



MICRO- REVOLUTION: THE NEW STAKEHOLDERS OF TRADE IN APAC

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ASIA PACIFIC MSME TRADE COALITION
(AMTC)

Prepared by the Asia Pacific MSME Trade Coalition (AMTC)

Important Notice on Contents – Estimations and Reporting

This report has been prepared by the Asia Pacific MSME Trade Coalition (AMTC) with analytical support from AlphaBeta, a strategy and economics advisory firm. The AMTC represents the voice of MSMEs engaged in exporting in the APAC region.

All information in this report is derived or estimated by AlphaBeta analysis using both proprietary and publicly available information. Where information has been obtained from third party sources and proprietary research, this is clearly referenced in the footnotes.

Asia Pacific MSME Trade Coalition (AMTC)

As the largest voice of MSMEs in Asia Pacific, the AMTC is committed to facilitating the trade of goods and services by MSMEs in the region, as well as serving as a bridge between government officials and business.

The purpose of the AMTC is to shape trade policies that are MSME friendly in collaboration with different stakeholders.

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CONTENTS

	Executive Summary	6
1	Digital technology unlocks the export potential of MSMEs in Asia Pacific	12
	<i>Micro, small, and medium-sized enterprises (MSMEs) are vital for economic growth and trade in Asia Pacific</i>	13
	<i>Most MSMEs in the Asia Pacific still face high barriers to export</i>	15
	<i>Digital tools can lower export barriers for MSMEs</i>	18
	<i>The digital economy could transform the time and cost for MSMEs engaged in exporting</i>	22
	<i>The savings are significant for MSMEs across the Asia Pacific</i>	28
2	MSMEs in Asia Pacific rely on sound digital regulation	30
	<i>Regulators commonly have four concerns related to digital trade</i>	31
	<i>Red tape</i>	32
	<i>Intermediary liability</i>	34
	<i>Copyright issues</i>	36
	<i>Cross-border data restrictions</i>	38
3	Key implications and takeaways	40
	Appendix A - Detailed Methodology	44



**ASIA PACIFIC MSME TRADE COALITION
(AMTC)**



Micro-Revolution: The New Stakeholders of Trade in APAC



Levers, progress and opportunities:

THE BENEFITS OF DIGITAL FOR MSMEs¹

96% of firms in Asia are MSMEs, accounting for **42%** of total exports



Digital technologies can save over **US\$339 billion** in export driven costs for MSMEs in China, India, South Korea, and Thailand



Up to **~29%** reduction in time for MSMEs exporting by leveraging digital tools²



Up to **78%** of this time saving is driven by a more streamlined operational support backend

Up to **~82%** reduction in exporting costs for MSMEs from taking advantage of digital tools³



Up to **65%** of this cost saving comes from a more efficient marketing solution

THE REGULATORY CHALLENGES FACING MSMEs IN EXPORTING

Red tape impacting market access



Intermediary liability



Copyright issues



Cross-border data restrictions



THE OPPORTUNITIES

Minimising border frictions



Building flexibility into copyright and intermediary liability regulations



Ensuring open information flows



¹ The calculations are based on a range of hypothetical MSMEs that annually generate a revenue of US\$1 – US\$4 million from exports and dedicate 1 - 300 FTE employees to the generation of export sales and export specific tasks. A manufacturer does so by 1-100 shipments, a service provider by 1 – 450 projects. We further assume 250 8-hour working days per year. These numbers were chosen in accordance with the definitions of MSMEs across APAC countries.

² Under time requirements we include the annual labour time requirements that are directly devoted to the generation of export sales and export specific tasks. We separate out the time requirements for market research, regulatory compliance, and insurance and finance, and group the residual time under operational support.

³ Under costs we include only items that are directly related to the generation of export sales and export specific tasks. Hence, we do not include production costs or general business overheads (e.g. rent, utilities, back office functions). Further, in order to keep the analysis country agnostic we exclude wage costs due to their large variance across APAC countries.

Source: AlphaBeta analysis

EXECUTIVE SUMMARY

Digital innovation is fast elevating the growth potential of micro, small and medium-sized enterprises (MSMEs), enabling them to emerge as the new stakeholders of trade in the Asia Pacific. Known as “micro multinationals”, the region’s most enterprising MSMEs have already adopted a global mindset and rely heavily on modern technology to expand overseas. This report analyses how the digital economy offers an opportunity to overcome traditional small-business hurdles to export, lowering export costs of an average MSME by as much as 82 percent and reducing time involved in exporting for MSMEs by up to 29 percent. It also aims to give MSMEs a voice in the ongoing debate on regulating the digital economy, which is crucial if they are to continue reaping its benefits.

MSMEs are the economic backbone of the Asia Pacific.¹ They comprise over 97 percent of firms and employ more than half of the APEC region’s workforce meaning MSMEs have become a significant driver of growth everywhere from India to New Zealand.² They are also at the heart of Asia Pacific’s trade with the world. Goods and services sold by small and medium-sized businesses today make up over 35 percent of the region’s direct exports.

Yet, most MSMEs across the Asia Pacific have yet to tap the export opportunity. Despite their

overall impressive contribution to the regional economy, less than one in ten SMEs in the Asia Pacific are currently exporting.³ Many MSMEs still face substantial challenges to bridge the gap to global markets. They often lack the resources to research international sales opportunities, build a global business network and promote their products overseas. Country-specific regulations and compliance standards add to the costs for MSMEs. Lack of knowledge in managing sophisticated, globalised supply chains and inventory flows can further hamper expansion plans. Digital technologies can be crucial facilitators, helping MSMEs overcome these barriers to trade.

Policymakers in many countries of the Asia Pacific are aware of the issue. They have stepped up efforts in recent years to improve the exportability of small and medium-sized firms, partially through digitalisation. Several countries have launched initiatives to support MSMEs in this area, such as New Zealand’s Business Growth Agenda (BGA) and Singapore’s “Smart Nation” plan to boost the global competitiveness of MSMEs. At the same time, many are beginning to scrutinize the rules of doing business in the digital economy, as global tech giants and other large multinational companies have expanded their reach into new markets. The problem: while much of the current regulatory debate revolves around these large-scale companies, it tends to overlook the concerns of MSMEs as some of the main beneficiaries of digital innovation.

With the various ongoing trade negotiations taking place in Asia, this report aims to shine a light on MSMEs as an increasingly important stakeholder group of the digital economy and sets out to broaden the regulatory perspective. Thanks to digital technologies lowering the barriers to

¹ While definitions across Asia Pacific vary, a firm that employs less than 200 people is typically regarded as a micro, small and medium-sized business. For further details, see Khrystyna Kushnir, “How Do Economies Define Micro, Small and Medium Enterprises (MSMEs)?”, 2010. Available at: <http://www.ifc.org/wps/wcm/connect/624b8f804a17abc5b4acfd29332b51/SME-ci-note.pdf?mod=ajperes>

² APEC (October 2016), *Small and Medium Enterprises Working Group*. Available at: <https://www.apec.org/Groups/SOM-Steering-Committee-on-Economic-and-Technical-Cooperation/Working-Groups/Small-and-Medium-Enterprises.aspx>

³ Oxford Economics (2017), *Local Business Global Ambition: How the internet is fueling SME exports in Asia-Pacific*. Available at: http://www.oxfordeconomics.com/google/local_global

exporting, MSMEs are the new stakeholders of trade. For example, eBay found that 100 percent of firms (limited to commercial sellers with over US\$10,000 of annual sales) in Indonesia and China using their platform were exporting, versus just 2 and 22 percent respectively of traditional (not online) sellers.⁴

Based on extensive literature search and data analysis, as well as numerous interviews with MSMEs from various industries and countries, this report establishes, for the first time, a fact base on the benefits of digital technology for MSME

exporters in the Asia-Pacific region. It finds that digital tools can lower market barriers and stimulate economic growth by significantly reducing the time and cost of exporting for MSMEs.

Yet these benefits may prove elusive. In a critical assessment of the current push to create new regulation for the digital economy across the Asia Pacific, **this report highlights a risk: the digital trade rules are not being discussed or built with smaller enterprises in mind, and may undermine the substantial global trade opportunity for Asia's MSMEs.**

KEY FINDINGS



The use of digital technology can lower export costs of MSMEs by as much as 82 percent

New digital tools – ranging from simple internet search engines and online bookkeeping software to cloud computing and sensor systems for freight containers – can boost the export capabilities of MSMEs, allowing them to operate with ease across geographies and tap into international supply chains, compete with larger exporters, and connect with consumers, suppliers, and investors across the globe. For many, the rise of the digital economy also offers an opportunity to expand into new business areas and services, such as e-commerce or online content creation. So-called “weightless exports”, which refer to online games, mobile apps and other services that can be exported electronically, are becoming increasingly important for MSMEs.

The combined benefits of using digital technology for Asia Pacific's small and medium-sized exporters are substantial. An analysis of existing data and evidence from case studies suggest that digital tools could lower export costs of an average MSME by as much as 82 percent (Exhibit E1) and reduce time involved in exporting for MSMEs by up to 29 percent.⁵



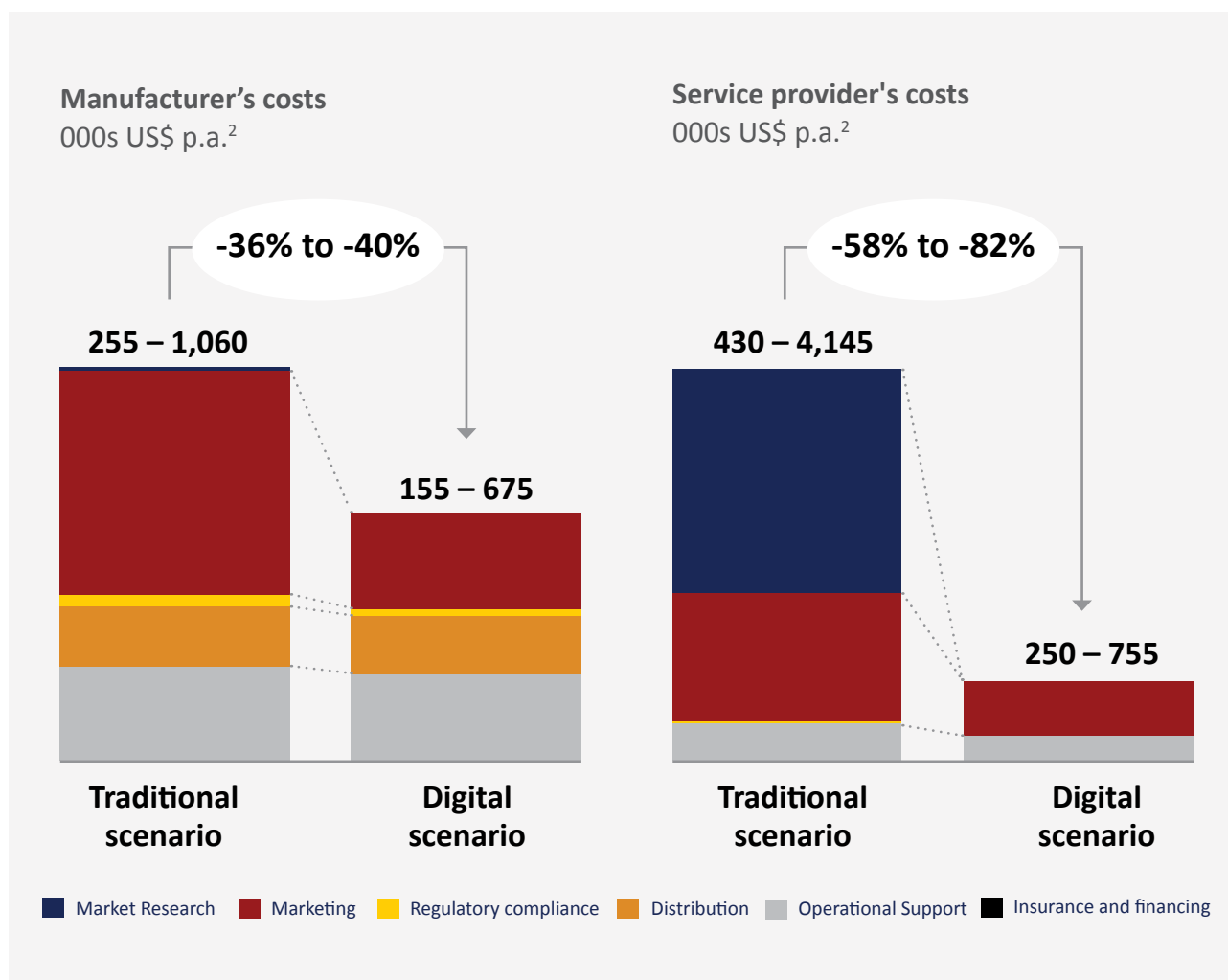
⁴ eBay (January 2016), *Small online business growth report: Towards an inclusive global economy*. Available at: https://www.ebaymainstreet.com/sites/default/files/eBay_global-report_2016-4_0.pdf

⁵ The calculations are based on a range of hypothetical MSMEs that annually generate a revenue of US\$1 – US\$4 million from exports and dedicate 1 - 300 FTE employees to the generation of export sales and export specific tasks. See the Appendix for further details.

EXHIBIT E1

MSMEs leveraging digital can potentially reduce costs of exports by up to 40% for manufacturers and 82% for service providers

MSMEs' potential export related cost savings from digital¹



¹ Traditional scenario refers to a business which relies primarily on paper documents, phone calls, and non-digital approaches to business, while digital scenario refers to a business which leverages on internet based solutions such as online databases, cloud based services, online search marketing, IoT warehousing and other similar solutions to streamline its operations.

Under costs we include only items that are directly related to the generation of export sales and export specific tasks. Hence, we do not include production costs or general business overheads (e.g. rent, utilities, back office functions). Further, in order to keep the analysis country agnostic we exclude wage costs due to their large variance across APAC countries. The calculations are based on a range of hypothetical MSMEs that annually generate a revenue of US\$1 – US\$4 million from exports and dedicate 1 – 300 FTE employees to the generation of export sales and export specific tasks. A manufacturer does so by 1-100 shipments, a service provider by 1 – 450 projects. We further assume 250, 8 hour working days a year. These numbers were chosen in accordance with the definitions of MSMEs across APAC countries.

