MTPConnect
MedTech and Pharma Growth Centre

Asialink
Business

Digital Health in Indonesia
Opportunities for Australia

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Collaboration partners

The report has been developed with a broad cross section of sector participants, including government, industry associations and Australian and Indonesian digital health companies. The input from these organisations has been invaluable in the drafting of this report. We would like to thank all of those who gave their time to participate in consultations for the report (see page 25 for a full list of organisations consulted for this report).

In developing this report, Asialink Business has also drawn on the expertise of key collaboration partners, Austrade and Elisabeth Yunarko, Founder, Spokle.

Contents

1. Foreword

Indonesia's digital health ecosystem is rapidly growing, providing new export opportunities for Australian businesses as well as new areas for partnerships and collaboration. At a growth rate over 60 per cent (CAGR), digital health revenues in Indonesia are expected to reach $973 million by 2023.[1]

Digital health plays a key role in both Indonesia and Australia's healthcare systems. Digital health solutions improve the delivery of precision healthcare and end-to-end care and provide greater consumer control in the sector. What this report shows is that Australian digital health businesses can draw on their experience and expertise operating in our world-class healthcare system to partner, collaborate and deliver solutions to Indonesia's digital healthcare ecosystem.

The collaboration between MTPConnect and Asialink Business on this report reflects a shared understanding of the importance of global supply chains and international markets to Australia's medical technology, biotechnology and pharmaceutical (MTP) sector. International opportunities — particularly those in Asia — will be crucial to unlocking sustained revenue growth for Australia's 1,278 MTP businesses.

Increasing the number of Australian businesses engaging with international markets has broader implications for the strength of the Australian economy. In 2019, the MTP Sector was the 8th largest exporter in Australia, with manufacturing exports valued at $8.2 billion and contributing $5.2 billion (gross value-added) to the Australian economy.[2] International markets — and those closest to us, such as Indonesia — present huge opportunities to grow Australia's MTP sector.

This report on Indonesia's digital health ecosystem provides an important overview of the sector, highlighting key opportunities and lessons for Australian businesses. It will prove valuable for Australian digital health businesses seeking to understand the size and nature of opportunities in our region.

We would like to thank Austrade for their outstanding in-market support and expert review of this report, and Elisabeth Yunarko (Founder, Spokle) for her comments on this report. We would also like to thank all the businesses, industry organisations and government bodies that have contributed to the development of this report.

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1 Frost & Sullivan, Digital Market Overview: Indonesia, <https://ww2.frost.com/files/3115/2878/4354/Digital_Market_Overview_FCO_Indonesia_25May18.pdf>, 23.
2 MTPConnect, Sector Competitiveness Plan 2019, (2019), 9.

2. Fast Facts

263m
Population

Indonesia's population is more than **10 times** Australia's.[4]
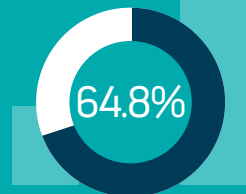
110m
Young people

Indonesia has a **huge** youth population.[5]

$54b
Internet economy

Indonesia is the **largest** and fastest growing internet economy in Southeast Asia. Expecting compound annual growth rate of over **40 percent**, reaching **$174 billion** by 2025.[6]

64.8%
Internet penetration

There are **170 million** internet users in Indonesia and growing.[7]

$1.4 trillion

Gross Domestic Product (GDP)

16th

Indonesia is the world's **16th largest economy** and growing quickly.[3]
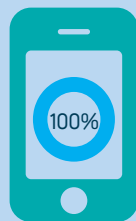
$19.6b
Global investment in health innovation

Investment in health innovation has grown dramatically in the last 10 years, from **$1.6 billion** in 2010 to **$19.6 billion** in 2018.[9]
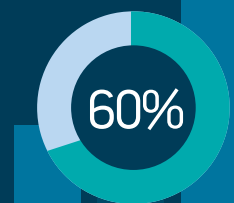
318k
Mobile phone health apps

There are **318,000 health apps** available globally on Google Play and Apple app stores, with over **200** apps added each day.[10]

100%
Mobile penetration

Most Indonesians use mobile technology with some having more than one phone.[8]

60%
Digital health revenues

growth per year (CAGR)
Digital health revenues in Indonesia are growing rapidly, from **$85 million** in 2017 to an estimated **$973 million** in 2022.[11]

3   The World Bank Group, "Indicators: Indonesia", <https://data.worldbank.org/country/indonesia?view=chart>.
4   The World Bank Group, "Indicators: Indonesia", <https://data.worldbank.org/country/indonesia?view=chart>.
5   United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, custom data acquired via website.
6   Google–Temasek, e-Conomy SEA 2019, (October 2019), 18, <https://www.thinkwithgoogle.com/_qs/documents/8456/e-Conomy_SEA_2019_report_I5z4pvR.pdf>.
7   Asosiasi Penyelenggara Jasa Internet Indonesia, Penetrasi & Profil Perilaku Pengguna Internet Indonesia 2018, (2019), <https://www.apjii.or.id/content/read/39/410/Hasil-Survei-Penetrasi-dan-Perilaku-Pengguna-Internet-Indonesia-2018>.
8   We are Social, "Digital 2018 Report: Indonesia", (1 February 2018), <https://datareportal.com/reports/digital-2018-indonesia>.
9   Startup Health, 2019 Q1 StartUp Health Insights, 4, <https://andhealth.com.au/wp-content/uploads/2019/04/2019-Q1-StartUp-Health-Insights.pdf>.
10   Research 2 Guidance, mHealth App Economics 2017/2018, (November 2017), <https://www.iqvia.com/institute/reports/the-growing-value-of-digital-health>.
11   Frost & Sullivan, Digital Market Overview: Indonesia, <https://ww2.frost.com/files/3115/2878/4354/Digital_Market_Overview_FCO_Indonesia_25May18.pdf>, 23.

3. Executive Summary

Indonesia's emerging digital health ecosystem presents a range of opportunities for Australian businesses to engage with Indonesia's rapidly growing healthcare market. Digital health is transforming healthcare delivery across the world. Businesses, governments and non-government organisations are all looking to digital health technologies to increase the efficiency of healthcare delivery and improve patient health outcomes. Digital health holds the potential to change both the way healthcare systems operate and how patients interact with them.

Digital health has emerged as a key area of disruptive innovation in Indonesia in the last 5–10 years and is gaining momentum as Indonesia's sizeable youth population increasingly looks to digital solutions to access goods and services.

The Indonesian digital health sector is using technology and leveraging the benefits of growing internet connectivity to address some of the challenges of healthcare delivery across the archipelago. Indonesia's healthcare system needs to deliver health services to 260 million people spread across over 17,000 islands. A shortage of health professionals and constraints on physical infrastructure further exacerbate the scale of this challenge.

Indonesian healthcare companies are looking globally for internationally competitive digital health solutions. Australia's world-class healthcare system and reputation for delivering good health outcomes at an affordable price provide Australian digital health businesses with a strong value proposition in Indonesia. Australian digital health businesses will face domestic and international competition in Indonesia but can leverage their domestic experience and expertise to position themselves as a trusted partner or provider to Indonesia's health sector.

This report provides an overview of the digital health landscape in Indonesia for Australian businesses. It highlights the opportunities for Australian businesses looking to engage with Indonesia's digital health sector and identifies areas where they may be better placed to partner or engage with Indonesian companies. It provides additional resources and contact details as next steps for Australian digital health businesses looking to deepen their engagement with Indonesia's digital health sector.

4. Introduction

Digital health is growing quickly in Indonesia. On one estimate, digital health revenues are expected to increase in Indonesia from $85 million in 2017 to $973 million in 2022 at a compound annual growth rate of over 60 per cent.[12] As the digital health ecosystem in Indonesia grows, businesses are applying new and existing technologies to improve healthcare delivery throughout the archipelagic nation.

Indonesia has proven potential for digital business, including digital health businesses.[13] Indonesia has the world's fourth largest population with over 260 million people and the world's 16th largest economy with a gross domestic product of $1.4 trillion in 2018.[14] Indonesia is also the largest ($54 billion) and fastest growing internet economy in Southeast Asia, with Google–Temasek research estimating that Indonesia's internet economy will reach $174 billion by 2025 at a compounded annual growth rate of over 40 per cent.[15] The country is currently home to over 170 million internet users, with a young population of 110 million, 90 per cent of whom use the internet.[16]

Digital health is emerging in Indonesia, as it is globally, to address a number of challenges in the country's healthcare system. As Indonesia has moved up the development curve, health outcomes have improved. But challenges remain, including in the delivery of services to a huge and fragmented population dispersed across over 17,000 islands and the rising prevalence of non-communicable disease. Increasingly, individuals and government are looking to digital health solutions to overcome these challenges.

