

# Warung Pintar

The digital future of mom-and-pop retail



Warung Pintar, which means “smart kiosk” in the Indonesian language, is leading the digitalisation of the traditional warung, a mom-and-pop micro-retail outfit that provides the day-to-day consumer goods for the immediate vicinity, and is valued for its convenience and grassroots familiarity. By offering warung owners a digital-ready turnkey solution that

includes a pre-fabricated storefront, a digitised supply chain system, and a fully integrated app that enables product and order tracking, and dashboard monitoring, Warung Pintar helps these micro-businesses run more efficiently and profitably, while providing a better retail experience for their customers.

# Warung Pintar

## Why it matters

The informal cash economy is one of the last frontiers that remains untapped in an increasingly data-driven world. Estimated to be about 22% of Indonesia's GDP, with similar or even higher rates in neighbouring countries, it continues to be a significant sector with few details available to provide a good understanding of the segment. With 95.6% of warung owners already using the internet, the key to introducing traceability and digitalisation to a major part of the shadow economy may already be at our fingertips.

Beyond the Indonesian warung, similar formats in other countries, like the sari-sari store in the Philippines and the kirana store in India, remain major retail channels locally and they face the common challenge of modern trade formats such as the minimart encroaching on their market share. Digital solutions for mom-and-pop stores are not just for this massive class of micro-entrepreneurs to better understand consumer habits and demands. These solutions also help to professionalise their store operations, increasing their competitiveness.



Digitisation



Data  
Monetisation



Concentration  
of Wealth



Focus on  
Transparency



Partnership  
Models

## INFORMAL ECONOMY ESTIMATES

Shadow economy size as % of GDP, as of 2015



In Indonesia –

More than **14,500**

Number of kiosks under Warung Pintar, as of June 2020

**+41%**

Increase in revenue after adopting Warung Pintar's system

In The Philippines –

**700,000  
to 1 Million**

Number of sari-sari stores

**28%**

Revenue share of fast moving consumer goods

# Grab & Gojek

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Superapp-powered  
economic development



Grab and Gojek are prominent technology startups in Southeast Asia that have produced superapps – single smartphone applications that provide users with a myriad of on-demand services. Gojek started as a motorcycle-taxi call centre in Indonesia, while Grab started with on-demand taxi services in Malaysia. Expanding beyond transportation, both superapps have

moved into food delivery, financial services, and more, and are becoming integral to the daily lives of many individuals across the region. Not only have they brought convenience to their customers, they have also empowered many with more self-employment opportunities, be it through expanding the gig economy or by offering merchant tools to small and medium enterprises.

# Grab & Gojek

## Why it matters

Superapps are becoming increasingly important to the welfare and livelihoods of many people in Southeast Asia, and they embody the potential of the mobile internet economy to change the norms of society. Projected to triple from US\$100 billion in 2019 to US\$300 billion by 2025, with the potential to grow at twice the rate in non-metropolitan areas compared to that of metropolitan areas, the internet economy is expected to become a path to economic inclusion for underserved regions and communities.

By adopting mobile-first internet-enabled services, Southeast Asian consumers are also leaving digital footprints. With a treasure trove of user data collected by the superapps and others like them, better customer insights can now be formed. As was the case in China's internet economy, which was transformed by Tencent's WeChat superapp, better insights can spur even greater innovations. This may range from alternative credit systems for consumer loans, to new services that will suit hyperlocal habits even better.



Data  
Monetisation



Concentration  
of Wealth



Geospatial  
Technology



Regulatory  
Landscape



Sharing  
Economy

### ECONOMIC IMPACT OF SUPERAPPS

**21%** Of driver-partners did not work prior to joining Grab, as of 2019

**31%** Of agent-partners had no income prior to joining Kudo, the merchant arm of Grab in Indonesia

**US\$5.8B**

Contribution by Grab to the Southeast Asian economy in the 12 months leading to March 2019

**Over 9 Million**

Number of people in the region who have earned income using Grab and/or Gojek, as of 2019

### SOUTHEAST ASIA'S INTERNET ECONOMY

Size (Gross Merchandise Value)



Ride-hailing  
Number of users

**8M**  
2015

**40M**  
2019

Ecommerce  
Number of users

**49M**  
2015

**150M**  
2019



# ZaloPay

Fintech for the  
underbanked



ZaloPay is one of Vietnam's leading mobile payment platforms. Established by homegrown technology company VNG in 2016 to accelerate the cashless payment trend in the country, ZaloPay connects with 34 banks and provides a huge range of consumer financial services, including bill payments and phone credit top-ups. With the integration of

ZaloPay into Zalo, the most popular messenger platform in Vietnam, 100 million Zalo users are able to link their bank accounts to the mobile phone for peer-to-peer money transfers and other services. With this move, ZaloPay not only achieved a massive increase in its userbase, it has also paved the way for Zalo to become a superapp in Vietnam.



Digitisation



Concentration  
of Wealth



Social  
Media



Regulatory  
Landscape

Why it matters

The growth of finance apps point to a future where mobile payments, e-wallets, and new forms of digital financial transactions may replace current norms of using physical cash and cards. Asia Pacific is leading the world with this change, with the number of finance application downloads jumping from 383 million in 2014 to 1.8 billion in 2018.

With the growth of smartphone adoption, financial technology is opening up new possibilities for payment, remittances, savings, loans, and other banking services to be transacted and accessed more cheaply and efficiently than before. More importantly, it is helping to improve the financial inclusion of the 70% of consumers who are estimated to be underbanked or unbanked in Southeast Asia today. By improving both the financial products and the customer experience, digital-first finance services like ZaloPay are giving traditional financial institutions a run for their money.

E-WALLET TRANSACTIONS  
IN VIETNAM

**US\$2.3B**

Value of total transactions in 2017

**US\$21**

Average value of transaction per  
user in 2019

Average frequency of  
transactions per user in 2019

**1.6 to  
2.2 times  
a day**

MOBILE PAYMENTS IN  
SOUTHEAST ASIA

**700%**

Estimated market growth from  
2019-2025, to

**US\$109B**

**at least 150**

E-wallet license holders in the  
region, as of 2019

Mobile payment penetration

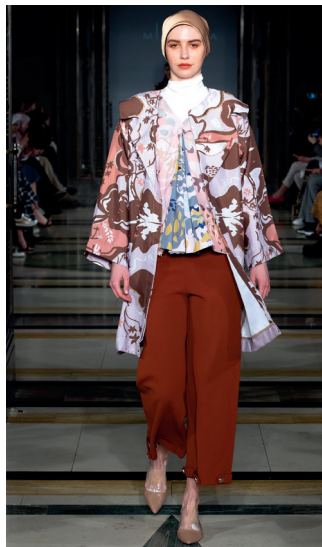
**7%**  
2019

**27%**  
Expected by  
2027

# Mimpikita

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Muslim fashion,  
modesty, and the  
Western gaze



Mimpikita, which means 'our dreams' in the Malay language, is a fashion label set up by three sisters from Malaysia. From their beginnings in 2008 as an online blogshop, Mimpikita has grown to become a representative for the Muslim fashionista at the London Fashion Week and the London Modest Fashion Week. It made its runway debut in 2015.

