

THE DATA REVOLUTION: HOW MALAYSIA CAN CAPTURE THE DIGITAL TRADE OPPORTUNITY AT HOME AND ABROAD



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Important Notice on Contents

This research employs a broad definition of “digital trade” which covers the production, distribution, marketing, sale or delivery of goods and services – domestically and abroad – supported by cross-border data flows. As international trade increasingly spills into the digital sphere with potentially huge economic benefits for economies, developing a knowledge base around the topic of digital trade becomes ever critical. This report serves to inform:

- **Governments and policymakers** to take into account the importance of digital trade for both the external and domestic economies when formulating trade and economic policy;
- **Businesses** in harnessing the opportunities afforded by digital trade in the form of increased exposure to overseas markets and uplifting productivity at home;
- **Industry groups** in recognising the nature and magnitude of economic benefits that digital trade could bring about to different sectors, and champion these in their outreach efforts.

This report was prepared by the Hinrich Foundation, with analysis from AlphaBeta, and support from the Malaysia Australia Business Council (MABC), Institute for Democracy and Economic Affairs (IDEAS) and Google. All information in this report is derived from AlphaBeta analysis using both proprietary research and publicly available data. Where information has been obtained from third-party sources, this is clearly referenced in the footnotes.

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THE DIGITAL TRADE OPPORTUNITY FOR THE MALAYSIA



VALUE OF DIGITAL TRADE FOR THE MALAYSIA'S DOMESTIC ECONOMY



Digital trade currently enables **UP TO MYR 24 BILLION** of economic impact in Malaysia's domestic economy.



By 2030, digital trade will enable an estimated **MYR 222 BILLION** of economic impact in Malaysia's domestic economy.



Potential benefits are spread across all sectors of the Malaysian economy, but particularly relevant in **INFRASTRUCTURE, MANUFACTURING AND AGRICULTURE & FOOD.**

VALUE OF DIGITAL TRADE FOR THE MALAYSIA'S EXPORTS



28% OF MALAYSIA'S SMES have an online presence, with **15% OF THEM** using this to export to overseas markets.



If digital goods and services were a sector, it would be the **6TH LARGEST EXPORT SECTOR** for Malaysia.



By 2030, Malaysia's digital exports could **GROW BY 298%.**

FOUR IMPERATIVES FOR CAPTURING THE OPPORTUNITY

1

ENSURE OPEN DATA FLOWS



3

MINIMISE BORDER FRICTIONS



2

PROMOTE INNOVATION-ORIENTED APPROACHES TO COPYRIGHT AND INTERMEDIARY LIABILITY REGULATIONS



4

ENCOURAGE DIGITAL ADOPTION



1. This refers to economic value created by cross-border data flows for the domestic economy, and is estimated in terms of consumer surplus, productivity gains and cost savings.

2. This refers to the value of exports of digital goods and services, which consists of: revenue from overseas digital downloads of local apps, sales of products to overseas markets through cross-border e-commerce platforms, services provided using digital technologies and imported digital services that get used in the export of other products and services.



EXECUTIVE SUMMARY

Malaysia has developed an ambitious agenda to fully capture the benefits of digital technologies for individuals, businesses, and start-ups. This includes a strategic initiative by its government to spearhead the nation's digital agenda by encouraging and incentivising Malaysian companies to pursue digital transformation through grants and industry-research matching schemes.¹ Digital trade (see Box 1 for the definition) will be crucial for achieving this vision.

Though trade was once dominated by tangible goods, growth in global goods trade has flattened as global data flows have surged, with the amount of cross-border bandwidth having grown 45 times since 2005.² This 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 rise.³ Digital trade is therefore crucial not only as a way to increase and diversify Malaysia's export base but also for helping Malaysian businesses leverage digital technologies in every sector of the economy.

Yet, the importance of digital trade in helping Malaysia achieve this vision has received limited attention to date. Traditional economic metrics have failed to keep pace with the rapid growth of the digital economy and there is currently a lack of robust data measuring the importance of digital trade for exports or for the domestic economy. This report aims to address these gaps by providing new data on the importance of digital trade, both

for Malaysia's domestic economy and exports, and recommendations for how Malaysia can fully engage the benefits of digital trade as it seeks to become a leading digital nation.

Our key findings include (Exhibit 1):

- Some of the digital trade's beneficiaries are outside the digital sector. While digital trade already contributes today to Malaysia's domestic economy, there is a MYR 222 billion (US\$51.6 billion) opportunity for the country's domestic sectors – with the right settings.** Digital trade enables Malaysian firms to achieve cost efficiencies (from storage of data), enter new markets and generate richer insights with the help of data. It supports collaboration, enables the adoption of efficient business practices (such as allowing consumers real-time access to their bank accounts even when abroad), and supports management of global supply chains (e.g., tracking of export containers using Internet of Things (IoT) technology). Today, the economic value of digital trade-enabled benefits to the Malaysian economy is estimated to be worth MYR 24 billion (US\$5.6 billion) which is equivalent to 1.8 percent of its Gross Domestic Product (GDP). If digital trade is fully leveraged, it is estimated that the value to Malaysia's domestic sectors could grow by more than 9-fold to reach MYR 222 billion (US\$ 51.6 billion) by 2030.

1. Toh Kar Inn (2018), "Digital economy expected to show significant growth", The Star Online.

Available at: <https://www.thestar.com.my/business/business-news/2018/04/10/digital-economy-expected-to-show-significant-growth/#8218ULTDpth5Xeuf.99>

2. McKinsey Global Institute (2016), Digital globalisation: The new era of global flows.

Available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows>

3. McKinsey Global Institute (2016), Digital globalisation: The new era of global flows.

Available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows>



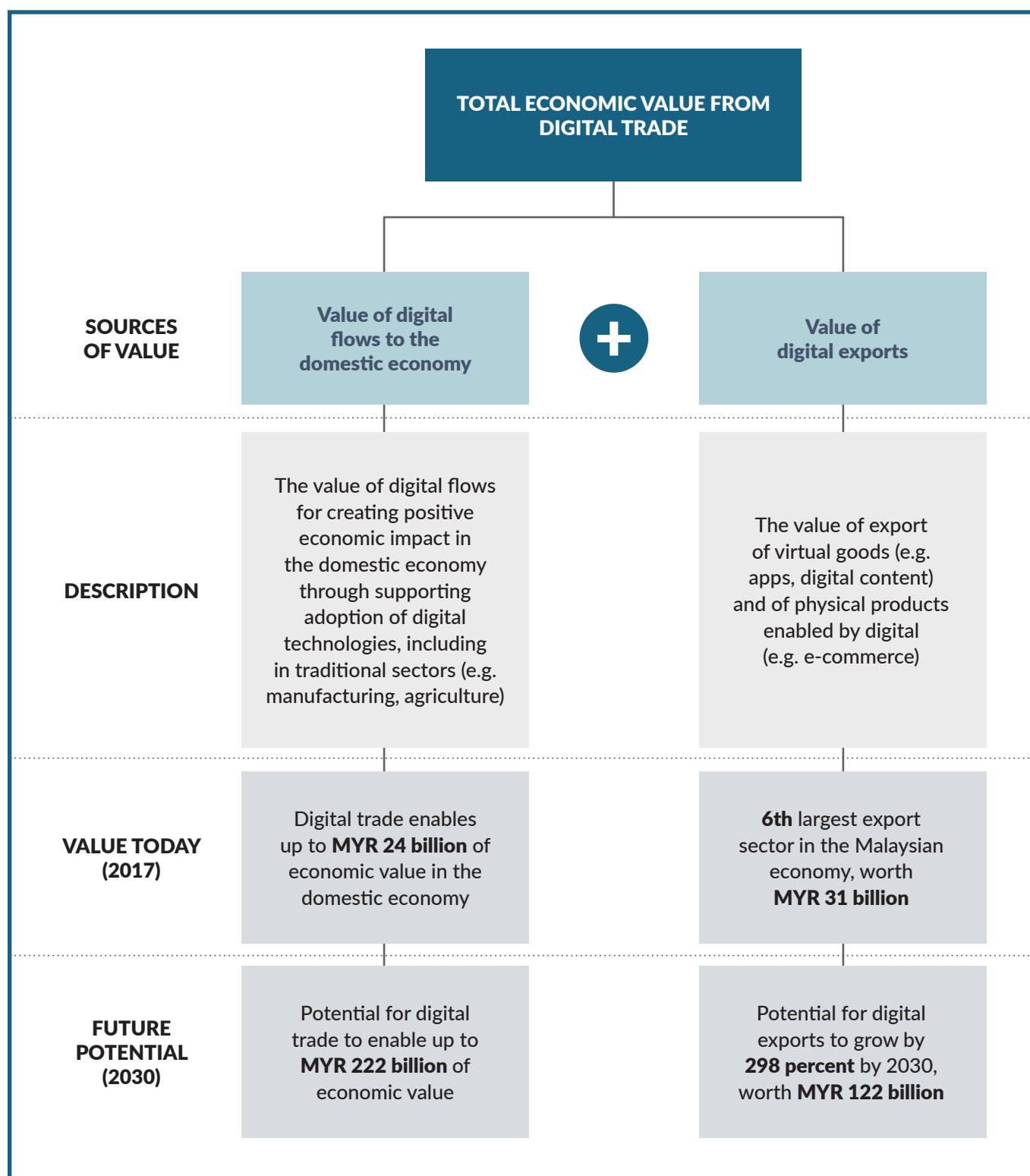
- **Digital exports account for about 3 percent of Malaysia's total export value today, with the potential to grow rapidly.** The export value of virtual goods and services enabled by the digital economy, such as e-commerce, account for MYR 31 billion (US\$7 billion) in exports today, making it Malaysia's 6th largest export sector and accounting for 3.3 percent of its total export value. In the absence of digital trade barriers, it is estimated that by 2030, Malaysia's digital exports could grow by a massive 298 percent from today's levels to reach MYR 122 billion (US\$28.5 billion).
- **To achieve the maximum returns to digital trade in the future, it is imperative to consider reducing trade barriers today.** Policymakers in Malaysia and across Asia Pacific are rushing to develop regulations for the digital economy. Malaysia's limited trading commitments and local license requirements on telecommunications

services, as well as its content and data restrictions, could impact data flows and undermine Malaysian companies and the country's ability to capture the digital opportunity. There is the opportunity for Malaysia to play a leading role, not only at home, but also abroad in pushing for facilitative digital trade rules in its various bilateral and multilateral trade negotiations.

The report is structured into three chapters. Chapter 1 examines the current and potential impact of digital trade at home and quantifies the economic value of technological gains enabled by digital trade. Chapter 2 assesses the current and future potential value of digital exports for the Malaysian economy. Chapter 3 highlights some of the perceived concerns related to digital trade and how they can be addressed, and identifies the priorities for Malaysia to capture the digital trade opportunity.