Indonesia's emerging digital health landscape provides a range of opportunities for Australian digital health businesses. Indonesia is one of Australia's closest neighbours and 13th largest trade partner[17] (Australia–Indonesia two-way trade was worth $16.4 billion in 2018).[18] The Indonesia–Australia Comprehensive Economic Partnership Agreement (IA-CEPA) has the potential to further enhance trade between the two countries, including through e-Commerce.

12 Frost & Sullivan, *Digital Market Overview: Indonesia*, <https://ww2.frost.com/files/3115/2878/4354/Digital_Market_Overview_FCO_Indonesia_25May18.pdf>, 23.
13 United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, custom data acquired via website.
14 The World Bank Group, "Indicators: Indonesia", <https://data.worldbank.org/country/indonesia?view=chart>.
15 Google–Temasek, *e-Conomy SEA 2019*, (October 2019), 18, <https://www.thinkwithgoogle.com/_qs/documents/8456/e-Conomy_SEA_2019_report_I5z4pvR.pdf>.
16 Asosiasi Penyelenggara Jasa Internet Indonesia, *Penetrasi & Profil Perilaku Pengguna Internet Indonesia 2018*, (2019), <https://www.apjii.or.id/content/read/39/410/Hasil-Survei-Penetrasi-dan-Perilaku-Pengguna-Internet-Indonesia-2018>.
17 DFAT, *Indonesia Country Brief*, accessed 17 September 2019, <https://dfat.gov.au/geo/indonesia/Pages/indonesia-country-brief.aspx>.
18 DFAT, Insights: Indonesia, < https://dfat.gov.au/dfat/trade/engage/economic-diplomacy/Documents/indonesia-market-insight.pdf>.

This report explores the recent rise of digital health in Indonesia, providing Australian businesses with an overview of Indonesia's digital health ecosystem and the health and digital landscapes more broadly. It examines potential opportunities for Australian businesses in the Indonesian digital health ecosystem, highlighting some of the important considerations for businesses looking to engage with the Indonesian market. The report includes case studies throughout, which tell the stories of digital health businesses currently operating in Indonesia. The report also provides additional information and useful resources to help Australian digital health businesses understand the Indonesian digital health landscape.

4.1 Digital health is the disruption of traditional healthcare delivery and research systems by new technologies

Digital health's interaction between the health and technology sectors means that it draws on and links into a number of different industries, including manufacturing, medical technology, biotechnology, medical devices and pharmaceuticals.[19] Australia's National Digital Health Initiative, ANDHealth, is currently pushing for digital health to be recognised as a standalone sector.[20]

ANDHealth, which is supported by MTPConnect, notes that the broad impact of digital health, its intersection with a number of different industries and the unique commercialisation pathway for digital health solutions means that digital health should be recognised as its own sector.[21]

Digital health can be categorised in different ways. For the purposes of this report we have adopted the World Health Organization's definition[22], which categorises digital health solutions by the user of the intervention, as follows:

1. Clients
2. Healthcare providers
3. Health system or resource managers
4. Data services

Interventions for clients

Clients are members of the public who are potential or current users of health services, including health promotion activities. Caregivers of clients receiving health services are also included in this group.

Interventions for healthcare providers

Healthcare providers are members of the health workforce who deliver health services.

Interventions for health system or resource managers

Health system and resource managers are involved in the administration and oversight of public health systems. Interventions within this category reflect managerial functions related to supply chain management, health financing, human resource management.

Interventions for data services

This consists of crosscutting functionality to support a wide range of activities related to data collection, management, use, and exchange.

19   "How we Define Digital Health", Resources, ANDHealth, accessed 19 September 2019, <https://andhealth.com.au/resources/>.
20   ANDHealth, Digital Health: Creating a new Growth Industry for Australia, (2018), 9, <https://andhealth.com.au/wp-content/uploads/2019/04/Digital_health_Creating-a-New-Growth-Industry-for-Australia.pdf>.
21   Ibid.
22   World Health Organization, Classification of Digital Health Interventions v1.0: A Shared Language to Describe the uses of Digital Technology for Health, 1, <https://apps.who.int/iris/bitstream/handle/10665/260480/WHO-RHR-18.06-eng.pdf;jsessionid=9B04434A5BADDFED45C309BDEE28C56D?sequence=1>.

Digital health in Indonesia is being used to address specific problems with traditional healthcare models and has the potential to improve:

- access to healthcare

- quality of healthcare

- cost of healthcare

- the efficiency of the healthcare system

- the patient (or customer) experience.

The World Health Organization's classification of digital health interventions also focuses on the sorts of system challenges that digital solutions can address. These include: improving information sharing and communication, increasing availability, improving quality, fostering better alignment with local norms and individual beliefs as well as increasing utilisation, efficiency and accountability and reducing cost.[23]

There are a broad range of examples of different technologies being applied in digital health. These range in complexity from an application on a watch that monitors vital signs all the way through to data management of a health record system for an entire population. Some examples of different types of technologies being applied to the healthcare sector are provided below.

New and existing technologies are being applied to address challenges in the traditional healthcare model

Mobile health
Smartphone/tablet apps are changing the way patients interact with health facilities and how practitioners receive consultations, monitor their health and medicine intake and streamline administration functions such as appointments, prescriptions and billing.

Wearables and sensor devices
Wearable devices measuring vital signs are being used in conjunction with smartphones and video technology in diagnosis and management of treatment. This is a major part of the 'internet of things' (IoT) revolution. These devices enable increasingly customised patient care, in a move toward precision medicine.

Data science
AI/machine learning is being used to reduce labour on routine back office tasks in the healthcare industry such as using voice recognition technology to transcribe doctors' notes. Data science is also being used with clinical data supporting a move towards personalised medicine for patients.

Cloud computing
Cloud computing is in the early stages of revolutionising electronic health records. This technology creates efficiencies by removing silos and eliminating duplication in records management systems. It will also provide vast aggregate data for research purposes.

Blockchain
Blockchain technology is being applied to preserve patient privacy while allowing aggregation of data in the healthcare industry that can be useful for medical research purposes and improving patient outcomes.

23 World Health Organization, Classification of Digital Health Interventions v1.0: A Shared Language to Describe the uses of Digital Technology for Health, 1, <https://apps.who.int/iris/bitstream/handle/10665/260480/WHO-RHR-18.06-eng.pdf;jsessionid=9B04434A5BADDFED45C309BDEE28C56D?sequence=1>

Understanding Indonesia's digital health landscape

Indonesia[24]		Australia[25]
263 million	Total population	25 million
$1.3 trillion	GDP	$1.9 trillion
$5,217	GDP per capita	$76,774
3 percent	Health expenditure (proportion of GDP)	9 percent
$150	Health expenditure per capita	$6,703
2,813 (1,026 public) — 1 per 100,000	Hospitals (#)	1,350 (693 public) — 5 per 100,000
310,710 — 118 per 100,000	Hospital beds	95,947 (61,647 public) — 384 per 100,000
164,180 (134,459 GPs) — 62 per 100,000	Registered medical practitioners (General practitioners and specialists)	95,194 (29,455 GPs) — 381 per 100,000
354,000 — 135 per 100,000	Nurses	323,122 — 781 per 100,000

Health indicators

Indonesia		Australia
71	Life expectancy	82
21 per 1,000 births	Infant mortality	3 per 100,000

All $ figures are AUD.

24 Indonesia stats are for 2018: <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi_Profil-Kesehatan-Indonesia-2018.pdf> (March 2019).
25 Australia stats for 2017-18 (https://www.aihw.gov.au/reports/hospitals/hospital-resources-2017-18-ahs/contents/at-a-glance (26 June 2019)). Public hospital data is for (2017-18) while private is 2016-17;
    GDP per capita (2018 current $US) https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?view=chart GDP (2018 current US$) https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart
    All figures in AUD (at OFX 2018 average rate (1.339736)).

4.2 Digital health can provide innovative solutions to challenges in Indonesia's healthcare system

Digital health is helping address challenges in Indonesia's healthcare system. Indonesia is the fourth largest country in the world with a population of over 260 million people, spread across an archipelago of over 6,000 inhabited islands (from a total of over 17,000).[26] Indonesia faces a range of challenges in healthcare delivery and access.

Indonesia has a complex and evolving healthcare system

Like Australia, Indonesia has a mixed model of public and private delivery of healthcare.[27] In Indonesia, public healthcare is decentralised, with 65 per cent of public-health spending occurring at the district level.[28] Almost 10,000 community healthcare centres play a significant role in delivering primary-healthcare services to the population.[29] For more serious healthcare needs, care is delivered primarily through public and private hospitals, with low penetration of non-hospital specialist clinics, pathology or radiology networks, rehabilitation or aged care services. For the most wealthy, international travel to Singapore and other jurisdictions for healthcare remains popular.