² Rounded to the nearest US\$ 5,000.

Source: AlphaBeta analysis

The export success of Asia Pacific's MSMEs relies on sound regulation of digital trade

Governments have the right to regulate and to ensure that public interest is not harmed by trade. But there is a risk that new regulations could be incompatible between countries in Asia, and inadvertently stymie the benefits extracted from the digital economy by MSMEs who export.

This report identifies four regulatory developments that should be of particular concern for MSMEs. While there are many issues that MSMEs face (e.g. access to capital, lack of information on foreign markets, etc), these four are examined as (a) they are of core relevance to the ongoing trade discussions taking place in Asia; (b) these issues have largely been seen as only impacting large firms and the impact of these issues on MSMEs has not received sufficient attention to date; and (c) while these issues may not be “front of mind” for MSMEs today, they will become increasingly relevant as the digital economy evolves:

- **Red tape impacting market access.** Several Asia Pacific authorities require digital trading businesses, no matter how small, to register locally if they sell goods and services into a country. Such local registration requirements can add significant costs (money and time) to MSMEs. Similarly, low custom duty thresholds on goods can also ratchet up regulatory costs for MSMEs trading across borders.
- **Intermediary liability.** With growing concerns about the proliferation of undesirable online content (such as hate speech or privacy violations), regulators are increasingly discussing whether and when online platforms are liable for the online content users post online. This poses a challenge for small and medium-sized internet platforms, which – if held legally responsible for what their users do and say – would shoulder compliance costs that tend to weigh on them more than on large players.

- **Copyright issues.** Various countries in Asia are currently in the process of updating their copyright laws for the digital era.⁶ There is a need for a balance that gives IP rights holders the ability to enforce their rights and prevent the sale of counterfeits while not burdening internet service providers (ISPs) and other internet platforms to the extent that it makes international trade on the internet too risky, or too burdensome for MSMEs to comply.
- **Cross-border data restrictions.** Various draft legislations across countries in Asia are currently being developed to regulate the movement of cross-border data.⁷ Laws that limit the ability of data to move freely across borders can affect the opportunities for internet-enabled trade. While a major company may have sufficient revenues and scale to justify building data centres in multiple locations, smaller firms can be shut out of the domestic and international internet economy completely if they cannot access affordable computing and data services.

⁶ Asian Trade Centre (August 2016), *Digital Trade and the TPP: How Asia Pacific Benefits*.

⁷ Deborah Elms and Minh Hue Nguyen (June 2017), “TPP Rules of Digital Trade in Asia”, ADBI Working Paper. Available at: <https://www.adb.org/publications/trans-pacific-partnership-rules-digital-trade-asia>

Sound regulation balances digital trade concerns with the needs of MSMEs

A well-balanced policy approach is needed to support the export competitiveness of MSMEs without losing sight of the regulatory concerns related to digital trade. While a strong uptake of digital technology would be desirable for the economic growth outlook in the Asia Pacific region as a whole, several issues are currently preventing MSMEs from engaging with the digital economy. Chief among them is the fact that many still lack reliable internet access and information on the benefits of going digital. Sound policy would need to address these shortcomings.

At the same time, it is also crucial to address regulatory concerns that risk undermining the access and benefits that MSMEs extract from the internet. Key priorities in this area include:

- **Minimising border frictions.** Establishing local branches in exporting markets can quickly become cost prohibitive for MSMEs and effectively serves as an additional tax on their operations. Likewise, low thresholds for when customs thresholds are applied to goods can also impose significant administrative costs. Countries should look to review de minimis thresholds, plus seek to exempt MSMEs from local registration requirements.
- **Building flexibility into copyright and intermediate liability regulations.** Addressing copyright concerns and removing undesirable content (such as hate speech) are clearly important priorities. The challenge is to balance those objectives with a system that is sufficiently flexible that it does not impose undue burden on MSMEs. Ensuring clarity on issues such as the ‘fair use doctrine’, which aims to balance the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and society’s competing interest in the free flow of ideas, information, and commerce on the other hand, will be an important component of this.
- **Ensuring open information flows.** There is a considerable opportunity to improve transparency on data management requirements across Asia and to identify areas to enhance performance. Data privacy laws and regulations have been introduced in many Asian Pacific countries in recent years, but many areas of uncertainty remain. Clarity is required around the type of data that can be shared, the boundaries of sharing, and the type of consumer consent that is required.

Structure of this report

The report starts with an overview, in **Chapter 1**, of the importance of MSMEs to the Asia business and exporting landscape, the barriers they face when exporting, and how the digital economy can help address those barriers. It then presents a robust estimation of the potential export related cost and time savings for MSMEs from leveraging digital. **Chapter 2** then examines four areas of digital economy regulation that could potentially undermine these benefits. The report concludes with a summary of the main implications and take-aways for policymakers in **Chapter 3**.



DIGITAL TECHNOLOGY UNLOCKS THE EXPORT POTENTIAL OF MSMES IN ASIA PACIFIC

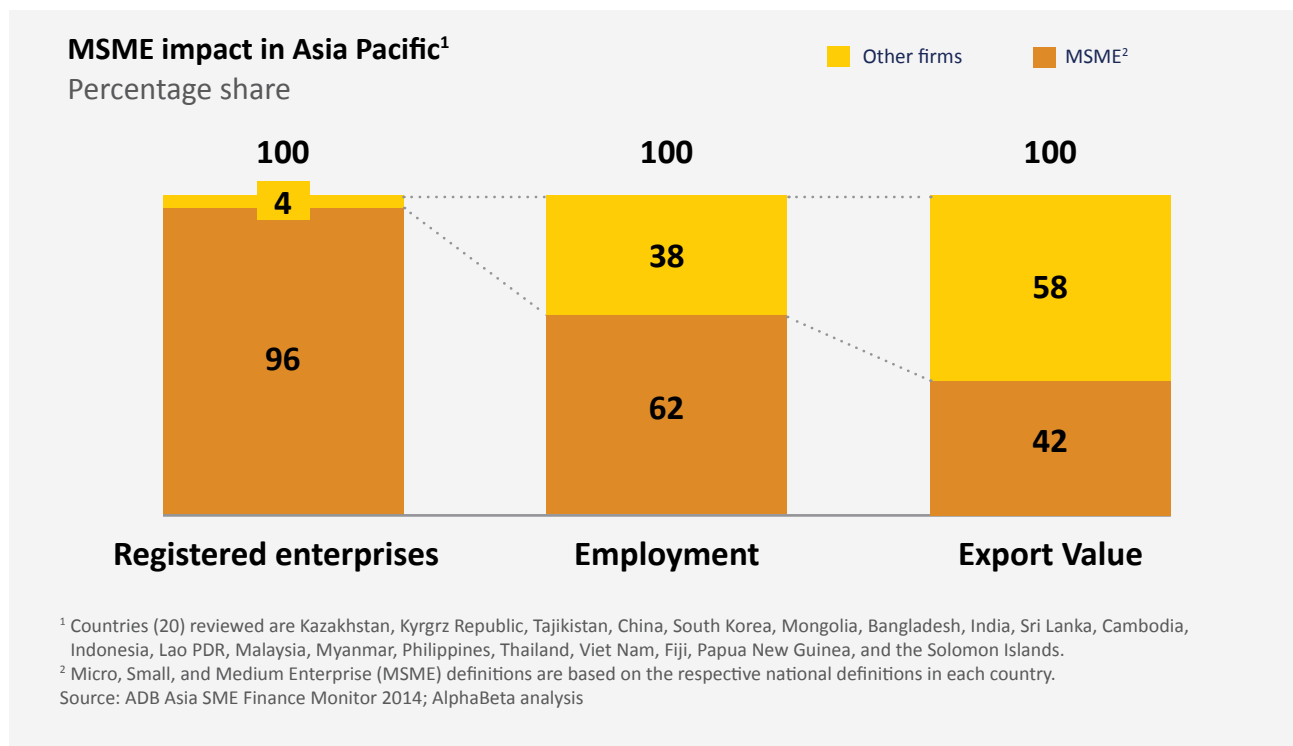
A growing share of our trade now flows through e-commerce marketplaces. Online crowdfunding platforms are connecting entrepreneurs with investors worldwide. Cloud computing is boosting business productivity by allowing workers to instantly collaborate across borders and time zones. And the prolific use of smartphones has made software app development a powerful new industry. Some of the biggest beneficiaries of these digital developments are MSMEs, which can use a myriad of new digital tools to improve their exportability.

Micro, small, and medium-sized enterprises (MSMEs) are vital for economic growth and trade in Asia Pacific

MSMEs are, and have been for a while, the economic backbone of the Asia Pacific. According to the Asian Development Bank (ADB) in 2014, these firms already comprised 96 percent of all businesses in the region⁸, employing 62 percent of the region's workforce and made up 42 percent of total export values (see Exhibit 1).⁹ These firms have gained even more significance, as in 2016, MSMEs comprised over 97 percent of firms and employed more than half of the APEC region's workforce¹⁰. In 2015, there were 15 million MSMEs operating across the region.¹¹ In every country in the Asia Pacific, MSMEs are an important part of the economy (Exhibit 2).

EXHIBIT 1

96% of all registered enterprises in Asia Pacific are MSMEs



⁸ Countries reviewed by the ADB included Kazakhstan, Kyrgyz Republic, Tajikistan, China, South Korea, Mongolia, Bangladesh, India, Sri Lanka, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Viet Nam, Fiji, Papua New Guinea, and the Solomon Islands.

⁹ Asian Development Bank (2014), ADB Asia SME Finance Monitor 2014.

¹⁰ APEC (October 2016), Small and Medium Enterprises Working Group. Available at: <https://www.apec.org/Groups/SOM-Steering-Committee-on-Economic-and-Technical-Cooperation/Working-Groups/Small-and-Medium-Enterprises>

¹¹ Oxford Economics (2017), Local Business Global Ambition: How the internet is fueling SME exports in Asia-Pacific. Available at: <http://www.oxfordeconomics.com/my-oxford/projects/367780>

EXHIBIT 2

MSME firms are important for economies across the Asia Pacific

Economic data on MSMEs for selected Asia Pacific countries¹

Economy	Total MSME employment	MSME employment (% of total employment)	No. of MSME firms	MSME firms (% of total firms)	Year
Australia	7,241,000	68.3%	2,076,068	99.8%	2010
Bangladesh	8,387,854	86.5%	2,987,560	99.9%	2003
Cambodia	1,300,000	71.8%	512,870	99.8%	2014
China	651,984,000	85.0%	40,478,200	99.7%	2013
India	101,200,000	N/A	36,200,000	N/A	2012
Indonesia	107,657,510	97.2%	56,534,591	99.9%	2012
Japan	N/A	N/A	4,128,215	99.7%	2013
Lao PDR	472,231	82.9%	124,510	99.8%	2013
Malaysia	5,100,000	57.5%	645,136	97.3%	2011
Mongolia	251,000	52.0%	72,473	98.2%	2010
Myanmar	N/A	N/A	126,237	99.4%	2009
New Zealand	964,000	99.0%	468,100	99.5%	2014
Philippines	4,930,851	64.9%	940,886	99.6%	2012
Singapore	2,100,000	67.7%	180,000	99.3%	2012
South Korea	13,059,372	87.7%	3,351,404	99.9%	2012
Sri Lanka	2,091,027	69.6%	1,012,549	99.5%	2013
Thailand	11,400,000	81.0%	2,760,000	97.2%	2013
Viet Nam	5,129,980	46.8%	333,835	97.7%	2012

¹ Data is obtained from national data sources for each country. MSME definition varies between countries and is based on each country's working definition used to compile the statistics.

Source: National data sources; Asian Development Bank

Most MSMEs in the Asia Pacific still face high barriers to export

The overall impressive contribution of MSMEs to exports and employment in the Asia Pacific masks the fact that the export performance of many individual firms is still relatively poor. Not even a tenth of MSMEs in the region (8.8 percent) are currently selling goods and services outside their domestic market.¹² Almost half (48 percent)

of MSMEs who export identify selling to foreign countries as a challenge.¹³

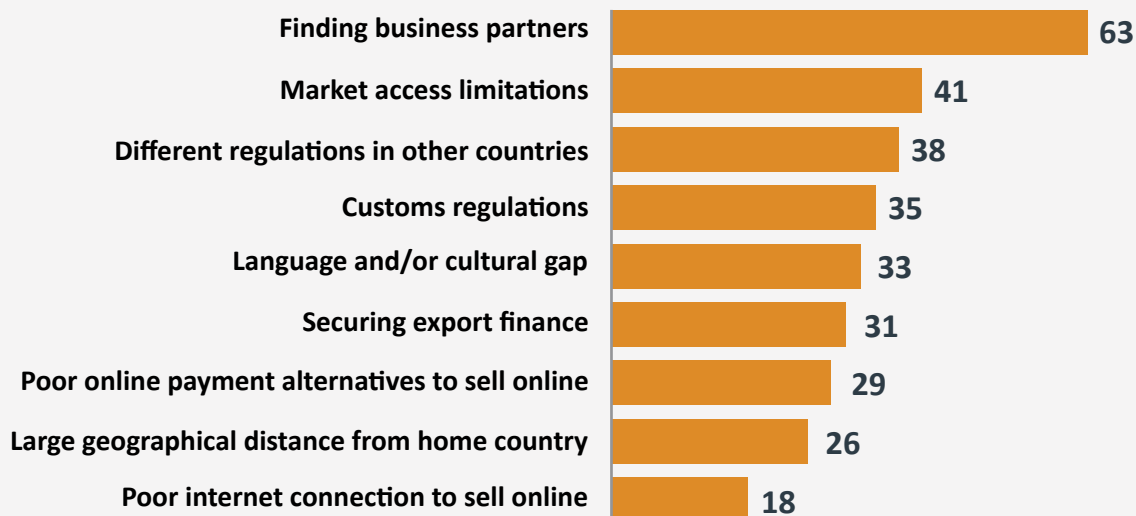
Due to their size and limited resources, MSMEs in particular face serious challenges when trying to become exporters. A recent survey of SMEs with a digital presence highlighted a number of barriers they face when seeking to export, including difficulties in finding business partners, market access limitations, and regulatory differences across countries (see Exhibit 3).¹⁴

EXHIBIT 3

MSMEs face a range of barriers as they seek to export



Share of MSMEs with a digital presence highlighting issue as a barrier to exporting;
Percentage (July 2017)



Source: Future of Business Survey (July 2017)

¹² Oxford Economics (2017), *Local Business Global Ambition: How the internet is fueling SME exports in Asia-Pacific*. Available at: <http://www.oxfordeconomics.com/my-oxford/projects/367780>

¹³ Facebook, OECD, and World Bank (July 2017), *Future of Business Survey*. Available at: <https://eu.futureofbusinesssurvey.org/manager/Storyboard/RHView-Storyboard.aspx?Rid=%C2%B3&Rlid=%C2%B3&Pid=%C2%B1%C2%B8%C2%B7%C2%B5%C2%B4&UId=%C2%B5%C2%B5%C2%BB%C2%B3%C2%B7&Rpld=20>

¹⁴ Facebook, OECD, and World Bank (July 2017), *Future of Business Survey*.



