 1)



The Singapore government has recognized the importance of travelling and instated so-called “Vaccinated Travel Lanes” (VTL) with Germany and Brunei as of 8 September 2021. This VTL with German is very well received by German companies. Further VTLs were implemented with Australia, Brunei Darussalam, Cambodia, Canada, Denmark, Fiji, Finland, France, Germany, India, Indonesia, Italy, Malaysia, Maldives, the Netherlands, the Republic of Korea, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Turkey, the United Kingdom and the United States. Under the VTLs, fully vaccinated travelers are able to travel between Singapore and the partner countries without having to undergo quarantine, provided they test negative for COVID-19 prior to their departure and upon arrival in Singapore (ICA, 2021).

¹The SGC flash survey was conducted between 15-24 March 2021. A total of 96 German companies in Singapore participated in the survey.

²The SGC flash survey was conducted between 22-26 July 2021. A total of 96 German companies in Singapore participated in the survey.

The VTLs are important steps towards reopening Singapore to the rest of the world. However, given the importance of the Asia-Pacific region in Singapore's function as a regional headquarter, and while remaining pragmatic in considering public health, Singapore could also consider implementing VTLs with the regional markets, such as China, Japan, New Zealand and Vietnam.

b. Work from home – challenge and opportunity

Another aspect of pandemic management is the implementation of safe-distancing measures and working from home arrangements. In Singapore, restrictions, such as split teams (50 per cent of staff working from home) and work-from-home as a default, were implemented to keep infections low (Gov.sg, 2021). Coupled with increasing digitalization, working from home has become a common global phenomenon and is likely to continue to exist in a post COVID-19 world. This might influence Singapore as a business location. As Singaporean Minister for Foreign Affairs Dr Vivian Balakrishnan said, “‘work from home’ also means ‘work from any country’” (MFA, 2020).



This presents a risk for Singapore. The Economist Intelligence Units ranks Singapore among the most expensive city in the World (Economist Intelligence Unit, 2021) and companies may no longer see the need to stay in Singapore and pay high rents for office space and expatriate packages if work from home is the default. Instead, they could work from anywhere or even relocate back to Germany. Our SGC flash survey showed that 61 per cent of respondents find returning to the office ‘very important’ or ‘important’ to them, and 21 per cent plan to decrease operations and headcount in Singapore due to the work from home regulations (Figures 2 and 3)³.

At the same time, however, this phenomenon can also be seen as an opportunity. As the leading business hub in the region, Singapore is well placed to attract remote workers as well as highly digitalized companies. Therefore, Singapore can continue to focus on its strengths, and encourage digitalization and innovation in order to capture this opportunity. This will be further elaborated on later in this paper.

c. Successful pandemic management - tool for ASEAN integration

Lastly, curbing the spread of COVID-19 is a difficult task. Singapore has presented itself as a pioneer in ASEAN in pandemic management. Within a few months, the city-state has established the necessary health infrastructure, provided digital solutions (TraceTogether, the COVID-19 GoBusiness portal, the Gov.sg Whatsapp, etc.) and rolled-out an effective vaccination strategy (GovTech Singapore, n.d.). Exporting this knowledge/expertise and collaborating with other ASEAN countries is important to bring down the rate of infection across the region and to ensure more conducive business conditions and a faster economic recovery. This is pivotal for Singapore, because growth in the ASEAN region creates new business opportunities for Singapore.

³SGC flash survey 22-26 July 2021

.02

**International Trade & Supply
Chains and their Importance
for Singapore**

The ongoing trade disputes among countries in the region, most notably the trade dispute between the US and China, have impacted trade patterns and regional value chains (OECD Development Centre, 2019). Both Germany and Singapore have strong economic ties with China and the US and are indirectly impacted by the global trade disputes through supply chain linkages and political considerations.

As a result of the trade dispute between the US and China, the Peoples' Republic has started to implement policies that are increasingly inward-looking. In September 2020, China unveiled a “dual circulation” strategy to reduce its dependence on overseas markets and technologies in its long-term economic development. China plans to rely mainly on internal circulation - the domestic cycle of production, distribution, and consumption. While China appears to stay engaged in the region through different initiatives, such as its One Belt One Road initiatives and Regional Comprehensive Economic Partnership (RCEP), China's inward looking strategy could have significant implications on ASEAN as the latter is tightly integrated into the Peoples' Republic's production networks. As such, ASEAN may also have to increasingly look towards its own economic bloc and develop stronger trade and supply chain linkages within Southeast Asia. The ASEAN Economic Community (AEC), which seeks to create a single market and production base in ASEAN, may act as the driving force behind this regional economic integration. In turn, this will also increase Singapore's and ASEAN's interdependency.

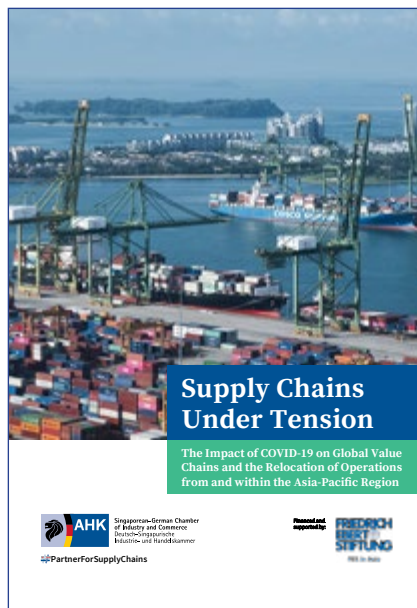


Linked to the AEC is the ASEAN trade policy network, which has gradually expanded over the years. There are currently six ASEAN+1 Free Trade Agreements in force with the following countries: China, Japan, South Korea, India, Hong Kong, Australia and New Zealand. Beyond that, the ASEAN member states are party to the Regional Comprehensive Economic Partnership Agreement (RCEP), a trade Agreement among 15 countries⁴ that entered into force on 1 January 2022. Lastly, four ASEAN countries (Brunei, Malaysia, Singapore and Vietnam) are party to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)⁵. All these have helped ASEAN economies to become part of regional and global value chains and are important tools to foster strong trade and investment relations with important external players.

Finally, another trend that has emerged over the years is the increasing adoption of a “China plus one” strategy by companies in response to rising labour costs in the Peoples' Republic (KPMG, 2019). The idea is that China remains the primary supply source and customer market, but certain operations may be diversified to other countries in APAC. For example, the textile and clothing value chain has gradually shifted from China to Cambodia, Vietnam and Bangladesh, although China still acts as a critical supplier of raw materials. The US-China trade dispute and the COVID-19 pandemic have further contributed to these shifts in value chains as companies seek to relocate and diversify their operations.

⁴RCEP is an Agreement between the ten ASEAN economies and China, Japan, South Korea, Australia and New Zealand. The Agreement builds on existing ASEAN+1 FTAs. The agreement covers goods (92 per cent of tariffs will be eliminated), service, investment, standards (SPS and TBT), IPR, digital trade and government procurement amongst others.

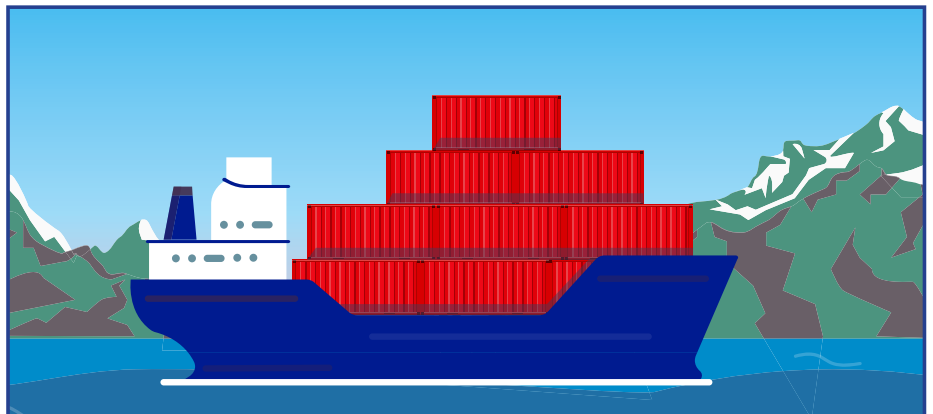
⁵CPTPP is an Agreement between Australia, Brunei, Canada, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam. It is currently the most modern and comprehensive trade agreements between countries in the Asia-Pacific region, covering, goods, services, investment and investment protection, Standards (SPS/TBT), digital trade, government procurement, sustainable development (environmental and labour law) amongst others.



A study conducted by the SGC on “Supply Chains under tension: The Impact of COVID-19 on Global Value Chains and the Relocation of Operations from and within the Asia-Pacific Region” finds that 26 per cent of companies⁶ expect relocation activities to occur within APAC. Furthermore, another 17 per cent expect German companies to increasingly offshore operations from Germany and the EU to APAC (Hoenig & Dittmann, 2021). This creates new opportunities for countries in Southeast Asia to capture value chain activity. For Singapore, as an open and trading economy, maintaining external connectivity is essential. Therefore, Singapore has established a comprehensive Free Trade Agreement (FTAs) network, which consists of 25 trade agreements (Enterprise Singapore, 2021).