Out-of-pocket expenditure on healthcare in Indonesia decreased as a proportion of total health expenditure from a high of almost 57 per cent in 2010 to the latest figure of about 37 per cent in 2016.[30] This is about twice the global average of 18.6 per cent and twice that of the proportion of out-of-pocket expenditure in Australia.[31] See the call-out box on Universal Healthcare on page 11 for further discussion.

Indonesia's health expenditure as a proportion of GDP is roughly a third of Australia's. Health expenditure in Indonesia sits at about 3 per cent of GDP (which has remained steady since 2010) while health expenditure in Australia is about 9 per cent of GDP.[32] The World Bank notes that a country's growth in income is generally accompanied by a growth in total health expenditure and decrease in out-of-pocket expenses.[33] Indonesia's health expenditure is likely to follow a similar pattern. The Indonesian economy has experienced annual GDP growth between 3 per cent and 6 per cent since 2000.[34] Indonesia's public expenditure on healthcare can also be expected to grow, with the introduction of universal healthcare in 2014 (see page 11).

Geographic fragmentation and a shortage of medical professionals are key challenges for healthcare delivery

Indonesia's traditional healthcare sector is a prime target for digital disruption. The Indonesian healthcare system faces the challenge of delivering health services to a large and fragmented population across the archipelago. A shortage of trained medical professionals — nurses, general practitioners and specialists — and a shortage in health infrastructure such as hospital beds further exacerbate these challenges (see page 9 for comparison between Australian and Indonesian healthcare systems).

Digital health solutions, such as mhealth (mobile health) and telemedicine increase access to quality health services in rural and remote areas of Indonesia. For example, TeleCTG provides cardiotography (CTG) devices to midwives in remote areas of Indonesia. The device allows midwives to record the vital signs of a fetus to their mobile phones and communicate that data to specialist obstetricians/gynaecologists located in urban centres (see case study on page 12).

Population health outcomes have improved, but the prevalence of non-communicable diseases is rising in Indonesia

In the last few decades Indonesia has made significant progress towards improving population health outcomes. Life expectancy has increased from the age of 63 in 1990 to 71 in 2018, and maternal mortality has more than halved in the last 10 years.[35] Indonesia has made progress on improving health outcomes and tackling communicable diseases and conditions arising from malnutrition.[36] But Indonesia now faces growing rates of heart disease, diabetes and other non-communicable diseases.[37] The World Economic Forum estimates that non-communicable diseases will cost the Indonesian economy AUD$3.8 trillion (US$2.8 trillion) from 2012–30.[38]

26 "Luas Daerah dan Jumlah Pulau Menurut Provinsi, 2002–2016", *Geografi*, Badan Pusat Statistick, (21 November 2017), < https://www.bps.go.id/statictable/2014/09/05/1366/luas-daerah-dan-jumlah-pulau-menurut-provinsi-2002-2016.html>.
27 https://elibrary-worldbank-org.ezp.lib.unimelb.edu.au/doi/pdf/10.1596/30623?download=true, 4.
28 The World Bank Group, (2017) <http://www.anggaran.depkeu.go.id/content/Publikasi/seminar%20bidang%20kesehatan/WBGHealth%20PER%20Update%20Phase2%20MOF%20Seminar_121417.pdf>.
29 Kementerian Kesehatan Indonesia, *Profil Kesehatan Indonesia 2018*, <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/profil-kesehatan-indonesia-2018.pdf>.
30 The World Bank Group, "Out of pocket expenditure (% of current health expenditure)", <https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?locations=ID>.
31 The World Bank Group, "Out of pocket expenditure (% of current health expenditure)", <https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?locations=ID>.
32 Australia stats for 2017-18 (https://www.aihw.gov.au/reports/hospitals/hospital-resources-2017-18-ahs/contents/at-a-glance, (26 June 2019). Indonesia stats are for 2018: http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi_Profil-Kesehatan-Indonesia-2018.pdf (March 2019).
33 The World Bank Group, *Health Update*, (2017), <http://www.anggaran.depkeu.go.id/content/Publikasi/seminar%20bidang%20kesehatan/WBGHealth%20PER%20Update%20Phase2%20MOF%20Seminar_121417.pdf>.
34 The World Bank Group, "GDP Growth (Annual%)", accessed, 4 October 2019, <https://data.worldbank.org/country/indonesia>.
35 The World Bank Group, "Country Profile: Indonesia", <https://databank.worldbank.org/views/reports/reportwidget.aspx?Report_Name=CountryProfile&Id=b450fd57&tbar=y&dd=y&inf=n&zm=n&country=IDN>.
36 "Risk of Premature Death due to NCDs (%)", Indonesia, *World Health Organization*, <https://www.who.int/nmh/countries/idn_en.pdf>.
37 Ibid.
38 D.E Bloom, et al., *"The Economics of Non-Communicable Diseases in Indonesia"*, World Economic Forum and Harvard School of Public Health, April 2015, <http://www3.weforum.org/docs/WEF_The_Economics_of_non_Disease_Indonesia_2015.pdf>.

Universal Healthcare/ National Health Insurance scheme
(Jaminan Kesehatan Nasional)[39]

The Indonesian government introduced universal healthcare in 2014, with the aim of 100 per cent coverage by 2019. The government agency responsible for the implementation of universal healthcare (Badan Penyelenggara Jaminan Sosial (BPJS Kesehatan)) estimates that as of 31 August 2019, 221 million Indonesians were covered by universal healthcare. This accounts for about 84 per cent of the population.[40]

The introduction of universal healthcare in 2014 has changed Indonesia's health landscape. The public's use of health services has increased, and health expenditure has begun to shift from private out-of-pocket expenditure to government health expenditure through the public health insurance scheme. This has meant greater demand for health services and more money in the health system. Digital health company, HELFA, has come up with an innovative way to address one of the challenges created by increased demand on the healthcare system (see case study below).

CASE STUDY: HELFA

University of Queensland graduate and Indonesian national Eldrian Sudarman founded HELFA in 2018. HELFA develops electronic kiosks for hospital waiting rooms that communicate with a downloaded phone app. The first HELFA kiosk was launched in a public hospital in Jakarta at the beginning of 2019.

CUTTING HOSPITAL WAITING TIMES

In the Indonesian public hospital system, patients often arrive at the hospital early in the morning and wait six to eight hours before getting to see a doctor. Before HELFA, patients were often employing brokers or stand-ins who, for a price, would hold their place in the hospital line and then call or text message the patient when it was coming up to their turn.

HELFA technology links to a mobile phone app which allows users to register for an appointment at the hospital ahead of time and receive live updates as to where they are up to in the queue. HELFA is currently looking to introduce its registration and queuing system into a small number of public hospitals with plans for further expansion.

Eldrian attributes the long waiting times at public hospitals to the introduction of universal healthcare in Indonesia in 2014. The policy has increased the number of people coming to the hospitals and the hospitals haven't been able to keep up with demand. The introduction of HELFA's system has started to clear hospital lobbies and reduce patient waiting times.

"At HELFA we are looking to reduce the waiting time for patients to see doctors to below 1.5 hours. It may still seem like a long time, but compared to the current six to eight hours, it would be a massive improvement" — Eldrian Sudarman, Co-Founder HELFA.

39 Kementerian Kesehatan Indonesia, "Jaminan Kesehatan Nasional", accessed 25 September 2019, <http://www.jkn.kemkes.go.id/faq.php?page=1>.
40 Badan Penyelenggara Jaminan Sosial Kesehatan, "Sejarah Perjalanan Jaminan Sosial di Indonesia", accessed 25 September 2019, <https://bpjs-kesehatan.go.id/bpjs/pages/detail/2013/4>.

CASE STUDY: Sehati/TeleCTG

The team at Sehati TeleCTG have developed two digital health solutions to provide maternal health support throughout Indonesia's archipelago. Sehati and TeleCTG are two separate technologies: Sehati is a phone app that provides information on pregnancy for expectant mothers; TeleCTG is a portable cardiotocography (CTG) device that allows midwives to examine pregnant mothers and fetuses.

Driving both projects are husband and wife team Anda Waluyo Sapardan (COO and co-founder) and Dr Ari Waluyo (CEO), their son Ara (Managing Director and Chief Strategy Officer), Chief Product Officer and co-founder Abraham Auzan, and Dondi Sasmita as Chief Technology Officer (CTO).

ADDRESSING MATERNAL MORTALITY IN INDONESIA

Both digital health solutions seek to improve outcomes for mothers and their babies and reduce infant and mother mortality for the 5.4 million births that occur in Indonesia every year. TeleCTG is currently available across six of Indonesia's 34 provinces and enables midwives in remote areas to provide expectant mothers with access to CTG scans that would otherwise be unavailable or difficult to access. The TeleCTG device is available for private sale, but the majority of purchasers come from district governments.