1: DIGITAL TECHNOLOGY UNLOCKS THE EXPORT POTENTIAL OF MSMEs IN ASIA PACIFIC

In detail, MSMEs are struggling with:

- **Identifying foreign business opportunities and partners.** MSMEs lack the resources to conduct exhaustive analysis of foreign market opportunities and potential business partners, particularly if this also requires extensive in-country fieldwork, where costs can quickly escalate.
- **Market access limitations.** Reaching global consumers can be difficult for MSMEs. Beyond regulatory constraints, MSMEs often know too little about cost-effective international marketing channels and how to position their products internationally.
- **Regulatory compliance associated with exporting and importing.** MSMEs face a range of red tape associated with importing and exporting. For example, they might need to comply with country-specific product labelling, certification, quality, and design requirements. They might also have to deal with costly sanitary and phytosanitary (SPS) regulations, lengthy and complicated customs clearance procedures, as well as import tariffs, quotas and bans.¹⁵
- **Language and cultural barriers.** Many MSMEs find it harder than larger competitors to overcome language and cultural differences when trying to identify new customers and market their products. This problem can be particularly acute in services industries that may require SMEs to provide ongoing international customer support.
- **Shortage of working capital to finance exports.** Many MSMEs complain that they lack the funds (trade finance and working capital) to pay for an international expansion. Pre-financing of large orders or shipments of goods that take time to build is particularly problematic for many MSMEs. About 50 percent of MSMEs in East and South Asia are financially unserved or underserved (Exhibit 4).¹⁶

¹⁵ USITC (2010). "Small and Medium-Sized Enterprises: US and EU Export Activities, and Barriers and Opportunities Experienced by US Firms." USITC Publication 4169.

¹⁶ Asian Development Bank (2014), *ADB Asia SME Finance Monitor 2014*.



EXHIBIT 4

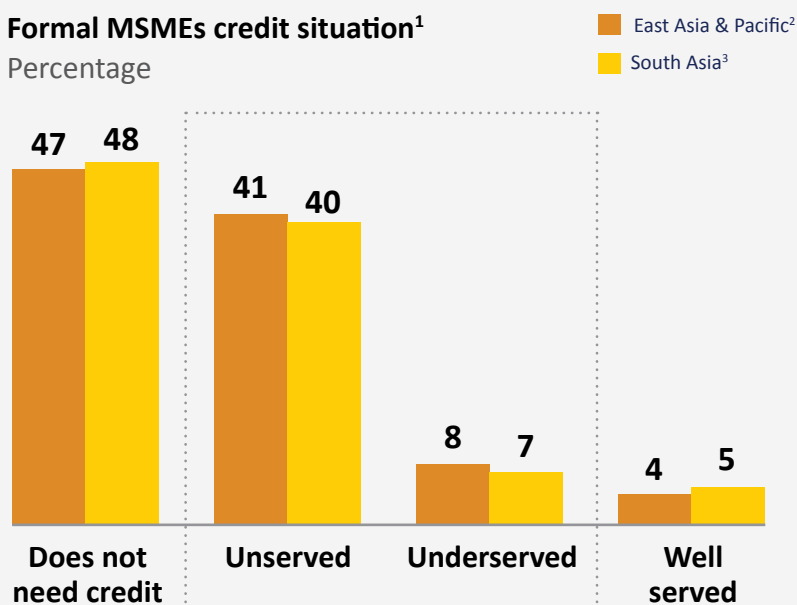
About 50% of MSMEs in East and South Asia are unserved or underserved by finance

INDUSTRY FACTS

- Limited access to bank credit is a structural problem in Asia
- Estimated credit gap of US\$1,082 billion
- Bank lending to MSMEs average 18.7% of the total bank lending in the region
- Banks decreased lending to MSMEs after 2008
- Basel III could be compounding lending reluctance to MSMEs

Formal MSMEs credit situation¹

Percentage



¹ Formal MSMEs are defined as enterprises who are registered with the local municipality or tax authority

² Countries included are Cambodia, China, Fiji, Indonesia, Lao PDR, Malaysia, Micronesia, Mongolia, Myanmar, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga, Vanuatu, Viet Nam

³ Countries included are Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka

Source: ADB Asia SME Finance Monitor 2014; IFC SME Finance Forum; AlphaBeta analysis

Digital tools can lower export barriers for MSMEs

Digital technology has begun to level the playing field for businesses globally and in the Asia Pacific. Firms that frequently use information and communications technologies (ICT) tend to be more successful exporters, various studies show.¹⁷ For example, a survey by the McKinsey Global Institute found that MSMEs with a high-intensity internet use grow twice as quickly, export twice as

much, create twice as many jobs and increase their productivity faster than their peers.¹⁸ In Asia, small businesses that have a website are almost four times more likely to export than those that don't.¹⁹ 58 percent of MSME exporters agree that using online tools for selling internationally has increased their revenue.²⁰

Digital technologies have changed the way MSMEs can conduct business across the export value chain (see Exhibit 5):

EXHIBIT 5

Digital technologies have changed the way MSMEs conduct business within six key components of the export value chain

Export value chain		Impact of digital	
	Details	Traditional scenario	Digital scenario
Market research	<ul style="list-style-type: none"> Identification and quantification of foreign business opportunities Obtaining information and a rigorous understanding of the target market 	<ul style="list-style-type: none"> Labour intensive: dedicated staff, market research agency, potential field trip Potential travel to market 	<ul style="list-style-type: none"> Desktop research Digital market research tools (e.g. online surveys) Reduced need for travel
Marketing	<ul style="list-style-type: none"> Targeting of customers in the foreign market through advertising Dissemination of promotional material through various advertising channels 	<ul style="list-style-type: none"> Procurement of local advertising space in foreign market (e.g. newspaper, radio & TV ads) 	<ul style="list-style-type: none"> Digital advertising channels (search engine optimisation, display, social, video) Leveraging market platforms
Insurance and financing	<ul style="list-style-type: none"> Access to product shipment insurance for and securing funding for export ventures Obtaining information on and procuring to insurance and securing loans 	<ul style="list-style-type: none"> Limited transparency Time intensive paper based approach Dedicated brokers 	<ul style="list-style-type: none"> Product comparison sites Single window view into market Digital financial products
Regulatory compliance	<ul style="list-style-type: none"> Regulation, rules and laws in the foreign market the MSME has to comply with Costs of complying with foreign regulation such as filing documents and legal costs 	<ul style="list-style-type: none"> Time intensive paper based approach Dedicated consultant 	<ul style="list-style-type: none"> National single window
Distribution	<ul style="list-style-type: none"> Physical delivery of goods to the foreign market Product delivery and channels through which sales occur 	<ul style="list-style-type: none"> Manual management of supply chains Limited information on causes of inefficiencies 	<ul style="list-style-type: none"> Automated and digitalised supply chain management (e.g. Internet of Things)
Operational support	<ul style="list-style-type: none"> Day to day operations of the business e.g. processing orders, back offices tasks IT heavy tasks such as database management, accounting, communication 	<ul style="list-style-type: none"> Special IT equipment (e.g. servers, office software) Communications services Dedicated travel agents 	<ul style="list-style-type: none"> Cloud computing and software Voice over IP Online travel services

Source: AlphaBeta framework

¹⁷ Tim Mazzarol, "SMEs engagement with e-commerce, e-business and e-marketing", Journal of Small Enterprise Research, February 2015.

¹⁸ McKinsey Global Institute (May 2011). *Internet matters: The Net's sweeping impact on growth, jobs, and prosperity*.

¹⁹ Oxford Economics (2017), *Local Business Global Ambition: How the internet is fueling SME exports in Asia-Pacific*. Available at: <http://www.oxfordeconomics.com/my-oxford/projects/367780>

²⁰ Facebook, OECD, and World Bank (July 2017), *Future of Business Survey*.

In detail, digital technology is found to provide numerous benefits to export-oriented MSMEs, including:

- **Search engines allow MSMEs to identify foreign business opportunities.** New digital search tools help MSMEs research foreign markets more efficiently, saving them time-consuming and expensive field trips abroad. Research shows that online search engines can complete a typical library query three times as fast.²¹
- **Cloud computing improves operational productivity of MSMEs.** New e-business tools – including virtual private networks (VPN), voice over internet protocols (VoIP), video conferencing and e-learning, as well as file sharing and data security systems – can significantly enhance a company's management of customers, suppliers, employees and production systems. Cloud technologies, which allow firms to store and access all their data over the internet, can lower a company's expenses on hardware, software, web hosting and associated administration and deliver a return of up to 12 times the investment in just five years.²² Analysts estimate that SMEs currently spend around \$2 billion on cloud services in the Asia Pacific region per year and expect further growth.²³ Online job platforms can help MSMEs fill vacancies faster, likely increasing their output by up to 9 percent and reducing recruitment costs by as much as 7 percent.²⁴
- **Price comparison sites allow MSMEs to identify better financing and insurance options.** New digital channels such as price-comparison sites are estimated to lower the cost of insuring a company's export activity (such as export credit insurance or intermediate liability insurance) by as much as 30 percent.²⁵ The internet also offers MSMEs a potentially more efficient access to finance. For example, China's e-commerce giant Alibaba now offers cross-border trade financing and credit reporting services for MSMEs in partnership with global banks and credit rating firms.²⁶
- **Online administration reduces costs for MSMEs.** Electronic systems such as National Single Windows (NSWs) speed up the communication on export related paperwork between companies and government authorities.²⁷ In Southeast Asia, such electronic administration systems are estimated to save MSMEs costs of up to 8 percent per consignment over communication via e-mail and paper.²⁸
- **Digital advertising provides a cost-effective marketing channel to MSMEs.** Digital platforms can be invaluable to small businesses that lack the scale and resources to run large marketing campaigns on television, radio or in newspapers, or tap into distribution channels controlled by heavy-weight industry players. Online search advertising can be a particularly strong marketing channel for MSMEs, promising businesses up to 8 times their advertising expenditure in revenues.²⁹ Singapore's Swee Lee Music Company (Box 1) is one company that has benefited from digital marketing.
- **Digital logistics tools help MSMEs save distribution costs.** New web-based technology gives small and medium-sized exporters greater control over their supply chain, including via the 'Internet of Things' (IoT), a network of sensors embedded in everyday objects enabling them to connect with each another and the internet. Radio frequency identification (RFID) tags on containers and boxes, for example, can track products on their journey from a factory to the

²¹ Chen et al. (2014), "A day without a search engine: an experimental study of online and offline search", *Experimental Economics*

²² Microsoft Philanthropies (2017), *A Cloud for Social Good: Empowering communities in Asia and Oceania*.

²³ Asia Cloud Computing Association (2015), *SMEs in Asia Pacific: The market for cloud computing*.

²⁴ McKinsey Global Institute (June 2015), *Connecting talent with opportunity in the digital age*.

²⁵ Based on AlphaBeta analysis of insurance price comparison websites in Asia.

²⁶ "China's Alibaba partners with banks, agencies to introduce B2B financing and rating services", *South China Morning Post*, 13 January 2016. Available at: <http://www.scmp.com/tech/e-commerce/article/1900654/chinas-alibaba-partners-banks-agencies-introduce-b2b-financing-and>

²⁷ National single windows refer to digital portals, that enables ex- and importers to file regulatory documents at a one-stop shop. Documents include customs declarations, applications for import/export permits, and other supporting documents such as certificates of origin and invoices.

²⁸ Michael Keong (2016), *ASEAN Single Window: Potential impact survey*.

²⁹ Varian (2009); Jansen & Spink (2009); and Deloitte study of "Google's Economic Impact in the UK" (2015).

warehouse shelf, allowing companies to improve their logistics, avoid stock-outs, excess inventory, and losses. This is particularly important in many traditional “mom-and-pop” retailer distribution networks in Asia. McKinsey Global Institute estimates that more efficient logistics could lower supply chain costs by up to 5 percent.³⁰

- **The proliferation of smartphones opens up new business areas for MSMEs.** The digital economy and the internet are also creating new business opportunities. MSMEs are increasingly seeking “weightless exports” of digital goods,

such as electronic games, and supply chains where tasks can be unbundled from products. Both allow MSMEs to overcome challenges associated with their small scale and an inability to coordinate all required tasks themselves. For example, Taamkru, a Thailand-based mobile app developing company, is among a number of firms that have found a niche trying to bring quality education to remote areas.³¹ Several e-commerce ventures have launched across Asia, such as Indonesia’s Kaskus and China’s Taobao.com, offering MSMEs new sales platforms.

BOX 1

Swee Lee Music Company - How digital advertising boosted export sales for a musical instruments retailer

An example of an MSME that has benefitted from digital economy is Swee Lee Music Company.³² The firm, established in 1946, is currently Asia’s leading online retailer and distributor of musical instruments. Swee Lee Music Company used digital advertising tools to increase its presence overseas. Instead of setting up physical stores in new markets, Swee Lee gained traction and new sales via its online store—and the help of services such as AdWords and YouTube. The former turned out to be particularly effective for Swee Lee. “Via AdWords, online sales have grown to be about 15 per cent of our local revenue. Online traffic has increased 300 per cent coming from Malaysia and Indonesia,” said Beverly Tang, Swee Lee’s marketing executive.³³



³⁰ McKinsey Global Institute (May 2013), *Disruptive technologies: Advances that will transform life, business, and the global economy*.