This FTA network grants Singapore-based companies preferential market access to important markets, including the ten ASEAN member states, as well as China, the EU, Japan, Australia, Korea and India. The EU-Singapore Free Trade Agreement (EUSFTA) entered into force in November 2019 and has strengthened trade and investment ties between the parties. The EUSFTA is an essential first building block towards a region-to-region trade agreement between the EU and ASEAN. As a gateway to ASEAN, Singapore could significantly benefit from the implementation of an EU-ASEAN trade pact.

Singapore could therefore play a important role and engage other ASEAN member states in a constructive dialogue to resume region-to-region trade negotiations. Such actions would also align with Germany’s Indo-Pacific Strategy, as the German Federal Government has pledged to work together with European partners to ensure rapid progress in the negotiations of free trade agreements between the EU and the respective countries, including ASEAN (Federal Government, 2020).



In light of the coup d’état in Myanmar and other political stumbling stones, and to avoid further delays, region-region negotiations could commence between the EU and a subset of ASEAN member states. For the latter, this could include ASEAN-members that have an FTA in force with the EU (Singapore and Vietnam), are in the process of negotiating one (Indonesia) or are currently considering resuming trade talks (Malaysia and Thailand).

Apart from trade agreements, Singapore has been looking to expand its cooperation in technology and the digital economy, which were brought to the forefront during the COVID-19 pandemic. As of January 2022, Singapore has signed two Digital Economy Agreements: (a) The Singapore-Australia Digital Economic Agreement and (b) the Digital Economic Partnership Agreement with Chile and New Zealand (MTI, n.d.). These are set to promote digital integration and connectivity in the future. In December 2021, Singapore and the EU stated trade talks to strengthen bilateral trade through an agreement..

Lastly, the US-China trade conflict and the COVID-19 pandemic have disrupted trade and value chains. Therefore, some companies seek to diversify their supply chain or relocate their operations. Singapore can leverage this and attract such companies to the city-state, creating economic growth and employment. In particular, Singapore can target innovation- and R&D-intensive companies, such as in manufacturing. As many German companies are active in such sectors, Singapore can engage with German policymakers to support Germany’s capital-intensive industries in investing in Singapore. Doing so would align with Germany’s Indo-Pacific Strategy as the German Federal government has pledged to counteract trends towards “deglobalization” discernible in the context of COVID-19, and instead support the diversification of supply chains in the Indo-Pacific region (Federal Government, 2020).

⁶337 German companies took part in the survey which was presented in the study.

D. Singapore & Germany

.01

**A solid foundation – Deep
business relations for future
growth**

a. German FDI in Singapore

Total German foreign direct investment (FDI) in Singapore has been consistently increasing, having grown by 55.6 per cent from 2010 to 2019 to about 17.6 billion Euro (GTAi, 2021). These investments predominately are in industries of strategic interest of Singapore (R&D-intensive and advanced manufacturing) and require access to qualified professionals.

For instance, Evonik invested €500 million in a methionine facility on Jurong Island in 2019, responsible for producing 41 per cent of Evonik's global methionine output (Leow, 2019). Biotechnology firm and COVID-19 vaccine maker BioNTech also has plans to build its regional headquarters and a manufacturing factory in Singapore in 2021, with an investment “in the range of hundreds of millions of US dollars” (Ang, 2021).



On the innovation side, examples include the German automotive manufacturer Continental, which has launched a S\$50 million corporate lab for automotive research on smart robotics and navigation technologies, artificial intelligence and software engineering, smart sensors, and touch-responsive interfaces (Chong, 2021). Table 3 (see appendix) provides an illustrative list of several large investments of German companies in manufacturing and R&D activities, underscoring the importance of the city-state for German companies.

This positive trend is likely to remain through the pandemic and beyond. In the 2021 DIHK World Business Outlook, 41 per cent of SGC member companies in Singapore stated that they will invest more in Singapore in the years to come, while 38 per cent indicated they will not invest further and 21 per cent will invest less (Deutscher Industrie- und Handelskammertag, 2021). Hence, this suggests that the net investment of German companies in Singapore will continue to increase, even if the pandemic prevails, provided that companies have sufficient access to qualified workers.

b. German-Singaporean Trade

Germany and Singapore also have strong trade relations. Germany is Singapore's largest trading partner in the EU, and Singapore is Germany's largest export market in ASEAN. In 2020, Singapore's exports to Germany totalled approximately €4.7 billion, while Germany's exports to Singapore totalled €6.1 billion (GCABC, 2021).

Singapore's extensive free trade agreement network is a significant factor supporting this, with 62 per cent of respondents to SGC's flash survey reporting that Singapore's Free Trade Agreement network and regional connectivity is either very important or important for their further business development (Figure 9)⁷. German companies can tap into the network when exporting into markets that the EU currently has no trade agreement in place, such as Malaysia, Thailand, Indonesia and the Philippines.



In the context of German trade with Singapore, the EUSFTA is of pivotal importance. The FTA has been in force for almost three years now and has facilitated cross-border trade in goods and services. The SGC's publication on "The EU-Singapore Free Trade Agreement: Facilitating Trade between Germany and Singapore" finds that 59 per cent of companies expect the EUSFTA to boost their export performance (Hoenig, 2020)⁸. Given that the EUSFTA will be fully implemented by 2024, bilateral trade is expected to increase in the years to come.

While the EUSFTA is modern and comprehensive, the possibility to further modernise the Agreement exists. Germany and Singapore can therefore play an important role in identifying areas in which the Agreement can be upgraded to further facilitate trade and investment and create growth and employment. Hence, there are many valuable opportunities for collaboration between Germany and Singapore.



⁸SGC flash survey 22-26 July 2021

⁷The survey was conducted in 2019 and a total of 47 German companies and 45 Singaporean companies participated in the survey.
SGC flash survey 22-26 July 2021

c. German Business in Singapore

There are currently approximately 2,000 German companies in Singapore- a 33 per cent increase from the 1,500 in 2016. German companies, particularly Mittelstand companies, often use Singapore as a first entry point and test market for their products and services in Asia. If successful, in a next step, these companies often establish offices in Singapore to conduct sales activities in neighbouring markets, such as Malaysia, Thailand or Vietnam, before further scaling-up operations in the region. For companies with more elaborate operations across APAC, Singapore often serves as a regional headquarter.

These headquarters oversee important activities across different markets, such as manufacturing and sourcing of raw materials, and are charged with monitoring regional compliance, finance, marketing, governmental affairs, talent management and acquisition and are indispensable for the operations in APAC. Hence, Singapore has a headquarter function for APAC and is used as a gateway to Asia for many German businesses.

The majority (58 per cent) of our survey respondents believe that Singapore's role as a regional hub five years from now will remain as important as it is today or will become more important (Figure 6)⁹. German companies choose to set up operations in Singapore because of Singapore's beneficial locational factors that include political stability, rule of law, absence of corruption, favorable economic framework conditions, availability of quality infrastructure and connectivity, language, education and innovation and quality of life (see Table 2).



⁹SGC flash survey 22-26 July 2021

One of Singapore's key advantages is its extremely strong public administration and governance. In terms of regulatory quality, for example, which measures perceptions of government ability to put in place policies to encourage private sector development, Singapore has achieved a worldwide percentile ranking of 100 in 2019 (World Bank, 2020). The Singapore government therefore ensures good economic framework conditions and infrastructure for ease of business.

A concrete example can be seen in Singapore's logistics sector, where trade-friendly policies, investments in technology and training, and expansions of Singapore's port and airport capacities have been pursued. As a result, the World Bank's Logistics Performance Index (LPI); which takes into account efficiency of customs clearance, quality of infrastructure, ease of arranging competitively priced international shipments, logistics competence, tracking and tracing, and shipment timelines; has ranked Singapore 7th worldwide in 2018 (World Bank, n.d.). Singapore is therefore very conducive to trade, and companies can take advantage of Singapore's role as an entry node to reach the region.

However, there are also some disadvantages of locating in Singapore:

The city-state is an expensive location to conduct business: Salaries and office space/rent are significantly higher compared to in neighbouring countries.

Availability of skilled labour: For German companies, it can be difficult to find sufficient local talent to fill all positions, particularly in scientific or technical fields. In a survey conducted by the SGC¹⁰, 73 per cent reported that they rarely or never find qualified workers in Singapore to fill research and development roles. The figures are similar for engineering roles and IT and digitalization roles, at 50 per cent and 45 per cent respectively (Figure 7).



¹⁰SGC flash survey 22-26 July 2021

As a result, companies may need to hire expatriates instead. Simultaneously, obtaining employment passes has become more difficult, according to 61 per cent of the survey participant. This is mainly related to longer processing times of EPs (58 per cent) and because fewer EP applications are successful (40 per cent). In cases where EPs are rejected, companies indicated that they leave the vacancy open (21 per cent) or could shift role to another location outside of Singapore (34 per cent). It is important to address the current lack of skilled workers in Singapore. This can be achieved by cooperating with education and training institutions and German companies that provide scientific and technical training for engineering, advanced manufacturing and research and development. Furthermore, to facilitate business, the government should review its current policies on hiring foreign talent, in particular with regards to EP processing time.