EXHIBIT 1:

MALAYSIA IS ALREADY REAPING SIGNIFICANT VALUE FROM DIGITAL TRADE, BUT THE FUTURE VALUE COULD BE SIGNIFICANTLY HIGHER



BOX 1.

DEFINING DIGITAL TRADE AND ITS COMPONENTS

At present, there is no consensus about the meaning of digital trade. Part of what makes defining digital trade difficult is the rapidly changing nature of the digital economy. Different definitions have been used by various international organisations. The World Trade Organisation (WTO) has generally employed the term “electronic commerce” rather than “digital trade”, defining it as “the production, distribution, marketing, sale or delivery of goods and services by electronic means”.⁴ The definition used by the United States International Trade Commission (USITC) is broader and includes the provision of e-commerce platforms and related services, but excludes the value of sales of physical goods ordered online, as well as physical goods that have a digital counterpart (such as books, movies, music, and software sold on CDs or DVDs).⁵ The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) recognises that while the narrowest definition of “digital trade” is “trade in digitised products” (i.e. trade in products with digital elements such as films and e-books, and in digital services such as IT and telecommunication services), a broader definition relates to “the use of digital technologies (ICTs) to conduct business”.⁶

This research employs a broad definition of “digital trade” which covers the production, distribution, marketing, sale or delivery of goods and services – domestically and abroad – supported by cross-border data flows. This consists of (a) trade in digitally-enabled products and services, and (b) cross-border data flows that create economic value in the domestic economy. Both components of digital trade are analysed in this report:⁷

- **Trade in digitally-enabled products and services.** There are three components to this: a) digitally-enabled products; b) digitally-enabled services; c) indirect digital services. For the purpose of this research, the value of exports in these components are estimated:

- 1. Digitally-enabled products.** These refer to physical and digitised products that are traded electronically via the Internet, e.g., overseas digital downloads of local apps, or sales of physical products to overseas markets through cross-border e-commerce platforms.⁸
- 2. Digitally-enabled services.** These refer to services that are provided using digital technologies. This is a large category because most industry sectors have adopted digital technologies and sell e-services to varying degrees. This includes online advertising (viewed from abroad), digital Information-Technology Business Processing Outsourcing (IT-BPO)⁹ services and the export of data processing and online software consultancy services. It also includes trade in other direct e-services such as online tourism booking and electronic banking; however, these categories are currently not able to be measured in a robust manner due to the lack of granularity in available data.
- 3. Indirect digital services (embedded in other exports).** These refer to imported

4. UNESCAP (2016), *Internal trade in a digital age*. Available at: <http://www.unescap.org/sites/default/files/aptir-2016-ch7.pdf>

5. U.S. International Trade Commission (2017), *Global Digital Trade 1: Market Opportunities and Key Foreign Trade Restrictions*. Available at: <https://www.usitc.gov/publications/332/pub4716.pdf>

6. UNESCAP (2016), *Internal trade in a digital age*. Available at: <http://www.unescap.org/sites/default/files/aptir-2016-ch7.pdf>

7. The detailed methodology is explained in an accompanying methodology document, which can be found on the Hinrich Foundation website (<http://hinrichfoundation.com/trade-research/>).

8. This research defines cross-border e-commerce platforms as Internet-enabled platforms that facilitate the selling and buying of products and services across national borders, where the seller and buyer are in different countries. This includes both B2B and B2C e-commerce. However, the analysis in this research focusses largely on B2C e-commerce due to the availability of existing data.

9. IT-BPO stands for Information Technology-Business Processing Outsourcing. This refers to the contracting of non-primary business activities and functions with digital components to a third-party provider. Examples of IT-BPO services include payroll administration, data management and customer/call centre relations.



digital services that get used in the export of other products and services. Examples include telecommunication services such as email, video conferencing, digital file sharing, and Voice Over Internet Protocol (VOIP) services that are used by a mining firm exporting overseas.

- **Cross-border data flows.** This does not reflect "international trade" in its conventional sense, i.e. transactions involving the exchange of goods and services for money, that are conducted between two parties located in different countries. Rather, cross-border data flows entail the exchange of data across national borders that create economic value, but which may not necessarily be associated with monetary transactions nor interaction between two parties (in many cases, it involves exchanges within the same company).

Cross-border data flows take place for a variety of reasons including business processing (e.g., international supply chain data used to guide inventory stocking decisions at a company's retail stores worldwide) and operational efficiency improvements (e.g., data flows enabling Internet banking functions overseas so that consumers wishing to access bank accounts from abroad can do so). This research estimates the economic impacts cross-border data flows create for the domestic economy. These are not represented in terms of GDP or market size, but rather in terms of economic value, which relates to consumer surplus, productivity gains and cost savings. Six key channels (which are discussed further in Chapter 1) have been identified by which digital trade supported by cross-border data flows is important for boosting productivity, creating new revenue streams, or lowering costs in the domestic economy.



THE VALUE AT HOME FROM DIGITAL TRADE

The value of digital trade is felt not just from exports. Digital trade is supporting up to MYR 24 billion (US\$5.6 billion) of economic benefits in Malaysia today through enabling digital technologies that increase worker productivity, lower costs, and create new sources of revenue. However, this represents just 1.8 percent of the country's GDP, which is lower than other Asia Pacific economies such as Australia, whose equivalent share of GDP is almost 3 percent. The relatively low penetration rates of these digital technologies today suggest large potential for higher impact in the future. By 2030, this could grow more than nine-fold, reaching MYR 222 billion (US\$51.6 billion).



UNDERSTANDING HOW DIGITAL TRADE IMPACTS DAY-TO-DAY OPERATIONS

This research adopts a broad definition of “digital trade” which relates to cross-border data flows, i.e. the exchange of data across national borders that create economic value (see Box 1 for detailed definition). In this chapter, the economic impacts which cross-border data flows create for Malaysia’s domestic economy have been estimated. To do this, six key channels have been identified through which digital trade is important for boosting productivity or lowering costs for Malaysian sectors (Exhibit 2).

- **Identifying and entering new markets.** New digital tools ranging from simple internet search engines to cloud computing, which is heavily reliant on cross-border data flows, can boost the export capabilities of firms, particularly micro, small and medium-sized enterprises (MSMEs). This allows these firms 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. Analysis by the Asia Pacific MSME Trade Coalition (AMTC) estimates that digital tools could lower the export costs of an average MSME by as much as 82 percent and reduce the time involved in exporting for MSMEs by up to 29 percent.¹⁰
- **Reducing cost and increasing speed of data storage, processing and access.** High data generation is more likely to lead to cross-border flows, in part due to storage requirements. For example, data processing is 5 to 7 percent of the total input costs in sectors such as financial services.¹¹ Related to this, storing data in a number of geographic locations can enhance recovery management.
- **Supporting collaboration.** Some activities may be particularly complex, and the sharing of data across borders enables better collaboration between talents. This could include talent for the analysis of data or it could relate to the use of human-guided robotics. For example, remote robotic surgery allows complex operations to be completed even when those surgeons may not be in the same country. A further example is how cross-border data flows can enable researchers around the world to share insights, design experiments and analyse the results in a collaborative and real-time manner.¹²
- **Enabling richer insights.** Used the right way, data can help companies improve products and make more informed business decisions. Analysis of the simplest datasets can lead to robust insights that inform important business decisions. For example, data on warehouse and point-of-sales inventory can allow retailers to optimise re-stocking through better forecasting of production and shipment needs, which could lead to increased sales.
- **Introducing more efficient business practices.** Digital trade can be a critical enabler of greater operational efficiency for businesses. This could include providing greater accessibility of data for clients across geographies (for example, Malaysian consumers or businesses wishing to access their bank accounts from overseas), enabling digital platforms to conduct routine operations such as the collection and exchange of data, and outsourcing operations to locations with a comparative advantage in the provision of required services.

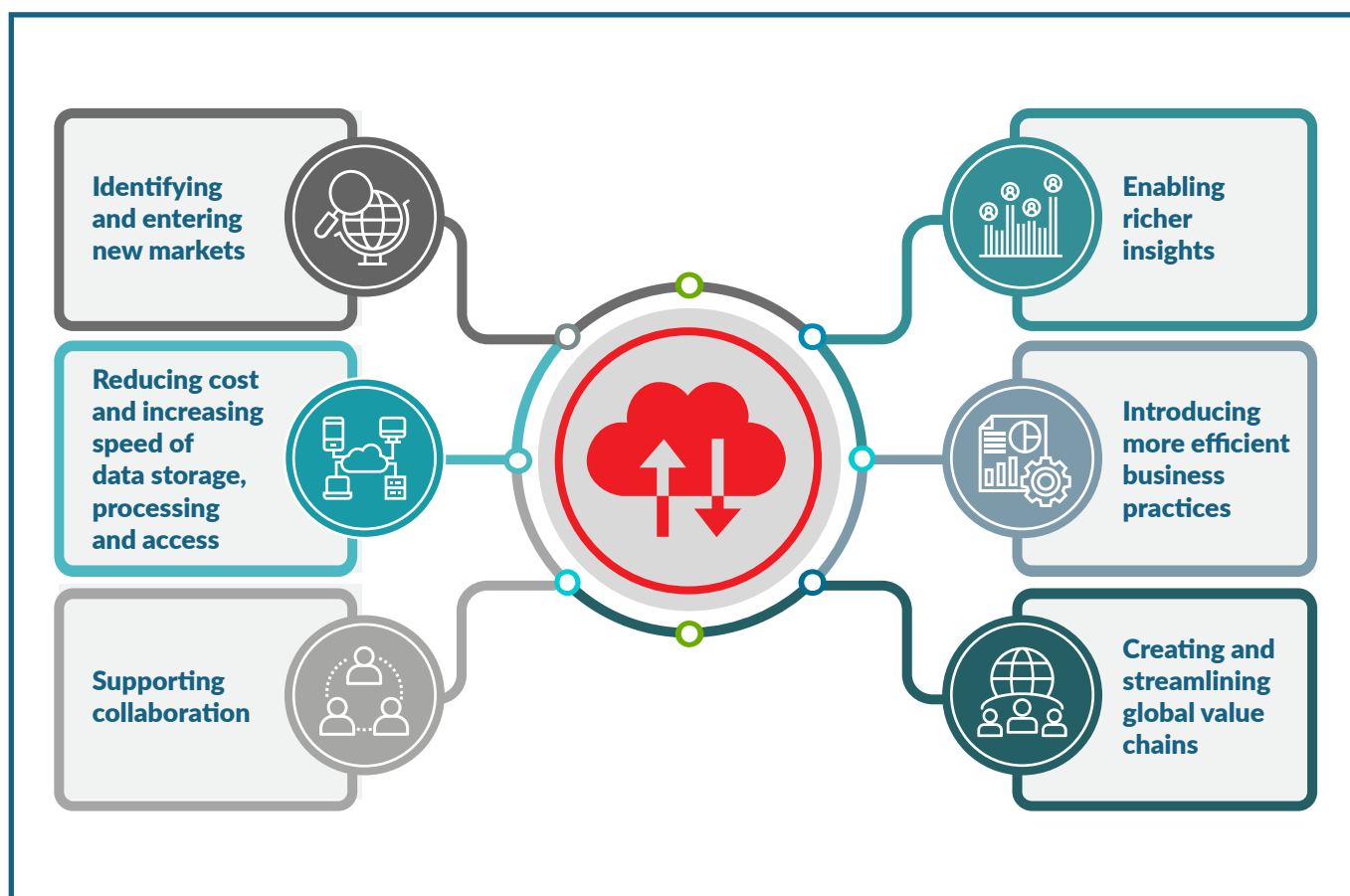
10. Asia Pacific MSME Trade Coalition (2018), *Micro-Revolution: The new stakeholders of trade in APAC*. Link?