Though not intended to be a modest fashion brand initially, Mimpikita has attracted a huge customer base of hijab-wearing Muslim women. This could be due in part to the hijab-wearing founders having garnered huge personal followings on social media over the years, making them fashion trendsetters for a segment that generally has not been represented in global fashion marketing.

# Mimpikita



Globalisation



Empowered  
Women



Social  
Media



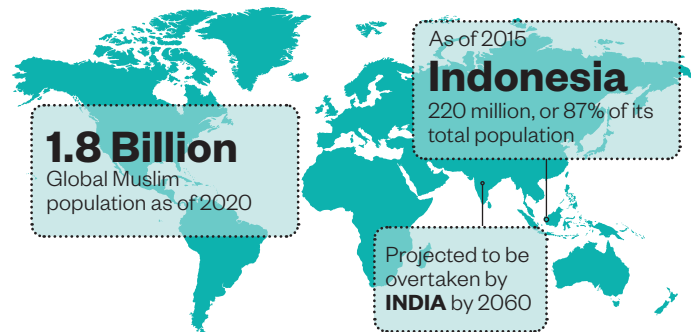
Demand for  
Customisation

## Why it matters

With the modest fashion market forecasted to expand from US\$283 billion in 2018 to US\$402 billion by 2024, internationally-acclaimed fashion weeks are embracing modest fashion, putting a spotlight on designers from countries with large Muslim populations, including those from Southeast Asia.

An emphasis on the modest fashion segment brings the voice of Muslim women to the mainstream and introduces diversity, heritage, and self-representation on the global fashion stage. From Dolce & Gabbana to H&M, fashion brands are responding to this phenomenon by rolling out new collaborations and collections that address this market, opening up options in modest dressing that are suitable not just for Muslims, but for everyone. Beyond sartorial selection, the 2017 launch of the Nike Pro Hijab, which the sporting goods company Nike had worked on alongside Muslim female athletes, also sent an inclusive and empowering message for pious Muslim women in the world to embrace their passion for sports.

## BIGGEST MUSLIM POPULATION IN THE WORLD



## THE MUSLIM CONSUMER

Median age of consumer as of 2015



**24** years old

Muslims



**32** years old

Non-Muslims

Biggest spenders on Muslim fashion

**Turkey**  
**US\$28B**  
**annually**

# 88rising

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Remixing the music  
business in a digital age



88rising is a new-age media and music company promising to tell an authentic Asian story in an era of digital media. Since 2015, the US company has mentored a diverse mix of artists, including Rich Brian, NIKI and Stephanie Poetri from Indonesia, Chinese rap group Higher Brothers, and Japanese-Australian lo-fi R&B musician Joji. In 2018, Rich Brian's debut album became the first album

released by an Asian artiste to top the iTunes Hip Hop Chart. In 2019, Joji hit platinum in the US for his ballad. Beyond the US, 88rising partnered with Philippines-based mobile provider Globe in 2020 to launch PARADISE RISING, a platform to highlight Filipino talent. It also ran its first online music festival, ASIA RISING FOREVER, which had 8 million viewers across its social media channels.

## Why it matters

The media landscape has changed, and more culturally diverse artists seem to be getting their break into global renown than before. Cultural bridging remains an inexact proposition, but with South Korean boyband BTS being the reason for one in 13 foreign tourists in South Korea in 2017, and some contending that Puerto Rico saw a tourism spike from the “Despacito” effect in 2017 following the global success of the reggaeton hit, the factors for cross-cultural appeal in an increasingly interconnected world are going to be important considerations for the success of other cultural exports.

As fans on social media look to popstars for authentic connection, artistry, and representation, media and music businesses have to rethink their presence and strategies in this internet age to appeal to the changing tastes of digital natives.



### RIISING STARS

88rising’s global reach

**84%** aged between 18-34

**50%** outside of US

## Slow Dancing in the Dark

Joi’s 2018 hit reached platinum status in 10 months, and then again in 2020



**US\$4.65B**

BTS’s contribution to South Korea’s GDP in 2018

### PLATINUM STATUS IN A DIGITAL AGE

The Recording Industry Association of America revamped its certification programme on 1 February 2016, expanding the count from just singles and albums to include tracks and streams.



1

Album sale

=



10

Tracks sold from an album

=



1500

On-demand audio or video streams from an album



1

Digital song sale

=



150

On-demand audio or video streams



# Free Fire

A sport or not a sport?



Developed by Southeast Asia gaming giant Garena, Free Fire was the most downloaded mobile game in the world in 2019 across both Android and iOS platforms. As of June 2020, it had over 100 million peak daily active users. The Free Fire World Series 2019 finals in Brazil recorded over 2 million peak concurrent viewers,

setting a new record for the highest concurrent viewership for a mobile game esports event. In Indonesia, Free Fire partnered popular actor Joe Taslim to create a playable in-game character called Jota, modelled after Taslim himself. It also partnered with Netflix for a special in-game crossover with the global hit series, Money Heist.

# Free Fire

## Why it matters

Mobile gaming is becoming a significant segment of the burgeoning gaming industry. The Southeast Asian market is the fastest-growing mobile game market in the world, and it had grown 17.4% from 2018 to 2019. Apart from battle royale games like Free Fire, another popular genre is hyper-casual mobile games. An example of that would be Magic Tiles 3, a music game created by Vietnamese startup Amanotes that has been downloaded over 700 million times worldwide.

Beyond mobile gaming, the inclusion of the broader category of gaming as a medalled event at the 2019 Southeast Asian Games alongside other physical sports has also made the region a forerunner in mainstreaming esports. The growing recognition of esports as an industry and a popular spectator event, together with the changing media consumption habits powered by increasing smartphone penetration and improving internet speeds, will open up new brand marketing and advertising opportunities.