MANUFACTURING IN INDONESIA

A key part of TeleCTG's digital health solution is the medical device itself — a small box with transducers that can measure the fetal heartbeat and contractions during pregnancy. The device then transmits the results to a midwife's smartphone and on to an obstetrician and gynaecologist. TeleCTG manufactures their device in their own factory in West Java, Indonesia. They have taken this step to protect their intellectual property and maintain quality of the product. To register their product with the Ministry of Health in Indonesia, however, the company looked to Singapore for a facility to conduct the required testing of the device.

"Manufacturing in Indonesia made sense to us. We could keep control over the process and our intellectual property and constantly check-in with how the process was going" — Abraham Auzan, CPO and Co-founder, TeleCTG.

LOOKING INTERNATIONALLY FOR RESEARCH & DEVELOPMENT

TeleCTG leverages relationships with Indonesian universities for research and development but is also looking abroad for collaboration and ideas. In the past, the company has examined manufacturing models in China and surveyed a range of technological developments coming out of Israel. But the company is also looking internationally in areas including research, technology innovation, data analytics, user engagement and applications of blockchain technology.

"75 per cent of births in Indonesia are delivered by midwives, so it makes sense that midwives are the users of our TeleCTG product" — Anda Waluyo Sapardan, COO and Co-founder, Sehati and TeleCTG.

4.3 Indonesia is increasingly going digital

Indonesia's large and technologically engaged population provides a strong foundation for digital health businesses. There are 170 million internet users in Indonesia (64.8 per cent of the total population), with most using their phones to access the internet.[41] This is a 10 per cent increase from 2017, with almost 30 million more people using the internet in 2018.[42] For comparison, 87 per cent of people in Australia in 2017 were internet users.[43]

Indonesia's technologically engaged youth population provides a large customer base for digital businesses. There are over 110 million Indonesians under 25 years old, accounting for more than 40 per cent of the total population.[44] For comparison, there are less than 8 million Australians under 25 (accounting for 32 per cent of the population).[45] Young Indonesians are also more likely to be internet users, with internet penetration of 91 per cent of 15–19 year olds and 88.5 per cent of 20–24 year olds.[46] This is in contrast to just 8.5 per cent of the population aged 65 and above.[47]

Indonesians generally access the internet through their mobile phones. Over 96 per cent of users access the internet through the cellular network, while 15 per cent do so through a fixed internet connection in their home.[48] Mobile phones are accessible and affordable in Indonesia resulting in a mobile penetration rate well over 100 per cent (people often have more than one sim card and/or phone and therefore multiple subscriptions).[49] But due to the high cost of smartphones, most Indonesians are still using feature phones.[50] The penetration of smartphones is still quite low at less than 30 per cent of the population — about 78 million people.[51]

With cheaper smartphones becoming available in the market, smartphone penetration is also expected to grow.[52] Most Indonesian smartphone users use the android operating system, with only 3 per cent of smartphone users using Apple's iOS.[53] The availability of smartphones and predominant use of the android operating system in Indonesia, are important considerations for companies developing digital health mobile phone applications for Indonesian users.

Digital disruption and the rise of four successful tech unicorns in Indonesia provide encouragement for other digital companies looking for opportunities in Indonesia.[54] Between 2015 and 2018, Indonesia's digital markets have grown significantly. Ecommerce has grown by more than 600 per cent to $12.2 billion in 2018, ride hailing has grown by 363 per cent to $3.7 billion while online travel has grown by 72 per cent to $8.6 billion.[55] Digital disruption to healthcare follows wide-scale disruption to other services in Indonesia, notably transport (with the introduction of Gojek, Grab and Uber) and Ecommerce (with major players Bukalapak and Tokopedia).

The Indonesian government's strong focus on finding the next tech unicorn is driving investment interest in digital health as a potential sector for Indonesia's next big tech success. To further this aim, for example, Indonesia's Ministry of Communication and Information hosts an annual summit Nexticorn (Next Indonesian Unicorns) to help create opportunities for investors to meet start-up founders, with the hope of finding Indonesia's next start-up success.[56] Although there is potential for Indonesia's next successful start-up to come from the digital health sector, there are also contenders in FinTech and EdTech.[57]

The Indonesian government is also implementing measures to increase internet penetration, especially in remote areas. These measures include the Palapa Ring Project which aims to bring broadband internet to Indonesia's population with over 36,000km of fibre-optic cable,[58] and the Multifunction Satellite Project to increase internet access to remote areas and improve their access to government services.[59]

These government projects seek to address the significant urban/rural divide in internet users in Indonesia. In 2018, 74 per cent of urban residents were internet users, in contrast to just 61 per cent in rural areas.[60] This is particularly relevant for digital health companies looking to address remote or rural access to health services, as improved internet infrastructure in these areas increases the number of users for services and applications targeting remote/rural areas.

41 Asosiasi Penyelenggara Jasa Internet Indonesia, *Penetrasi & Profil Perilaku Pengguna Internet Indonesia 2018*, (2019), <https://www.apjii.or.id/content/read/39/410/Hasil-Survei-Penetrasi-dan-Perilaku-Pengguna-Internet-Indonesia-2018>.
42 Ibid.
43 Australian Bureau of Statistics, *Household use of Information Technology, Australia 2016–17*,
44 United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, custom data acquired via website.
45 Australian Bureau of Statistics, *Australian Demographic Statistics, Dec 2018: Table 59. Estimated Resident Population By Single Year of Age, Australia*, <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Dec%202018?OpenDocument>.
46 Asosiasi Penyelenggara Jasa Internet Indonesia, *Penetrasi & Profil Perilaku Pengguna Internet Indonesia 2018*, (2019), <https://www.apjii.or.id/content/read/39/410/Hasil-Survei-Penetrasi-dan-Perilaku-Pengguna-Internet-Indonesia-2018>.
47 Ibid.
48 Ibid.
49 We are Social, *"Digital 2018 Report: Indonesia"*, (1 February 2018), <https://datareportal.com/reports/digital-2018-indonesia>.
50 Ibid.
51 Statista, "Smartphone Penetration Rate as Share of the Population in Indonesia from 2017 to 2023", <https://www.statista.com/statistics/321485/smartphone-user-penetration-in-indonesia/>.
52 Ibid.
53 Ibid.
54 Indonesia's four tech unicorns are Gojek (rideshare and other services), Tokopedia (ecommerce), Bukalapak (ecommerce) and Tokopedia (travel services).
55 Kementerian Komunikasi dan Informatika, Laporan Tahunan 2018, <https://www.kominfo.go.id/content/detail/21445/laporan-tahunan-kementerian-komunikasi-dan-informatika-tahun-2018/0/laporan_tahunan>.
56 "Nexticorn", Nexticorn: Next Indonesian Unicorns, accessed 17 September 2019, <https://www.nexticorn.com/>.
57 Lim Fathimah Timorria, "Startup Edutech & Healthtech Punya Potensi Jadi Unicorn Indonesia Selanjutnya", (26 Oktober 2018), Bisnis.com, <https://teknologi.bisnis.com/read/20181026/105/853591/startup-edutech-healthtech-punya-potensi-jadi-unicorn-indonesia-selanjutnya>.
58 https://kominfo.go.id/index.php/content/detail/3298/Sekilas+Palapa+Ring/0/palapa_ring
59 Kementerian Komunikasi dan Informatika, Laporan Tahunan 2018, <https://web.kominfo.go.id/sites/default/files/LAPORAN%20TAHUNAN%20KOMINFO%202019%20LOW%20%287%29.pdf> 20.
60 Asosiasi Penyelenggara Jasa Internet Indonesia, Penetrasi & Profil Perilaku Pengguna Internet Indonesia 2018, (2019), <https://www.apjii.or.id/content/read/39/410/Hasil-Survei-Penetrasi-dan-Perilaku-Pengguna-Internet-Indonesia-2018 >.

Digital health has potential to be the next wave of digital disruption in Indonesia [61]

Ride sharing	🚗	Gojek 🦄
Ecommerce	🖥️	Shopee Bukalapak 🦄
Travel	✈️	Traveloka 🦄
Fintech	📱	OVO 🦄
Digital health	💓	🦄

This graphic shows the phases of digital disruption in Indonesia. The phases are ordered according to when each phase of digital disruption gained mass-attention and popularity. This also coincides with the chronological order of when five of the digital companies (marked with unicorn horns) became tech unicorns (with a valuation of over US$1 billion). Digital health is yet to produce a start-up unicorn but is being touted as a possible area for Indonesia's next unicorn.