³¹ Terence Lee, “Taamkru plans to fix Thailand’s ‘disgracefully bad’ education system, raises seed money,” *Tech in Asia*, July 30, 2014.

³² Swee Lee Music Company - <https://www.sweelee.com.sg/>

³³ Go Global, SG SMEs Success Story, Swee Lee - <https://www.youtube.com/watch?v=3nsxmSiot8A>



It should be noted that digital technologies have not only helped traditional MSMEs lower the barrier to export through cost reductions exclusively. Rather, these technologies have spurred innovation in business models and allowed many MSMEs and entire industries to become “digital first” (for examples see Exhibit 6). A prominent example of such an industry that has arisen from this innovation is the mobile app economy, which generated US\$23 billion in the APAC market in

2015,³⁴ while providing up to 2.25 million jobs through the creation of a new job, the app developer.³⁵

As another example, digital technologies have allowed numerous businesses (often individuals) to become online content creators. This new industry is estimated to generate advertising revenues, through digital “banners” and videos, to the tune of US\$22.5 billion in Asia in 2017.³⁶

EXHIBIT 6

Digital services have spurred product innovation allowing MSMEs to explore new business models

Selected business models	Description	Key facts in APAC
App developer and publisher 	<ul style="list-style-type: none"> Business focussing on the development and distribution of software applications (apps) Developers and publishers earn revenue through three key channels: i) in app advertising ii) paid app downloads (through appstores) iii) in app purchases 	<ul style="list-style-type: none"> The APAC market in 2015 alone had 58.5 billion app downloads on Android, generating roughly US\$22.9 billion in revenue for app developers The APAC market is rapidly growing with 382 million new smartphone internet users from India, China and Indonesia alone between 2014 - 2016 There were an estimated 2.25 million app developers working in APAC in 2016
Online content creator 	<ul style="list-style-type: none"> Businesses producing multimedia content (i.e. print, video, audio) that is distributed online Content is shared through blogs, dedicated websites or social media (e.g. YouTube, Facebook) Content creators earn revenues through: i) advertising (e.g. advertising displayed alongside content, product endorsements) and ii) paid content (e.g. subscription services) 	<ul style="list-style-type: none"> Distributing content digitally means content providers are exporters by default, supplying a worldwide audience. For example, YouTube provides access to 1 billion viewers worldwide. Digital “banner” and video advertising revenue is estimated to hit US\$14.1 billion and US\$8.4 billion respectively in Asia for 2017

Sources: “The Google Play Opportunity”, App Annie (2016), The Next Horizon of Emerging App Markets, Adobe, Evans Data Corporation, YouTube, Statista

³⁴ App Annie (2016), *App Annie Mobile App Forecast: The Path to US\$100 Billion*, App Annie Insights.

³⁵ AlphaBeta (2017), *Digital Nation: Policy levers for investment and growth*, Available at: <http://www.alphabeta.com/digital-nation-policy-levers-investment-growth/>

³⁶ Statista (2017), *Digital Advertising*, Available at: <https://www.statista.com/outlook/216/101/digital-advertising/asia#>

The digital economy could transform the time and cost for MSMEs engaged in exporting

The combined benefits of using digital technology are substantial for Asia Pacific's micro, small and medium-sized exporters. An analysis of existing data and evidence from case studies suggests that digital tools could lower export costs of an average MSME by potentially as much as 82 percent (Exhibit 7). Time savings can amount to as much as 29 percent (Exhibit 8).³⁷

Different to most existing studies, this analysis takes a theoretical bottom-up approach to the potential cost and time savings for MSMEs from going digital. The analysis looks at the potential savings in terms of both cost and time that are realised from leveraging digital tools in comparison to how export related tasks would have been traditionally conducted (i.e., prior to the digital economy). The analysis is conducted for each of the six key components of the export value chain -

market research; marketing; insurance & finance; compliance; distribution; and operational support - in isolation and cost savings are then aggregated. Further, the analysis does not include labour costs saved, but rather labour time saved.

The potential savings a MSME can realise from digital are affected by a number of factors, including i) the type of industry (e.g. manufacturing, services) and ii) the size of the firm (e.g. revenue, number of employees, annual number of shipments, etc). The analysis therefore computes the savings for different types of MSMEs and expresses the results in ranges.

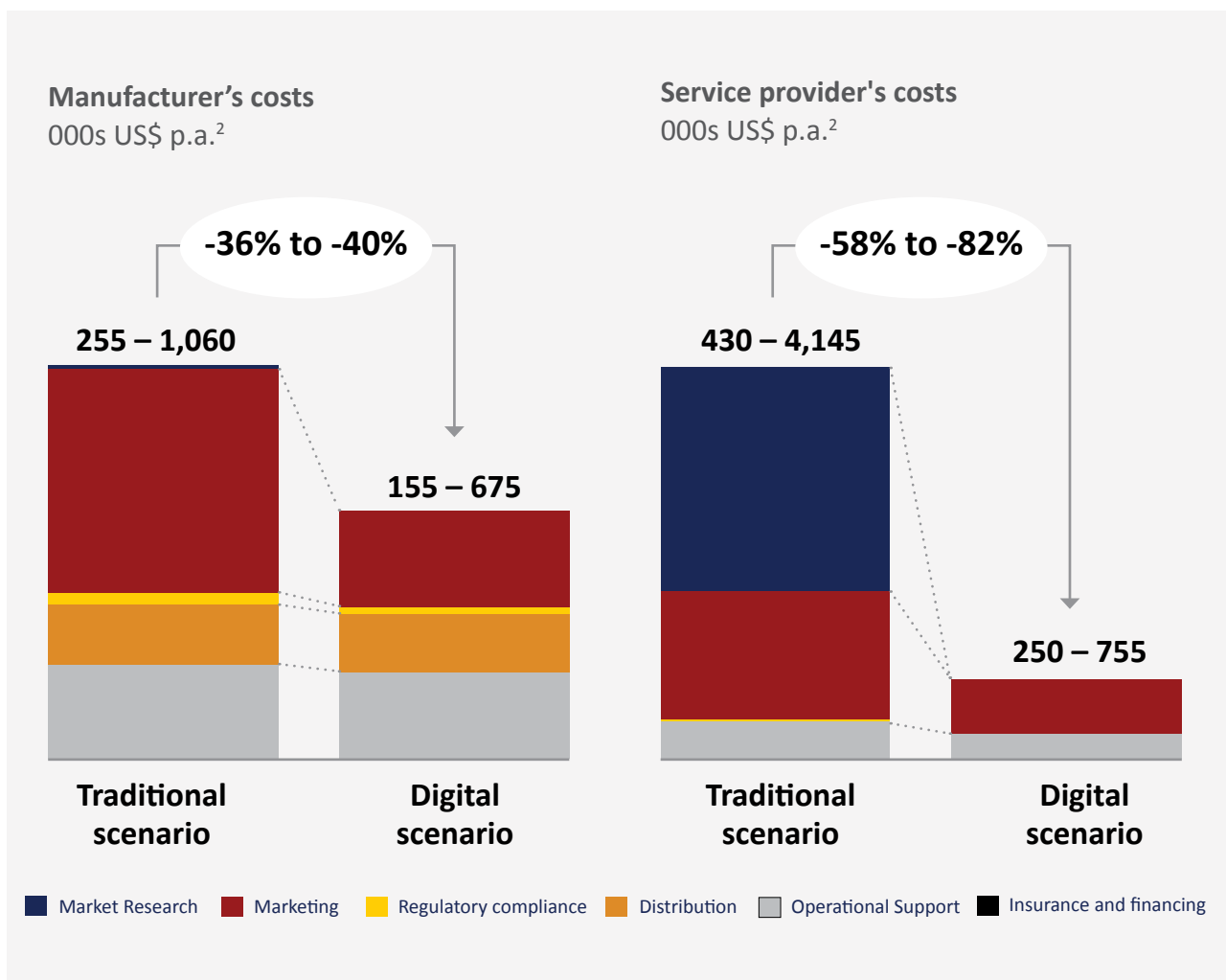
A deeper look into the cost savings of an average MSME reveals significant differences in savings between manufacturing and service firms as a result of different operating models. With a smaller capital expenditure requirement, service firms can leverage digital technologies to save up to 82 percent of export related costs, compared to a maximum of 40 percent for export related costs in manufacturing firms (Exhibit 7).

³⁷ The calculations are based on a hypothetical MSME manufacturer that annually generates a revenue of US\$1 million from exports through 25 shipments and dedicates 4 FTE employees to the generation of export sales and export specific tasks. See Appendix for further details.

EXHIBIT 7

MSMEs leveraging digital can potentially reduce costs of exports by up to 40% for manufacturers and 82% for service providers

MSMEs' potential export related cost savings from digital¹



¹ Traditional scenario refers to a business which relies primarily on paper documents, phone calls, and non-digital approaches to business, while digital scenario refers to a business which leverages on internet based solutions such as online databases, cloud based services, online search marketing, IoT warehousing and other similar solutions to streamline its operations.

Under costs we include only items that are directly related to the generation of export sales and export specific tasks. Hence, we do not include production costs or general business overheads (e.g. rent, utilities, back office functions). Further, in order to keep the analysis country agnostic we exclude wage costs due to their large variance across APAC countries. The calculations are based on a range of hypothetical MSMEs that annually generate a revenue of US\$1 – US\$4 million from exports and dedicate 1 - 300 FTE employees to the generation of export sales and export specific tasks. A manufacturer does so by 1-100 shipments, a service provider by 1 – 450 projects. We further assume 250, 8 hour working days a year. These numbers were chosen in accordance with the definitions of MSMEs across APAC countries.

² Rounded to the nearest US\$ 5,000.

Source: AlphaBeta analysis

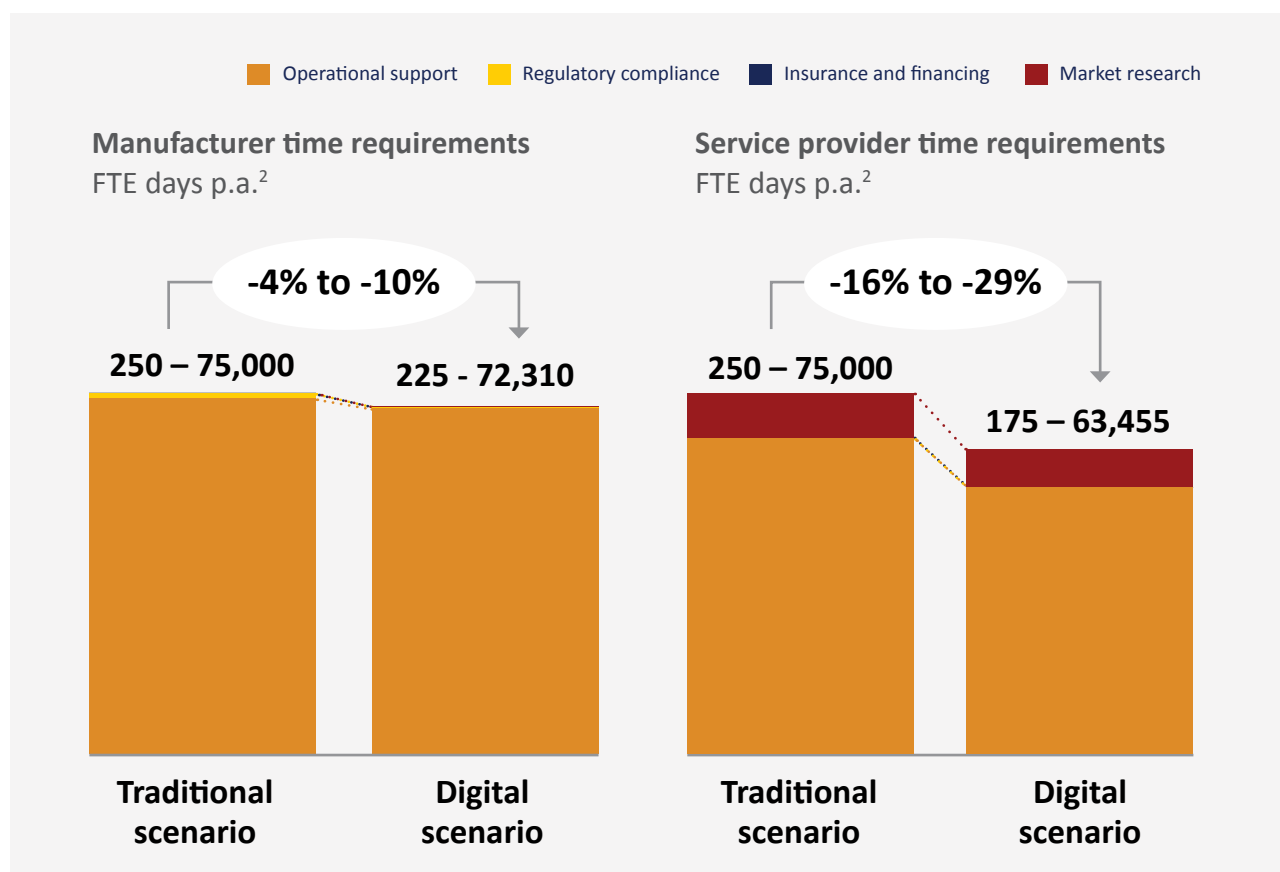
Aside from cost, digital technologies also help to drive down the amount of time which MSMEs need to spend on export related tasks, this is especially valuable as MSMEs often do not have large amounts of manpower. Analysis shows that MSMEs can save up to 29 percent of the time required for export related tasks using digital technologies. Further analysis shows manufacturing firms are

able to save up to 10 percent of the required time needed, while service firms could potentially save up to 29 percent of time required for export related tasks (Exhibit 8). The greater time saving of service related MSMEs is linked to reduced requirements to travel to foreign markets by leveraging digital tools such as search engines and online video calls.