However, despite the aforementioned challenges, Singapore has been an attractive business location for German companies. From a German business perspective, Singapore's locational advantages, such as good governance, transparency and lack of corruption are highly important and outweigh locational disadvantages.

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**A New Avenue for Future
Business Relation-the German
Indo-Pacific Strategy**

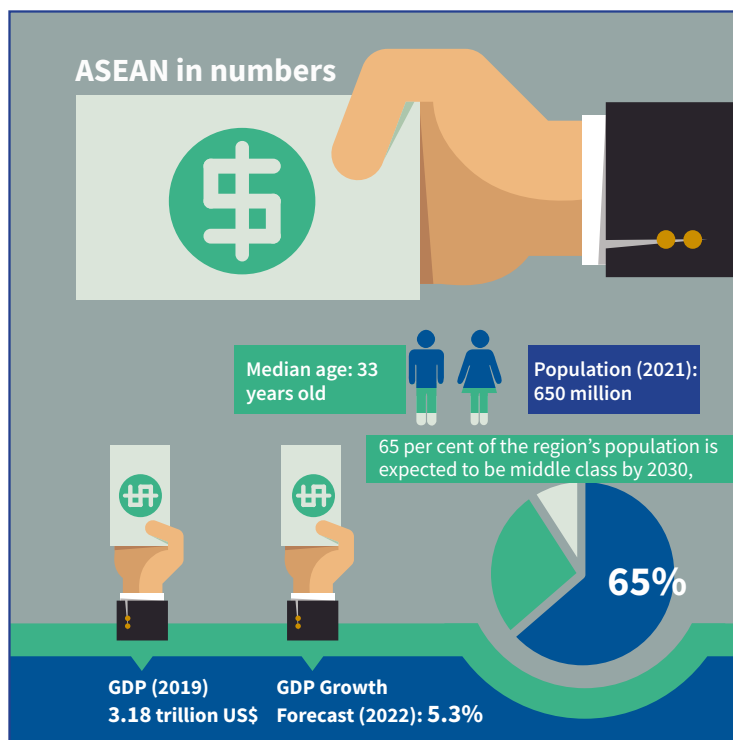
With 60 per cent of the global population, 60 per cent of global GDP, a growth forecast of about 5 per cent in the next five years and a growing middle-class, the Indo-Pacific region is of high importance to the European Union and Germany (European Union External Action Service, 2021). Germany has recognized the Indo-Pacific's importance and engaged with key players in the region to strengthen diplomatic, economic, political, and cultural ties.

To facilitate trade and investment, Germany is connected through EU Free Trade Agreements with four key Asian trading partners, namely Japan, Singapore, South Korea and Vietnam. The EU is currently negotiating agreements with Australia, Indonesia and New Zealand, which Germany supports (European Commission, 2021). Beyond trade, Germany is an important partner for economic and social development. For instance, Germany was conferred the title of ASEAN Development Partner in 2016 and is currently the only EU member state with this role (Federal Government, 2020).

To identify opportunities for cooperation with partners in the region and contribute to forming an overall EU strategy on the Indo-Pacific, Germany has published its policy guidelines for the Indo-Pacific region in 2020 (Federal Government, 2020).

Germany's strategy seeks to: strengthen multilateralism; tackle climate change and protect the environment; strengthen peace, security and stability; promote human rights and the rule of law; strengthen rule-based, fair and sustainable free trade, rule-based networking and the digital transformation of regions and markets; and bring people together through culture, education and science.

According to the German policy guidelines for the Indo-Pacific, ASEAN is "the most influential regional organization in the Indo-Pacific" given its key location and the high-level cooperation between its members (Federal Government, 2020).



ASEAN has strong economic prospects. With a combined GDP of US\$3.18 trillion in 2019, ASEAN is the world's fifth largest economic bloc (German Chambers ASEAN Business Council, 2021). Average real GDP growth is high, and despite disruptions caused by COVID-19, forecasts for 2022 have been strong at 5.3 per cent (ADB, 2021). Digitalization is also rapidly evolving, and ASEAN has the world's fastest growing e-commerce market alongside East Asia (Chen, 2020).

Furthermore, ASEAN unicorns are on the rise, offering digital services, products and solutions, and it is expected that many more unicorns will emerge in the post pandemic world (The ASEAN Post, 2020). German companies, such as SAP (through its start-up initiative SAP.IO), are already closely working with regional start-ups and are providing curated mentorship, exposure to its software, APIs and opportunities to collaborate with the industry. Another key advantage of ASEAN is its favourable demographics. With a population of more than 650 million, ASEAN is the world's third largest market. Wealth is also increasing, and it is estimated that 65 per cent of the region's population is expected to be middle class by 2030, pointing to a growing consumer base. (UOB, 2021).

Median age also remains low, at an estimated 33 years of age in 2030, ensuring a young and productive workforce (Enterprise Singapore, n.d.).

Lastly, ASEAN's integration into global value chains has been increasing, with average extra-ASEAN trade in goods and average foreign direct investment having increased 45.7 per cent and 46.5 per cent respectively from 2010 to 2019 (ASEANstats, 2020). This growth has been aided by ASEAN's strategic location in the middle of major trade routes, as well as the implementation of major trade agreements.

Therefore, ASEAN stands in the center of the Indo-Pacific guidelines and provides Singapore with an opportunity to tap into Germany's policy strategy, cooperate on the various initiatives, tackle some of the current geopolitical challenges, and build stronger ties to the Federal Republic and German industry players.

.03

**The Way Ahead – Where Germany
and Singapore can work together:
Recommendations from the
German Business Perspective**

Singapore could implement policies to stay relevant and competitive, and to ensure that the city-state can retain its function as a regional hub for business. In particular, there are opportunities for Singapore and Germany to complement each other's competitive advantages in public administration, digitalization and cyber-security, R&D intensive manufacturing, green technologies, logistics and shipping as well as education and training. Furthermore, Germany's Indo-Pacific strategy provides cooperation potential that can be leveraged to strengthen Singapore's ties to Germany and attract German companies to Singapore.

Singapore and Germany are much alike in some respects. Both countries are gateways to their region: Singapore for ASEAN and Germany for the EU. Both countries are important trading nations and advocate for a rules-based system. Furthermore, both countries have a strong manufacturing-based, accounting for approximately 20 per cent of their GDP and work at the forefront of industrial and public sector transformation. In the light of this, the two countries can also complement each other to drive this transformation further. Singapore is particularly well known for its strong public administration, good governance and planning, and digitalization and cybersecurity. Germany is known for its advanced manufacturing capabilities as well as its green technologies and policies. This provides Germany and Singapore with ample opportunity to cooperate and leverage each other's competitive advantage.

Innovation has been a key focus for Singapore and its public administration, beginning in 1991 with the National Technology Plan 1995. The latest plan, the Research, Innovation and Enterprise 2025 Plan, will see a S\$25 billion investment targeting strategic sectors of manufacturing, trade and connectivity; human health and potential; urban solutions and sustainability; and smart nation and digital economy. This funding will be used for research grants, establishing of innovation and enterprise platforms, and talent development, among others (National Research Foundation, n.d.).

A concrete example of such investment is in the building of testbed facilities, allowing Singapore to present itself as a top testbed location for companies. For example, facilities such as the Singapore Institute of Manufacturing Technology (SIMTech) and the Advanced Remanufacturing and Technology Centre (ARTC) have been built to serve the advanced manufacturing sector, while CleanTech Park and the Electric Vehicle (EV) test bed target the clean energy sector (Visit Singapore, 2019; National Climate Change Secretariat, n.d.). Such facilities attract international firms, increasing Singapore's competitiveness.

Similarly, regulatory sandboxes, where specific legal and regulatory requirements are relaxed to allow companies to innovate in a controlled environment, have been put in place for a variety of sectors, such as financial technology, environmental services, and energy innovation (Monetary Authority of Singapore, n.d.; National Environment Agency, n.d.; Energy Market Authority, n.d.). These sandboxes cushion companies from failure and encourage them to test their innovations (Economic Development Board, n.d.).

On a more micro level, startups are also supported through Startup Singapore, which provides talent sourcing, mentorship support, funding support, and infrastructural support, etc. (Startup SG, n.d.). As such, local talent and innovation is cultivated.

Singapore has therefore branded itself as a global hub for innovation and a good partner for collaboration in the field of innovation. From a German business perspective in particular, key innovation-led areas to further explore in Singapore would include digitalization and cybersecurity, R&D intensive manufacturing, and green technology.

a. Digitalization and Cybersecurity

In an increasingly digital age, digitalization and cybersecurity are important considerations for companies. In 2014, Singapore launched the Smart Nation initiative, which aims to use smart and digital technology to transform key domains of health, education, transport, urban solutions and finance. To facilitate the digitalization of industries and businesses, a Digital Economy Framework of Action was rolled out under the Digital Economy pillar, involving Industry Transformation Maps and programmes such as SMEs Go Digital (Smart Nation, 2018).