Digitisation



Globalisation



Competition  
for Talent

### WINNING THE GAME

# 170%

Increase in the number of hyper-casual games in the app stores in 2019, from 2018

This increase is more than

# 3X

 the gaming industry average

Largest prize pool for an esports tournament to date

# US\$25,532,177

### RISE OF THE SOUTHEAST ASIAN GAMER

# 250 Million

Number of gamers expected in Southeast Asia by 2021

# 82%

Of the urban online population in the region are gamers, as of 2020

Revenues per device type, as of 2019

US\$3B +17.4%YoY	Mobile
US\$1B +7.1%YoY	PC
US\$0.4B +5.2%YoY	Console

# 69.4%

Of overall game revenue in the region is from mobile

# US\$4.3B

Revenues from the games market (mobile and non-mobile) in 2019, up 13.9% year-on-year

# Viddsee

—  
Global brands,  
local stories



Viddsee started in 2013 as a platform for aspiring filmmakers in Southeast Asia to showcase their work to discerning audiences, making it easier for both sides to find each other amidst the proliferation of user-generated content on other video platforms. Having built up a community that now includes over 3,000 filmmakers across Southeast Asia, the company launched

Viddsee Studios in 2017 to create premium long-form digital video content for brands and companies. With a strong understanding and ability to articulate local stories, they have worked with iconic brands such as Vaseline, Cornetto, Yomeishu, and the Singapore Tourism Board to articulate brand stories in a contextually-relevant way for the intended audience.

# Viddsee

## Why it matters

The new audience segments reached with increasing mobile internet penetration are also increasing the demand for local content, making it important for brands to act on local preferences to drive interest and engagement. With video-viewing expected to dominate overall internet traffic growth, representing 80% of all internet traffic by 2021, modern media platforms are critical for unearthing local talent and facilitating partnerships between corporations and creatives to deliver locally-relevant brand content.

Beyond Viddsee and its curated aesthetic, other crowd-sourced media platforms also serve the same function for talent discovery. In 2018, eight of the top 10 trending videos on YouTube in Singapore were locally produced or featured local talent, up from 5 in 2017. Apart from videos, platforms like Spotify have also helped to unearth and promote new music talent. Notably, Spotify has played a key role in enabling the resurgence of Original Pinoy Music (OPM) in the Philippines and beyond.



Digitisation



Demand for Customisation



Crowd-sourcing

## VIDDSEE

# 11 Million

Monthly average audience reach

# 42 Million

Monthly average video views

## VIDEO WATCHING HABITS

Weekly online video screen time, as of 2018



The Philippines



Singapore



Global

As of 2017,  
% of connected  
consumers in  
Singapore who...

**67%**  
watch traditional  
broadcast TV daily

**76%**  
watch online  
video daily

# Anurak Saruethai

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The unlikely social media entrepreneur



Anurak Saruethai, or Bang Hasun (“Brother Hasun”) as he is commonly known, is the son of a fisherman who lives in a Thai seaside village called Satun. Selling dried shrimp, squid, and fish on Facebook livestream, Saruethai’s rambunctious salesmanship has won him over a million followers on his business’s Facebook account and has made him a mini-celebrity. Hailed as a role

model for modern entrepreneurship and winning business awards in Thailand, he has been covered extensively by the media and is used as a case study to teach about small business digitalisation. Saruethai is a testament to how the combination of social media, ecommerce, and modern logistics is creating new livelihood opportunities for those who are not located in urban centres.



Next-Gen  
Workforce



Digitisation



Social  
Media



Internet of  
Things

## Why it matters

Social media is becoming an increasingly important aspect for online sales as a platform to engage and interact with customers. Nearly 45% of Southeast Asian shoppers reported that conversational commerce - mainly through the use of social media and messaging platforms - had driven their first online purchase, compared to 27% in the US. The digital ability to have personalised interactions is bypassing conventional ecommerce storefronts to attract some consumer segments, and middle-aged women in middle-income households in Southeast Asian cities are leading the way.

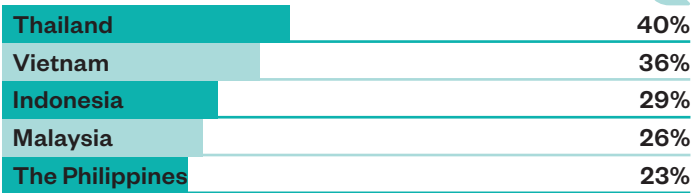
Alleviating the burden of individually replying every potential customer, startups like Halosis from Indonesia and Jumper.ai from Singapore are integrating sales, marketing, customer service, and inventory solutions into chatbots that would take over from a user interaction on social media and turn engagement into sales and conversions.

## RISE OF CONVERSATIONAL COMMERCE

### Conversational commerce awareness comparison



### Respondents with conversational commerce experience



### In Thailand

Social commerce share of  
ecommerce

**21%**

2016

**44%**

2017



# Rags2Riches

—  
Elevating  
artisanal crafts



Rags2Riches (R2R) is a social enterprise founded in 2007 in the Philippines that aims to provide a sustainable livelihood for community artisans by inserting them into a high-end value chain, thereby increasing the value of their handicrafts. R2R is most notable for its impact in Payatas, where waste-picking from a nearby dumpsite and handicrafts are common means to make a living.

Instead of highlighting the plight of poverty, R2R has turned the focus to the fashionable handmade bags that have been designed and produced by their artisans in partnership with top Filipino and international fashion designers. Beyond selling fashion and homeware, R2R is also the sewing and customisation partner of IKEA Philippines, which is slated to open its first outlet in the country in 2021.

# Rags2Riches

## Why it matters

An increasing awareness of the importance of businesses advancing socio-economic development is galvanising a new breed of changemakers. Though the social enterprise landscape in Southeast Asia is currently dominated by the 'long-tail' of small enterprises, the appetite for businesses to do more for society is growing amongst entrepreneurs, corporations, and governments. In the Philippines, the Poverty Reduction Through Social Entrepreneurship (PRESENT) Coalition was formed in 2012 to push for a bill recognising social enterprises as a vehicle for development. In 2015, the Singapore Centre for Social Enterprises was launched with partial government funding to promote this nascent sector.

B Corporation certification has also become popular, with companies trying to get recognised for their efforts in reaching high standards of social and environmental performance. While no one-size-fits-all solution exists to solve all challenges across different societies, government support, religious motivations, and other philanthropic initiatives are beneficial in creating an enabling environment for aspiring businesses to lead change.