61 Indonesia's four tech unicorns are Gojek (rideshare and other services), Tokopedia (ecommerce), Bukalapak (ecommerce) and Tokopedia (travel services).
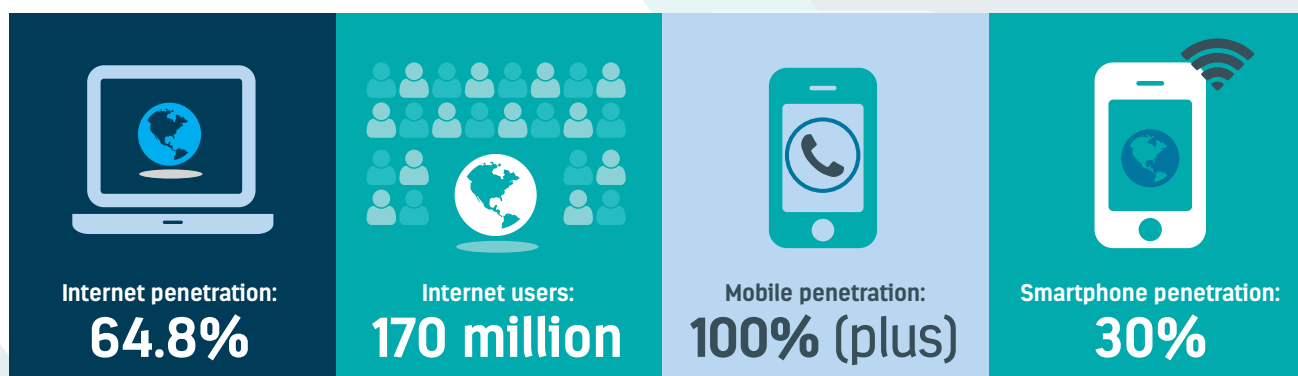
4.4 Digital health is growing as part of a broader trend of digital uptake in Indonesia

Digital health is growing quickly in Indonesia, as it is globally. Globally, it is estimated that there were over 318,000 health apps available on the Google Play and Apple app stores in 2017, with over 200 health apps being added to this total each day.[62] The number of health apps on Google Play Store increased by 50 per cent from 2016 to 2017, while the Apple App store experienced 20 per cent year-on-year growth for health apps.[63] Globally, investment in health innovation has also dramatically increased from $1.6 billion in 2010 across 154 deals to $19.6 billion in 2018 across 769 deals.[64]

In the last 5–10 years, a range of digital health companies and digital health solutions have emerged in Indonesia. Indonesia's large and geographically dispersed population provides a strong user base for Indonesia's emerging digital health applications. As a relatively new phenomena in Indonesia, the private sector is driving the expansion of digital health. Key players in the sector include pharmaceutical companies, healthcare companies, public and private hospitals and start-ups. For example, two of Indonesia's largest pharmaceutical companies, Kalbe Farma and Dexus Group are supporting digital health platforms KlikDokter (Kalbe Farma) and PT Global Urban Esensial (Dexus Group). The not-for-profit and public sector are also adopting digital health to deliver health services to remote communities.[65]

As digital health rapidly expands and more Indonesians start to use these apps, the need for government regulation grows. The Indonesian government is yet to regulate digital health applications, leaving a grey area where digital health applications are operating — that is, between existing (but separate) health and technology regulations.

Indonesian digital health companies are taking full advantage of the regulatory grey area but are aware of the impact that government intervention and regulation may have in the future. They are currently engaging government to ensure they are involved in the process.

| Internet penetration: **64.8%** | Internet users: **170 million** | Mobile penetration: **100% (plus)** | Smartphone penetration: **30%** |

62   Research 2 Guidance, *mHealth App Economics 2017/2018*, (November 2017), <https://www.iqvia.com/institute/reports/the-growing-value-of-digital health>.
63   Ibid.
64   Startup Health, *2019 Q1 StartUp Health Insights*, 4, <https://andhealth.com.au/wp-content/uploads/2019/04/2019-Q1-StartUp-Health-Insights.pdf>.
65   Examples include: Wahana Visi's Posyandu and mSurvey mobile health applications, JHPIEGO's InfoBunda as well as a range of digital health applications that have emerged for Indonesia's universal healthcare system (see: Deloitte Indonesia, Bahar Law Firm and CHAPTERS, *21st Century Healthcare Challenges: A Connected Health Approach*, < https://www2.deloitte.com/content/dam/Deloitte/id/Documents/public-sector/id-gps-ehealth-publication-Indonesia.pdf>).

Jakarta is Indonesia's digital health capital

Indonesia's digital health ecosystem is largely centred in the national capital of Jakarta. This is partly due to a more-established digital ecosystem with access to human capital, infrastructure and investment opportunities for digital health companies. For example, Indonesia's Ministry of Information and Communication estimates that 75 per cent of Indonesia's 200 co-working spaces are located in Jakarta.[66]

There are some companies — such as Riliv (see case study on page 23) — based outside of Jakarta. Local governments in other major Indonesian cities, such as Bandung and Surabaya, are actively promoting and incentivising start-ups to set-up and stay in these cities through subsidised rent, incubator programs and some grant opportunities.

Indonesians are fast adopters of digital health

Indonesians have adopted digital health applications quickly, with some apps already reporting downloads in the hundreds of thousands (see PT GUE case study on page 17). Given the industry is in the early stages of development, many Indonesian digital health companies appear to be focused on building their user base, proving their concept and attaining market dominance.

While earning revenue is a current consideration for some Indonesian digital health businesses there are still many companies that are providing services such as doctor consultations to the population for free.[67] For example, HaloDoc which is perhaps the best-known digital health solution in Indonesia, continues to provide free services to its customer base. HaloDoc received over AUD$142.6 million (US$100 million) investment in Series B (and B+) funding rounds in 2019. Investors included the Bill & Melinda Gates Foundation, global insurance companies Allianz X and Prudential and Indonesia's first unicorn — Gojek.[68]

66 Kementerian Komunikasi dan Informatika, *Laporan Tahunan 2018*, 55, <https://web.kominfo.go.id/sites/default/files/LAPORAN%20TAHUNAN%20KOMINFO%202019%20LOW%20%287%29.pdf>.
67 For example: HaloDoc and KlikDokter.
68 "HaloDoc", *Crunchbase*, accessed 17 September 2019, <https://www.crunchbase.com/organization/halodoc>.

CASE STUDY: PT Global Urban Esensial (PT GUE)

Robyn Soetikno founded PT Global Urban Esensial (PT GUE) in 2016 to provide the Indonesian population with better access to medical information. Three years later, PT GUE is the parent company for five digital health applications aimed at improving healthcare quality and trust in health information in Indonesia.

PT GUE translates as "my company" and reflects the company's user-centric approach to healthcare and information in Indonesia. The company's digital health solutions range from applications that enable users to organise the delivery of pharmaceuticals to their homes, to finding quality medical information online to better managing diabetes.

SUPPORTING INDONESIAN MOTHERS

Teman Bumil (or Pregnant mother's friend) is PT GUE's most successful app to-date. The app provides information to users about the different stages of pregnancy and infant development. Teman Bumil has been installed over 720,000 times since it was launched in November 2017 and is Indonesia's most popular pregnancy and parenting app.

"PT GUE's point of differentiation is that we aim and have managed to bring key parts of the ecosystem (patients, doctors and pharmacies) together digitally." — Robyn Soetikno, COO PT GUE.

ADDRESSING DIABETES IN INDONESIA

Teman Diabetes (or Diabetes Friend), another of PT GUE's digital health solutions— was launched in August 2018. By August 2019, the app had been installed over 34,000 times. But 34,000 downloads is still only a small proportion of Indonesia's population who have diabetes.

The World Health Organisation has previously estimated that 7 per cent of Indonesia's population has diabetes — or over 18 million people on current population figures.[69]

Teman Diabetes uses a medical device, Dnurse, that attaches to the user's smartphone to measure blood sugar levels and uploads the results to the app. This allows users to share the information with medical professionals and trusted friends and family members, enabling users to collaboratively manage their condition along with their community. The app also provides users with relevant information and a forum to discuss their experience with other people with diabetes.

"Teman Diabetes works to detect, educate and support users so that they can ensure they are keeping on top of their diabetes." — Robyn Soetikno, COO PT GUE.

PURSUING INTERNATIONAL COLLABORATION

Robyn sees many opportunities for PT GUE to collaborate internationally. And the company is already looking abroad to ensure they have the best product for their users. For example, PT GUE imports the Dnurse blood glucose meter from China to pair and distributes the device in Indonesia for use with the Teman Diabetes app.

PT GUE is also looking abroad for key technical capabilities in data science. But rather than just import human resources for these functions, Robyn says she would prefer to work collaboratively to build the capability of the Indonesian workforce in these areas.

"We're interested in understanding how to develop the talent locally." — Robyn Soetikno, COO PT GUE.

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69   World Health Organization, Diabetes Country Profiles, (2016), <https://www.who.int/diabetes/country-profiles/idn_en.pdf?ua=1>.