To this end, the Cybersecurity Agency of Singapore was established in 2015, publishing the Singapore Cybersecurity Strategy in 2016. Pillars of this strategy include building a more resilient infrastructure, a safer cyberspace and a more vibrant ecosystem. This would be done through working with stakeholders in responding to cyberthreats, establishing cybersecurity legislation, and engaging in closer partnerships with industry and educational institutions, among others (Cybersecurity Agency, 2016).

Cybersecurity is of utmost importance to German companies to safeguard business secrets and to comply with data protection regulations in Germany, the EU and Singapore. Hence, Singapore's performance in this regard has been seen by German companies as a competitive advantage, and 53 per cent of our SGC survey respondents say that digitalization and cybersecurity have the most potential for cooperation between Germany and Singapore in the next five years (Figure 4)¹¹.

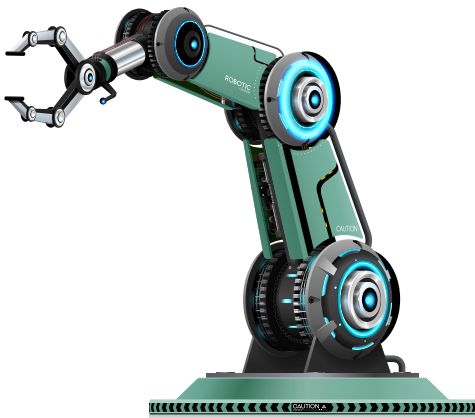
The final pillar of the Singapore Cybersecurity Strategy involves strengthening international partnerships through international initiatives and exchanges, and this is where greater collaboration with Germany could also be pursued (CSA, 2016). With cybersecurity being a global concern with often global effects, global cooperation is highly valuable. This would also align with Germany's Indo-Pacific Strategy, which has indicated the goal of increasing international cybersecurity cooperation and dialogue, and specifically mentioned Singapore as a country of interest (Federal Government, 2020).

Recommendation: Digitalisation and Cybersecurity are of utmost importance to industry and will become even more important in the years to come. Germany and Singapore are known for providing a rule-based system with comprehensive laws on cybersecurity and data protection as well as frameworks that foster digitalization. Germany and Singapore should leverage this reputation. In particular, with regards to Cybersecurity, Singapore could act as a "safe haven" for German companies that seek reliable and trustful (regulatory and business) environment for their future activities in Asia-Pacific.

b. R&D intensive manufacturing, including health care and life sciences

Manufacturing, excluding construction, contributes approximately 20 per cent to Singapore's GDP, and the Manufacturing 2030 Plan suggests that Singapore aims to grow its manufacturing sector by 50 per cent of its current value (S\$106 billion) while maintaining its current share of GDP. To achieve this goal, Singapore will have to develop its competitiveness through its ability to innovate quickly and move into advanced manufacturing fields, such as Industry 4.0 and smart solutions, additive manufacturing, biotechnology and green technology. Hence, Singapore has to attract major industry players, nurture promising local enterprises, and work with educational institutions and ensure the availability of skilled labor (MTI, 2021).

¹¹SGC flash survey 22-26 July 2021



Given Germany's expertise and competitive advantage in manufacturing, Germany could act as a vital collaboration partner for Singapore in this area. This is also corroborated by our survey results, in which 47 per cent of respondents say that high-end manufacturing has the most potential for cooperation between Germany and Singapore (Figure 4)¹². In addition to having many German companies that are pioneers in advanced manufacturing, Germany also has an education and institutional system that ensures a highly technically skilled workforce needed to keep these industries innovative. This can be replicated in Singapore through the joint industry collaborations. The Smart Industry Readiness Index (SIRI), launched by the Singapore Economic Development Board (EDB) in partnership with TÜV SÜD and Siemens, is an excellent example of such a collaboration.

Next to advanced manufacturing, 41 per cent of respondents say they see much potential to collaborate in research and development (41 per cent). Against the backdrop of COVID-19 and Singapore's ambition to expand the city state's Biomedical cluster, the life science sector holds much potential for collaboration between Germany and Singapore. Germany currently holds 30 biotechnology clusters that span the entire value chain from fundamental research and drug development to novel therapeutic approach and innovative medical technology. Collectively, these 30 clusters consist of almost 700 companies, employ more than 33 thousand workers, undertake 1.8 billion Euro in R&D spending and generate a revenue of almost 5 billion Euro (GTAi, 2021).

Singapore could strategically tap into these different clusters and could seek to attract companies that engage in R&D-intensive segments. This should not only include MNCs but also smaller companies. The latter could tap into the German Center's "Life Science Incubator". The Life Science incubator was launched in September 2021 to provide such smaller firms with agile, equipped and affordable facilities to operate in Singapore and integrate and contribute to Singapore's biomedical cluster.

The German Federal Government has pledged to strengthen Germany's competitiveness in key technology and will, to this end, seek opportunities for cooperating on key technologies with Indo-Pacific countries, especially Singapore, Australia, South Korea and Japan (Federal Government, 2020).

Recommendation: Singaporean companies could partner with German counterparts to increase their competitiveness and enhance Singapore's industrial base. Doing so will have a positive spill-over effects, because it will attract more R&D-intensive manufacturing, provided sufficient qualified works are available and existing framework conditions prevail.

c. Sustainability, climate protection and urban farming

In February 2021, the Singapore Government released the Green Plan 2030 for Singapore, which aims to strengthen Singapore's commitment to the Paris Climate Agreement and the UN's 17 Sustainable Development Goals (SDGs) (Singapore Green Plan 2030, n.d.).

The plan highlights specific focus areas from clean energy to waste management, packaging, farming, and water treatment; and points to energy efficiency and decarbonization measures for the entire private sector. While concrete actions are necessary to tackle climate change and promote sustainability, a green economy also presents itself as a business opportunity that companies in Singapore can leverage on.

The Singapore Green Plan 2030 can be holistically supported by collaboration. Also, Singapore has the opportunity to lead the region in targeting zero emissions, zero waste and zero inequality. Similarly, a company's Environmental, Social and Governance (ESG) performance will become increasingly important for their consumers, investors and lawmakers, further incentivizing companies to go green. A further ambition of Singapore is to raise local food production from 10 to 30 per cent by 2030 and enhance the resilience of Singapore's food supply chain.

¹²SGC flash survey 22-26 July 2021

On the sustainability front, Germany is a pioneer in implementing policies that transform a market into a low carbon, environmentally sound economy. Many German companies also have technological capabilities and know-how in green and sustainable sectors, including digital technology for carbon footprint management, environment, health & safety management, e-mobility, circular economy, etc.

These companies might see much potential in the Singaporean market and work with Singaporean counterparts to transform city-state into greener economy. This is supported by our survey results, which indicate that 72 per cent of respondents find sustainability to be the area with the most potential for cooperation between Germany and Singapore (Figure 4)¹³. To this end, the SGC has organized several energy efficiency delegations in Singapore and brought German technology into the market.



Furthermore, the SGC's "Grün Book: Closing the Waste Loop Through Innovative Plastic Recycling" has scrutinized and highlighted the possibility for collaboration in research and plastic recycling efforts (Singaporean-German Chamber of Industry and Commerce, 2020). This has resulted in the creation of the Plastic Recycling Association Singapore (PRAS), which seeks to engage organizations, societies, institutions and government agencies to discuss ways to support plastic waste recycling initiatives (PRAS, 2021). In October 2021, the SGC organized a Plastic Recycling Forum to bring together different players from the plastic value chains and discuss the future recycling in Singapore. The SGC has also organized Mobility Forums that seek to contribute to the discourse and highlight various collaborative opportunities between German and Singaporean companies in automotive technologies, especially in the context of electric vehicles.

The finance and banking community plays a critical role in facilitating investments in green and carbon-neutral technologies and therefore plays an enabling function in Singapore's ambition to become a green economy. The Singapore government has recognized the importance of building up stronger capabilities and expertise in this field. Many German financial institutions are pioneers in sustainable finance and are able, amongst others, to help corporates to build ESG credentials through ESG-compliant, sustainability-linked financing structures. The SGC's banking committee is actively working on this topic and is open to engage with the Singapore authorities and stakeholders to see how its members can contribute to developing Singapore into a green finance hub.



Germany's food and beverage (F&B) industry is R&D-intensive. In 2018, the German F&B industry invested 1.7 billion Euros into research and development to introduce new technologies. R&D activities are further supported by the Germany's federal and regional institutions with an annual budget of 800 million Euros (GTAI, 2021). As such, several German companies have developed technologies, such as vertical farming technologies, that can be employed in Singapore to scale up local food production. Some company examples include Bayer, &ever and Infarm. Working with German innovative F&B companies can thus help Singapore realizing its 30 by 30 ambitions.