11. Matthias Bauer et al. (2014), *The costs of data localization: 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

12. Joshua Paul Meltzer (2014), “The Internet, Cross-Border Data Flows and International Trade”, *Asia & the Pacific Policy Studies*, vol. 2, no. 1. Available at: <https://onlinelibrary.wiley.com/doi/epdf/10.1002/app5.60>

EXHIBIT 2:

DIGITAL TRADE SUPPORTS PRODUCTIVITY, GROWTH AND COST EFFICIENCY THROUGH SIX MAIN CHANNELS



- Creating and streamlining global value chains.** Digital data flows can help create efficiencies in real-time decision-making and monitoring to support global value chains. For example, businesses are able to receive customer orders in real time and adjust production processes accordingly. Likewise, Internet of Things (IoT) monitoring of the transit of goods across countries enables better control over supply chains, creating significant logistical benefits.

“ This research adopts a broad definition of 'digital trade' which relates to cross-border data flows, i.e. the exchange of data across national borders that create economic value. ”

THE ECONOMIC VALUE OF DIGITAL TRADE FOR DOMESTIC SECTORS

To understand the economic value of digital trade for Malaysia's domestic sectors, a set of relevant technological applications for different sectors of the Malaysian economy were identified based on an extensive review of the academic literature (Exhibit 3).¹³ The importance of digital trade was then assessed for each technological application based on factors related to the six channels highlighted above, including (a) the volume of data generated (requiring more efficient storage requirements); (b) the scale requirements to draw insights (which cross-border data flows can facilitate by enabling pooling of data); (c) the complexity of the activity (and hence the potential need for cross-border collaboration); and (d) whether the activity to which the technology is being applied is itself cross-border in nature.

The value of these applications was sized both for 2017 and 2030 (Exhibit 4). The economic value supported by digital trade across the major sectors in the Malaysian economy is estimated to be up to MYR 24 billion (US\$5.6 billion) in 2017. Though this number may seem substantial, it is equivalent to only 1.8 percent of Malaysia's GDP, which appears low in comparison with economies such as Australia where the equivalent value accounts for 3 percent of its GDP. Malaysia faces a critical opportunity to capture more of this value by reducing the barriers to digital trade. In addition, the low technology penetration rates today mean there is great untapped potential for Malaysia. If digital trade is fully leveraged, it is estimated that the economic value to Malaysia's domestic sectors could increase more than nine-fold to as much as MYR 222 billion by 2030 (Exhibit 4).

Some of the main opportunities and examples by sector include:¹⁴

- Infrastructure.** Technologies such as predictive maintenance of utilities and smart roads are key to driving efficiencies in this sector. To address Malaysia's traffic congestion problems, the government entity Malaysia Digital Economy Corporation (MDEC) collaborated with China-based Alibaba Group to launch the "city brain" project in Kuala Lumpur. This project leverages Artificial Intelligence (AI) and big data analytics to time traffic signals at busy intersections and provide real-time information on traffic volumes and speeds to optimise the flow of vehicles and reduce traffic congestion.¹⁵ Energy and water losses in Malaysia may also be reduced through greater adoption of predictive maintenance technologies, such as IBM's "Watson IoT", which autonomously streams data from sensors and devices to assess conditions and automatically trigger appropriate maintenance processes.¹⁶ Digital trade is crucial for many of these technologies due to the need for cross-border collaboration and data exchanges, as well as the benefits of pooled data to obtain robust insights.
- Manufacturing.** To encourage the adoption of digital technologies in this sector, the Malaysian government's "Digital Transformation Acceleration Programme" provides grants to domestic manufacturers who incorporate IoT, data analytics, robotics and AI in their operations.¹⁷ Foreign expertise in these fields is also leveraged, such as

13. The detailed methodology is explained in an accompanying methodology document, which can be found on the Hinrich Foundation website (<http://hinrichfoundation.com/trade-research/>).

14. The descriptions below only include a subset of the total technologies analysed in this research. See the methodology document for a more extensive discussion of the analysis, which can be found on the Hinrich Foundation website (<http://hinrichfoundation.com/trade-research/>).









15. Focus Malaysia (2018), "Smarter roads for smarter cities". Available at: <http://www.focusmalaysia.my/Property/smarter-roads-for-smarter-cities>

16. Phillip Tracy (2017), "The top 5 industrial IoT use cases", IBM Internet of Things blog. Available at: <https://www.ibm.com/blogs/internet-of-things/top-5-industrial-iot-use-cases/>

17. World Bank Group (2018), Malaysia Economic Monitor: June 2018. Available at: <http://documents.worldbank.org/curated/en/826251530105101845/pdf/127679-Revised-Economic-Updates-and-Modeling-Malaysia-Economic-Monitor-June-2018-Navigating-Change-full-report-revised.pdf>

EXHIBIT 3: EXAMPLES OF RELEVANT TECHNOLOGIES BY SECTOR IN MALAYSIA



 <p>Resources</p>	<ul style="list-style-type: none"> • Smart exploration • Predictive safety • Performance monitoring • Autonomous mining equipment
 <p>Financial Services</p>	<ul style="list-style-type: none"> • Big data analytics • Digitising marketing, distribution, and service • Reg tech • Financial inclusion through mobile payments
 <p>Agriculture & Food</p>	<ul style="list-style-type: none"> • Precision farming • Supply chain management • Food safety • Real-time market information
 <p>Manufacturing</p>	<ul style="list-style-type: none"> • Big data analytics • Additive manufacturing • IoT-enabled supply chain management
 <p>Health</p>	<ul style="list-style-type: none"> • Remote patient monitoring • Telehealth • Data-based public health Interventions • Detection of counterfeit drugs • Smart medical devices • AI-enabled diagnostics
 <p>Infrastructure</p>	<ul style="list-style-type: none"> • Smart grids • 5D BIM & project management technologies • Predictive maintenance • Smart buildings • Smart roads • Smart ports
 <p>Consumer & Retail</p>	<ul style="list-style-type: none"> • Digitising channels • Inventory management • Analytics-driven products and services
 <p>Education & Training</p>	<ul style="list-style-type: none"> • E-career centres and digital jobs platforms • Personalised learning • Online retraining programmes



through Johor Corporation's collaboration with China's Siasun Robot Investment to develop a robotics R&D and servicing centre.¹⁸ TT Vision Technologies, a Malaysian systems integrator, uses "cobots"¹⁹ supplied by Danish company Universal Robots to customise automation solutions for its customers.²⁰ These solutions allow for 100 percent visual inspection of critical processes and provide real-time feedback to minimise defects and improve production yields.²¹ Local enterprises have also started offering analytics capabilities for manufacturing processes. Fusionex, for example, has gained traction with large international clients; their analytics software allowed Intel to predict up to 90 percent of potential equipment failures.²² Digital trade is thus essential for such global collaboration to optimise production processes.

- **Agriculture and Food.** In its national IoT plan, Malaysia aims to increase farming productivity by 20 percent through leveraging sensors and data in farms.²³ To encourage the adoption of

precision farming technologies, the government developed an IoT platform which captures and shares environmental data with farmers, traders and suppliers, as well as the trialling of sensors in farms.²⁴ Malaysia has also been pursuing IoT-enabled food safety solutions to minimise post-harvest food losses, which can be significant in its tropical climate. The government tied up with British pest management company Rentokil to utilise its PestConnect system which provides automated real-time monitoring with rapid response and protection against pests such as rodents.²⁵ Digital trade is crucial in this sector due to the need to share data across borders (for example, monitoring exports or tracing food origins using IoT) and the need to pool data to enhance insights to be used in precision farming.

- **Resources.** Though Malaysia is endowed with major minerals such as gold, iron ore and coal, the sector is fragmented with relatively small mining companies which have largely yet to draw on

18. Oxford Business Group (2017), "Malaysia pushes forward with robotics agenda".

Available at: <https://oxfordbusinessgroup.com/news/malaysia-pushes-forward-robotics-agenda>

19. Cobots, or collaborative robots, are robots that are designed to physically interact with humans in a shared workspace. This is in contrast with robots which are designed to operate autonomously or with limited guidance.

20. Kumar (2017), "Robots are on the rise in Malaysia", Computer World Singapore. Available at: <https://www.computerworld.com.sg/print-article/110984/>

21. Kumar (2017), "Robots are on the rise in Malaysia", Computer World Singapore. Available at: <https://www.computerworld.com.sg/print-article/110984/>

22. Malaysia Digital Economy Corporation Sdn Bhd (2017). Available at: <https://www.mdec.my/digital-innovation-ecosystem/big-data-analytics>

23. Charlene Chin (2016), "Why is smart farming Asia's big new trend?", Gov Insider.

Available at: <https://govinsider.asia/smart-gov/why-is-smart-farming-suddenly-so-cool/>

24. Charlene Chin (2016), "Why is smart farming Asia's big new trend?", Gov Insider.

Available at: <https://govinsider.asia/smart-gov/why-is-smart-farming-suddenly-so-cool/>

25. Foodbiz Asia (2017), "Malaysia partners with Rentokil to boost food safety compliances".

Available at: <https://www.foodbizasia.com/malaysia-partners-with-rentokil-to-boost-food-safety-compliances/>



technologies to improve productivity and yields.²⁶ Smart exploration approaches drawing on big data have the potential to uncover more opportunities in Malaysia's resource landscape, while technologies such as autonomous drills and predictive maintenance and safety applications will augment productivity in drawing from existing reserves. Digital trade is crucial for technologies in the resources sector due to the need for cost-efficient data gathering and storage solutions, as well as the need to access global talent to analyse data.