EXHIBIT 8

MSMEs leveraging digital can potentially save time required for export related tasks, 10% for manufacturers and 29% for services

MSMEs' potential export related time savings from digital¹



¹ Traditional scenario refers to a business which relies primarily on paper documents, phone calls, and non-digital approaches to business, while digital scenario refers to a business which leverages on internet based solutions such as online databases, cloud based services, online search marketing, IoT warehousing and other similar solutions to streamline its operations. Under time requirements we include the annual labour time requirements that are directly devoted to the generation of export sales and export specific tasks. We separate out the time requirements for market research, regulatory compliance and insurance and finance and group the residual time under operational support. The calculations are based on a range of hypothetical MSMEs that annually generate a revenue of US\$1 – US\$4 million from exports and dedicate 1 - 300 FTE employees to the generation of export sales and export specific tasks. A manufacturer does so by 1-100 shipments, a service provider by 1 – 450 projects. We further assume 250, 8 hour working days a year. These numbers were chosen in accordance with the definitions of MSMEs across APAC countries.

² Rounded to nearest 5 FTE days.

Source: AlphaBeta analysis



Previous research efforts into the impact of digital differ in their approaches and focus and the size of the findings here exceeds some of the estimates in the existing literature. For example, a 2014 report by the United States International Trade Commission estimated the cost the trade cost reduction of US imports and exports from the internet at 26 percent.³⁸ However, the analysis was conducted for companies of all sizes (and not specific to MSMEs where the benefits are likely to be larger) and did not include the same breadth of digital levers considered in this analysis.

Evidence for the impact of digital technologies on exporting MSMEs in Asia is scarce. Research in India indicated that greater uptake of digital technologies by MSMEs could help increase their contribution to India's GDP by 10 percentage points, reaching up

to 46 – 48 percent of GDP by 2020. Digital MSMEs' profits could grow up to twice as fast as offline counterparts and while not explicitly looking at exports the data showed that the share of digital MSMEs serving customers beyond their city is 22 percentage points higher than that of non-digital firms.³⁹

The time and cost savings from “going digital” differ somewhat across the components of the export value chain for manufacturing and service sector firms. As an example, for service sector firms, operational support savings from leveraging digital tools are potentially larger than for manufacturing firms as they can use online collaboration tools to minimise required travel to foreign markets (Exhibit 9).

³⁸ USITC (2014), *Digital Trade in the U.S. and Global Economies*, Part 2.

³⁹ KPMG & Google (2017), *Impact of internet and digitization on SMBs in India*, Available at: <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2017/01/Impact-of-internet-and-digitisation.pdf>

EXHIBIT 9

Cost and time savings for MSMEs vary significantly across the components of the exporting value chain

Savings by value chain component from the traditional scenario by leveraging digital tools¹

Value chain component	Manufacturing MSME cost reductions		Service MSMEs cost reductions	
	Cost	Time requirements	Cost	Time requirements
Market research	100%	25%	100%	17-20%
Marketing	57%	NA	57%	NA
Insurance and financing	NA	88%	NA	88%
Regulatory compliance	40%	54%	100%	NA
Distribution	3%	NA	NA	NA
Operational support	6-17%	3%	24-58%	15-28%

¹ The traditional scenario refers to a business which relies primarily on paper documents, phone calls, and non-digital approaches to business, while the digital scenario refers to a business which leverages on internet based solutions such as online databases, cloud based services, online search marketing, IoT warehousing and other similar solutions to streamline its operations.

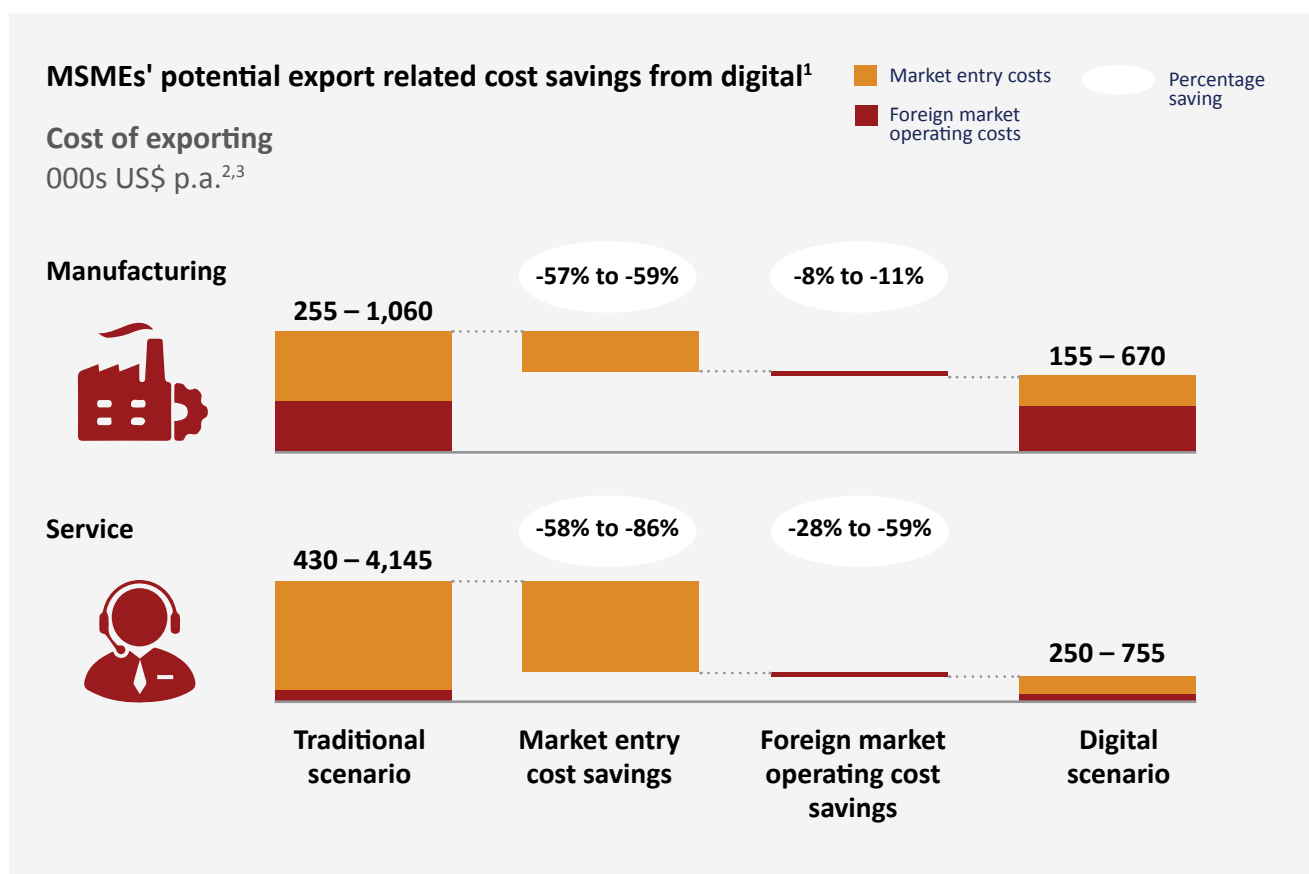
Source: AlphaBeta framework

Digital solutions are particularly helpful to MSMEs for reducing the costs of identifying foreign business opportunities and marketing to businesses abroad. When examining the key components of the export value chain - market research; marketing; insurance & finance; compliance; distribution; and operational support – we are able to group the first three value chain areas under tasks associated with market entry, while the latter three value chain areas fall under tasks associated with operating in

foreign markets. Using this classification, Exhibit 10 shows that the costs associated with market entry can potentially be reduced by up to 59 percent for manufacturers and up to 86 percent for service providers, by leveraging digital technologies. This is important as it demonstrates that digital solutions can help lower the cost of market entry, helping to “de-risk” the exporting opportunity for MSMEs and thereby hopefully encourage more MSMEs to engage in exporting.

EXHIBIT 10

MSMEs could save up to 86% in market entry costs and 59% in foreign market operations costs



¹ Traditional scenario refers to a business which relies primarily on paper documents, phone calls, and non-digital approaches to business, while digital scenario refers to a business which leverages on internet based solutions such as online databases, cloud based services, online search marketing, IoT warehousing and other similar solutions to streamline its operations.

² The calculations are based on a range of hypothetical MSMEs that annually generate a revenue of US\$1 – US\$4 million from exports and dedicate 1 - 300 FTE employees to the generation of export sales and export specific tasks. A manufacturer does so by 1-100 shipments, a service provider by 1 – 450 projects. We further assume 250, 8 hour working days a year. These numbers were chosen in accordance with the definitions of MSMEs across APAC countries.

³ Rounded to the nearest US\$ 5,000.

Source: AlphaBeta analysis



It should be noted that these estimates are not exhaustive. Several additional factors can improve the export competitiveness of MSMEs, but are difficult to quantify (for example, benefits from unbundling products and tasks to participate in a broader range of supply chain areas). The estimates presented in this report should therefore be seen as indicative of the type of potential benefit that small and medium-sized exporters can extract from digital technology use.⁴⁰

The savings are significant for MSMEs across the Asia Pacific






While our analysis is modelled on an archetypical MSME engaged in either manufacturing or the service sector, it is useful to understand how large these savings could be for certain countries in the Asia Pacific, based on the sector composition of their MSMEs, the amount of MSMEs engaged in exporting in each country, and the size of MSMEs. Through publicly available information on MSME activities in China, India, Indonesia, South Korea, and Thailand, the analysis on time and cost savings related to the digital economy was applied in order to size the total potential benefit for each of these countries. The analysis found that over US\$339 billion could be saved by export-focused MSMEs in these countries by utilising digital technologies (Exhibit 11). This figure could be even greater if such technologies were applied to the domestic business operations as well.

Recent advances in digital technology have the potential to significantly enhance the export competitiveness of MSMEs, helping to level the playing field between small and large firms.

⁴⁰ These estimates are also consistent with prior research in this area. For example, the USITC estimates that the internet reduces trade costs by 26 percent on average. United States International Trade Commission, USITC (2014), *Digital Trade in the US and Global Economies Part 2*, 4485, Investigation No. 332-540. Available at: <https://www.usitc.gov/publications/332/pub4485.pdf>

EXHIBIT 11

Over US\$339 billion can be saved by export focused MSMEs by utilising digital technologies in five APAC countries

Economy	Percentage share of total MSMEs by industry		MSMEs export driven digital cost savings	
	Manufacturing	Service	Percentage of cost ¹	US\$ millions (rounded to nearest 5 million)
China 	19%	57%	40%	211,035 ²
India 	59%	29%	46%	59,270
Indonesia 	11%	17%	51	3,425
South Korea 	11%	61%	56%	39,360
Thailand 	35%	40%	55%	25,685
TOTAL				339,050

¹ Figures are a weighted average accounting for firm type (manufacturing vs service), size of firm, and country of operation.

² Cost savings only account for industrial enterprises.

Source: AlphaBeta analysis

MSMES IN ASIA PACIFIC RELY ON SOUND DIGITAL REGULATION

Governments across the Asia Pacific recognise the importance of MSMEs and have launched a range of support programmes to boost their growth and export potential. Yet a recent push to tighten the rules of doing business in the digital economy may undermine existing efforts to strengthen MSMEs. This chapter reviews four regulatory concerns and, using case studies, shows the potential impact of regulatory action on the export competitiveness of MSMEs.

Regulators commonly have four concerns related to digital trade

MSMEs surveyed by the US International Trade Commission revealed some common regulatory concerns in relation to cross-border trade: market access concerns (including local presence regulations and custom duty thresholds), uncertain legal liability rules, intellectual property rights (IPR) infringement, and cross-border data restrictions.⁴¹ While many issues that MSMEs face are broader, including access to capital, lack of information on foreign markets, etc, these four are examined in this report as (a) they are of core relevance to the ongoing trade discussions taking place in Asia; (b) these issues have largely been seen as only impacting large firms and the impact of these issues on MSMEs has not received sufficient attention to date; and (c) while these issues may not be ‘front of mind’ for MSMEs today, they will become increasingly relevant as the digital economy evolves. Take Artificial Intelligence (AI) for example, where a number of MSMEs across Asia are currently engaged in developing innovative business models. AI often relies on the use of existing datasets to ‘train’ the technology, which could potentially raise several copyright issues.

There are large risks attached to launching new regulation for digital economies across the Asia Pacific. Good regulation should facilitate economic growth, protect consumers, and cultivate innovative business models. It should be noted that companies such as Amazon, Facebook, and Google were also once MSMEs, and they were able to benefit from a flexible policy environment.

Poor regulation, however, can introduce new costs for MSMEs. At worst, regulatory action might derail the substantial benefits MSMEs can expect from digital cross-border trade (see Chapter 1 for details and Exhibit 12 for potential impact areas). It is therefore of utmost importance that regulations are devised and implemented according to best practices in order not to undermine the benefits of digital technologies. In the following sections we describe the concerns of MSMEs in each of these four areas.

⁴¹ United States International Trade Commission, USITC (2014), *Digital Trade in the US and Global Economies Part 2*, 4485, Investigation No. 332-540. Available at: <https://www.usitc.gov/publications/332/pub4485.pdf>

EXHIBIT 12

The transition to digital is surrounded by regulatory challenges that will impact seamless exporting for MSMEs

		Potential to impede benefits ¹	Potential to introduce additional costs ²	Both			
		Impact of regulatory challenges on components of the export value chain					
		Market research	Operational support	Marketing	Insurance & financing	Regulatory compliance	Distribution
Market access red tape (eg., national registration)							
Intermediary liability							
Copyright issues							
Cross-border data restrictions							

¹ Regulation has the potential to reduce the size of the savings from going digital outlined in the first chapter.

² Regulation has the potential to lead to new types of cost that fall outside of the cost components outlined in the first chapter. e.g. if intermediaries were made liable for the content distributed on their platforms this could lead to censorship / curation costs, legal costs or the need for additional insurance.