5. Opportunities for Australian Businesses

The breadth and scale of Indonesia's digital health ecosystem presents a range of opportunities for Australian businesses. Internationally competitive digital health solutions including those targeting clients, healthcare providers, health system or resource managers and/or data services, are likely to find a market for their product within Indonesia's healthcare system. Australia's healthcare system has a strong reputation internationally and in Indonesia where it is renowned for delivering good health outcomes at an efficient price. The Commonwealth Fund ranks Australia's healthcare system as second globally and first for healthcare outcomes and administrative efficiency.[70] Australian businesses can leverage this expertise and experience operating in Australia's healthcare sector to become a trusted provider/partner for digital health solutions in Indonesia.

Australian digital health companies should look to identify areas where Australian experience and Indonesian demand are both strong. For example, Australia has long been developing technologies and solutions to deliver healthcare services to rural and remote areas. Australian experience with these technologies dates back to at least the 1920s when a pedal-powered radio was used in remote homesteads to contact the Royal Flying Doctor Service, giving remote communities access to medical advice and emergency services.[71] This is just one example of an area where digital health solutions in Australia may find opportunities in Indonesia.

Australian digital health companies, however, may need to customise their product to find entry points to the Indonesian market, including around language and cultural nuances. Some of these considerations are presented in section 5.1, as they relate to different users/purchasers of Australian digital health solutions.

Other opportunities in Indonesia's digital health ecosystem

There are additional opportunities for Australian businesses in Indonesia's digital health ecosystem, outside of those just for digital health businesses. Broadly, these opportunities are for businesses providing enabling services and technology to digital health companies. Several opportunities that arise in the Indonesian digital health space include:

Technology

- Data security and storage solutions

Education and training

- Data analysis and data science
- Training of health professionals, including nurses

Accreditation and standards

- Hospital and community health care accreditation
- Device testing and ISO certification

Investment

- Capital investment in Indonesian digital health start-ups

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70   "Healthcare System Performance Rankings", The Commonwealth Fund, accessed 23 September 2019, <https://www.commonwealthfund.org/chart/2017/health-care-system-performance-rankings>. The Commonwealth Fund is a private philanthropic foundation that promotes high-performing healthcare system.
71   "Alfred Traeger: Giving the Outback its Voice", Royal Flying Doctor Service, accessed 23 September 2019, <https://www.flyingdoctor.org.au/about-the-rfds/stories/alfred-traeger-giving-outback-its-voice/>.

5.1 Australian businesses should tailor their Indonesia strategy to their customer

Australian businesses pursuing opportunities in the Indonesian digital health landscape will have a number of different pathways to access the market. Each pathway will generate specific challenges for Australian businesses based on the primary stakeholders they are engaging with. This section outlines some important considerations for Australian businesses looking to enter the Indonesian market, categorised by the potential purchaser/partner of the digital health solution.

Australian businesses should also consider a range of regulatory requirements specific to foreign businesses. These requirements include foreign investment ownership limits, local contracting requirements, and rules regarding the recognition of intellectual property. As a result, in practice, most foreign firms partner with a local firm (either through contract or co-investment) as a part of their business establishment and business development approach.

Business-to-business (B2B) opportunities are the most prospective for Australian companies

Indonesia's B2B market is likely to be the simplest point for Australian businesses to access the Indonesian market. Big players in Indonesia's healthcare system have both the resources and international mind-set to be interested in some of Australia's emerging digital health applications.

Within this market, Indonesian hospitals and healthcare companies, pharmaceutical companies, and digital health companies are all potential purchasers of Australian digital health solutions. Many of these firms work with specialised technology integrators, who support their uptake of new technologies over time. Digital health appeals to these companies as a way to improve system efficiency and improve patient outcomes. For example, National Hospital and its off-shoot technology company, Lifepartners Healthcare are looking internationally to purchase world-class digital health solutions to ensure premium healthcare services for the premium market (see case study on page 21).

Business-to-customer (B2C) opportunities will be more difficult to access

Australian businesses without prior experience in the Indonesian market are likely to find it difficult to compete with Indonesian consumer-facing platforms and health service providers for Indonesian users. Given their proximity to and familiarity with local markets, Indonesian companies are likely to have a stronger understanding of the local language, culture, market dynamics and regulatory environment.

Australian companies with a scalable solution looking to capitalise on Indonesia's far bigger potential user base should consider seeking local expertise or working in collaboration or partnership with a local Indonesian company. This will enable Australian businesses to tap into local expertise and networks.

For example, Docquity, a doctor–to–doctor communication platform originally established in India, entered Indonesia in November 2016. Docquity is a foreign digital health company that has rapidly localised for the Indonesian market, including through providing Indonesian content for Indonesian users. Docquity hired Indonesian staff and established an Indonesian business entity at the outset to demonstrate their commitment to the market to users and partners. Further information on Docquity's experience in Indonesia can be found on page 22.

Australian businesses will have to show significant commitment to capitalise on business to government (B2G) opportunities

Foreign businesses generally require a multi-year commitment of time and strong local networks if seeking to work directly with government bodies in Indonesia. This applies equally to central and regional governments, both of whom are responsible for different aspects of health service delivery and policy. Government approval processes tend to be protracted in most sectors in Indonesia, and officials are often conservative in procurement decisions to avoid any appearance of impropriety.

Regardless, in the healthcare sector government stakeholders are critical, and building trust through regular communication and availability for meetings are important elements of success. Having an agent or in-market staff is important but, in some cases, only the principals of a company will be able to secure government meetings.

The impact of the Indonesia–Australia Comprehensive Economic Partnership Agreement

The Indonesia–Australia Comprehensive Economic Partnership Agreement (IA–CEPA) has the potential to support Australian businesses looking to engage with Indonesia's digital landscape. The Indonesia–Australia Comprehensive Economic Partnership Agreement was signed on 4 March 2019. As of February 2020, the agreement has been ratified by the Indonesian and Australian parliaments but is yet to come into force.[73] Once in-force, both governments expect benefits to digital businesses in Indonesia and Australia.

Impact on data localisation

The Indonesian government introduced a new regulation in October 2019 that will reduce restrictions on businesses storing Indonesian data offshore.[74] Previously, most businesses were required to store Indonesian data onshore in Indonesia. The IA–CEPA agreement will capture any further liberalisation to data localisation requirements for Australian businesses and ensure that no new requirements for onshore data storage are introduced.[75]

Source code

Current Indonesian regulatory requirements mean that Australian software suppliers have to provide the source code for their software to the Indonesian government if they wish to import, sell, distribute or use the software in Indonesia.[76] Under IA–CEPA this will no longer be a requirement, but Australian businesses may be required to alter their content to meet Indonesian standards.[77][78] This means that Australian businesses can have more confidence in the protection of their intellectual property.

73 Australian Department of Foreign Affairs and Trade, "Indonesia–Australia Comprehensive Economic Partnership Agreement", accessed on 23 January 2020, <https://dfat.gov.au/trade/agreements/not-yet-in-force/iacepa/pages/indonesia-australia-comprehensive-economic-partnership-agreement.aspx>.
74 See: Ahmad Fikri Assegaf, Zacky Zainal Husein and Muhammad Iqsan Sirie, "Indonesia: Government Relaxes Data Localisation Requirement", (6 November 2019), *Mondaq*, <http://www.mondaq.com/x/861082/data+protection/Government+Relaxes+Data+Localisation+Requirement>; See also: *Peraturan Pemerintah Republik Indonesia Nomor 71 Tahun 2019 tentang Penyelenggaraan Sistem dan Transaksi Elektronik*, <http://peraturan.go.id/common/dokumen/ln/2019/LN185-PP71.pdf>.
75 Australian Department of Foreign Affairs and Trade, "Indonesia–Australia Comprehensive Economic Partnership Agreement", accessed on 23 January 2020 , <https://dfat.gov.au/trade/agreements/not-yet-in-force/iacepa/pages/indonesia-australia-comprehensive-economic-partnership-agreement.aspx>.
76 Ibid.
77 Ibid.
78 Government Regulation 82 of 2012; See: HHP Law Firm, General Data Localization Requirements in Indonesia, (July 2018), <https://www.bakermckenzie.com/-/media/files/insight/publications/2018/07/al_generaldatalocalizationrequirements_july2018.pdf?la=en>

CASE STUDY: Lifepartners Healthcare and National Hospital

Ang Hoey Tiong founded Lifepartners Healthcare in 2018 in Surabaya, Indonesia. The business idea came from his experience as director at National Hospital Surabaya where he has worked with CEO Dr Hans Wijaya to integrate world-class technologies to service Indonesia's premium healthcare market. Lifepartners Healthcare is now looking at how other health providers can use new technologies and ways of working to improve customer experience and drive greater efficiencies.