- **Education and Training.** Digital technologies hold the promise of enhancing the quality of instruction, improving the productivity of teaching and support staff, and enhancing the matching of labour demand and supply. 60 percent of Malaysian job seekers use online platforms to seek employment opportunities – much higher than the global average of 36 percent.²⁷ The government also partnered with global outsourcing marketplace Freelancer to leverage its online platform in helping low-income

individuals access online jobs based on their skills.²⁸ Digital trade is important for many of these opportunities given the presence of multinational enterprises usually associated with such platforms (e.g., Freelancer) and cross-border data flows (e.g., advertising job opportunities in Malaysia in overseas markets).

- **Financial Services.** With 81 percent of Malaysian adults having financial bank accounts, Malaysia has achieved one of the highest levels of financial inclusion in Southeast Asia, due partly to the proliferation of mobile money in expanding financial access especially to remote rural regions.²⁹ Another driver of economic value in this sector is the digitisation of retail banking services – the number of internet banking subscribers in Malaysia reached 22.8 million people at the end of 2016 – practically all its financially-included adult population.³⁰ Malaysian banks rely on international digital services to enhance the efficiency of the banking system and safeguard it from losses. For example,

26. Ben & Partners (2016), "The potential of mining sector in Malaysia". Available at: <http://www.benpartners.com/the-potential-of-mining-sector-in-malaysia/>

27. Human Resources (2015), "60percent of job seekers in Malaysia use social media".

Available at: <https://www.humanresourcesonline.net/60-job-seekers-malaysia-use-social-media/>

28. Magdirila (2013), "Freelancer teams up with Malaysian government to get low-income groups into work", TechinAsia.

Available at: <https://www.techinasia.com/freelancer-lower-income-groups-malaysia>

29. World Bank Group (2017), "Malaysia shares lessons on achieving high financial inclusion for other countries".

Available at: <http://www.worldbank.org/en/news/press-release/2017/05/22/malaysia-shares-lessons-on-achieving-high-financial-inclusion-for-other-countries>

30. World Bank Group (2017), Financial inclusion in Malaysia: Distilling lessons for other countries.

Available at: <http://documents.worldbank.org/curated/en/703901495196244578/pdf/115155-WP-PUBLIC-GFM08-68p-Flpaperwebversion.pdf>

EXHIBIT 4:

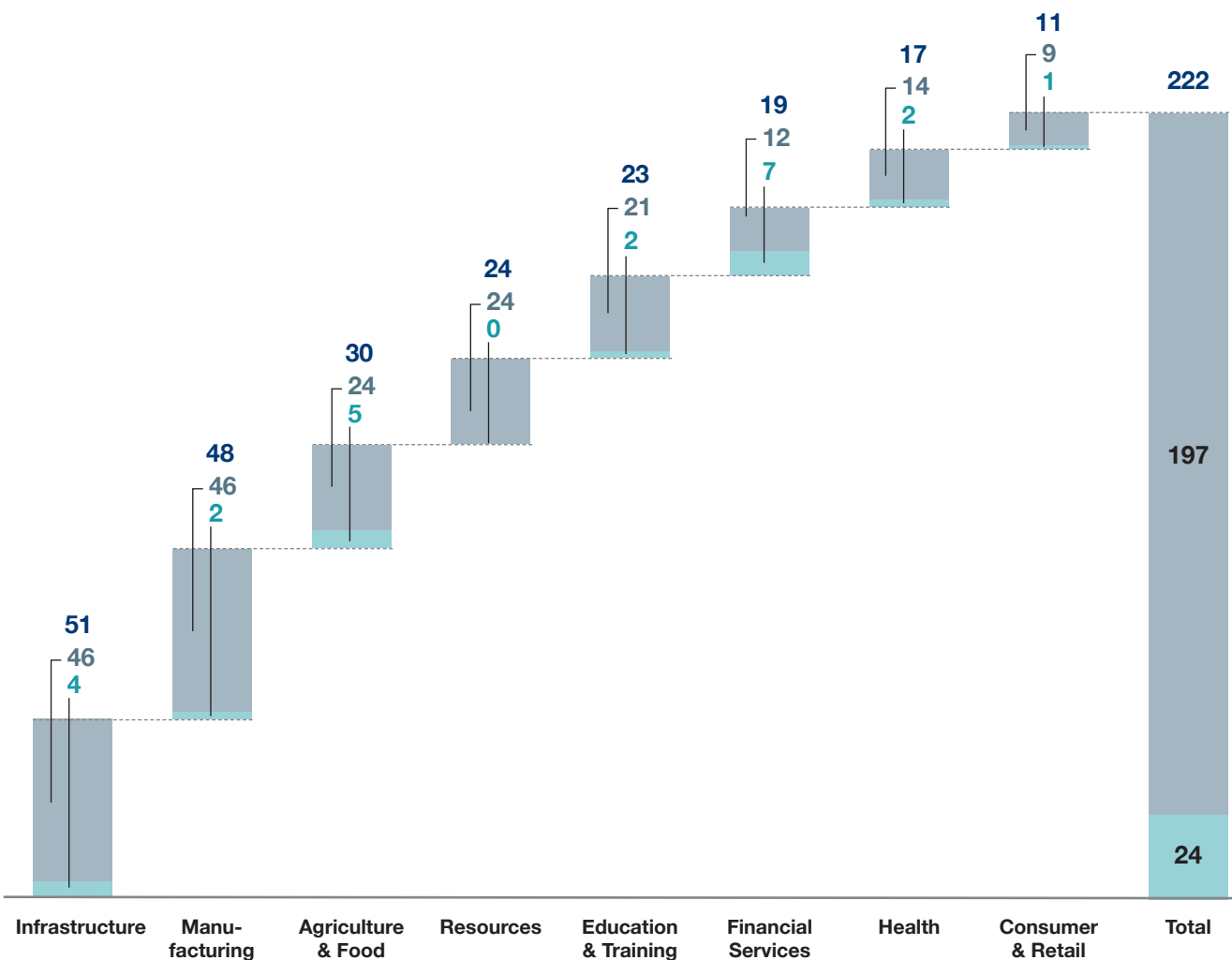
DIGITAL TRADE IS SUPPORTING UP TO MYR 24 BILLION OF ECONOMIC BENEFITS IN MALAYSIA TODAY, WHICH COULD GROW TO MYR 222 BILLION BY 2030



POTENTIAL ANNUAL ECONOMIC VALUE^{1,2}
MYR BILLION, 2017 AND 2030 (HIGH-END SCENARIO)

THE POTENTIAL ECONOMIC VALUE IN 2030 IS EQUIVALENT TO 9% OF MALAYSIA'S PROJECTED GDP

2017 Additions in 2030



1. These estimates do not represent GDP or market size (revenue), but rather economic value, including consumer surplus. The sizing includes the economic value that is both "somewhat enabled" and "highly enabled" by digital trade.
 2. Due to rounding to the nearest billion, the numbers in this table may not add up precisely to the totals indicated.

SOURCE: AlphaBeta analysis

Malaysia's largest bank, Maybank, leverages data analytics tools from US-based Teradata Corporation to manage fraud risk and enhance their customer relationship processes.³¹ Digital trade is crucial in this sector for helping to lower the costs of storing high volumes of sensitive data in a secure fashion, and due to the cross-border flows of remittances and payments, with data needing to move seamlessly across countries.

- **Health.** Technology applications enabled by digital trade can improve Malaysia's healthcare quality and coverage, especially in rural regions. For example, the local healthcare provider BP Healthcare Group developed a mobile app, Doctor2U, which provides on-demand healthcare services in the form of video consultations and live chats with doctors and medicine deliveries.³² This app leveraged Microsoft's cloud services to integrate AI and machine learning onto its platform, enabling Doctor2U to harness data insights and deliver more effective treatment plans for patients.³³ Digital trade is thus crucial due to the cross-border data flows required for such data management and analytics services.
- **Consumer and Retail.** The Malaysian government has been taking bold steps to boost the e-commerce sector, for example through its recent establishment of the Digital Free Trade Zone (DFTZ) in cooperation with Alibaba Group.³⁴ Established under a partnership between the Malaysian government and China-based Alibaba Group, the DFTZ project aims to establish Malaysia as a regional e-commerce and e-fulfillment hub, and



drive e-commerce-enabled exports by Malaysian SMEs.³⁵ E-commerce penetration can further improve if Malaysian retail businesses extend their adoption of digital services beyond mere web presence, and leverage data analytics and IoT to customise customer experiences.³⁶ This is expected to improve with the emergence of local retail analytics platforms such as Tapway and Tide Analytics, which utilise such technologies to conduct shopper profiling and footfall analytics for brick-and-mortar businesses.³⁷³⁸ Digital trade is crucial for enhancing the productivity of Malaysia's e-commerce players through its enablement of cross-border data pooling to obtain robust insights and through the use of IoT technology to track goods across borders.

31. Azhar (2014), "How global companies utilise big data analytics", The Edge Markets.

Available at: <http://www.theedgemarkets.com/article/how-global-companies-utilise-big-data-analytics>

32. Doctor2U (2018). Available at: <http://www.doctor2u.my/about-us/>

33. Mehrotra (2017), "Innovating for SMEs in the current digital landscape", Microsoft Malaysia News Center.

Available at: <https://news.microsoft.com/en-my/2017/05/26/innovating-smes-current-digital-landscape/>

34. Trinna Leong (2017), "KL, Alibaba launch Digital Free Trade Zone", Straits Times.

Available at: <https://www.straitstimes.com/asia/se-asia/kl-alibaba-launch-digital-free-trade-zone>

35. Malaysia Digital Economy Corporation: Digital Free Trade Zone (2017). Available at: <https://mydftz.com/>

36. World Bank Group (2018), Malaysia Economic Monitor: June 2018. Available at: <http://documents.worldbank.org/curated/en/826251530105101845/pdf/127679-Revised-Economic-Updates-and-Modeling-Malaysia-Economic-Monitor-June-2018-Navigating-Change-full-report-revised.pdf>

37. Tapway (2018). Available at: <http://gotapway.com/>

38. Tay (2014), "Brick-and-mortar store owners, this is what you're missing out on", TechnAsia.

Available at: <https://www.techinasia.com/tapway-is-google-analytics-for-brick-and-mortar-store>



THE VALUE OF DIGITAL EXPORTS FOR MALAYSIA

Malaysia's digital exports in 2017 are estimated to be worth over MYR 31 billion (US\$7 billion), making it the 6th largest export sector and accounting for more than 3.3 percent of its total export value. While this is a relatively strong performance in the ASEAN context, it is estimated that this value could potentially quadruple in 2030, in the absence of digital trade barriers for Malaysia and its trading partners.



THE VALUE OF MALAYSIA'S DIGITAL EXPORTS

Malaysia is beginning to capture the digital export opportunity with the launch of the DFTZ and the formation of the National eCommerce Council (NeCC). Malaysia's digital exports are estimated to be currently worth MYR 31 billion (US\$7 billion), making it the country's 6th largest export sector. This is equivalent to roughly 4 percent of total exports. By 2030, it could grow by 298 percent to reach MYR 122 billion (US\$28.5 billion) (Exhibit 5).