## FROM RAGS TO RICHES

General daily wage for artisans in Payatas

**US\$0.20** **US\$4.50-\$15**

Before R2R

After R2R

Cost versus revenue

**US\$190**

Start-up costs for R2R in 2007

**US\$250K**

Expected sales for R2R in 2019

## NUMBER OF B CORPORATIONS

**1,358** in 2015  
over 41 countries

**82** in 2007  
1st year that B  
Corp certification  
was launched

**3,243**  
in 2020  
over 75  
countries

Belief-Driven Buyers

**64%**

Consumers who self-identified as "belief-driven buyers" based on a global survey by Edelman in 2018

# Tun Yat

Sharing economy for  
paddy prosperity



Tun Yat is a sharing platform for farming equipment and machine operation services. It seeks to mechanise the farming sector in Myanmar by facilitating the rental of harvesting machines, tractors, and other productivity equipment between machine owners and farmers. By becoming a neutral broker between the two sides, Tun Yat has helped over 10,000 small-holder farmers overcome common constraints like the

affordability, availability, and access to equipment, allowing them to harness mechanisation to improve their yield and incomes. Now enhanced with technology solutions including machine IoT utilisation reports, chatbot-enabled digital education for farmers, and more, Tun Yat is providing a roadmap for improving digital literacy and promoting technology adoption amongst smallholder farmers at scale.

## Why it matters

Technology-enabled solutions addressing the persistent challenges of smallholder farming are being promulgated as a result of modern advancements in mobile connectivity, but much more needs to be done. Grow Asia, the multi-stakeholder partnership platform between the World Economic Forum and ASEAN created to help the farming community in the region, estimates that only 2.5% of smallholder farmers in Southeast Asia use any of the 60 digital solutions it has curated in its directory. Solutions to improve the productivity of the industry promises to alleviate the ageing farming population's burden to feed the region and have the potential to dislodge farmers from entrenched poverty.

Local startups are coming up with market-specific solutions. In Myanmar, apart from Tun Yat, other agritech startups like Greenovator, Digital Trinity, Village Link and Impact Terra integrate data solutions to enhance farming yields. Elsewhere in the region, AgromelQ in Brunei, TaniGroup in Indonesia, and Ricult in Thailand are also finding new ways to improve direct access to hardware, inputs, knowledge, credit, markets, and better logistics for the class of smallholder farmers.



Sharing Economy



Digitisation



Concentration of Wealth

### SMALLHOLDER FARMING IN SOUTHEAST ASIA

In Southeast Asia

## 71 Million

Estimated number of smallholder farmers

In Indonesia

## 8 Million

Potential drop in farming workforce by 2030 as people move to cities

In Myanmar

## 70%

Of population is rural, and depend on farming for a livelihood

## 2.5 ha

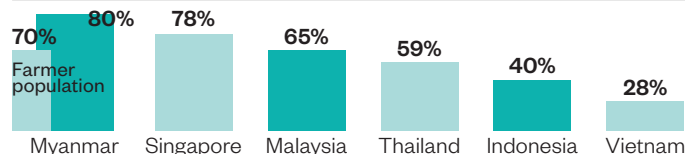
Average size of farm in Myanmar

In Thailand

Proportion of farmers aged 60 and above



### SMARTPHONE PENETRATION IN SOUTHEAST ASIA



# Kampot Pepper

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Matching value with  
quality and tradition



Kampot Pepper obtained Geographical Indication (GI) protection from the World Trade Organisation in 2010 and is the first Cambodian produce to be granted the equivalent in the European Union.

As is the case for champagne specifically from the French region, Champagne, GI identifies a product as having a quality, reputation, or other characteristics that are attributable to its place of origin. GI is an

intellectual property right that is enforceable in jurisdictions where protection has been obtained.

The peppercorn industry has been in the Cambodian regions of Kampot and Kep for centuries but it declined during the Khmer Rouge regime in the 1970s. It has enjoyed a renaissance with the GI status and is now served at the finest restaurants worldwide.



# Kampot Pepper



Globalisation



Concentration  
of Wealth



Regulatory  
Landscape



Environmental  
Awareness

## Why it matters

The growing push by governments to institute GI status is elevating the value of their products in global markets and promoting socio-economic development at home. Studies have estimated that GI products generally command 20% to 50% price premiums, or even more, compared to the non-GI equivalents.

In the past decade, Southeast Asian governments have passed new GI laws and regulations in their countries, introducing stricter oversights and requirements, while promoting pride for its heritage and traditions. In Thailand, which strives to have a product with GI status in every province, 118 of the 135 certified GI products are indigenous and are spread across 75 of their 77 provinces, as of 2019. The same trend of promoting local GI can be seen in Indonesia, Malaysia, and Vietnam for produce like coffee, rice and also handicrafts. The enhanced recognition of the quality of these products also supports the growth of location-related industries like tourism.

## KAMPOT PEPPER: BEFORE AND AFTER GI

	2009, before GI	2018, after GI
Number of producers	113	440
Number of traders	7	27
Price per kilogramme		
	US\$4.50	US\$15
Black		Black
	US\$10	US\$26
White		White
	US\$8	US\$25
Red		Red

## GEOGRAPHICAL INDICATION IN ASEAN

346	Eight
GIs registered in ASEAN	GIs registered in EU from ASEAN



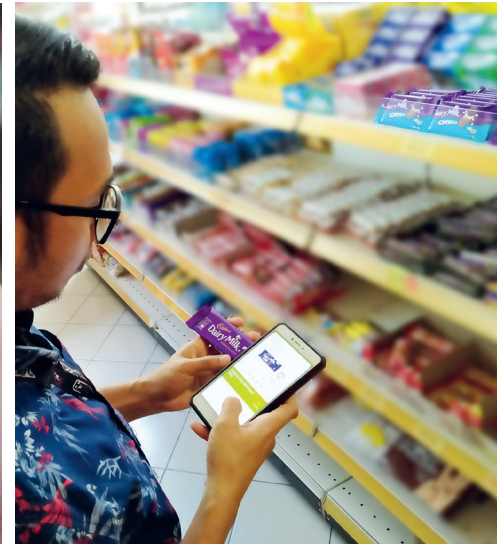
# Global Halal Data Pool

Modernising  
standards of faith

Deloitte Center  
for  
the Edge



The Global Halal Data Pool (GHDP) is an information depository that connects halal suppliers to manufacturers, buyers, and retailers to synchronise the listing of their halal-certified products globally. Connected to 40,000 organisations and 1.4 million global traders, this data pool powers Verify Halal, a halal certification verification application launched in 2017 that



is endorsed by Malaysia's Department of Islamic Development (JAKIM). In 2019, Serunai Commerce, which developed both the GHDP and Verify Halal, launched a blockchain-enabled halal digital records system, promising better data integrity and supply chain traceability, and improving the sophistication of its whole suite of products that make up a halal digital ecosystem.