INDONESIA'S PREMIUM MARKET DEMANDS PREMIUM SERVICES

Historically, Ang says, the majority of the premium healthcare customers in Indonesia have travelled overseas for their healthcare — to places like Singapore, Malaysia and Australia. But the goal with National Hospital is to provide state-of-the-art, globally competitive healthcare so that customers can stay in Indonesia for their treatment.

"Our brand at National Hospital, first and foremost, and our use of world-class technologies and tech systems are our competitive advantage" — Ang Hoey Tiong, Director, National Hospital and founder, Lifepartners Healthcare.

INTRODUCING NEW HEALTH TECHNOLOGIES TO INDONESIA'S HEALTH SYSTEM

Lifepartners Healthcare purchases existing technologies but also works with local technology providers to build customised solutions. Some examples of their customised solutions include applying speech to text technology to doctor consultations, improving electronic medical record systems and hospital management systems, and developing medical technologies to ensure better surgery and patient outcomes.

"At Lifepartners Healthcare we are helping healthcare providers transform from delivering traditional healthcare services to digital healthcare services"
— Alexander Ang, COO Lifepartners Healthcare.

One of the challenges to digital health in Indonesia's healthcare system, Dr Hans says, is how stakeholders react to change. In Indonesia, shareholders in private hospitals are often the doctors who work there.
Doctors, especially older doctors, Dr Hans notes, are sometimes resistant to changing their habits and the way they have traditionally done things.
However other stakeholders, like private health insurers, see the benefits of more efficient, lower cost, and patient-centred care.

"Technology is not the only answer and is not always the answer, it's more about finding a solution and being able to show greater effectiveness." — Dr Hans Wijaya, CEO National Hospital Group and CEO Lifepartners Healthcare.

WORKING WITH AUSTRALIA AND IMPROVING HEALTH SERVICES IN INDONESIA

National Hospital and Lifepartners have a strong connection to Australia, often drawing on Australia's world-class health sector expertise — whether in new technologies or for training their staff. Both companies continue to look globally for the best solutions and technologies to best serve their customers.

"Australia is a close neighbour with expertise in delivering world-class healthcare. It makes sense for us to be connecting with Australian expertise and technologies to provide Indonesians with better healthcare."
— Dr Hans Wijaya, CEO National Hospital Group and CEO Lifepartners Healthcare.

CASE STUDY: Docquity

Docquity was co-founded in 2015 by Amit Vithal and Indranil Roychowdhury. The application is uniquely designed for medical professionals, accessible easily through a mobile phone and website. It allows medical professionals to share their expertise on medical cases, access medical research & information and earn professional development points. To ensure a smooth process, the Docquity team works closely with national medical associations to identify and validate medical professionals when they register to use the app.

DEVELOPING A FOOTPRINT IN INDONESIA

Since 2015, Docquity has expanded its base throughout Southeast Asia. To support this expansion, the company established its headquarters in Singapore in 2016. Docquity is currently available in Indonesia, the Philippines, Malaysia and Thailand; and is looking to grow further in the region.

Docquity was established in Indonesia at the end of 2016 and has quickly marked its presence in the market. As of September 2019, over 60,000 health professionals have signed up as users of the app. Docquity has been able to use its content and experience to grow within the Indonesian market. Gradually, the Indonesian management has made the app's content more relatable, including by providing users with Indonesian language content.

Dr Patrick Indradjaja, Head of Content-Partnership at Docquity Indonesia, notes, while having content in the Indonesian language is important for Docquity's users, it is also important for the company to have a presence and on the ground staff in Indonesia.

DISRUPTING INDONESIA'S HEALTH SECTOR

Like many digital health applications in Indonesia, Docquity was established to address a challenge in the traditional model of healthcare communication and delivery. Docquity seeks to address unlimited opportunities that doctors need for their professional development but can't access them due to the constraint of time needed to attend professional development courses and conferences. Indonesia's market for a product like Docquity is massive. Within three years of its establishment in the Indonesian market, Docquity has attracted over 40,000 general practitioners, 14,000 specialists, and 6,000 dentists and specialist dentists to the application.

Docquity is aiming to double its users in the region from a base of 100,000 to 200,000 by August 2020.

EMBEDDING AN INTERNATIONAL MINDSET

Docquity is truly an Asian company, not just because it has a regional presence but also because it has an international mindset. While the Indonesian company relies on tech support in India, it is also looking at the international market to collaborate with medical research institutes, universities and medical journals in order to provide the users of the app with access to the best information that improves users' knowledge.

"We partner with national medical associations and that relationship doesn't work unless we are on the ground, meeting regularly and showing our commitment to the market" — Dr Patrick Indradjaja, Head of Content-Partnership, Docquity Indonesia.

CASE STUDY: Riliv

Audrey Maximillian Herli (Maxi) and Audy Herli founded start-up Riliv ("relief") in mid-2015. The Riliv platform (www.riliv.co) provides users with counselling services via instant messaging or over the phone. Maxi came up with the idea for the platform after he had a friend reach out and talk to him about his depression. Riliv started off as a peer-to-peer support network. But the team at Riliv soon realised that they needed to connect their users with qualified psychologists. Users of Riliv can now pay for a one-off counselling session with a psychologist or sign-up for a series of appointments for counselling.

EXPANDING ACCESS TO MENTAL HEALTH SERVICES IN INDONESIA

Riliv taps into a population of an estimated 14 million people in Indonesia with depression. Maxi believes that Riliv appeals to its Indonesian users by enabling them to avoid the negative stigma of seeing a psychologist. A survey of Riliv's user base reveals that 89 percent of users have had no previous interactions with psychologists. The added benefit of Riliv is that it costs a fraction of a traditional psychologist's appointment.

LEVERAGING GOVERNMENT SUPPORT FOR START-UPS

Riliv is based out of Koridor, a co-working space that is operated by the Surabaya City government. The Surabaya government initiative is looking to establish and develop creators, innovators and local entrepreneurs to drive innovation and help Surabaya-based businesses and entrepreneurs compete on the global stage. Maxi says they have received a range of support from the government, but that there are still a number of challenges in establishing a start-up — Riliv is Maxi's fourth start-up.

"The start-up market in Indonesia is still developing and needs more success stories to inspire other start-ups and encourage growth of the ecosystem" — Maxi, Riliv co-founder.

Access to the skills and technology required to support Riliv's platform remain hard to come by. Maxi says that while he is able to tap into local universities and get students to support content-development, it is still hard to access the technical expertise in Indonesia for start-ups. Maxi notes that while there is support in Surabaya, many start-ups are drawn to Jakarta where there are more business opportunities.

5.2 Key lessons for Australian businesses

There are potential market opportunities for Australian digital health businesses in Indonesia. The interviews conducted for this report highlight a number of practical lessons for Australian businesses looking to capitalise on this opportunity. These interviews highlighted the importance of finding the right partner and spending time in-market as key considerations for Australian businesses considering the Indonesian market. In addition, Australian businesses should be mindful of Indonesian business culture and practices when doing business in the country (see useful resources on page 25).

Understand how your solution and business will fit in the Indonesian context

The Indonesian health sector is dynamic and multi-faceted, and the challenges faced by its users are often quite different from those in Australia and other markets. It is important to develop an understanding of how a new solution will address specific needs of Indonesian service providers, patients or the government.

In addition, it is critical to understand which organisations are best placed to deploy your solution and will represent a good cultural fit at the business level.

Finding the right partner

Many opportunities for Australian businesses in the Indonesian digital health ecosystem will hinge on finding a trusted local Indonesian partner, with the local expertise and networks required to succeed on the ground. Partnerships with Indonesian companies may include finding an agent or distributor, establishing a joint-venture with an Indonesian company or finding a purchaser for a digital health solution.[79]

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79 For more information on possible business structures see: Asialink Business, Country Starter Pack: Indonesia, 27.

Australian government and industry bodies are increasingly focusing on international opportunities for Australian digital health businesses. Government and industry bodies are hosting conferences and networking events in Australia and conducting trade missions of Australian companies abroad, including to Indonesia. They are also bringing international digital health companies to Australia. These events provide Australian digital health businesses with the opportunity to meet with international digital health business leaders and discuss possible areas of collaboration.

Getting in-market

Going to Indonesia and meeting with potential partners is an important step for any Australian business looking to do business in Indonesia. Commitment to the market and the regularity of visits may depend on the stage of business negotiations or investment. Market visits are critical to understanding the market and maintaining a network of genuine relationships. Market visits are also an important signal to Indonesian partners and government of business commitment to the market. One Australian digital health company chairman spoke of how he was visiting Indonesia each month to ensure he was regularly in front of his staff and business and government networks. He noted that if he had the time, he would be visiting Indonesia more often, but that currently he was relying on his staff on the ground to ensure key relationships were maintained while he was out of the country. This example highlights both the importance of getting in-country regularly and also having good in-country staff.