It should be noted that this report's estimate of the value of digital exports is conservative, due to data

constraints. For digitally-enabled products, the value of products exported via cross-border e-commerce platforms only focusses on Fast Moving Consumer Goods (FMCG) and not other categories of goods where e-commerce could be important, due to the availability of data. Since a large proportion of FMCG goods are B2C in nature, the estimate of e-commerce exports would likely approximate the value of B2C e-commerce. Similarly, the value of digitally-enabled services only focusses on a subset of services where robust data is available.

DIGITALLY-ENABLED PRODUCTS

The value of these exports is currently MYR 3 billion (US\$728 million) and could grow almost twenty-eight times the current value by 2030, reaching MYR 85 billion (US\$19.9 billion).³⁹ This growth is expected to be largely driven by expanding e-commerce exports.

- **E-commerce.** E-commerce platforms can be crucial gateways to connect firms to export markets and provide a new source of future growth for traditional sectors such as manufacturing. Approximately 12 percent of the global goods trade is now conducted via international e-commerce, with much of it being driven by platforms such as Alibaba, Amazon, eBay, Flipkart, and Rakuten.⁴⁰

However, most Malaysian businesses have yet to tap the export opportunity, with less than

12 percent of businesses currently engaged in exporting (versus 16 percent in East Asian and Pacific economies on average).^{41 42}

Many Malaysian businesses, particularly Small and Medium Enterprises (SMEs), still face substantial challenges in bridging the gap to global markets. SMEs contribute less than 19 percent to exports which is relatively small considering SMEs make up over 98 percent of businesses in Malaysia.⁴³ They often lack the resources to research international sales opportunities, build global business networks and promote their products overseas.

Nevertheless, e-commerce has been growing in Malaysia, with its share of Malaysian GDP increasing from 5.9 percent in 2015 to over

39. Based on AlphaBeta analysis.

40. McKinsey Global Institute (2016), *Digital globalization: The new era of global flows*. Available at: <https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20globalization%20The%20new%20era%20of%20global%20flows/MGI-Digital-globalization-Full-report.ashx>

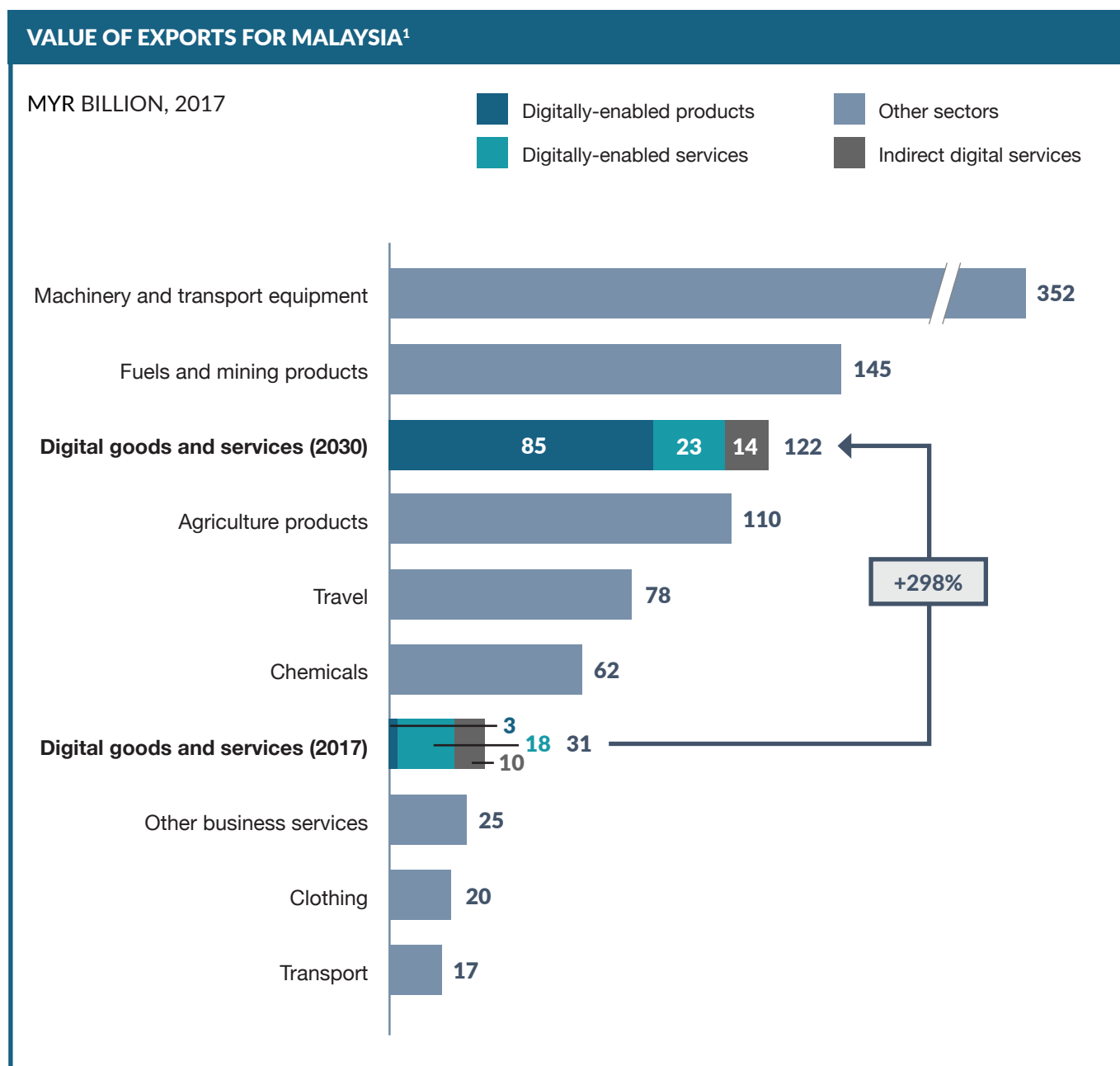
41. World Bank Enterprise Survey. Available at: <http://www.enterprisesurveys.org/Custom-Query>

42. World Bank Enterprise Surveys (2015). Available at: <http://www.enterprisesurveys.org/data/exploretopics/trade>

43. Malaysia External Trade Development Corporation's (Matrade) chief executive officer Dr Mohd Shahreen Madros at the Malaysia Digital Economy Forum. Reported by Digital News Asia (2018), *Malaysia on track to achieve 21% e-commerce growth by 2020*. Available at: <https://www.digitalnewsasia.com/digital-economy/malaysia-track-achieve-21-e-commerce-growth-2020>

EXHIBIT 5:

IF DIGITAL WERE A SECTOR, IT WOULD REPRESENT MALAYSIA'S 6TH LARGEST EXPORT SECTOR, AND COULD INCREASE BY 298 PERCENT BY 2030



1. Due to rounding to the nearest billion, the numbers in this table may not add up precisely to the totals indicated.

SOURCE: WTO (data on 19 other sectors); AlphaBeta analysis



6.1 percent in 2016.⁴⁴ Currently, 28 percent of Malaysian businesses have an online presence and 15 percent use that presence for export purposes.⁴⁵

Using average export revenue data and eBay data on the proportion of sellers on their platform who export as proxies for the likelihood of Malaysian companies to export using e-commerce channels, it is estimated that e-commerce generated over MYR 3 billion (US\$728 million) of export revenues for Malaysia in 2017, which could grow to over MYR 85 billion (US\$19.9 billion) in 2030 based on the forecasted growth of e-commerce markets in nearby countries.⁴⁶ These values account for the majority of Malaysia's export revenues coming

from digitally-enabled products. One example of a Malaysian company taking advantage of the e-commerce export opportunity is local e-commerce platform, 11street (See Box 1).

- **Digital apps.** Although the Malaysian market boasts a 70 percent smartphone penetration rate in 2017, it does not yet have a robust domestic app development ecosystem as evidenced by the fact that, outside of a few local service apps (banking apps, TV guides, domestic mobile wallet, etc), there are no other local apps which appear in App Annie's top 100 apps list.⁴⁷ The lack of a robust app economy is partially attributed to challenges in accessing capital and required talent.⁴⁸

44. Digital News Asia (2018), "Malaysia on track to achieve 21% e-commerce growth by 2020".

Available at: <https://www.digitalnewsasia.com/digital-economy/malaysia-track-achieve-21-e-commerce-growth-2020>

45. Digital News Asia (2018), "Malaysia on track to achieve 21% e-commerce growth by 2020".

Available at: <https://www.digitalnewsasia.com/digital-economy/malaysia-track-achieve-21-e-commerce-growth-2020>

46. Based on AlphaBeta analysis.

47. App Annie (2018?), Available at: https://www.appannie.com/apps/ios/top-chart/?country=MY&category=36&device=iphone&date=2018-08-06&feed=All&rank_sorting_type=rank&page_number=0&page_size=100&table_selections=

48. The Star (2013), "Miles to go for app economy". Available at: <https://www.thestar.com.my/news/community/2013/01/23/miles-to-go-for-app-economy/>

BOX 2. 11STREET

11street is an open marketplace operated by Celcom Planet Sdn. Bhd. – a joint venture between Malaysian mobile telecommunications provider Celcom Axiata Bhd and SK Planet Ltd, a subsidiary of South Korea’s SK Telecom which focusses on e-commerce, digital marketing and other online services. As of December 2017, 11street had grown to become Malaysia’s second largest online marketplace, with its seller base at 42,000 merchants. Further, 11street recently partnered with the Malaysia External Trade Development Corporation (MATRADE) to increase the e-commerce export adoption rate amongst Malaysian businesses.⁴⁹

In addition to its marketplace, 11street also launched a full-fledged certification programme endorsed by the Malaysia Digital Economy Corporation (MDEC), aimed at helping sellers reach their e-commerce potential.⁵⁰



Photo source: <https://themalaysianreserve.com/2017/06/06/online-sales-to-increase-50-this-year-says-11street/>

49. Malaysia External Trade Development Corporation (2016), MATRADE Partners with 11Street and Daganghalal to Spur Exports via e-Commerce. Available at: <http://www.matrade.gov.my/en/jp/archive/3525-matrade-partners-with-11street-and-daganghalal-to-spur-exports-via-e-commerce>

50. New Straits Times (2017), "11street tripled its seller base in two years; targets to grow by 15 per cent next year".

Available at: <https://www.nst.com.my/business/2017/12/313571/11street-tripled-its-seller-base-two-years-targets-grow-15-cent-next-year>

DIGITALLY-ENABLED SERVICES

The value of these exports is currently MYR 18 billion (US\$4.2 billion) and could grow by 27 percent in value by 2030, reaching roughly MYR 23 billion (US\$5 billion).⁵¹ This growth is expected to be largely driven by expanding digital infrastructure services.