Source: AlphaBeta analysis



Red tape impacting market access

Past AlphaBeta research has found that firms can significantly contribute to local digital economies, even without a large physical presence in the country.⁴² However, domestic registration can threaten these scale economies by requiring digital firms, even small ones, to register locally, if providing goods and services into the country. Domestic registration requirements can take away some of the advantages that the digital economy brings to small businesses, by allowing them to

seamlessly trade across borders. It can also add significantly to costs and result in a large amount of lost time for businesses as they seek to comply with these requirements (see Box 2 for one example). In Cambodia, starting a business can take up to 99 days, and in the Philippines, there are 16 separate procedures to complete in order to start a business.⁴³

In addition, when countries' customs rules set low thresholds for import values—the transaction amounts for which a firm must file customs paperwork and pay duties—customs requirements can act as a significant impediment to trade. In APEC, thresholds vary from zero to more than US\$ 1,000.⁴⁴

⁴² AlphaBeta (2017), *Digital Nation: Policy levers for investment and growth*.

⁴³ World Bank (2017), *Doing Business 2017: East Asia and the Pacific* (EAP). Available at: http://www.doingbusiness.org/reports/~/_media/WBG/DoingBusiness/Documents/Profiles/Regional/DB2017/EAP.pdf

⁴⁴ Jeffrey Rae (2012), *De Minimis Threshold in APEC - Extended Report Prepared on Behalf of the EAA, CAPEC and CLADEC, ITS Global*. Available at: http://mddb.apec.org/documents/2012/CTI/CTI2/12_cti2_015.pdf

BOX 2

IdentityWings – How physical presence requirements would make it harder for an IT firm in the medical sector to run its India operations remotely and thereby save costs



IdentityWings is an Australian based online medical records software company, specialising in developing websites and IT systems for hospitals, clinics, doctors, and healthcare manufacturers. The company expanded into India ten years ago, with a strong focus on provision of software to help manage online medical records.⁴⁵

According to founder Chaksu Madan, advances in internet enabled technologies have been transformative to the way the firm operates in the Indian market.⁴⁶ “When operations started in India, I spent approximately 30 percent of my time in face-

to-face meetings, and averaged only one new client a month. Our potential target market was limited as our marketing was constrained to a few traditional channels. We also had a physical office in India, employing around 5 FTEs.” “Today, with the rise of applications such as Skype, Google Drive, chat apps (such as Line, WeChat, WhatsApp), and AdWords, we now average 10 new clients a day, located around the world.” IdentityWings no longer maintains a physical office space in India, but instead has 5 FTEs who work remotely, helping to reduce operating costs, while employing an additional 100 plus freelancer team of Indian software developers when needed for certain projects.

“A physical presence requirement would negate these benefits and we would have difficulty competing on price, but the alternative would be shutting down the business since 95 percent of our clients reside in India” says Chaksu Madan.

⁴⁵ Information available at: <http://identitywings.com/>

⁴⁶ Based on AlphaBeta interview with Chaksu Madan, founder of identity wings.



Intermediary liability

According to the OECD, internet intermediaries can be defined as: "Organisations that bring together or facilitate transactions between third parties on the internet. They give access to, host, transmit and index content, products and services originated by third parties on the internet or provide internet-based services to third parties."⁴⁷ Online intermediaries provide a range of benefits to MSMEs, including the ability to reach a large number of customers, lower costs of selling, and helping to build trust with customers.⁴⁸ The potential GDP contribution of internet intermediaries in India was estimated at 1.3 percent in 2015.⁴⁹ While large internet intermediaries like Google, Twitter, and Facebook are well-known, there are also a range of MSMEs who also act as similar platforms. For example, Mouthshut.com, is an India-based review platform that incorporates user-generated reviews on a range of goods and services (see Box 3).

Whether and when communications platforms are liable for their users' online activities is one of the key factors that affects innovation and free speech. Governments around the world increasingly demand that intermediaries block their users' undesirable online content in order to suppress dissent, hate speech, privacy violations and the like. An additional form of regulation is to make internet intermediaries legally responsible for what they users do and say on their platforms. Many jurisdictions have laws setting out the conditions under which intermediaries can be made exempt from liability, known to as 'safe harbours'. However, conditions vary across countries, as do the punishments for infringement.

Similar to copyright issues, if designed poorly, MSMEs could be the firms most impacted by such a change given their lack of capacity to effectively monitor and remove offending content in a timely manner. Surveys of US firms reveal that unclear or unduly strict legal liability for internet intermediaries is of particular concern in Asian markets such as China and India.⁵⁰

A study by Oxera examined the impact on internet intermediary start-ups of changes in Internet Intermediate Liability (ILL) regimes across countries.⁵¹ Oxera found that a regime that defines clear and cost-efficient requirements for intermediaries is likely to produce the best results for society. Such a regime could increase start-up success rates for intermediaries by up to 24 percent (in the case of Thailand), and raise their expected profit by up to 5 percent (in the case of India).

⁴⁷ OECD (April 2010), *The economic and social roles of internet intermediaries*. Available at: <https://www.oecd.org/internet/ieconomy/44949023.pdf>

⁴⁸ Copenhagen Economics (October 2015), *Online intermediaries: Impact on the EU Economy*.

⁴⁹ Copenhagen Economics (March 2014), *Closing the Gap – Indian Online Intermediaries and a liability system not yet fit for purpose*. Available at: https://www.copenhageneconomics.com/dyn/resources/Publication/publicationPDF/1/251/0/Closing%20the%20Gap%20-%20Copenhagen%20Economics_March%202014.pdf

⁵⁰ United States International Trade Commission, USITC (2014), *Digital Trade in the US and Global Economies Part 2*, 4485, Investigation No. 332-540. Available at: <https://www.usitc.gov/publications/332/pub4485.pdf>

⁵¹ Oxera (February 2015), *The economic impact of safe harbours on internet intermediary start-ups*. Available at: <https://www.oxera.com/Latest-Thinking/Publications/Reports/2015/How-are-internet-start-ups-affected-by-liability-f.aspx>

BOX 3

Mouthshut.com – How a customer review website in India struggles with current intermediary liability laws



Mouthshut.com is a user-generated content and consumer review web site, based in India.⁵² The website hosts reviews of restaurants, movies, consumer goods, travel destinations, banks, and many other areas.

Mouthshut.com has faced a series of challenges related to user-generated content appearing on its website – particularly user reviews that are questioned by the

concerned businesses. To address these legal challenges, Mouthshut.com has employed a full-time team of five people (in addition to executive time). In addition, Mouthshut.com has expressed concerns that removal of user content could reduce the perceived objectivity of the website.⁵³

The costs of legal action are also potentially considerable in India. Lawsuits are reported to take more than 10 or even up to 20 years to resolve.⁵⁴ Oxera estimates that reforms to the intermediate liability regime in India could increase the start-up success rate by as much as 22 percent, and increase profitability of successful start-ups by 5 percent.⁵⁵



How can MouthShut help you?

⁵² Mouthshut.com - <http://www.mouthshut.com/>

⁵³ Copenhagen Economics (2014), *Closing the Gap – Indian Online Intermediaries and a liability system not yet fit for purpose*. Available at: http://www.global-networkinitiative.org/sites/default/files/Closing%20the%20Gap%20-%20Copenhagen%20Economics_March%202014_0.pdf

⁵⁴ Oxera (February 2015), *The economic impact of safe harbours on internet intermediary start-ups*. Available at: <https://www.oxera.com/Latest-Thinking/Publications/Reports/2015/How-are-internet-start-ups-affected-by-liability-f.aspx>

⁵⁵ Oxera (February 2015), *The economic impact of safe harbours on internet intermediary start-ups*. Available at: <https://www.oxera.com/Latest-Thinking/Publications/Reports/2015/How-are-internet-start-ups-affected-by-liability-f.aspx>



Copyright issues

Various countries in Asia are currently in the process of updating their copyright laws for the digital era.⁵⁶ Copyright is a form of intellectual property law that protects original works of authorship including literary, dramatic, musical, and artistic works, such as poetry, novels, movies, songs, computer software, and architecture.⁵⁷ Copyright protection across the world has become more difficult in recent years due to technological advances that make content sharing extremely easy and inexpensive, and due to a drastic increase in the utilisation of internet related platforms such as social media. The challenge for regulators is how to balance the need to protect an author's intellectual property from unauthorised use without hampering innovation. In the United States, the Digital Millennium Copyright Act (DMCA) provides a mechanism for copyright holders to protect their

online content, whereby a service provider must act "expeditiously" to remove copyrighted work after it has been notified.⁵⁸

While larger firms have the resources to effectively monitor and remedy any copyright concerns, smaller businesses (including individual content creators) generally do not. The 'fair use doctrine', a core component of the U.S. copyright system, aims to balance the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand.⁵⁹

A survey of US exporters revealed that particular intellectual property right issues include the copying or misuse of a firm's branding assets (e.g., the unauthorised use of photos and videos depicting the branded product; rerouting of legitimate content and viewers to false sites; and online infringement of all types of copyrighted content.⁶⁰

⁵⁶ Asian Trade Centre (August 2016), *Digital Trade and the TPP: How Asia Pacific Benefits*.

⁵⁷ Definition Available at: <https://www.copyright.gov/help/faq/faq-protect.html>

⁵⁸ Bradley S. Shear (2010), *Copyright Protection in the Digital Age*. Available at: <http://www.acc.com/legalresources/quickcounsel/icpituscaeu.cfm>

⁵⁹ The US Department of Commerce Internet Policy Task Force (July 2013), *Copyright policy, creativity, and innovation in the digital economy*. Available at: <https://www.uspto.gov/sites/default/files/news/publications/copyrightgreenpaper.pdf>

⁶⁰ United States International Trade Commission, USITC (2014), *Digital Trade in the US and Global Economies Part 2*, 4485, Investigation No. 332-540. Available at: <https://www.usitc.gov/publications/332/pub4485.pdf>

BOX 4

Counter656 – How IP protection balanced with fair usage policies helps online content creators to flourish

Counter656 is a Taiwanese stop motion animation studio launched in 2008 that has a rapidly expanding overseas following.⁶¹ Its YouTube channel has more than 703,000 subscribers and over 260 million views for its videos. In 2016, the channel garnered 54 million views.⁶² The channel focuses on popular licensed series like Transformers and Dragonball Z and uses branded toys and action figurines as “cast” in its animations. Through the action-packed videos and interesting storylines, Counter656 has garnered fans all over the world with most of its viewers coming from the US, Mexico, and Brazil.⁶³ In fact, according to founder John Huang, only 10 percent of Counter656’s viewership come from Taiwan.

Being able to rely on the fair usage of licensed and heavily IP protected characters is essential to Counter656’s artistic expression and business. “In order to increase the popularity of our videos, it is essential we use toys of popular characters. If we could not use famous licensed characters, we could lose up to 30% percent of our viewership” says John Huang.

He adds that fair usage policies are also important when it comes to their own content. “There are certain audiences we

may not be able reach through our YouTube channel, viewers in China for example or people who have not heard of us yet. We are famous enough that these audiences will eventually come to our channel to look for more content, hence the lost revenue is negligible compared to the publicity” adds John Huang. However, Mr Huang also stresses that a balance must be found with IP protection, and it is “important to protect the intellectual property of small content creators.”



⁶¹ Counter656 - <https://www.youtube.com/user/counter656>

⁶² Views and subscriber numbers (latest figures available) from SocialBlade.com.

⁶³ Based on AlphaBeta interview with John Huang, founder of Counter656.



Cross-border data restrictions

Trade was once dominated by tangible goods, but growth in global goods trade has flattened. Today, global data flows are surging, and digital flows now exert a larger impact on GDP growth than trade in goods.⁶⁴ The amount of cross-border bandwidth that is used has grown 45 times larger since 2005.⁶⁵ It is projected to increase by an additional nine times over the next five years as flows of information, searches, communication, video, transactions, and intra-company traffic continue to surge.

Cross-border data flows are pervasive as the internet has enabled businesses to seamlessly connect across the world. These flows are essential to many recent business trends, including big data analytics, machine-to-machine, communications, digital collaboration, supply chain automation, cloud computing, and various value-adding products and services.

Various draft legislations across countries in Asia are currently being developed to regulate the movement of cross-border data.⁶⁶ There are a number of arguments for restrictions of data movement, many of which subject to much debate. Some reasons include protecting the privacy of data, internet Protocol (IP) protection, ensuring cybersecurity or regulating access to harmful content such as child pornography. In other cases, restrictions on cross-border data flows are being imposed to provide domestic companies with a competitive advantage, to attempt to create local employment (through establishment of local data centres)⁶⁷, or to bring international firms under the

purview of local regulatory oversight. These include regulations that could restrict the efficiency of cross-border flows, such as:⁶⁸

- **Local storage requirements.** Regulations governing requirements for data to be stored on local servers.
- **Traffic routing.** Affects data flows by requiring communications providers to route internet traffic in a specific way.
- **Geolocation data.** Regulations governing the collection, disclosure, transfer or storage of geolocation data.
- **Export controls.** Affects data flows by requiring corporate intellectual property and other technology to reside in-country.

Laws that limit the ability for data to move globally and to remain local raise the costs of moving data globally, which affect the opportunities for internet-enabled trade. These issues are particularly problematic in Asia. Half of all economies that have data localisation policies are part of APEC.⁶⁹ While a major company may have sufficient revenues and scale to justify building data centres in multiple locations, smaller firms can be shut out of the domestic and international internet economy completely if they cannot access affordable computing and data services (See Box 5 for an example of the potential impact of these regulations on MSMEs). Past research has found that local companies would be required to pay 30-60 percent more for their computing needs from strictly enforced data localisation policies.⁷⁰ The macroeconomic costs of forced data localisation range between 0.7 percent and 1.1 percent of GDP.⁷¹

⁶⁴ McKinsey Global Institute (February 2016), *Digital globalization: The new era of global flows*.

⁶⁵ Cross-border bandwidth refers to the flow of digital data, measured in bytes, between countries.

⁶⁶ Deborah Elms and Minh Hue Nguyen (June 2017), "TPP Rules of Digital Trade in Asia", ADBI Working Paper. Available at: <https://www.adb.org/sites/default/files/publication/321841/adbi-wp746.pdf>

⁶⁷ Academic research demonstrates that the potential direct employment benefits of data localisation are minimal, but the harm to the broader economic could be significant. For further details, see Michael Mudd (2016), *Benefits of Open Cross Border Data Flows*, The Open Computing Alliance. Available at: http://mddb.apec.org/Documents/2015/SMEWG/SMEWG41/15_smeWG41_039.pdf

⁶⁸ For a more exhaustive list of cross-border data restrictions, see Business Roundtable (2016), *Putting data to work: Maximizing the Value of Information in an Interconnected World*.