# Global Halal Data Pool

## Why it matters

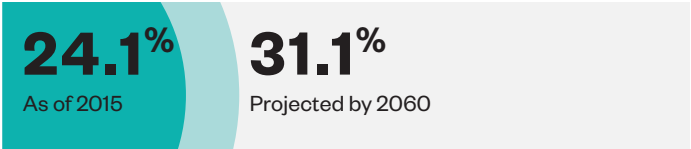
The Islamic economy spent US\$2.2 trillion on the food, lifestyle and pharmaceuticals sectors in 2018, which are expected to grow to US\$3.2 trillion by 2024. This has increased the impetus to improve the halal certification regime, which affects many industries including consumer goods and financial services. However, as a faith-based standard on ethical and safe consumption, halal certification is not uniform. Indonesia's Halal Product Law came into effect in late 2019, requiring new operations for registering, testing, auditing, labelling and distributing many consumer items. In the same year, the Philippines had launched their national halal logo as a mark of assurance that a product or service is up to the standards of its own Philippine National Halal Certification Scheme.

While full regulatory harmonisation across the Islamic economy may not be feasible, the recognition of regional requirements is facilitative for trade. Apart from promoting Malaysia's halal standard, JAKIM recognises the halal certifications of 84 Islamic bodies in 46 countries as of 2020, under its International Halal Authority Board.



## UNDERSTANDING THE ISLAMIC ECONOMY

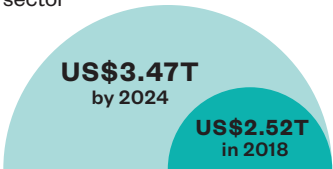
Percentage Muslim in the global population



Size of halal food sector



Size of Islamic financial (assets) sector

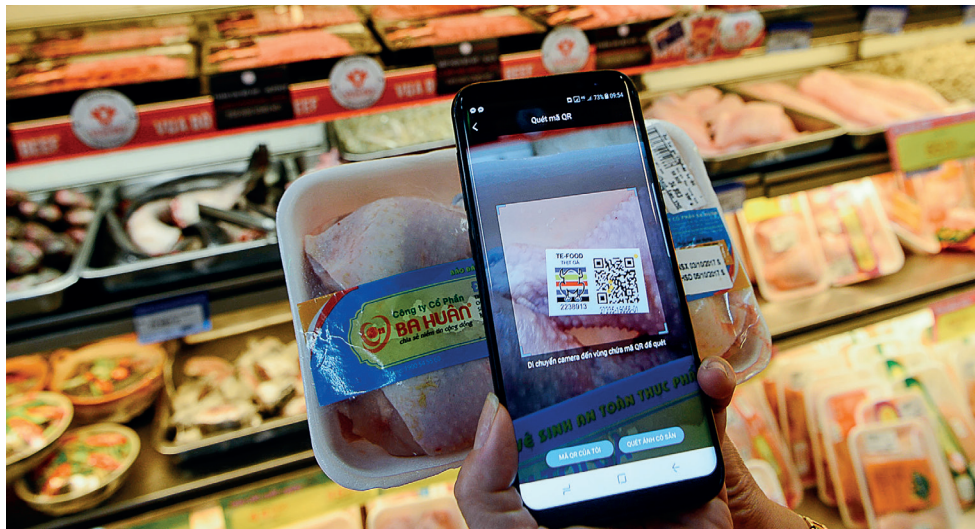


Some categories of halal products and services within the GHDP



# TE-FOOD

## Blockchain for food



TE-FOOD is a farm-to-fork traceability solution provider that is powering the push to implement better food traceability in emerging markets using blockchain technology. Set up in 2016 between Hungarian and Vietnamese partners, TE-FOOD has rolled out food supply chain traceability initiatives with authorities to track the pork, chicken, and egg supply chains in South Vietnam. This implementation required the development of

software and hardware components, including physical identification tools, and the training of at least 10,000 supply chain workers to verify and document the supply chain. TE-FOOD systems have been implemented for over 6,000 business customers globally, including European-based Auchan, Vietnam's Vinamilk, Thailand's CP Group, South Korea's Lotte Mart, and Switzerland's Migros.

# TE-FOOD

## Why it matters

Expected to grow at a CAGR of 9.3% from 2018 to 2025, the global market for food traceability solutions has been strengthened by recent technological progress and can now better serve niche dietary markets. From vegan to halal food requirements, traceability solutions are becoming important considerations for all players across the often complex food supply chain.

Producers with traceability solutions ensure transparency and compliance in farming activities. Increased transparency on upstream supply chain operations in turn allows retailers to enhance operational efficiency and optimise logistics downstream. By getting every party along the supply chain to provide data on their transactions on a blockchain, modern food traceability systems capture and relay information from the ground more securely and efficiently, giving rise to better insights that can enhance consumer trust, producer and distributor efficiencies, and also public food safety.



Blockchain  
Systems



Focus on  
Transparency



Regulatory  
Landscape



Partnership  
Models



Cloud  
Technology

## GLOBAL FOOD TRACEABILITY NEEDS

**Almost 1 in 10**  
People fall ill from eating  
contaminated food each year

**22.5%**  
Overall rate of mislabelling, based  
on a study on fishery imports by  
Italy in 2017. The highest rates of  
mislabelling were found in products  
from China, Vietnam, and Thailand.

**US\$22.3B**  
Estimated market size for food  
traceability by 2025

**150**  
Number of farms Vietnam food  
producer Codifec monitors with  
the TE-FOOD system to ensure  
that all suppliers are compliant to a  
similar standard.



## BLOCKCHAIN EFFICIENCY

Without blockchain

**7 days**

With blockchain

**2.2 sec**

Time taken to track mangoes sold in  
North America, based on a blockchain  
traceability pilot project between Walmart  
and IBM in 2017.

# BreadTalk

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Old flavours, new styles, globalising tastes



BreadTalk Group is a multi-brand food and beverage company that started in Singapore with its eponymous bakery brand founded in 2000. It rose to fame with its buns topped with pork floss, a dried shredded meat snack from China that is common in Southeast Asia. From old-school toast, to yesteryear street food markets recreated in air-conditioned comfort,

BreadTalk Group has made local nostalgic tastes and aesthetics a modern and affordable delight. Apart from selling traditional local and regional foods in creative reinventions, it also manages other successful casual dining restaurants like Din Tai Fung. The group operates about 1,000 F&B outlets across 17 markets, including China, Cambodia, Thailand, and the United Kingdom.

## Why it matters

With 65% of the population in Southeast Asia expected to join the middle class by 2030, up from 29% in 2010, the emerging consumer class in the Southeast Asian region opens up opportunities for new brands to command attention and spending. Coming into wealth in an age of globalisation and being from countries that are familiar with external cultural influences, these new consumers have a broad appetite that includes both local and foreign tastes, making preferences diverse and potentially unpredictable.