- Digital infrastructure services.** This includes telecommunication services such as the export of email, video conferencing, digital file sharing, and Voice Over Internet Protocol (VOIP) services as well as data processing. Boosted by Malaysia's large IT-BPO⁵² sector, the country's digital exports of infrastructure services in 2017 are estimated to have been around MYR18 billion (US\$4.2 billion), making up the lion's share of Malaysia's export revenues coming from digitally-enabled services.⁵³ Since 2004, the country has been consistently ranked third in AT Kearney's "Global Services Location Index" (after India and China), with its success in this industry being attributed to its multilingual population, large talent pool, the government's strong digital agenda and adequate Information and Communications Technology (ICT) infrastructure.⁵⁴
- Online video advertising.** Thanks to the advent of video-sharing platforms such as YouTube, Vimeo and Facebook, Malaysian stories and voices are starting to find new global audiences.

For example, the Malaysian singer, Wee Meng Chee, or more popularly known as Namewee, leveraged YouTube to reach larger audiences. Namewee was able to upload both music videos as well as his original songs, and slowly began to



make a name for himself with his original songs and collaborations with other artists.⁵⁵ By 2018, Namewee had over 1.5 million subscribers and 616 million views on this channel (Exhibit 6).

It is estimated that Malaysian content owners earned over MYR 6 million (US\$1.4 million) in advertising revenue from overseas markets through online video platforms.⁵⁶ This could potentially grow to over MYR 67 million (US\$15.6 million) in 2030 based on the forecasted growth of its digital advertising market.⁵⁷ This is in addition to the large, but difficult to size, value of direct digital services exports in industries such as tourism (including online ticket booking), financial services, accounting, law, education, and even medicine.

51. Based on AlphaBeta analysis.

52. Information Technology-Business Processing Outsourcing (IT-BPO) refers to the contracting of non-primary business activities and functions with digital components to a third-party provider. Examples of IT-BPO services include payroll administration, data management and customer/call centre relations.

53. Based on AlphaBeta analysis.

54. Invest KL (2016), "KPO and Malaysia's journey in global business services".

Available at: http://www.investkl.gov.my/Relevant_News-@-KPO_and_Malaysia%E2%80%99s_Journey_in_Global_Business_Services_.aspx





55. Bandwagon (2018), "Between controversy, virality and popularity: an interview with Namewee".

Available at <https://www.bandwagon.asia/articles/between-controversy-virality-and-popularity-an-interview-with-namewee>

56. Based on AlphaBeta analysis.

57. Based on AlphaBeta analysis.

EXHIBIT 6:

<p>MUSIC</p>  <ul style="list-style-type: none"> • Who: Wee Meng Chee • Channel: Namewee • Detail: Music and film • Subscribers: >1.5 million • Views: >616 million 	<p>GAMES</p>  <ul style="list-style-type: none"> • Who: PlataBush • Channel: PlataBush • Detail: Minecraft videos • Subscribers: >1.6 million • Views: >331 million
<p>RELIGION</p>  <ul style="list-style-type: none"> • Who: Omar, Hana and their family • Channel: Omar & Hana • Detail: Islamic moral values education through music • Subscribers: >706,000 • Views: >330 million 	<p>COMEDY</p>  <ul style="list-style-type: none"> • Who: Raffi Th'ng, Bryan Lim, Ming Han, Ming Yue • Channel: The Ming Thing • Detail: Comedy sketches • Subscribers: >488,000 • Views: >54 million

INDIRECT DIGITAL SERVICES

Imported digital services are crucial for enabling the growth of the exports of non-digital sectors. In traditional sectors such as manufacturing, imported digital services, such as email, video conferencing, Voice Over Internet Protocol (VOIP), digital file sharing and data processing help Malaysian firms in reaching new markets. For example, Nestle Malaysia installed a screen which tracked keywords related to their products on the Internet, allowing the company to identify potential advertising opportunities using real-time big data flows.⁵⁸ In 2017, the impact of imported digital services on exports in all other sectors in Malaysia is estimated at just under MYR 10 billion (US\$2.2 billion).⁵⁹

” In 2017, the impact of imported digital services on exports in all other sectors in Malaysia is estimated at about MYR 10 billion (US\$2.2 billion). ”

58. The Star (2016), IoT, the next step in local digital economy.

Available at: <https://www.thestar.com.my/business/business-news/2016/07/23/iot-the-next-step-in-local-digital-economy/#OIjY80sIBp52WYE.99>

59. Based on AlphaBeta analysis.



CAPTURING THE DIGITAL TRADE OPPORTUNITY

In order to realise the full potential of digital trade, policymakers will need to address four areas of potential concern surrounding digital trade. The good news is that all of them are addressable without needing to unduly restrict digital trade flows. Malaysia has an opportunity to ensure a strong domestic ecosystem for digital trade (particularly addressing data localisation issues) and to also play a role in advocating strongly for digital trade to remain open in the Asia Pacific to safeguard the potential benefits for Malaysian firms.



PERCEIVED CONCERNS RELATED TO DIGITAL TRADE

Digital trade has unfortunately faced increasing barriers in various forms in recent years, ranging from data localisation requirements through to local registration mandates. The barriers exist in four main forms:



1. PRIVACY

Protecting the privacy of citizens



2. SECURITY

Enabling rapid access to data for law enforcement and safeguarding national security as well as the security of users



3. ECONOMIC

Supporting the growth of domestic digital firms and local jobs



4. FISCAL

Protecting the local tax base

These barriers require critical examination. Some overlook the fact that the same end objective could be achieved more efficiently through technological measures or other regulations without jeopardising the benefits of digital trade.



CONCERN 1:

PROTECTING THE PRIVACY OF CITIZENS AND SAFEGUARDING THEM FROM INAPPROPRIATE CONTENT

Digitised information requires appropriate privacy safeguards in order to protect citizens and safeguard against nefarious use or interference. There are different ways of addressing data privacy concerns and many can achieve the same objective of safeguarding privacy, without unduly impeding data flows. For example, the United States has adopted an approach of self-regulation enforced with heavy fines if companies are found not to be safeguarding privacy appropriately.

The Asia Pacific Economic Cooperation (APEC) forum has established the Cross-Border Privacy Rules (CBPR)

and Privacy Recognition for Processors (PRP) systems which requires participating businesses to implement data privacy policies consistent with the APEC Privacy Framework.⁶⁰ These forms of privacy protections are solutions that allow cross-border data flows while safeguarding privacy through interoperable enforcement mechanisms, providing an ideal international framework that Asia Pacific policymakers should seek. On the other hand, data localisation requirements could actually increase privacy risks by requiring data to be stored in single centralised locations that are more vulnerable to intrusion.

CONCERN 2:

ENABLING RAPID ACCESS TO DATA FOR LAW ENFORCEMENT AND SAFEGUARDING NATIONAL SECURITY AS WELL AS THE SECURITY OF USERS

Cybersecurity concerns may be exacerbated by constraints on cross-border digital trade that limit the scale of cloud providers (thus potentially impacting their ability to ensure appropriate investment in data safeguards) and by concentrating data in few locations (as opposed to maintaining redundant datasets at multiple data centres spread across countries).

Modern data storage systems take advantage of “sharding”, a type of database partitioning that separates very large databases into smaller, faster, more easily managed parts called data shards. Sharding assists the intelligent transmission and storage of data, enabling the movement and replication of data between data centres

and across borders in the interests of integrity, efficiency and security. Without sharding, data transfer and storage are slower and less secure.

Cloud providers balance factors ranging from internet bandwidth and the likelihood of power outages over available networks to network throughput in order to optimise systems.⁶¹ As one set of researchers found, “Requirements to localise data do nothing on their own to make data safer; in fact, they will only make it impossible for cloud service providers to take advantage of the Internet’s distributed infrastructure and use sharding.”⁶²

60. For further information, see: <http://www.cbprs.org/>

61. Urs Holzle (2018), “Freedom of data movement in the cloud era” (Google Blogs).

Available at: <https://www.blog.google/products/google-cloud/freedom-data-movement-cloud-era/>

62. Patrick Ryan, Sarah Falvey, and Ronak Merchant (2013), “When the cloud goes local: The global problem with data localization”. *IEEE Computer Society, Issue 12, Vol. 46*. Available at: <https://www.computer.org/csdl/mags/co/2013/12/mco2013120054-abs.html>

Moreover, research has shown that local storage providers, in fact, apply less rigour to data security than global providers as a result of fewer financial resources, less technological expertise, lower competitive need to draw customers and technological restrictions (e.g. on sharding and the distributed storage of backup copies).⁶³ There are also numerous examples of data localisation creating issues for the resilience and security of data by making it susceptible to a single point of failure. For example, in 2012, a small explosion in a data centre in Calgary, Canada, led 30,000 people to lose landline phone services (including to emergency services) and interruptions to the functioning of radio stations, fire authorities, taxi services and even some local government functions for several days.⁶⁴ National-level events such as flooding, earthquakes, tornadoes,

and wildfires could create resiliency issues even for data stored at multiple points within a country.

There are valid issues when it comes to law enforcement officials requiring timely access to data in other countries; however, these issues are best addressed by tackling the specific requirements of law enforcement agencies through inter-governmental data sharing agreements, rather than constricting data flows.⁶⁵ For example, Malaysia could explore discussions with the United States under the CLOUD Act, which authorises providers to disclose communications content pursuant to a lawful order from a foreign government that has entered into an executive agreement with the United States.

CONCERN 3: SUPPORTING THE GROWTH OF DOMESTIC DIGITAL FIRMS AND LOCAL JOBS

It has been argued that free digital trade will result in a select number of large multinationals (with the necessary scale) capturing economic benefits, while local firms receive limited benefits and local economies miss out on employment opportunities. The economic literature has debunked the notion that trade protectionism spurs the creation of highly-productive domestic champions⁶⁶, and the same is even more true for the digital sector for several reasons.