¹³SGC flash survey 22-26 July 2021

Hence, energy efficiency, waste management and recycling, water treatment, e-mobility, green finance as well as urban farming are areas in which Singapore could seek collaborations with Germany, promote technology transfer and sharing of know-how, and work towards a sustainable and greener future. Such actions would also align with Germany's Indo-Pacific Strategy, where the German Federal Government has pledged to step up its cooperation in the Indo-Pacific region in the spheres of climate protection, adaptation to climate change, biodiversity protection, renewable energy and energy efficiency (Federal Government, 2020).

Recommendation: Singapore could leverage Germany's industry know-how and work towards implementing these technologies in the city-state. This would put Singapore in a first-mover position and could give rise to considerable business opportunities for local companies when transporting these technologies to other ASEAN markets.

d. Logistics and shipping

For many years, Singapore has been a prime location for major German logistics and shipping companies that use the city-state to host key operations, such as a regional distribution hub or as a testing ground for innovative supply chain solutions. Some examples include DHL, DB Schenker, Hamburg Süd and others.



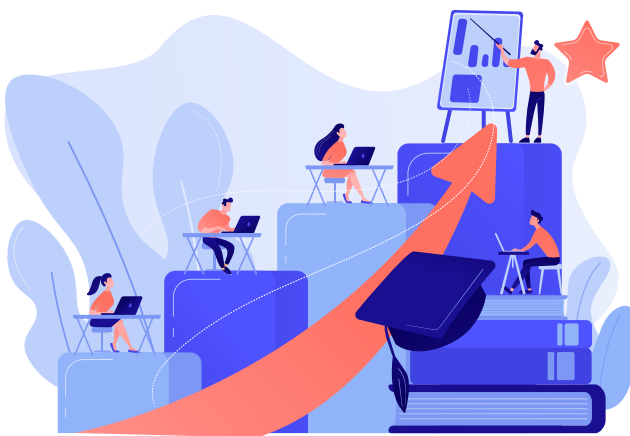
With current disruptions in place, companies are re-assessing their operations and are working on supply chain resilience and ways to mitigate trade barriers. Not only are supply chains set to become more complex, but companies will also seek more reliability and flexibility. These trends will impact the logistics and shipping sector and presents itself as an opportunity for Singapore to solidifies its role as a regional hub in these sectors. In logistics and shipping, Singapore competes on superior connectivity, openness and quality services.

It is important to continuously review existing policies and move in tandem with the logistics and shipping industry's needs and market requirements to stay ahead of the competition. These include ensuring fast and efficient customs clearance processes, negotiating and enforcing trade agreements that facilitate the movement of goods across the region and and enhancing digitalization and automation of critical (port) infrastructures, such as automating quay crane quay-side operation, to improve port efficiency and productivity and enable Just-In-Time operations.

Recommendation: To remain a prime location for German logistic companies, it is important to continually review existing policies and plan and move in tandem with the logistics and shipping industry's needs and market requirements. This will allow Singapore to stay ahead of the competition. Relevant actions include maintaining efficient customs clearance procedures, enforcing trade agreements that facilitate the movements of goods and digitalizing and automating critical infrastructure.

e. Education and Training

Singapore has an annual budget of about \$10 Billion for education and training purposes and invests strategically in skill upgrading and life-long learning. For instance, through national initiatives such as the SkillsFuture Series in Advanced Manufacturing, the Singapore Government continues to work alongside industry players and institutes of higher learning to equip people with the necessary skills for advanced manufacturing (EDB, N.d.). Another example is A*STARs Computer and Information Science Scholarship (ACIS), which was launched in 2018 and provides Singaporeans with the opportunity to learn and conduct research that can be applied to real-world issues, across the whole spectrum of computing science, from deep learning for healthcare, data analytics for improved machine learning, to modelling and simulation for advanced application (A*STAR, 2018).



The SGC has started to work in training and education by cooperating with partners in Singapore and Germany to contribute to upgrading the skill sets of works in Singapore. For instance, the SGC partnered with Nanyang Polytechnic's (NYP) National Centre of Excellence (NACE), in which it contributes its expertise in the area of on-the-job learning.

Another example is the SGC's ongoing cooperation with Bosch Rexroth, Singapore Polytechnic (SP) and SkillsFuture Singapore (SSG) to organize German certified ten-day training courses, which lead to the title of "Specialist Industry 4.0" and equips participants with knowledge on how industry 4.0 applications are integrated into the workplace and in manufacturing. In June and September 2021, two training cycles were successfully conducted.

Despite Singapore's excellent education, and the government's ongoing efforts to promote skill upgrading and life-long learning, German companies still find it challenging to find sufficient local talent to fill positions in Singapore, particularly in scientific and technical fields. The SGC survey revealed that survey respondents rarely or never find qualified workers in Singapore to fill R&D (73 per cent), engineering (50 per cent) and IT and digitization (45 per cent) functions.

Access to qualified workers is extremely critical to ensure that Singapore can continue to grow as an innovative and competitive hub for advanced manufacturing, green technologies, and pharmaceutical and life sciences. There is the need to continue to invest in education and training and to find new avenues to improve access to qualified workers. Germany is internationally recognized for its education and institutional system that ensures a skilled workforce. Therefore, German educational institutions, companies and other important actors present themselves as important partners for cooperation in education and training.

As there are currently insufficient qualified workers in some professions in Singapore, it is also important to ensure that companies can hire sufficient foreign talent (EP holders), which has become increasingly difficult, according to 61 per cent of the SGC survey participants. In some cases, it could result in companies shifting these positions to other countries, potentially causing a direct job loss in Singapore. Therefore, to facilitate companies and ensure that key business areas can continue to prosper in Singapore, it is vital to review current policies on hiring foreign talent.

Recommendation: In Singapore, in certain professions, there is a lack of qualified workers. It is necessary that companies can fill key functions with qualified professionals. Otherwise, companies might move key functions out of the city-state. To address this, Singapore could continue to invest in education and training and seek to cooperate with German counterparts wherever possible. German companies and educational institutions could provide the required support for technical and digital skilling and reskilling.

E. Annex

Table 1: An illustrative list of ASEAN unicorns

Company Name	Description
Razer	Founded in 2005 in Singapore, Razer creates computer gear for gamers and accounts for 30 per cent of the video game mouse and keyboard business since 2015. The company is valued at 4.4 billion US\$.
Grab	Founded in 2012 in Malaysia, and later moved to Singapore, Grab is an all-in-one transportation service providing a platform that is present in nearly every ASEAN country, covering 500 cities and towns in eight countries.
Bukalapak	Founded in 2010 in Indonesia, Bukalapak is an online marketplace that is currently home to more than 50 million users, processing two million transactions a day.
VNG	Founded in 2004 in Vietnam, VNG is Vietnam's first ever unicorn start-up which specializes in online gaming and e-commerce. In 2016, the start-up reached a US\$1 billion valuation after an undisclosed funding round led by CyberAgent Ventures and IDG Ventures.

Table 2: Singapore's positive locational factors

Source: compiled by SGC from various articles and press releases

Factors	Singapore
Political stability, rule of law and absence of corruption	<ul style="list-style-type: none"> ■ Ranked #3 in the Corruption Perception Index 2020 ■ Ranked #12 in the WJP Rule of Law Index 2020 ■ In World Bank's Worldwide Governance Indicators for 2019, Singapore is above the 95th percentile worldwide for indicators of political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption
Economic framework conditions	<ul style="list-style-type: none"> ■ Open economy: 99 per cent can enter duty-free into Singapore even without a Free Trade Agreement ■ National standards are aligned to international standards: all Singapore Standards are reviewed once every five years ■ Robust IPR regime in place: ranked #4 in the International Property Rights Index 2020 and #2 in terms of business environment in the World Bank's Doing Business Survey 2020 ■ Cybersecurity: topped the ranking of 90 economies in the 2020 Digital Intelligence Index with the highest state of digital evolution, and was a top performer in terms of digital trust. Singapore is also ranked #15 globally, and #1 in Asia in the National Cybersecurity Index. ■ Low corporate tax rate (17 per cent)
Availability of quality infrastructure and connectivity	<ul style="list-style-type: none"> ■ 154 per cent mobile penetration rate ■ Connected to 23 active subsea cables ■ Hosts 50 per cent of Southeast Asia's data center capacity ■ By end of 2022, half of Singapore will be covered by 5G ■ Ranked #7 in the Logistics Performance Index (LPI) 2018 and #5 in the aggregated LPI 2012-2018 ■ Geographically well placed in Asia, in close proximity to key markets ■ Singapore Port: one of the world's busiest and best-connected Ports, with an annual capacity of 37.2 million TEUs in 2019. By 2040, this capacity will reach 65 million TEUs. ■ Changi Airport: 68.3 million passengers and 2 million tons of air freight moved through Changi Airport in 2019
Language	<ul style="list-style-type: none"> ■ English is the lingua franca
Education and innovation	<ul style="list-style-type: none"> ■ Access to a pool of qualified workers ■ Availability of an extensive and renowned research and university network ■ Access to government funds: S\$25 billion committed to research and development under the Research, Innovation and Enterprise 2025 Plan ■ An average of 1 billion per year spent on continuing education and training between 2015 and 2020 ■ Availability of regulatory sandboxes
Quality of Life	<ul style="list-style-type: none"> ■ High quality of life: the city is green, clean and safe, making it attractive location for expatriates with families. ■ Ranked #25 in Mercer's Quality of Living City Ranking 2019, and #1 in Asia