There are a number of organisations that provide support for businesses looking for opportunities in Indonesia. Australian federal and state governments host trade missions, which are often sector specific and take groups of similarly focused businesspeople to Indonesia to introduce them to potential partners on the ground.

Austrade also supports individual businesses to understand the market, and to identify and be introduced to partners, end users and other important stakeholders. Austrade's operations team in Indonesia have specific expertise in digital health, with established networks in the industry.

6. Conclusion

Indonesia's healthcare sector is growing rapidly, with total health expenditure more than doubling since 2010 to reach $42 billion in 2017.[80] This amounts to a per capita increase of $76 or an 88 per cent increase in per capita health expenditure since 2010.[81] As part of this broader growth trend, digital health is emerging in Indonesia as a solution to key challenges in the country's growing healthcare sector.

Australian digital health businesses are well-placed to capitalise on opportunities in this sector. Indonesia's rapidly growing digital health ecosystem provides market opportunities for Australian digital health solutions and areas for business partnerships and collaboration. Indonesia's healthcare system faces a number of challenges including population access to services, quality of services and the rising prevalence of non-communicable diseases. Digital health technologies are well suited to addressing these challenges.

Digital health solutions have found a captive audience in Indonesia. The country's large, young and technologically engaged population has already adopted technology to solve challenges in the transport, travel booking and commerce sectors. As Indonesia's population grows and more people gain access to the internet and smartphones across the country, the market for digital solutions in Indonesia will grow.

Indonesia's domestic digital health ecosystem is young and energetic. As the sector continues to grow, opportunities for Australian businesses will also grow. Australian businesses looking to engage with Indonesia's digital health sector will need to make sure that they continue to access up-to-date information and build strong relationships in the country to ensure that they are well positioned to actively seek out these emerging opportunities.

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80 Kementerian Kesehatan Indonesia, *Profil Kesehatan Indonesia 2018*, <http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/profil-kesehatan-indonesia-2018.pdf>.
81 Ibid.

7. Useful resources

7.1 List of industry and support organisations

MTPConnect

Level 20 / 15 William Street
Melbourne VIC 3000
Australia

Website: www.mtpconnect.org.au
Tel: +61 3 7019 0917

Email: info@mtpconnect.org.au

ANDHealth

Level 22 / 120 Spencer Street
Melbourne VIC 3000
Australia

Website: andhealth.com.au
Contact: andhealth.com.au/contact-us

Indonesia HealthTech Association

Website: healthtech.id

Email: healthtech.id@gmail.com

Australian Trade and Investment Commission (Austrade)

Austrade Canberra

Levels 1-2, Nishi Building,
2 Phillip Law Street,
Canberra ACT 2601 Australia.

Tel: 13 28 78
Email: info@austrade.gov.au

Austrade Jakarta

Australian Embassy
Jl. Patra Kuningan Raya Kav
1-4 Jakarta Jakarta
12950 Indonesia

Tel:+62 21 2994 5400

Austrade Surabaya

Australian Consulate-General,
Level 3 ESA Sampoerna Center
Jl. Dokter.Ir. H. Soekarno
No. 198 Klampis Ngasem,
Sukolilo Surabaya Indonesia

Tel: +62 31 9920 3223

7.2 Key information resources

ANDHealth, *Digital Health: Creating a New Growth Industry for Australia*
https://andhealth.com.au/wp-content/uploads/2019/04/Digital health_Creating-a-New-Growth-Industry-for-Australia.pdf

Asialink Business, *Country Starter Pack: Indonesia*
https://asialinkbusiness.com.au/research-resources/indonesia-country-starter-pack

Austrade, *Digital Health website*
https://www.austrade.gov.au/digitalhealth/home

Deloitte, Bahar Law and Chapters, *21st Century Health Care Challenges: A Connected Health Approach*
https://www2.deloitte.com/content/dam/Deloitte/id/Documents/public-sector/id-gps-ehealth-publication-Indonesia.pdf

8. About us

MTPConnect

The Medical Technologies and Pharmaceuticals Industry Growth Centre, MTPConnect, was formed in 2015 to champion the growth of Australia's MTP sector. MTPConnect forges stronger connections between research and industry to help maximise opportunities for Australians to not only make scientific and technological breakthroughs, but to see them developed through the proof-of-concept stage and successfully translated and commercialised.

MTPConnect represents and supports organisations, research entities and governments involved in the research, development, manufacturing or market commercialisation of innovative products along the MTP value chain.

In addition to its Growth Centre activities for the Department of Industry, Science, Energy and Resources, MTPConnect operates two programs for the Medical Research Future Fund: the $45 million BioMedTech Horizons program and the $22.3 million Biomedical Translation Bridge program.

MTPConnect's Head Office is in Melbourne CBD. It has hubs at Monash University, the University of Sydney's Institute of Biomedical Engineering and Technology, the Harry Perkins Institute of Medical Research in Perth and the Translational Research Institute in Brisbane.

For more information visit mtpconnect.org.au.

MTPConnect Priority 5: Support the development of digital healthcare solutions: device and data analytics

The digital world has, and will continue to have, a substantial impact on the healthcare landscape. The development of digital devices and datasets will enable new software solutions and healthcare platforms that will change how healthcare providers diagnose and administer health solutions and how consumers choose to be treated. Digital technologies will also change how new products and therapeutics are discovered and developed. They are the crucial elements needed as the sector moves towards greater adoption of precision healthcare. The success of these new solutions also relies on educating end users, such as state health departments and public and private healthcare providers, on the potential of digital innovations.

This priority directly reflects the importance of the digital evolution megatrend, but it is also reinforced by the role that digital health solutions play in several other megatrends, including delivering precision healthcare, providing greater consumer control, and delivering better integrated end-to-end care (which is often supported by digital diagnostics and monitoring devices).

Source: MTPConnect, Sector Competitiveness Plan 2019, (June 2019), 21.

Asialink Business

Asialink Business is the National Centre for Asia Capability, mandated by the Australian Government to create an Asia capable workforce in Australia. Asialink Business supports organisations nationally to engage with Asia through capability development programs, research and information, and public forums and events.

Asialink Business is a part of the Asialink Group, based at the University of Melbourne. Asialink is Australia's leading centre for creative engagement with Asia. Asialink has programs in arts (Asialink Arts), education (the Asia Education Foundation), diplomacy (Asialink Diplomacy) and business (Asialink Business).

Working across all sectors of the economy, Asialink Business designs and delivers impactful solutions tailored to our clients' niche Asian growth needs. Our expertise covers all Asian economies and includes extensive experience in assisting organisations expand into Asia. With national representation across Australia, Asialink Business has a highly skilled team of Asian market and sector specialists, business practitioners, market intelligence professionals and capability development specialists.

Our commercially focused solutions enable our clients and partners to optimise their business with Asia, by accessing customised insights, skills and networks, including:

• Country, market and industry-specific insights and research
• Market development planning and opportunity assessments
• Cultural intelligence, negotiation skills and relationship building to drive business outcomes
• Executive and leadership training
• Business thought leadership
• Asian stakeholder engagement, business facilitation and events.

For more information visit asialinkbusiness.com.au.

Austrade

The Australian Trade and Investment Commission – Austrade – contributes to Australia's economic prosperity by helping Australian businesses and education institutions as they develop international markets.

Together with partners such as MTPConnect and Asialink Business, Austrade's ASEAN team is closely engaged with a network of health sector contacts across the region. Austrade draws on this network to help Australian health businesses understand and take advantage of the emerging opportunities arising from the modernisation of the sector.

For more information visit austrade.gov.au.

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- **All figures in this report are in Australian dollars unless otherwise stated.**

- 1USD = AUD1. 339736 (OFX 2018 annual average rate).

- 1Rp = AUD0.00010468

10. Appendix

10.1 Key regulatory bodies in Indonesia

- Ministry of Health http://www.kemkes.go.id/

- Ministry of Communication and Information https://kominfo.go.id/

- Directorate General of Intellectual Property http://www.dgip.go.id/

- National Agency of Drug and Food Control (BPOM) https://www.pom.go.id/new/

10.2 Organisations consulted for the development of this report

- Austrade Indonesia

- Bunda Medik Hospital

- Cartula Health

- Centre for Healthcare Policy and Reform Studies (Chapters)

- Docquity

- HaloDoc

- Health Governance Initiative, United Nations for Development Program

- HELFA

- Indonesia Health Management Consultant Association

- Indonesia HealthTech Association

- John Hopkins

- Klikdokter

- Lifepartners Healthcare

- National Hospital

- Nutrition International

- Premier Hospital

- PT Global Urban Esensial (GUE)

- Riliv

- Sehati TeleCTG

- Varises Indonesia

- Wahana Visi Indonesia

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