First, digital multinationals make important contributions to the local digital ecosystem. A survey of start-ups across Asia (including in Malaysia) found that 88 percent

considered it crucial to attract foreign technology investment to the country, with some of the most important channels including start-up financing, investments in the digital ecosystem, and knowledge transfer.⁶⁷ In Malaysia, such examples of the importance of digital multinationals to the local digital industry are plentiful:

- **Investment in research.** Microsoft collaborated with Malaysia's Collaborative Research in Engineering, Science & Technology (CREST) to build a digital health hub in Penang which will connect researchers, start-ups and app developers in

63. James Arlen and Brendan O'Connor (2015), "Xenophobia is hard on data: Forced localization, data storage, and business realities", Sector. Available at: <https://sector.ca/sessions/xenophobia-is-hard-on-data-forced-localization-data-storage-and-business-realities/>

64. Leviathan Security Group (Year?), "Comparison of Availability Between Local and Cloud Storage". Available at: <https://static1.squarespace.com/static/556340e4b0869396f21099/t/559dad9ae4b069728afca34a/1436396954508/Value+of+Cloud+Security+-+Availability.pdf>

65. Joshua P. Meltzer and Peter Lovelock (2018), *Regulating for a digital economy: Understanding the importance of cross-border data flows in Asia*. Available at: https://www.brookings.edu/wp-content/uploads/2018/03/digital-economy_meltzer_lovelock_working-paper.pdf

66. For a literature review, see Arvind Panagariya (2011), "A Re-examination of the Infant Industry Argument for Protection", *Journal of Applied Research*. Available at: <http://journals.sagepub.com/doi/abs/10.1177/097380101000500102>

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



collaborating on research and development in areas of healthcare innovation, such as telehealth, remote patient monitoring and drug adherence.⁶⁸

- **Support for innovation.** IBM's "Smarter Cities Challenge" is a competitive grant programme in which IBM partners cities who have put forth the most compelling proposals by leveraging IBM's technical expertise in cloud computing, analytics and AI to achieve their visions – fully funded by IBM.⁶⁹ The state of Negeri Sembilan has received such support, particularly in the area of digitising its administrative services.⁷⁰
- **Support for small business.** Microsoft partnered with local software company Financio to build a cloud management system that has enabled over 4,500 small Malaysian businesses to save over 384,000 manhours annually by optimising back-

end operations such as the automated tracking of transactions, generation of financial reports, and sharing of internal documents at affordable cost.⁷¹ In addition, the DFTZ established with Alibaba Group will be a platform that will propel Malaysia's retail MSMEs onto the online marketplace in Asia.⁷²

- **Support for the education system.** Microsoft SAP collaborated with the ASEAN Foundation to jointly roll out digital literacy programmes for youths in ASEAN member states, including Malaysia. These are aimed to provide youths with the skills they need to tackle societal issues and thrive in the digital economy, and covers broad fields such as education, volunteerism and entrepreneurship.⁷³

Second, digital constraints not only negatively affect the digital sector itself, but also the broader economy. In fact, the larger impact is on non-digital sectors.

68. Digital News Asia (2016), "Microsoft Malaysia, CREST sign MoU for healthcare innovation".

Available at: <https://www.digitalnewsasia.com/business/microsoft-malaysia-crest-sign-mou-healthcare-innovation>

69. IBM (2017), "Smarter Cities Challenge aims to make lasting urban improvements".

Available at: <https://www.ibm.com/blogs/cloud-computing/2017/02/17/smarter-cities-challenge-improvements/>

70. IBM Smarter Cities Challenge (2018). Available at: <https://www.smartercitieschallenge.org/cities>

71. Microsoft Malaysia News Center (2017), "ABSS partners with Microsoft to accelerate digital transformation journey for Malaysian SMEs".

Available at: <https://news.microsoft.com/en-my/2017/10/17/abss-partners-microsoft-accelerate-digital-transformation-journey-malaysian-smes/>

72. Trinna Leong (2017), "KL, Alibaba launch Digital Free Trade Zone", Straits Times.

Available at: <https://www.straitstimes.com/asia/se-asia/kl-alibaba-launch-digital-free-trade-zone>

73. SAP News (2017), "The ASEAN Foundation and SAP extend strategic collaboration to drive positive social impact in the digital economy".

Available at: <https://news.sap.com/sea/2017/11/the-asean-foundation-and-sap-extend-strategic-collaboration-to-drive-positive-social-impact-in-the-digital-economy/>

The macroeconomic costs of forced data localisation range between 0.7 percent and 1.1 percent of GDP.⁷⁴ In addition, data localisation has been associated with investment decreases of up to 4 percent.⁷⁵ Third, digital trade constraints bring about significant additional operational costs, which often fall hardest on SMEs. 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. Past research has found that local companies would be required to pay 30 to 60 percent more for their computing needs from strictly enforced data localisation policies.⁷⁶ Indeed, it has been observed that not only does the fragmentation of global online networks by data localisation laws result in delays, inefficiencies and higher costs from building or renting

physical infrastructure in each jurisdiction, it also imposes the need to operate in a “complex array of different jurisdictions imposing conflicting mandates and conferring conflicting rights”.⁷⁷

Fourth, protectionism could encourage retaliatory behaviour in other jurisdictions with the potential to shut out local firms from these foreign markets. McKinsey Global Institute estimates that data flows accounted for US\$2.8 trillion of economic impact in 2014 and any impediment to these flows could create significant economic headwinds.⁷⁸

Finally, the perceived benefit of data localisation requirements for domestic employment is typically much smaller than expected. Data centres, for example, are “capital-heavy” but “job-light” investments that are likely to create few local jobs.⁷⁹

74. Matthias Bauer et al. (2014), *The costs of data localization: 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

75. http://www.ecipe.org/app/uploads/2014/12/OCC32014_1.pdf

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

77. Sascha Meinrath (2013), “We can’t let the Internet become balkanized”, *Slate*.

Available at: http://www.slate.com/articles/technology/future_tense/2013/10/internet_balkanization_may_be_a_side_effect_of_the_snowden_surveillance.html

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

Available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/digital-globalization-the-new-era-of-global-flows>

79. TechRepublic (2016), “Why data centers fail to bring new jobs to small towns”.

Available at: <https://www.techrepublic.com/article/why-data-centers-fail-to-bring-new-jobs-to-small-towns/>

CONCERN 4: PROTECTING THE LOCAL TAX BASE

A fear of many policymakers is that digital trade makes it easier for companies to shift profits to low tax jurisdictions and hence avoid paying taxes. This perception, however, is not necessarily backed by data. Research by the European Centre for International Political Economy (ECIPE) shows that the taxes paid by the world's largest Internet firms are on average commensurate with leading businesses across the Asia Pacific region.⁸⁰ As government officials have increasingly acknowledged, the international approach to tackling Base Erosion and Profit Shifting (BEPS) and US tax reform have together been largely successful at addressing the issue of double-non-taxation and indefinitely deferred taxation respectively.

The conversation has now moved on to how that tax should be allocated among countries, particularly countries with large consumer markets. At present, digital multinationals (like non-digital multinationals) pay the majority of their tax where their product

development takes place. Some countries have expressed their desire for the presence of large consumer markets to play a stronger role in how profit (and therefore taxing rights) is allocated, but it is no longer accurate to suggest that there is a broad problem of digital multinationals not paying enough tax at a global level.

Surveys of digital multinational enterprises conducted by AlphaBeta in past research found that investors are more concerned about the unpredictability of the tax environment, as opposed to the rate itself.⁸¹ For example, over 30 percent of respondents in Deloitte's latest "Asia Pacific Tax Complexity Survey" considered the tax compliance and fiscal requirements in Malaysia to be "complicated". The early lessons from BEPS reforms in the region highlight the importance of a strong consultation process with industry and of enforceable mechanisms that do not discriminate against the digital sector.⁸³

80. Martina F. Ferracane and Hosuk Lee-Makiyamahe (2018), *Geopolitics of Online Taxation in Asia-Pacific - Digitalisation, Corporate Tax Base and The Role of Governments*. Available at: <http://ecipe.org/publications/the-geopolitics-of-online-taxation-in-asia-pacific/>

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

82. Deloitte (2017), *Shifting sands: risk and reform in uncertain times. 2017 Asia Pacific Tax Complexity Survey*.

Available at: <https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/tax/deloitte-cn-tax-2017-ap-tax-complexity-survey-en-170424.pdf>

83. AlphaBeta (2017), *The Screen Evolution: How video-on-demand boosts Asia's economies and generates value for viewers, business and society*.

Available at: <http://www.alphabeta.com/the-screen-evolution/>



PRIORITIES FOR ACTION

In its manifesto, the government promised to “support the growth of the digital and creative economy”,⁸⁴ and recently the Minister of Communications and Multimedia, Gobind Singh, revealed that the government was currently formulating

its policy on the digital economy which would be revealed in the third quarter of 2019.⁸⁵ How can the government ensure that its policy for the digital economy captures the digital trade opportunity? There are two broad categories: action at home and abroad.

CATEGORY 1: ACTION AT HOME

Malaysia has several opportunities to enhance its current domestic regulatory approach to the digital economy:

- **Ensuring open data flows and interoperability.** Malaysia enacted the Personal Data Protection Act in 2010, which restricted the transfer of personal data outside of Malaysia, unless the action has been approved by the Malaysian government.⁸⁶ A list of requirements such as the demonstration of “reasonable steps taken to protect data” as well as the severe penalties for non-compliance could pose as restrictions to the country’s ability to fully harness the economic benefits of digital trade across a range of sectors including healthcare and financial services.

A useful first step would be for Malaysia 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, which specifies controls to protect personal data.

A related opportunity is to encourage interoperability between digital frameworks, particularly on payment gateways, to avoid the costs of companies having to customise their

approaches to every single market. One opportunity for Malaysia is to support the implementation of the data management initiative under the Master Plan on ASEAN Connectivity 2025 (MPAC 2025), which aims to improve transparency and accountability on data regulation requirements in ASEAN and identify areas to enhance performance and coordination.⁸⁷

- **Promote innovation-oriented approaches to copyright and intermediary liability regulations.** A strong environment for digital trade is one in which the development of innovative digital content is facilitated in a manner that does not undermine the interests of rights holders. While addressing copyright concerns and removing undesirable content (such as hate speech) are clearly important priorities for stimulating innovation and protecting consumers, the challenge is to balance such objectives with a system that is sufficiently flexible that it does not impose undue burden on firms, particularly MSMEs.

Ensuring clarity on issues such as the “fair use doctrine”, which aims to balance the interests of content creators on the one hand, and society’s

84. Promise 5 of Buku Harapan. Available at: https://kempen.s3.amazonaws.com/manifesto/Manifesto_text/Manifesto_PH_EN.pdf

85. The Star, 2019, Available at <https://www.thestar.com.my/news/nation/2019/02/23/gobind-digital-economy-policy-is-being-formulated/>

86. Martina Ferracane et al (2018), Digital Trade Restrictiveness Index, European Centre for Political Economy (2018).

Available at: <http://ecipe.org/app/uploads/2018/04/DTRI-final1.pdf>

87. ASEAN Secretariat (2016), Master Plan on ASEAN Connectivity 2025.

Available at: <http://asean.org/storage/2016/09/Master-Plan-on-ASEAN-Connectivity-20251.pdf>



competing interest in the free flow of ideas, information, and commerce on the other hand, will be an important part of this.