⁶⁹ Michael Mudd (2016), *Benefits of Open Cross Border Data Flows*, The Open Computing Alliance. Available at: http://mddb.apec.org/Documents/2015/SMEWG/SMEWG41/15_smeWG41_039.pdf

⁷⁰ Leviathan Security Group (June, 2014), *Quantifying the costs of forced localisation*. Available at: <https://static1.squarespace.com/static/556340ece4b0869396f21099/t/559dad76e4b0899d97726a8b/1436396918881/Quantifying+the+Cost+of+Forced+Localization.pdf>

⁷¹ Matthias Bauer et al. (2014), *The costs of data localisation: Friendly fire on economic recovery*, European Centre for International Political Economy (ECIPE). Available at: http://www.ecipe.org/app/uploads/2014/12/OCC32014_1.pdf

BOX 5

Pegaxis – How uncertainty surrounding regulation affects digital MSMEs foreign expansion plans

Singapore based MSME start-up Pegaxis is a one-stop e-procurement property management services platform for real estate.⁷² The platform connects property managers with vendors for an exhaustive list of services such as gardening and landscaping or lift repair and maintenance services. Building operators can list tenders on the platform and vendors can bid for contracts.

Pegaxis already services more than 500 residential and commercial properties or more than 25 percent of Singapore's private residential market and is now setting its sights on international expansion into Indonesia, Hong Kong and Viet Nam.⁷³

Expanding into new markets, regulation of digital economy is a major concern for digital MSMEs such as Pegaxis. "Having certain and stable regulations in place is key. For example, recent regulatory proposals in Indonesia are a big risk to us as it would mean we would need to physically incorporate in Indonesia to start our operations. This undermines the geographical freedom doing business in the digital economy provides. Aside from additional costs, physical incorporation is a lengthy process, that could significantly delay our market entry" says Ted Poh Chen Wei, Chief Executive Officer and founder of Pegaxis.⁷⁴ A further concern for Pegaxis

are data localisation regulations. "Like most MSMEs, we do not have expensive physical servers but rely on existing cloud solutions. To comply with regulation, we will have to find a local data centre provider. Unfortunately, the data centre market in Indonesia is nascent, meaning providers are likely going to be more expensive, of uncertain quality and less reliable. Also, switching data centre provider is not a simple copy paste as the architecture might be very different. That means we will face cost searching for providers, cost of setting up a new infrastructure and exposure to uncertainty" Poh says.

Intermediary liability regulation is also important to Pegaxis' operations. As a platform, Pegaxis allows users to review vendors and leave comments. "We rely on the fact that users can freely express their opinions of the services listed vendors provide" says Poh. If Pegaxis were liable for comments and reviews users write, this could significantly raise the firm's compliance costs according to Poh. "The sheer amount of content would make this task not feasible for a firm of our size and resources."



Regulating the digital economy in the Asia Pacific is a balancing act. Any move to address key concerns stemming from the digital cross-border activity of multinational companies will inevitably affect the region's many MSMEs and, in the worst case, undermine the substantial benefits small firms stand to gain from digital trade.

⁷² Pegaxis - <https://www.pegaxis.com/>

⁷³ The Independent (August 2017), "Shaking up outdated procurement practices in Singapore's property management." Available at: <http://www.theindependent.sg/shaking-up-outdated-procurement-practices-in-singapores-property-management/>

⁷⁴ Based on AlphaBeta interview with Ted Poh Chen Wei, chief executive officer and founder of Pegaxis.

KEY IMPLICATIONS AND TAKEAWAYS

Based on the findings in the previous two chapters, this chapter identifies some key regulatory priorities to ensure that MSMEs are able to capture the benefits of the digital economy when trading across borders.

Despite the enormous promise of internet-based technologies to help small businesses leap into global export markets, most MSMEs have yet to engage with the digital economy. Comprehensive figures on the technology adoption rate of MSMEs across Asia are not readily available. However, there is ample anecdotal evidence that the situation is challenging for MSMEs: many only have limited internet access, struggle to understand the benefits of going online and lack even basic digital skills. For example, a mere 27 percent of MSMEs in Malaysia are using ICT and no more than 5 percent of MSMEs in Indonesia and Viet Nam understand cloud services.⁷⁵

A comprehensive policy approach is needed to address these issues and improve the technology uptake among MSMEs without losing sight of the regulatory concerns related to digital trade outlined in the previous chapter.

EXHIBIT 13

Three policy imperatives

**Minimising
border frictions**



**Building flexibility into
copyright and intermediate
liability regulations**



**Ensuring open
information flows**



⁷⁵ Asia Cloud Computing Association.

Policymakers could focus on three priority areas to balance the needs of small and large companies when regulating digital trade:

- **Minimising border frictions.** Establishing local establishments in exporting markets can quickly become cost prohibitive for MSMEs and effectively serves as an additional tax on their operations. Likewise, low thresholds for when customs thresholds are applied to goods can also impose significant administrative costs. Countries should look to raise de minimis thresholds, plus remove customs duties on digital products.⁷⁶ A de minimis threshold of US\$200 could generate over US\$30 billion in economic benefits for all 21 APEC members.⁷⁷
- **Building flexibility into copyright and intermediate liability regulations.** Addressing copyright concerns and removing undesirable content (such as hate speech) are clearly important priorities. The challenge is to balance those objectives with a system that is sufficiently flexible that it does not impose undue burden on MSMEs. Ensuring clarity on issues such as the 'fair use doctrine', which aims to balance the interests of authors and inventors in the control and exploitation of their writings and discoveries on the one hand, and society's competing interest in the free flow of ideas, information, and commerce on the other hand, will be important as part of this. Similarly, well-balanced Internet Intermediate Liability (ILL) regulations can help to ensure the effective removal of illegal content without constraining the free flow of information. It is imperative that regulations define clear and cost-efficient requirements for intermediaries to comply with the legislation, and provide clarity on any potential liability.
- **Ensuring open information flows.** There is a considerable opportunity to improve transparency on data management requirements across Asia and to identify areas to enhance performance. Data privacy laws and regulations have been introduced in many Asian countries in recent years, but many areas of uncertainty remain. Clarity is required around the type of data that can be shared, the boundaries of sharing, and the type of consumer consent that is required. A useful first step would be for countries to adopt the APEC Privacy Framework and join the APEC Cross Border Data Privacy Rules System as well as adopt ISO Standards such as ISO27018 that specifies controls to protect personal data. While there are valid public policy concerns for restricting movement of some forms of data, establishing guidelines for this could be useful. For example, the draft legislation of the Trans Pacific Partnership prohibits cross-border data movement restrictions in cases where the measures do not satisfy the following requirements: (i) the measure has to achieve legitimate public policy objectives, (ii) the measure should apply to all companies equally without any discrimination, and (iii) the measure should not impose more-than-necessary restrictions for the objective achievement.⁷⁸

⁷⁶ This does not preclude governments from applying local consumption or sales taxes, but these cannot discriminate against international designers or developers.

⁷⁷ Stephen Holloway and Jeffrey Rae (March 2012), "De minimis thresholds in APEC", World Customs Journal, Vol.6 Number 1.

⁷⁸ Deborah Elms and Minh Hue Nguyen (June 2017), "TPP Rules of Digital Trade in Asia", ADBI Working Paper. Available at: <https://www.adb.org/sites/default/files/publication/321841/adbi-wp746.pdf>



Statistical Analysis

GLOBAL MAP



GLOBAL MAP



Statistics



Application Form

Application Form

1. PERSONAL INFORMATION

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

2. EDUCATION

High School: _____

College: _____

University: _____

3. EMPLOYMENT

Current Employer: _____

Previous Employers: _____

4. REFERENCES

Reference 1: _____

Reference 2: _____

Reference 3: _____

APPENDIX A – Detailed Methodology

This report describes the total potential cost and time savings of utilising digital technology for export related tasks in micro, small, and medium enterprises (MSMEs) engaged in export business. That is, under export related tasks we include only items that are directly related to the generation of export sales across six key components of the export value chain: market research; marketing; insurance & finance; compliance; distribution; and operational support. For further distinction, we group the former three under tasks associated with market entry.

To provide a basis of comparison across the six components, we calculate the cost and time required to perform tasks in a traditional scenario and calculate the same for a digital scenario. The “traditional scenario” refers to a business which relies primarily on paper documents, phone calls, and non-digital approaches to business; while the “digital scenario” refers to a business which leverages internet-based solutions such as online databases, cloud based services, online search marketing, Internet of Things (IoT), and other similar solutions to streamline its operations.

We calculate cost and time savings across these six components for hypothetical MSMEs in the manufacturing industry as well as the service industry, to showcase how digital technologies can benefit different businesses and not to be too industry dependent. For the purposes of this report, one may assume a manufacturing firm to be a shoe company, while a service firm to be a consulting company.

In order for our analysis not to be distorted by geographical variations in wages, we do not include labour costs in our calculations but focus on non-labour costs of exports; both fixed and variable.

Methodology and Data: General

To provide an accurate range of savings, the calculations are based on a hypothetical MSME, in the manufacturing industry and the service industry. Each pair of hypothetical MSMEs in one of the industries will comprise of the smallest micro sized firm and the largest medium sized firm, with the sizes based on the average classification amongst Asian governments.

For the hypothetical micro-sized firms, the firms possess the following characteristics:

- Annual revenue of US\$1 million
- 1 employee
- 1 export shipment for manufacturers / 1 project abroad for services
- 250 working days a year
- 8 working hours a day

For the hypothetical medium-sized firms, the firms possess the following characteristics:

- Annual revenue of US\$4 million
- 300 employees
- 100 export shipments for manufacturers / 450 projects abroad for services
- 250 working days a year
- 8 working hours a day

The cost savings (where applicable) were qualified in US dollars and the time savings in full time equivalent (FTE) days

Methodology and Data: Market Research

The potential savings for this component compares a traditional scenario where firms send one single staff member to a target market to conduct on-the-ground research, while in the digital scenario this individual can leverage video conferencing technology, online survey tools, desktop research, online databases, and other similar tools to perform its market research.

Traditional Scenario

For this calculation, we assume the traditional scenario involves staff traveling to the target market where staff will conduct focus groups or in-depth interviews.

Estimating the cost of air travel

The cost of air travel was based on an aggregate of search results from Expedia. The criteria which was used when searching for flights was as follows:

- All trips were round trip economy tickets
- Flight dates were from 6th Nov 2017 to 17th Nov 2017
- Due to the potential for unusual flight routing on the search engine, a stopover limit of 1 was used
- Flight combinations that utilize multiple airlines are ignored as they were cost inefficient
- Flights were between the major cities of Sydney, Shanghai, Tokyo, Delhi, Jakarta, and Hong Kong

For each combination of flight origins/destinations, we took the average between the cheapest and most expensive flights that fit our criteria. These results are averaged once more, to provide the “rule of thumb” average used in our calculations.

Estimating the cost of hotel accommodation

The cost of hotel accommodation was based on an aggregate search results from Expedia.⁷⁹ The criteria which were used when searching for hotel accommodation was as follows:

- 4-star hotels
- Stay dates were from 6th Nov 2017 to 17th Nov 2017
- Promotional prices were not considered
- Only hotels in the major cities of Sydney, Shanghai, Tokyo, Delhi, Jakarta, and Hong Kong

For each city, we took the average between the cheapest and most expensive hotel rooms for the duration of the stay. These results were averaged once more, to provide the “rule of thumb” average used in our calculations.

Estimating the time required for a market research trip

Time requirements for a manufacturing firm’s market research trip are comprised of three components: travel time, networking, and surveying. While the time requirements for a service provider are comprised of travel time, networking, and surveying as well as desk research.

For the number of trips, it was assumed that a manufacturer requires one trip per year for market research purposes, whereas a service provider requires a trip per project, hence the number of trips equals the number of projects.

Travel time was limited to the duration of air travel plus the time taken to travel to and from the airport. Through desk research, the average total travel time (accounting for the round trip) to be approximately a day.

A typical market research trip tended to last two to three weeks on average, with roughly half that time spent on networking.

⁷⁹ Accessed on 12th September 201. Accessible at www.expedia.com

Desk research (service provider only)

Time requirements for a service provider also accounted for a range of five to ten days of desk research per project.

Table 1: Inputs and sources for estimating market research costs in the traditional scenario

Area	Metric	Source
Financial cost of air travel	Price of average plane ticket on round trip economy tickets	• Expedia
Financial cost of hotel accommodation	Price of average 4-star hotel room per night	• Expedia
Time required for travel	Average flight duration	• Expedia
	Average airport travel trip	• Google Maps
Time required for market research	Duration of market research through focus groups	• Dimensional Research • itracks
	Time required for market research trip	• AlphaBeta estimate based on interviews with SMEs
	Time spent on networking	• AlphaBeta estimate based on interviews with SMEs
Time required for desk research (service provider only)	Days spent on desk research	• AlphaBeta estimate based on interviews with SMEs

Digital Scenario

For this calculation, we assume the digital scenario involves switching market research processes to utilising web driven surveys, internet video conferencing for online focus groups, and online databases to acquire the necessary market information.

Estimating the cost of air travel and accommodation

As digital technology has removed the necessity to manually conduct fieldwork on-site, these costs have been reduced to zero.

Estimating the time required for conducting market research through digital technologies

As digital technology has removed the necessity to manually conduct fieldwork on-site, these costs have been reduced to zero.

Travel for networking and market surveying

Based on desk research, it was found that running internet-based market research can lead to a

time saving of 33-44 percent when compared to traditional methods.^{80 81} However, the other component of time related to business networking does not involve a time saving as it is still assumed there is a need to talk to local suppliers and buyers.

Desk research (service provider only)

To calculate the time saving of digital to desk research, we applied time saving estimates from an experiment that measured the time taken to conduct a search online versus a search at the library.⁸² This study found that a search that takes 21 minutes in the library takes 7 minutes online.