In Thailand, homegrown dessert cafe After You became the world's best performing restaurant stock in 2019. Selling Japanese desserts like Shibuya Honey Toast, elaborate pancakes, and shaved iced treats in a variety of flavours from Matcha (Japanese green tea) to Thai Tea, the restaurant has grown to over 35 outlets since it set up its first in 2007. It has plans to expand to other parts of Asia.

## PROFILE OF THE ASEAN MIDDLE CLASS

Southeast Asia, by 2022

**350 Million**    **US\$10-100**

Expected middle class population

Daily expenditure per person that defines middle class (in purchasing power parity terms)

**US\$300B**

Expected disposable income in the region

.....  
In Indonesia

**1 in 5**

Considered to be middle class or

**52 Million**

People in total, representing

**43%**

Of total household consumption

.....  
In Thailand

**49 Million**

Middle class population

.....  
In Vietnam



% of people considered to be middle class



# ecoSPIRITS

More drink,  
less glass

Deloitte Center *for*  
the Edge



ecoSPIRITS is a patent-pending closed-loop spirit distribution system with sustainability at its core. Spirits are transported in bulk directly from distilleries to ecoPLANTS, where they are repacked into reusable, stackable 4.5 litre ecoTOTE vessels that are sent to restaurants and bars, who will refill their bottles on-site. The famous Singapore Sling at the Raffles Hotel in

Singapore has been completely supplied by the ecoSPIRITS model, reducing its carbon and waste footprint. With up to 70% of the cost of a bottle of spirits estimated to be for the glass, packaging, and distribution, the savings from reducing single-use bottles can be used to support higher-quality spirits and to increase margins all along the supply chain.

## Why it matters

Growing consciousness around responsible consumption is driving retail and lifestyle habits of the future, and businesses that strive to make their supply chains and production methods more sustainable stand to benefit. While this trend is more pronounced in western developed markets, these are influences that are likely to manifest with the rising levels of consumption in Southeast Asia. A 2015 survey by Nielson had in fact found Southeast Asian consumers to be the most willing to pay for sustainable products, with Vietnamese and Filipino consumers leading the pack.

Another Nielson survey from 2018 found that globally, 73% of consumers would change their consumption habits to reduce their impact on the environment. 46% shared that they would forgo on a brand name in order to buy environmentally-friendly alternatives. Companies new and old that jump on this opportunity to reimagine sustainable business models stand to win over consumers for the long term.



Partnership  
Models



Climate  
Change



Environmental  
Awareness

## ECOSPIRITS' ENVIRONMENTAL BENEFITS

95%

Elimination of cardboard and glass waste production

up to  
80%

Reduction of carbon footprint in the life cycle of spirits

## Glass recycling rate comparison, as of 2019



in Singapore



in Europe

## % OF CONSUMERS WHO ARE...

willing to pay more for sustainable products

Southeast Asia	80%
Middle East/Africa	75%
Europe	51%
North America	44%

Based on a Nielson survey from 2015

extremely or very concerned about packaging and food waste

Latin America	81%
APAC	73%
Middle East/Africa	73%
Europe	63%
North America	60%

Based on a Nielson survey from 2017

# Avani Eco

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Like plastic,  
but better



Avani Eco is an Indonesian company best known for its plastic bag alternatives made from cassava starch. At only US\$0.02 more than a conventional plastic bag, the fully biodegradable cassava starch bag retains the functional properties expected of plastic but eliminates the problems of plastic waste. The company produces 3-5 million of these bags a day, as well

as a range of other sustainable products like food containers, cups, and straws.

Avani Eco's solutions are being used across a variety of packaging needs for a wide range of clients from retail to hospitality and are commonly seen in the tourist haven of Bali, where the company was founded in 2014.



Regulatory  
Landscape



Climate  
Change



Environmental  
Awareness

## Why it matters

The escalating amount of marine litter both in the ocean and in coastal communities demands an urgent look into plastic alternatives. Over half of the 8 million tonnes of plastic dumped into the sea every year come from major countries in the region, including Thailand, Indonesia, the Philippines, and Vietnam, much of it due to inadequate waste management systems on land, amongst other factors.

Government policies like Bali's 2019 province-wide ban on plastic bags, straws, and polystyrene, and Thailand's single-use plastic bags ban in 2020, have contributed to reducing consumer plastics. However, the plastic problem spans a long value chain of actors from production to packaging to waste disposal. It will require the cooperation of many different stakeholders to effectively reduce environmental damage, while maintaining the level of convenience and protection we are accustomed to with plastic packaging.

## THE GLOBAL PLASTIC SITUATION

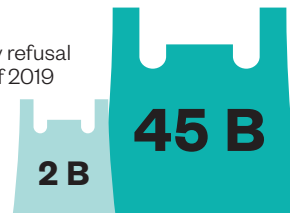


# 80-180 days

Time taken for Avani Eco  
cassava starch bags to  
biodegrade

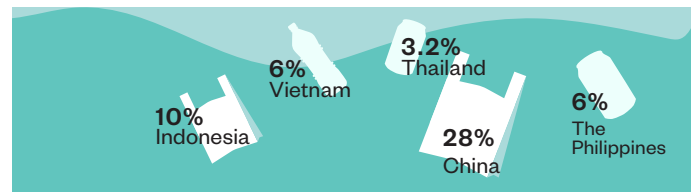
### Number of plastic bags eliminated with Thailand's ban

Based on voluntary refusal  
by customers, as of 2019



Annual savings  
expected based on  
the ban, or  
**225,000  
tonnes**

### Contribution to global plastic mismanagement



# Envirotech Waste Recycling Inc.

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Closing the loop  
on dead-end  
plastics

Deloitte Center *for*  
the Edge



Breathing new life into landfill plastics, Envirotech Waste Recycling Inc. from the Philippines sells upcycled furniture that are made from all sorts of plastic waste, including carrier bags, candy wrappers, laminated sachets and plastic bottles. Shredded, cleansed, melted then moulded, their most well-known product, school chairs, cost about US\$35 (Php 1,700) each, compared to a wooden chair equivalent that would have cost



about US\$31 (Php 1,500). Corporations partner the company to give back to society and push an awareness about plastic waste.

The recycling company processes 50 to 100 tonnes of plastic waste and produces 1,500 school chairs per month. Beyond chairs and other furniture, its ambitions extend to creating prefabricated, low-cost, recycled plastic homes.