Well-balanced Internet Intermediary Liability (ILL) regulations can help to ensure the effective removal of illegal content without constraining the free flow of information. It has been illustrated that the broad application of Malaysia's Communications and Multimedia Act can be restrictive to the use of digital platforms such as social media, through its requirement that "no content applications service provider, or other person using a content applications service" may provide content that is judged to be "indecent, obscene, false, menacing, or offensive...".⁸⁸ A recent announcement by the Communications and Media Ministry to amend this act is a positive move, and it is imperative that such regulations provide clarity on any potential liability for intermediaries.⁸⁹ This will be essential to avoid creating an environment with higher liability risks on internet intermediaries than equivalent laws

overseas, which could potentially lead to an uneven playing field with overseas competitors and impede competition by smaller firms.

- **Minimising border frictions.** Cross-border digital trade would be greatly enhanced by ensuring fair competition in relevant sectors, which boosts innovation and better economic performance.

Malaysia is one of eleven countries in the world which were considered to present a significant level of restrictiveness to digital trade, due to the relatively low level of international competition promoted in its telecommunications sector.⁹⁰ This was attributed to the country's limited GATS (General Agreement on Trade in Services) commitments on most basic telecommunications services, as well as to its partial adoption of the WTO Reference Paper on Basic Telecommunications.⁹¹ These commitments help promote global competition in the telecommunications sector by securing

88. Martina Ferracane et al (2018), *Digital Trade Restrictiveness Index*, European Centre for Political Economy (2018). Available at: <http://ecipe.org/app/uploads/2018/04/DTRI-final1.pdf>

89. Kalbana Perimbanayagam and Hidayatul Ahmad (2018), "Ministry to look into amending Communications and Multimedia Act section said to stifle freedom of expression". Available at: <https://www.nst.com.my/news/nation/2018/08/403504/ministry-look-amending-communications-and-multimedia-act-section-said>

90. Martina Ferracane et al (2018), *Digital Trade Restrictiveness Index*, European Centre for Political Economy (2018). Available at: <http://ecipe.org/app/uploads/2018/04/DTRI-final1.pdf>

91. Martina Ferracane et al (2018), *Digital Trade Restrictiveness Index*, European Centre for Political Economy (2018). Available at: <http://ecipe.org/app/uploads/2018/04/DTRI-final1.pdf>



countries' mutual agreement on matters such as the establishment of new telecommunications companies, foreign direct investment in existing companies and the cross-border transmission of telecommunications services.⁹² Further, license requirements are imposed on telecommunications operators⁹¹ by the Malaysian Communications and Multimedia Commission.⁹³ Notwithstanding the importance of this sector to digital trade, a healthy level of competition in a country's telecommunications sector is also an important condition for national economic development. Nevertheless, the country is currently making promising steps towards liberalising its telecommunications market such as by allowing 100 percent foreign equity participation in phases.⁹⁵ It can further address the above issues through greater support of international trade rules which promote fair competition in this sector.

Further, the WTO moratorium that bans member states from charging customs duties on electronic

transmissions of goods and services is currently under threat, with indications from several countries of opposing it in the belief that this would improve their trade balance, shrink fiscal deficits and ensure the competitiveness of their domestic businesses.⁹⁶ However, such arguments neglect the adverse cost impact on domestic consumers and businesses, and ignore the scale of economic benefits digital imports bring to domestic sectors.⁹⁷ While governments should seek to create a level playing field for both resident and non-resident providers of digital services, this objective could be achieved through less distortive measures. For instance, imposing a Value-Added Tax (VAT) or Goods and Service Tax (GST) on non-resident providers of digital services is an approach that has been adopted by an increasing number of countries across the world, including all member states of the European Union, South Korea, India, Australia, New Zealand and Taiwan.⁹⁸ Not only is this in line with the principle that tax revenues should accrue to the jurisdiction in which the digital services are

92. World Trade Organization (2018), "Telecommunications services". Available at: https://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_e.htm

93. These include: Network Facilities Providers (NFPs), Network Services Providers (NSPs), Content Applications Service Providers (CASPs) and Applications Service Providers (ASPs).

94. Martina Ferracane et al (2018), Digital Trade Restrictiveness Index, European Centre for Political Economy (2018).

Available at: <http://ecipe.org/app/uploads/2018/04/DTRI-final1.pdf>

95. Malaysian Investment Development Authority (2018), "Liberalisation of the services sector".

Available at: <http://www.mida.gov.my/home/liberalisation-of-the-services-sector/posts/>

96. Yuafanda Kholfi Hartono (2018), "Welcoming import duties on intangible goods".

Available at: <http://www.thejakartapost.com/academia/2018/01/10/welcoming-import-duties-on-intangible-goods.html>

97. Asia Pacific Economic Cooperation (2016), 2016 CTI report to ministers. Available at: <http://publications.apec.org/-/media/APEC/Publications/2016/11/2016-CTI-Report-to-Ministers/TOC/Appendix-26-Pathfinder-on-Permanent-Customs-Duty-Moratorium-on-Electronic-Transmissions-Including-Co.pdf>

98. Avalara VATlive (2018), "Global VAT & GST on digital services". Available at: <https://www.vatlive.com/global-vat-gst-on-e-services/>

actually consumed, a non-resident VAT would also maintain a consistent tax treatment between digital and non-digital services without conflicting with international rules, standard practices and the non-discrimination principle.⁹⁹

By positing that import tariffs are necessary for a healthy trade balance, these arguments also understate the potential scale of these countries' digital exports. Moreover, imposing customs duties as a stop-gap measure to improve the country's trade balance could also trigger retaliatory tariffs from other governments, putting all involved at risk of suffering even greater losses to its future digital export revenues, and being shut out of the gains to global digital trade. This would have significant detrimental impact not only on Malaysian enterprises that depend upon cross-border e-commerce, but also other businesses that benefit indirectly from cross-border data flows as highlighted in Chapter 1. As such, it is key that Malaysia advocates strongly for this moratorium to be made permanent.

A promising move made by Malaysia in this regard of minimising border restrictions is its establishment of the DFTZ, as earlier mentioned in Chapter 1.

- **Encouraging digital adoption.** Affordable and reliable access to the internet is crucial to ensuring that Malaysian businesses can take advantage from future growth in digital trade, but Malaysia's internet adoption presents a mixed picture. While the costs of accessing mobile internet are relatively low and take-up is high, the same is not true of fixed line broadband. Malaysia ranks 74 out of

167 countries for fixed line broadband services and 64 out of 118 for fibre broadband services. In February 2018, Malaysia's average download speed was ranked 63 out of 130 countries.¹⁰⁰ As a result, take up of broadband by businesses is lower than it could be: only 62 per cent of businesses are connected to the internet and only 46 per cent have fixed broadband. The government has recognised this and pledged in its manifesto to reduce the cost of broadband and increase the speed – indeed, the government has already taken steps to this effect. The World Bank attributes the poor performance of Malaysia's fixed line broadband to the lack of competition and market dominance of Telekom Malaysia, which operates over 90 per cent of fixed line subscriptions. The government should therefore consider how to increase levels of competition in the fixed-line broadband market to lower prices, improve quality and promote wider adoption, particularly by businesses.

A related issue for digital adoption is the continued reliance on cash for many businesses in Malaysia, especially for SMEs. Adoption of e-payments methods would catalyse digital adoption by businesses and create opportunities for digital entrepreneurs. The government introduced the Payment Card Reform Framework (PCRF) in 2015 to encourage the migration to e-payments. This framework should be reviewed and improved where possible. In particular, the government itself has a significant role to play in setting an example for the wider economy by ensuring that all government transactions could be conducted online.¹⁰¹

99. Alexander Bellheim et al (2014), *Your pocket guide to VAT on digital e-commerce*, Bird & Bird.

Available at: <https://www.twobirds.com/~/media/pdfs/books/bird--bird--pocket-guide-to-vat-on-digital-ecommerce.pdf?la=en>

100. World Bank, 2018 "Malaysia's Digital Economy" Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/30383/129777.pdf>

101. Teo, 2018, "Payment Card Review Framework (PCRF): A Policy Evaluation Study" Available at: <http://www.ideas.org.my/wp-content/uploads/2018/06/PI48-Payment-Card-Reform-Framework.pdf>

CATEGORY 2: ACTION ABROAD

The Malaysian Government is currently engaged in a number of bilateral and multilateral trade deals. Though Malaysia's closest trading relationships are within ASEAN – where there is huge potential for growth in digital trade, more needs to be done to ensure that these opportunities may be realised. In a recent survey of ASEAN businesses by Bain and Company, SMEs revealed that they were increasingly concerned by digital trade barriers.¹⁰² The Malaysian government should therefore advocate for an ASEAN-wide approach that reflects the principles set out above.

Under the previous administration, the government agreed the Comprehensive Trans Pacific Partnership (CPTPP) with 10 other countries in the region. The CPTPP was the successor to the Trans Pacific Partnership (TPP) which included the United States. The CPTPP is a highly ambitious trade agreement that goes beyond the reduction of tariffs and trade facilitation to address wider issues, including a number of important provisions to enhance digital trade. These include:

- **Article 14.11**, which commits its members to ensuring that data can flow easily where it is for the conduct of legitimate business;
- **Article 14.4**, on non-Discriminatory Treatment of Digital Products, which prohibits signatory parties from favouring domestic products and their creators and owners or from discriminating between products or producers from home versus abroad;
- **Article 14.7**, which requires parties to adopt or maintain consumer protection laws for an online environment;

- **Article 14.7**, which prohibits signatory countries from asking software companies for access to their source codes – protecting the security and IP of businesses engaged in digital trade;
- **Article 14.13**, which prohibits the imposition of data localisation requirements.

These provisions represent significant advances on the scope of what has typically been included in Free Trade Agreements. The current government has signalled reticence over the CPTPP and has not yet committed to a clear timeline for ratification and implementation. To promote growth in digital trade, alongside other benefits, the government should move quickly to ratify the CPTPP.

Beyond the CPTPP, the government is currently negotiating the Regional Comprehensive Economic Partnership (RCEP), a proposed free trade agreement (FTA) between the ten member states of ASEAN and the six states with which ASEAN has existing free trade agreements (Australia, China, India, Japan, South Korea and New Zealand). Elements relating to the digital trade and e-commerce provisions within RCEP remain unclear – the government should seek ambitious agreement on digital provisions within RCEP on data flows, localisation and non-discrimination.

Finally, the government should strengthen the framework for digital trade with the EU. The government has previously sought to secure an FTA with the EU, but to date progress has been mixed. The government should accelerate efforts to reach an agreement that includes ambitious provisions to support digital trade.

102. Bain & Company, 2018, "Advancing Towards ASEAN Digital Integration".

Available at: https://www.bain.com/contentassets/37a730c1f0494b7b8dac3002fde0a900/report_advancing_towards_asean_digital_integration.pdf

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