Table 3: Notable investments by German companies in Singapore
Source: compiled by SGC from various articles and press releases

Firm	Industry	Investment Description	Investment Amount	Year
DHL Express	Logistics, Transportation and Storage	South Asia Hub at Changi Airport	€85 million	2015
Pepperl+Fuchs	Logistics, Transportation and Storage	Global Distribution Centre	€40 million	2016
TÜV SÜD	Professional Services (Security)	Digital Service Centre of Excellence	€25 million	2016
BIOTRONIK	Medical Technology and Equipment	Asia-Pacific manufacturing facility	€20 million	2016
Mann+Hummel	Filtration	Global Internet of Things Lab	€6.2 million	2016
Symrise	Chemicals (Flavours and Fragrances)	Asia-Pacific Flavor Innovation and Technology Centre	over €30 million	2017
Feinmetall	Manufacturing and Technology	Digital Manufacturing Facility	€3.7 million	2017
Infineon Technologies	Semiconductors	Smart Factory	€64.6 million	2017
TÜV SÜD	Professional Services (Security)	Regional Headquarters at International Business Park	€62 million	2018
Evonik Industries	Chemicals	First Methionine Facility at Jurong Island	€500 million	2014
Evonik Industries	Chemicals	Second Methionine Facility at Jurong Island	€500 million	2018
Evonik Industries	Chemicals	R&D and research hub		2018
Lufthansa	Aviation	Lufthansa Innovation Hub		2019
DB Schenker	Logistics, Transportation and Storage	Red Lion Warehouse at Changi Airport	€101 million	2020
Infineon Technologies	Semiconductors	AI Solutions Development Plan	€16.7 million	2020
Siemens	Engineering	The Advance Manufacturing Transformation Center		2020
Continental	Automotives	Corporate lab for automotive research at NTU	€30 million	2021
SAP	Software	Regional Headquarters for SAP Asia Pacific and Japan, SAP Skills University		

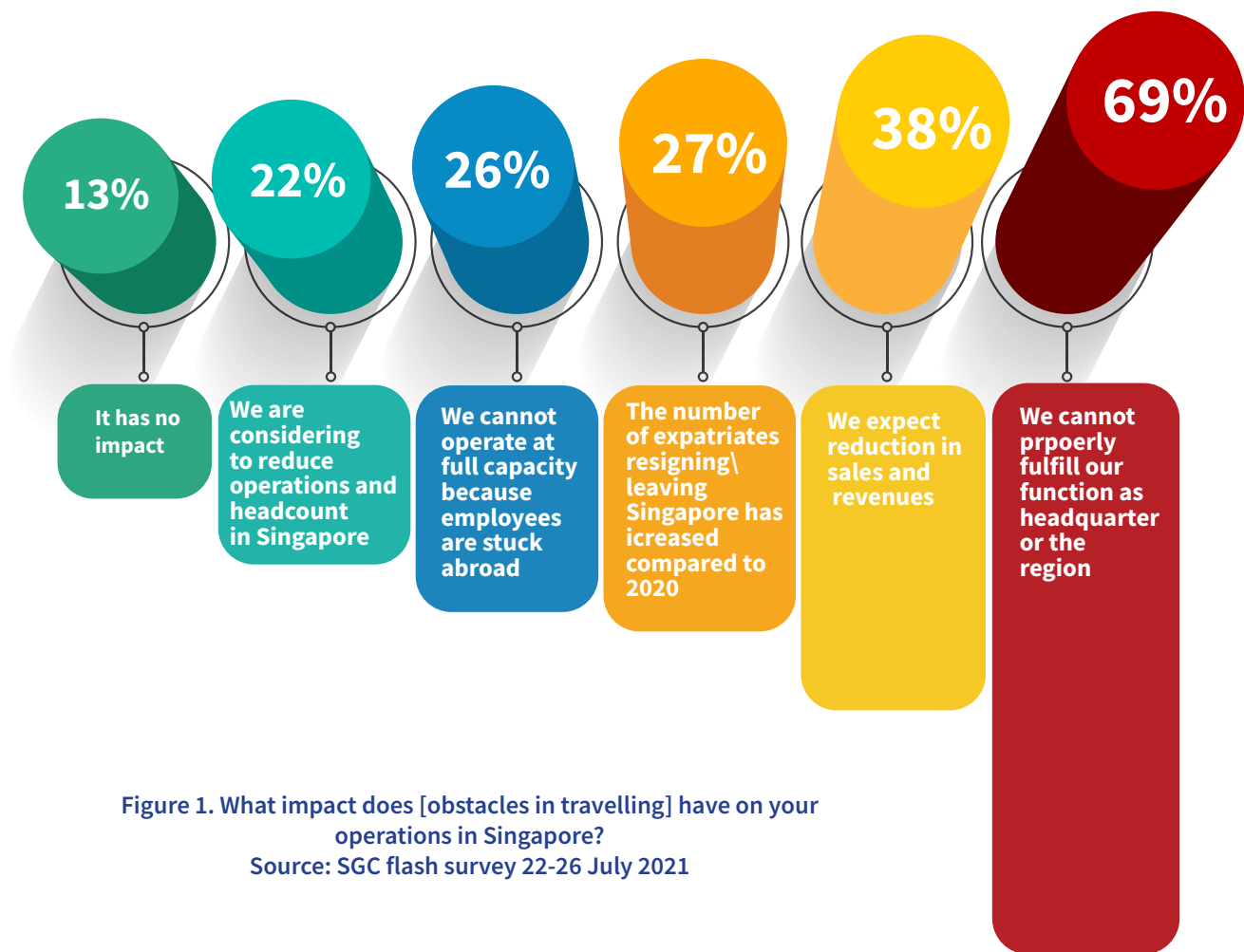


Figure 1. What impact does [obstacles in travelling] have on your operations in Singapore?

Source: SGC flash survey 22-26 July 2021

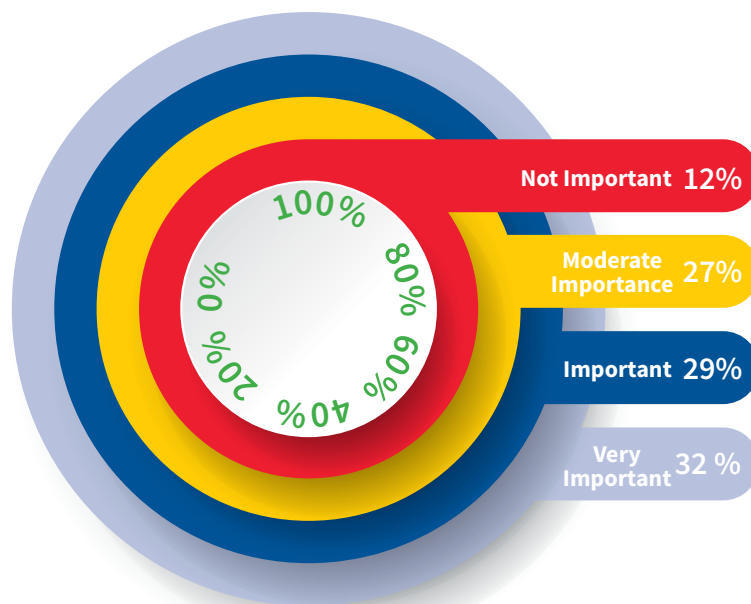


Figure 2. Working from home: How important is returning to the office to your company?