# Envirotech Waste Recycling Inc.

## Why it matters

The growing demand for solutions to the global plastic waste problem is encouraging businesses to explore circular economy models and recycling technologies. The global recycling industry is worth US\$200 billion annually, with developed countries shipping their trash to less developed countries to be managed. When China started to reject shipments of poor quality plastic waste imports in 2018, Malaysia became the biggest importer of global plastic waste with imports tripling between 2016 and 2019 to 870,000 tonnes. That same year, Indonesia also saw its plastic waste imports increase by 141% to 283,000 tonnes.

By 2019, Malaysia had also started returning non-recyclable plastic scrap to the developed countries that generated them. As countries take greater steps to protect their environment, it is crucial for industries to adopt better circular economy models through the successful commercialisation of new recycling technologies, in a more equitable arrangement amongst countries, communities, and even competitors.



Partnership  
Models

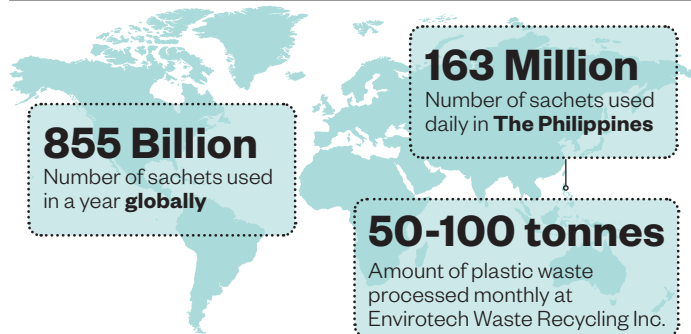


Automation



Environmental  
Awareness

## THE SINGLE-USE SACHET



## UNDERSTANDING GLOBAL PLASTICS

From 1950 to 2015

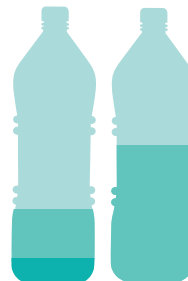
**6,300 Million tonnes**

Total plastics produced

**14%** Now in landfills or in  
the environment

**12%** Incinerated

**9%** Recycled



Current production

**+300 Million tonnes**

Plastics produced yearly

**Over 50%**  
used for single-use  
plastic products



# Saving Boracay

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Bad for business,  
good for nature



In 2018, the island of Boracay in the Philippines closed to tourists and non-residents for six months to allow its popular beaches to recover from the damages of over-tourism. Nearly 400 hotels and restaurants deemed to violate the local environmental laws were also ordered to close as part of the clean-up efforts. These drastic moves came just after a bumper year in 2017, during

which 2 million tourists contributed US\$1 billion of revenue in just 10.3 square kilometres of land.

Since its reopening, Boracay has capped the number of visitors and imposed a host of new regulations to reduce trash. These include bans on partying and barbecuing on the beach, and also on the use of single-use plastics.

# Saving Boracay



## Why it matters

Before the pandemic, governments in Southeast Asia were stepping up their conservation efforts to curb over-tourism. The Travel and Tourism Competitiveness Index 2019 identified environmental sustainability to be the greatest weakness of the Southeast Asian region relative to the global average. Beyond Boracay, the Hollywood-famous Maya Beach in Thailand is closed until mid-2021 as local authorities attempt to replant and revive its coral reefs. Meanwhile, Indonesia contemplates park closures and other initiatives to ensure their indigenous Komodo dragon population continues to thrive on Komodo Island, a UNESCO World Heritage site.

Post-pandemic, this sector has to confront an even more acute struggle between economic priorities and ecological restoration. With the global travel industry in the doldrums for the foreseeable future, tourism-reliant economies especially need to find new sustainable economic opportunities. These may still capitalise on natural endowments, but hopefully with more foresight on environmental protection and longevity.

## TOURISM IN THE PHILIPPINES

### Saving Boracay



Amount of trash generated on the island daily before the closure

Estimated economic losses from the closure

### Visitor arrivals



### Economic contribution, as of 2018



## TOURISM IN SOUTHEAST ASIA

### Visitor arrivals



### Economic contribution, as of 2017



# Kenaf

—  
Better, faster,  
cheaper, greener



Kenaf is a fast-growing tropical plant that can be processed into biofuel, fibre, pellets, and feedstock. These are then further processed into material like rope and paper, building panels as an alternative to brick or concrete, and biocomposites that are used in the automotive industry for filters, brake pads, and panelling. Noted to have similar properties as hemp, a

popular consideration for sustainable raw material, kenaf is becoming an important industrial crop like palm oil and rubber in Malaysia, due to government investment into an alternative crop to tobacco. Businesses like social enterprise AffordableAbodes in Malaysia are also promoting the use of kenaf as they advance their primary aim of providing low-cost and better housing solutions.

# Kenaf



## Why it matters

The growing demand for greener inputs in many industries is driving exploration and investment into alternative raw materials and production technologies. In the case of kenaf, its biocomposites have shown mechanical and physical properties comparable to fibreglass, but are cheaper and biodegradable. The automotive industry, in particular car manufacturers Toyota and Ford, has embraced kenaf biocomposites, driving initial research that has shown how this alternative can be lighter and also greener than conventional parts.

Scaling the farming, production, and research into use cases for better alternative sustainable material opens up possibilities for improving the unit economics of using these new materials to the point of parity with current material choices. Although kenaf has been around for thousands of years, it is just the early days of research into further industrial applications of kenaf. Other bio-based industrial material are also getting more attention as manufacturing companies explore the potential to switch out epoxy resins, chemical additives, and other man-made agents.

### KENAF'S POTENTIAL

Market size by 2025

**US\$854M**

Annual market growth

**10–15%**

Harvest cycle

**4–5 months**

CO<sub>2</sub> absorption per cycle

**30–40 tonnes/ha**

Shorter than many other crops

More than many other crops

### KENAF BIOCOMPOSITES VERSUS CONVENTIONAL MATERIAL

Kenaf air cleaner case for cars

**10–15% 10%**

Less CO<sub>2</sub> emission

Lighter in weight

Kenaf door trim

**20%**

Lighter in weight

Pricing comparison

**US\$0.92/RM4**

per kg of kenaf fibre

**US\$1.61/RM7**

per kg of glass fibre

# BSD City

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Sustainability at  
scale, by design



Bumi Serpong Damai (BSD) City is an ambitious satellite city project by Sinar Mas Group, one of the largest conglomerates in Indonesia. It is now in its third and final phase of development, which is projected to be completed by 2035. BSD City aims to be a digital hub and a showcase of sustainable modernity centred on effective water, waste, and energy management and has

attained green certification for these features. With over 400 hectares of green space and a dedicated water treatment plant, BSD City is nearly self-sufficient in water supply and produces net zero potable water waste. Its pedestrian-friendly city design also accommodates bicycle lanes and sidewalks, which are unusual features in Indonesia's famously congested urban centres.