We further leverage data from proprietary AlphaBeta consumer surveys conducted in South Korea, Taiwan and Japan in 2016. These surveys identified the average number of searches that people conducted for work purposes per day. Combining the time saved per search with the number of searches we then multiplied the daily saving with the number of days spent on desk research.

Table 2: Inputs and sources for estimating market research costs in the digital scenario

Area	Metric	Source
Time required for market research	Duration of market research web survey	• Dimensional Research
	Duration of online focus group	• itracks
	Time spent on networking	• AlphaBeta estimate based on interviews with SMEs
Time saving from online search (service provider only)	Per search time saving from online search	• Chen et al. (2015)
	Average number of searches per day for work	• 2016 AlphaBeta consumer surveys in South Korea, Taiwan and Japan

⁸⁰ "How Much Time Does A Market Research Project Take?", *Dimensional Research*. Accessible at <http://dimensionalresearch.com/blog/2009/06/22/how-much-time-does-a-market-research-project-take/>

⁸¹ "Cost, Leadtime and Sustainability of Face-to-Face and Internet Focus Groups", *itracks*. Accessible at <https://www.itracks.com/portfolio-items/cost-leadtime-and-sustainability-of-face-to-face-and-internet-focus-groups-ittracks-chat/>

⁸² Chen, Y., YoungJoo Jeon, G., & Kim, Y.-M. (2014), A day without a search engine: an experimental study of online and offline searches, *Experimental Economics*, Vol 17, Issue 4, pp 512-536.

Methodology and Data: Marketing

Estimating the marketing budget

To understand how much money could be saved because of utilising digital solutions instead of traditional ones in marketing, we first needed to estimate the amount of money a firm typically budgets for marketing. Based on desk research, we identified that the typical marketing budget for a manufacturer is approximately 10-20 percent of annual revenue and 10-50 percent for a service provider respectively.^{83 84}

Estimating the budgetary savings when switching to the digital scenario

For this component, we assume the traditional scenario involves an advertising campaign through television ads, while the digital scenario utilises online search engine optimisation in order to achieve the same level of marketing return on investment (ROI).

To calculate the different impacts which each method generates, we rely on public research which indicates television, radio and press ROI are 2.8, 2.6 and 2.4 respectively.⁸⁵ To obtain an average ROI for traditional media we utilised survey data of MSMEs indicating their most effective channels of marketing.⁸⁶ We used the ratio of percentage of responses scored for television, radio and print to the percentage of responses scored by total non-digital channels as weights for each channel respectively. On the other hand, Google Search ROI has been estimated at 3.4 - 8.0.⁸⁷

Using the average marketing budgetary figure, we calculate the ROI on using traditional advertising campaign. This is then contrasted against the digital solution ROI to discover the necessary budget spend to achieve the same effect. The difference between the two figures is the budgetary saving for marketing.

Table 3: Inputs and sources for estimating marketing costs in both scenarios

Area	Metric	Source
Marketing budgets	Budget as a percentage of annual revenue	<ul style="list-style-type: none"> • Vital • Chron
Advertising ROI	Traditional advertising ROI	• Thinkbox
	Relative usage of different traditional ROI	• BrightLocal
	Search engine ROI	• Hal Varian

⁸³ "What Is the Average Marketing and Advertising Budget for a Company?", *Chron*. Accessible at <http://smallbusiness.chron.com/average-marketing-advertising-budget-company-30993.html>

⁸⁴ "What Percent of Revenue Do Publicly Traded Companies Spend on Marketing and Sales?", *Vital*. Accessible at <https://vtl.design.com/digital-marketing/content-marketing-strategy/percent-of-revenue-spent-on-marketing-sales/>

⁸⁵ "A Year in TV 2014", *Thinkbox*. Retrieved at <http://www.asiconferences.com/wp-content/uploads/2015/08/A-Year-in-TV-2014-Thinkbox.pdf>

⁸⁶ BrightLocal (2014), 37 percent of SMBs Plan to Spend More on Internet Marketing in 2015, Available at: <https://www.brightlocal.com/2015/01/07/37-smb-plan-spend-internet-marketing-2015/>

⁸⁷ Varian, H. (2011), Economic Value of Google. Google, Inc. and Varian, H. R. (2009), Online Ad Auctions. *The American Economic Review*, Vol. 99, No. 2, pp. 430-434.

Methodology and Data: Finance

Finance is one of the main barriers to MSMEs as access to working capital is often hard to come by when a firm is new or too small. Hence, this component will focus on changes brought about by the rise of non-traditional financial institutions as a result of digital technology, especially in relation to working capital loans.

Traditional Scenario

In a traditional scenario, business owners would have to walk in to a bank branch to apply for a business loan. Unfortunately, there is no publicly available information on how long a MSME working

capital loan took in the pre-digital era, and many banks have already digitised their MSME loan platforms to feature mobile or online banking. As such, this component focuses on the loan application approval time of banks (which can be 9 days).

Estimating the loan approval times of traditional financial institutions

Many banks do not disclose their loan approval durations on their websites, as such, we relied on PayPal's research on loan approval times at banks, together with DBS Bank (the largest bank in Southeast Asia) as they openly list their approval times.^{88 89}

Table 4: Inputs and sources for estimating loan approval times of traditional financial institutions

Area	Metric	Source
Working capital loan approval time	Days	<ul style="list-style-type: none">• PayPal• DBS Bank

Digital scenario

This component focuses on the rise of non-traditional financial institutions such as PayPal or Alibaba, and the benefits in loan approval times they bring as a result of digital technology.

Estimating the loan approval times of non-traditional financial institutions

For this estimate, we rely on self-disclosed approval and funding times by non-traditional financial institutions on their websites (which can be less than 1 day).

Table 5: Inputs and sources for estimating loan approval times of non-traditional financial institutions

Area	Metric	Source
Working capital loan approval time	Days	<ul style="list-style-type: none">• PayPal• MyBank• Capital Float

⁸⁸ PayPal Working Capital. Accessible at <https://www.paypal.com/webapps/workingcapital/>

⁸⁹ DBS SME Working Capital Loan. Accessible at <https://www.dbs.com.sg/sme/financing/working-capital/working-capital-loan>

Methodology and Data: Compliance

For this component, we calculate costs and time savings differently for manufacturers and service providers.

For manufacturers, we rely on the World Bank Doing Business database on trading across borders to provide us with the current costs and time required for both border and documentary compliance in relation to exporting.⁹⁰

We assume that traditional processes for export compliance involve filing out numerous forms, manually arranged inspections (where necessary), and significant manpower requirements from border officials to process goods shipments. Whereas in the digital scenario, many of these processes and manpower costs have been reduced by moving to a national single window system such as the US ACE system.

For service providers we simply look at the costs for single entry visas for all the trips required for market research and operational support (see respective sections in this appendix for details).

Estimating the time and cost savings of moving to a national single window system

Manufacturers

From the World Bank database, we extract regional export compliance information on South Asia, East Asia & Pacific, and OECD high income countries. As the majority of countries in the Asia selection comprise of lesser developed and comparatively lower income economies, we assume that these countries rely on a primarily paper-based system for export compliance. We also assume that the economies within the OECD high income selection all utilise a national single window system.

Employing a “distance to frontier” concept, we reduce the export compliance costs for the Asian economies by the percentage difference between the Asian economies and the OECD high income economies to arrive at the attainable time and cost savings.

Service providers

We sum up the number of trips assumed to be required for market research and operational support (see respective sections in this appendix for details). We then multiply them by the cost of a single-entry visa. As benchmark for the cost of we use a visa on arrival for Indonesia of US\$35 per visa.⁹¹

Table 6: Inputs and sources for estimating export compliance costs and savings between the two scenarios

Area	Metric	Source
Border compliance	Financial cost (US\$)	• World Bank <i>Doing Business</i> database
	Time cost (hours)	• World Bank <i>Doing Business</i> database
Documentary compliance	Financial cost (US\$)	• World Bank <i>Doing Business</i> database
	Time cost (hours)	• World Bank <i>Doing Business</i> database
Visa compliance	Visa of arrival (US\$)	• Indonesia Travel

⁹⁰ Trading Across Borders, World Bank Group. Accessible at <http://www.doingbusiness.org/data/exploretopics/trading-across-borders>

⁹¹ Indonesia Travel (2017), VISA AND IMMIGRATION, Available at: <http://www.indonesia.travel/en/travel-guidance/visa-and-immigration>

Methodology and Data: Distribution

In this component, we assume that an export driven MSME can use digital technologies such as the Internet of Things (IoT) to reduce traditional supply chain costs.

Estimating the cost savings of IoT improvements in the supply chain

For the purposes of this report, we leverage the research carried out by McKinsey Global Institute in 2013 which detailed the average costs for a business in relation to both a traditional supply chain and a IoT driven supply chain.⁹²

Table 7: Inputs and sources for estimating supply chain costs and savings between the two scenarios

Area	Metric	Source
Supply chain costs	Percentage of annual revenue	• McKinsey Global Institute
IoT improvements of supply chain costs	Percentage reduction in cost	• McKinsey Global Institute

⁹² "Disruptive technologies: Advances that will transform life, business, and the global economy", McKinsey Global Institute. Retrievable at <http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/disruptive-technologies>

Methodology and Data: Operational Support

For this component, we focus on three buckets of cost and time savings i) the savings from internet enabled information technology (IT) (both hardware and software) and telephony which an export business can leverage and which apply to both manufacturers and service providers, ii) the savings from foregone additional travel, that can be substituted for remote work, a service provider usually faces (e.g. for client interaction or additional data collection) in a foreign market over the duration of a project and iii) the time savings from being able to use online search for research purposes.

Traditional scenario

In a traditional scenario, this includes server hardware, annual server maintenance, export associated IT expenses, and international telephony costs.

For service providers there is an additional cost of repeated travel to and from the foreign market over the duration of a project.

Estimating the cost of traditional IT and telephony costs

For the purposes of this report, we leverage the research carried out by Forrester Consulting in 2015 which detailed the average IT and telephony costs for a typical SME.⁹³

Table 8: Inputs and sources for estimating IT costs in the traditional scenario

Area	Metric	Source
Average annual cost of IT server	US\$	• Forrester Consulting
Annual maintenance cost of IT server	US\$	• Forrester Consulting
Average SME annual spend on IT expenses	Percentage of annual revenue	• AMR Research ⁹⁴
Annual conferencing services (Telephony)	US\$	• Forrester Consulting
	Number of employees	• AlphaBeta model input

⁹³ "The Total Economic Impact of Google G Suite", Forrester Consulting

⁹⁴ Understanding Technology Costs", Network Alliance. Accessible at <http://www.networkalliance.com/your-advantage/understanding-technology-costs>

Estimating the cost of travel associated with operations (service provider only)

We assume that a service provider will have to make monthly up to bi-monthly trips to the foreign market to support the project operations. These trips require one day for both travel to and from the foreign market and have an average duration of five days. We leverage the assumptions and calculation

of travel costs outlined under the market research section to estimate these costs. (for other inputs see Table 1)

Further, we assume that for the duration of the trips the travelling staff member will have to spend half an hour to one hour a day commuting via taxi.⁹⁵ The hourly taxi rate is estimated at US\$60.

Table 9: Inputs and sources for estimating travel cost and time requirements associated with operations under traditional scenario

Area	Metric	Source
Number of trips	Number of trips	• AlphaBeta estimate based on interviews with SMEs
Time and cost required for taxi travel	Time spent in taxi per day	• AlphaBeta estimate based on research on Google Maps and shared mobility services
	Average hourly taxi rate	• AlphaBeta estimate based on research on Google Maps and shared mobility services

⁹⁵ Based on the average duration of business trips by car identified by AlphaBeta research on Google Maps in a number of APAC countries and research on shared mobility services in Indonesia. Available at: <http://www.alphabeta.com/google-economic-social-impact-new-zealand/> & <http://www.alphabeta.com/rethinking-urban-mobility-indonesia-role-shared-mobility-services/>

Digital scenario

In the digital scenario, expensive physical servers and localised business software are replaced with their cloud equivalents. Further, the business utilises cloud based office software (e.g. Office 365, GSuite) for collaboration and communication purposes. As the hypothetical MSME in this report is a typical MSME export business, we exclude the benefits of utilising cloud computing capacity as it would not be used in a firm such as our fictional but rather they would rely on the storage capabilities of cloud software.

Further, service providers no longer require lengthy trips to foreign markets as they can leverage VoIP services and conduct online desk research instead of having to collect primary data.

Estimating the cost of digital IT and telephony costs

Similar to the traditional scenario, we leverage the research carried out by Forrester Consulting in 2015 which detailed the costs a typical SME through the use of cloud software.⁹⁶ The business forgoes the cost of having to purchase an expensive physical server and saves IT and telephony cost through cloud based software solutions.

Estimating the time savings of digital IT and telephony solutions

The research performed by Forrester Consulting revealed that using cloud-based software increased the effective collaboration between colleagues, leading to considerable time savings.

Table 10: Inputs and sources for estimating IT costs in a digital scenario

Area	Metric	Source
Average annual cost of cloud software	US\$	• GSuite for Business
	Number of employees	• AlphaBeta model input
Average SME annual spend on IT expenses	Percentage of annual revenue	• AMR Research ⁹⁷
Annual IT cost savings from cloud software solutions	Percentage of annual costs	• Forrester Consulting
Annual savings for conferencing services (Telephony)	Percentage of annual costs	• Forrester Consulting
	Number of employees	• AlphaBeta model input
	Percentage saving	• Forrester Consulting

⁹⁶ "The Total Economic Impact of Google G Suite", *Forrester Consulting*

⁹⁷ Understanding Technology Costs", *Network Alliance*. Accessible at <http://www.networkalliance.com/your-advantage/understanding-technology-costs>

In addition, service providers can reduce the time taken for desk research through online search. The savings of this technology are applied to the entire MSME's workforce involved in export tasks. The assumptions, inputs and calculations are identical to those described in the market research section and Table 1.

Estimating the time savings from foregone travel associated with operations (service provider only)

Service providers no longer require lengthy trips to foreign markets as they can leverage VoIP services and conduct online desk research. This saves them the time costs associated with flights and taxi journeys as outlined above.



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