Source: SGC flash survey 22-26 July 2021

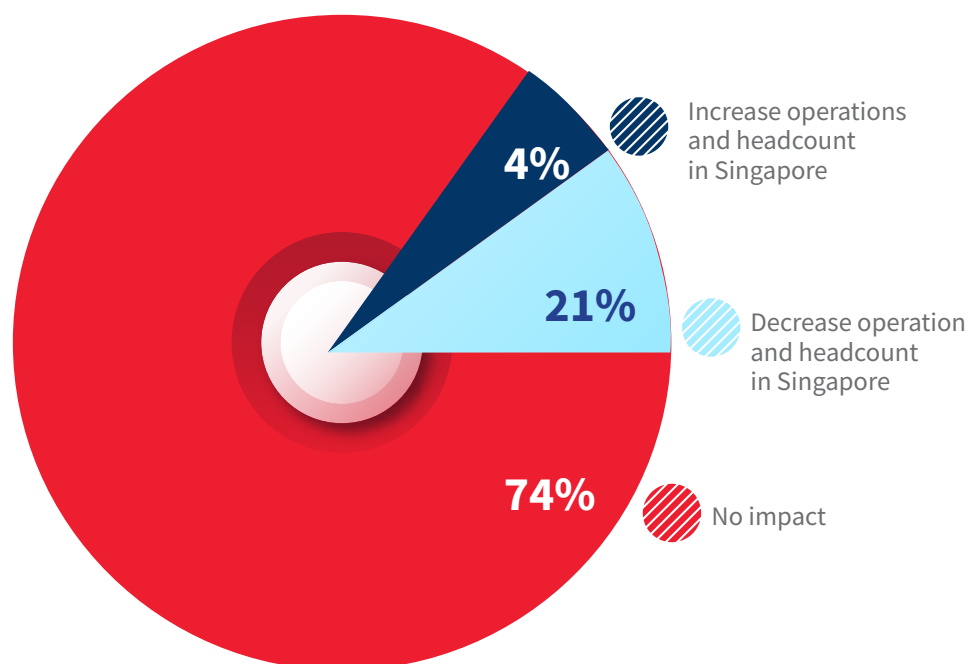


Figure 3. Do the current WFH regulations impact your operations and headcount in Singapore?
Source: SGC flash survey 22-26 July 2021

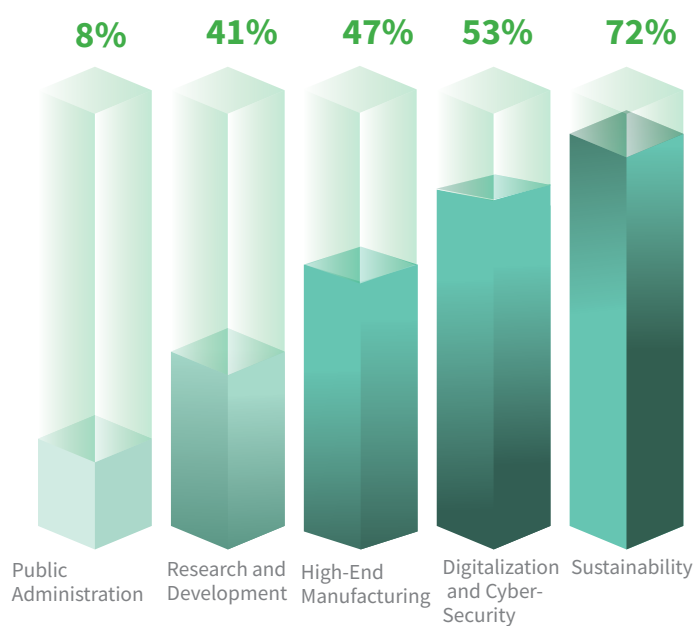


Figure 4. Which areas have the most potential for cooperation between Germany and Singapore in the next five years? (multiple answers possible)
Source: SGC flash survey 22-26 July 2021

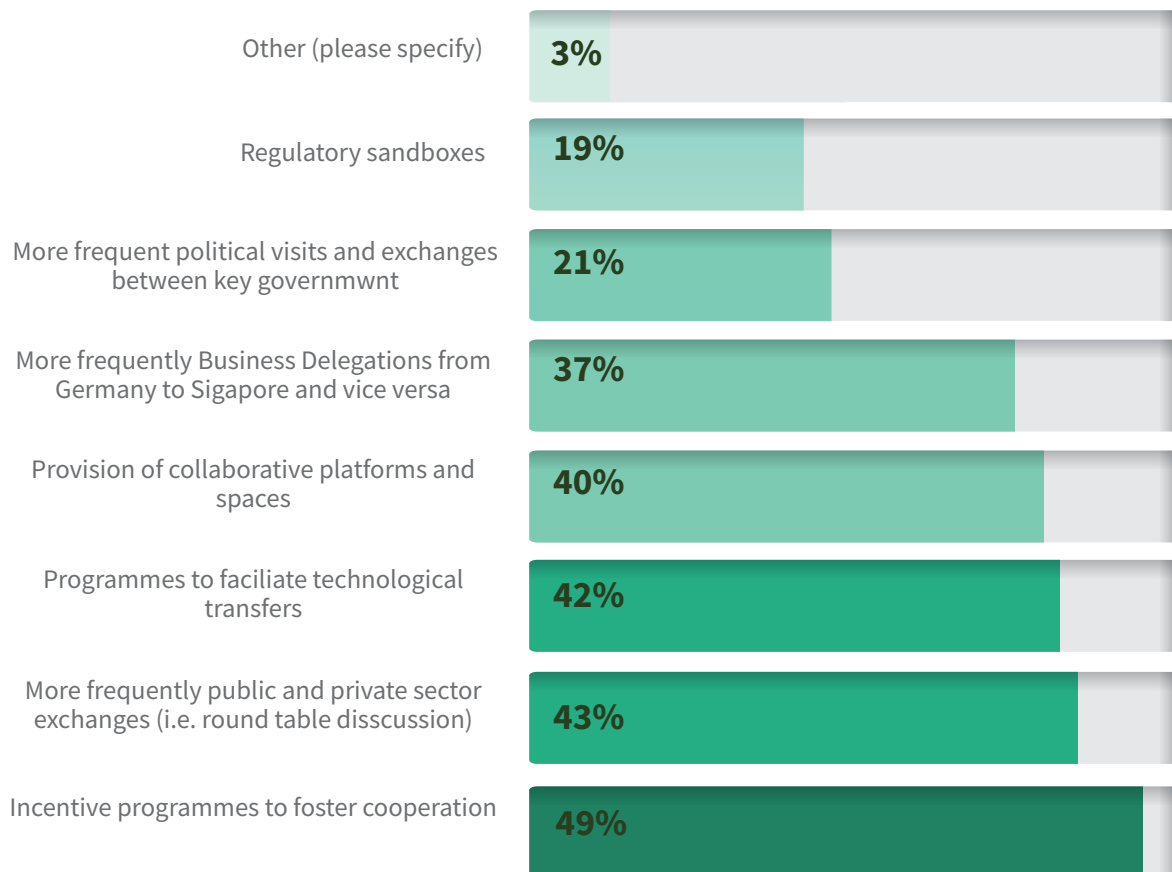


Figure 5. What do you consider as helpful to foster cooperation in the aforementioned areas?
(multiple answers possible)

Source: SGC flash survey 22-26 July 2021

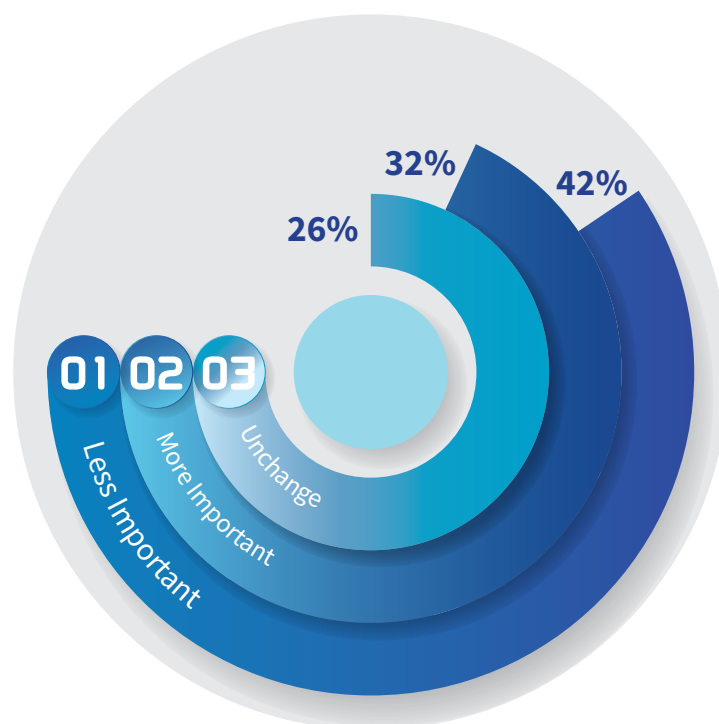


Figure 6. How do you see Singapore's role as a regional hub five years from now?

Source: SGC flash survey 22-26 July 2021

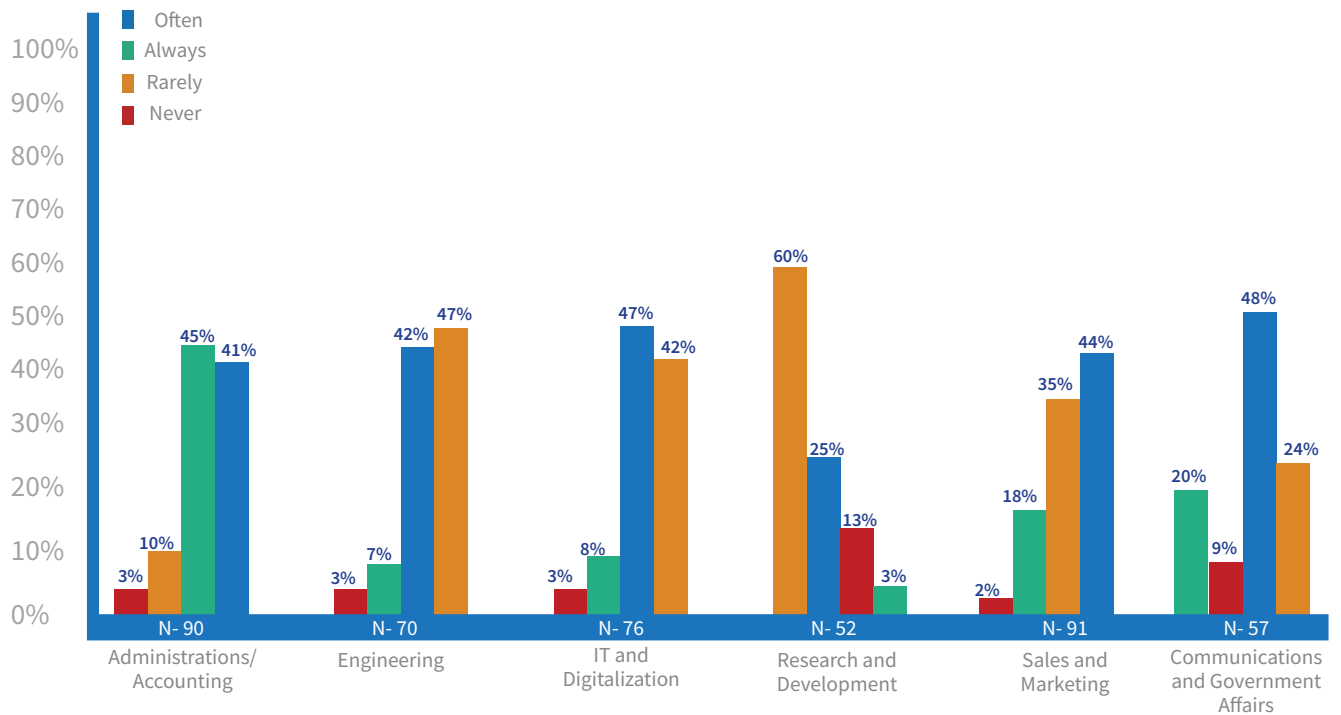


Figure 7. Do you find enough qualified workers in Singapore for the following business functions?
Source: SGC flash survey 22-26 July 2021



Figure 8. If an EP application is finally rejected, what do you do? (Multiple answers possible)
Source: SGC flash survey 22-26 July 2021

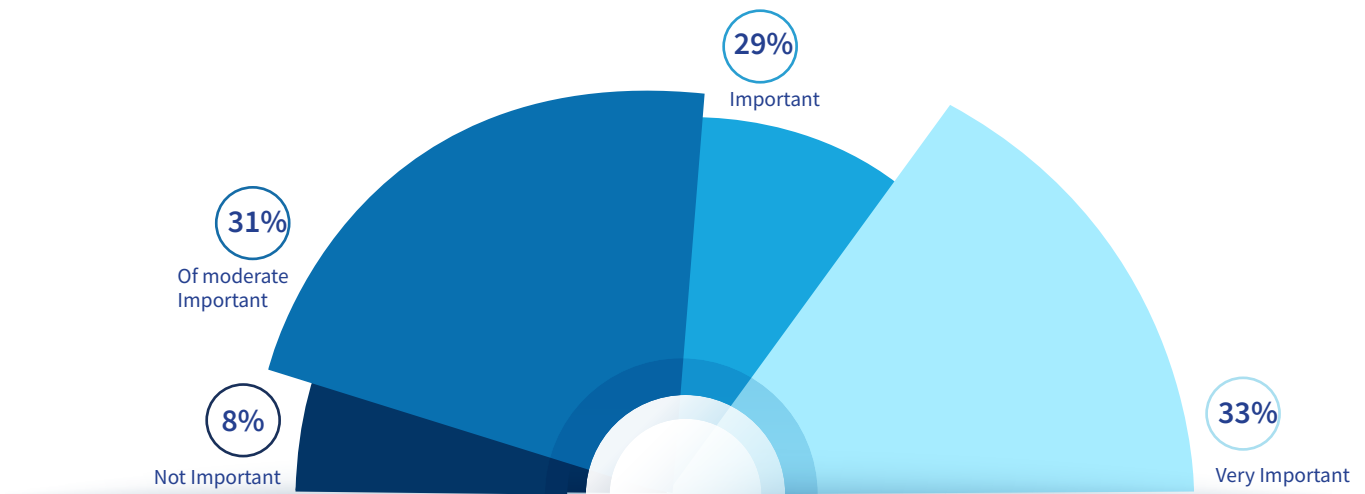


Figure 9. How important is Singapore's Free Trade Agreement network and regional connectivity for your further business development?

Source: SGC flash survey 22-26 July 2021

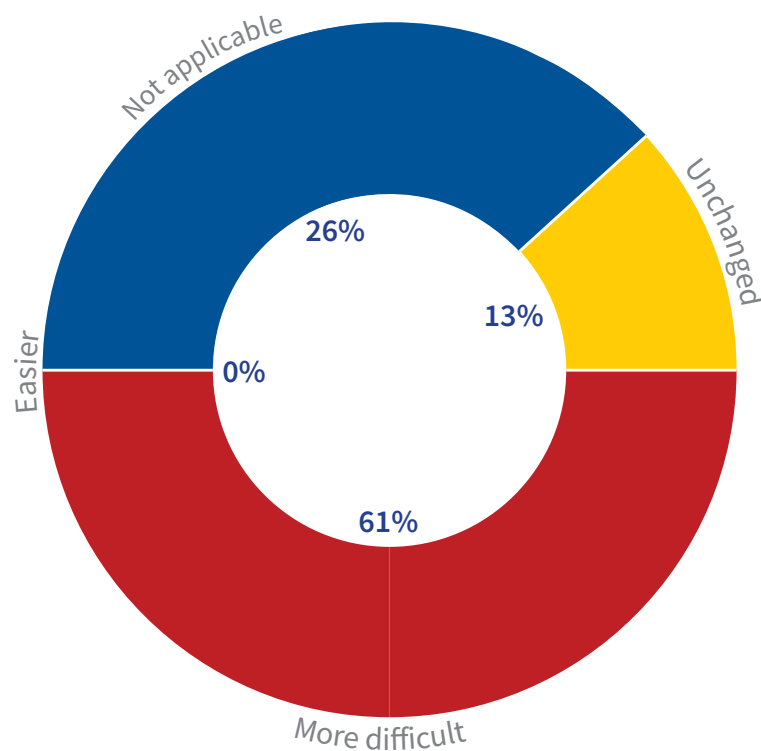


Figure 10: Obtaining an EP for Expatriates has become ____ during the last 12 months?

Source: SGC flash survey 22-26 July 2021

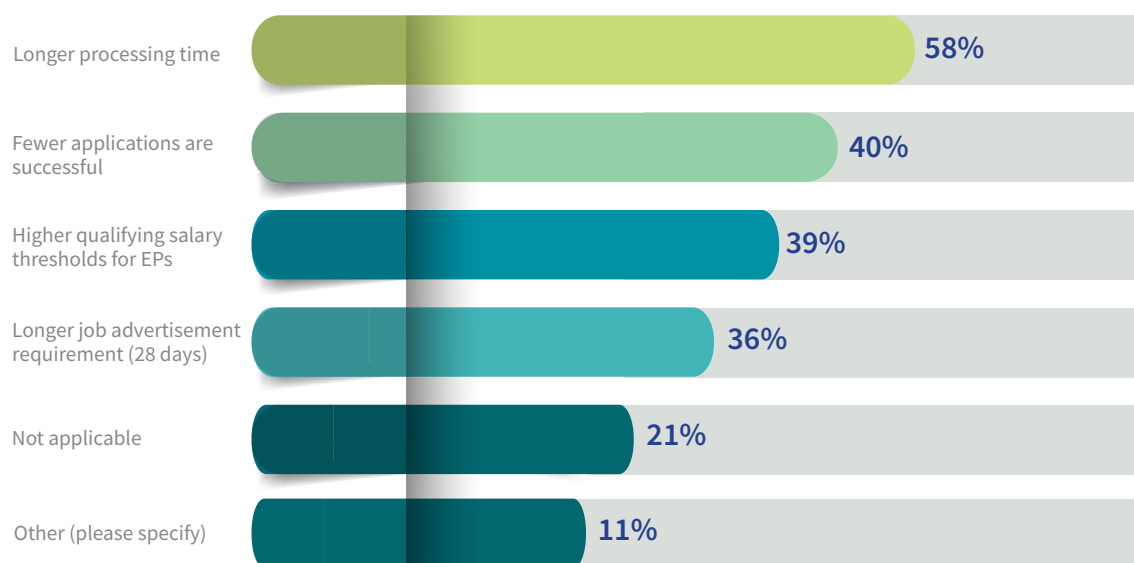


Figure 11: Why has obtaining an EP become more difficult?
Source: SGC flash survey 22-26 July 2021

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Singaporean-German Chamber of Industry and Commerce

25 International Business Park
#03-105 German Centre
Singapore 609916

T +65 6433 5330

F +65 6433 5359