# BSD City

## Why it matters

Urbanisation is increasing the urgency for sustainable infrastructure that can provide for and withstand the stresses of large and dense populations. An additional 2.5 billion people are expected to live in urban areas by 2050, and 90% of them will be from Asia or Africa.

Half of ASEAN member populations already live in urban areas, and another 70 million are expected to join the class of urbanites by 2025. Today's cities take up just 2% of the Earth's surface, but they are major contributors to climate change, consuming 78% of the world's energy and producing more than 60% of greenhouse gas emissions.

Yet, cities remain critical for economic development. Given that city-level sustainability can be enhanced on multiple fronts, opportunities abound for infrastructure and public utilities providers to work with governments to implement better long-term solutions for the economic and environmental health of its residents.



Digitisation



Competition  
for Talent



Urbanisation



Resource  
Scarcity

## IN INDONESIA



# 150,000

New homes expected to be built in BSD City between 2015 and 2025

# 32 Million

Projected number of people seeking housing in urban areas in Indonesia by 2030

## MEGACITIES OF THE WORLD

# 23%

of the world's population live in cities, as of 2018

Number of megacities

# 33 / 27

As of 2018

In less developed regions

# 43

Expected by 2030



# Chulalongkorn University Centenary Park

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Mitigating floods with  
monkey cheeks



Built to accommodate the frequent floods in low-lying Bangkok, the 12-acre Centenary Park was designed by Kotchakorn Voraakhom to be a manifestation of the Thai King Bhumibol Adulyadej's (Rama IX) inspiration of kaem ling or "monkey cheeks" as a flood control mechanism—that is, the observation that monkeys store food in their cheeks for delayed consumption. With a

containment capacity of one million gallons, the sloping park collects water through gravity, and has functional sections that treat the water and store this resource for use in drier months. Beyond flood management, the park features a green roof, man-made wetlands, retention ponds, and other landscape features. It also provides visitors respite from the hustle and bustle of the capital city.

## Why it matters

Scientists have predicted that oceans will rise between 30cm to 2.5 metres by 2100, putting coastal cities across the world at risk of being flooded. For the many coastal areas in Southeast Asia that sit on soft clay and sand, sinking grounds with rising sea levels pose an existential threat. Climate change also enlarges seasonal variability. From Bangkok to Jakarta, as Southeast Asian cities power on with rapid economic progress, the need for sustainable urban development becomes increasingly pronounced with each monsoon season.

In 2019, following years of trying to manage the annual floods with pumps, canals, barriers, and dams, Indonesia announced that it would move its capital out of Jakarta, which is reportedly sinking between 1-15 centimetres per year. Meanwhile in The Philippines, natural flood defences like mangroves and bamboo trees have been replanted to rehabilitate Laguna de Bay, where floods affect not just local residents, but also those in Metro Manila and the surrounding region.



Urbanisation



Resource  
Price Volatility

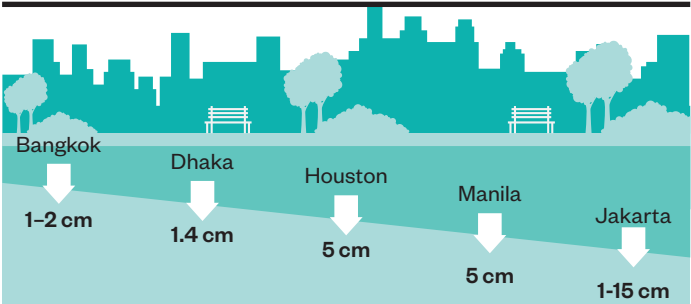


Climate  
Change



Environmental  
Awareness

### ANNUAL RATE OF GROUND SINKING



### HUMAN DISPLACEMENT

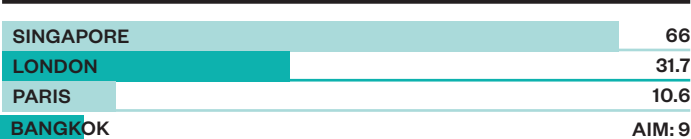
**9.6 Million**

People in Southeast Asia affected by the monsoon season in 2017

**150 Million**

People expected to be displaced by flooding by 2050 globally

### GREEN SPACE PER CAPITA (SQ METRES)



# Halodoc

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Real doctors, virtual visits, immediate relief



Halodoc is an end-to-end telemedicine platform in Indonesia that provides patients with access to registered physicians for online medical consultations, courier services for medicine, and home testing services. Payment solutions through insurance or other means are also available on the platform. In 2017, Halodoc partnered with Indonesian superapp

Gojek to meet the growing demand for on-demand delivery of pharmaceutical items. The convenience of accessing medical services through the internet is especially welcome in Indonesia, a country made up of over 17,000 islands and with notoriously congested urban centres, where the conventional physical visit to clinics can be a real burden to be overcome.

# Halodoc

## Why it matters

Rising affluence, increasing life expectancies, and patchy existing infrastructure are some factors driving the demand for better healthcare solutions in the region, and it is fuelling investment and innovation into the healthcare technology industry. Healthtech received US\$5 billion in funding in Asia Pacific for 2019, with Southeast Asia more than doubling its amount of investment attracted from the previous year.

Research has shown that the developing world accounts for only 20% of the global health expenditure, even though it hosts 85% of the human population. The increasing penetration of mobile internet in Southeast Asia provides a landscape for promising solutions that not only expand the reach for doctors but also offer better medical care experience for patients. The reimagining of healthcare provision with the help of technology is poised to improve resource allocation and reduce inequalities between regions.



Technisation  
of Healthcare



Partnership  
Models



Crowd-  
sourcing



Regulatory  
Landscape

### USERS OF HALODOC

# 16 Million

Monthly active users

# 20,000

Number of doctors connected to  
the platform per month on average

Starting price for a 10-15 minute  
consultation on Halodoc

# US\$1.03

# Rp15,000

### INDONESIA'S HEALTHCARE SITUATION

Number of physicians per 1,000 population, as of 2018



# 0.4

Indonesia

# 0.7

Myanmar

# 2.8

UK

# 3.3

France

Increase in internet users in Indonesia, from Jan 2019 to Jan 2020



# +17% or 25 Million

Of population

# National Steps Challenge™

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Gamifying  
preventative  
healthcare



The National Steps Challenge™ was created by the Singapore Health Promotion Board (HPB) in 2015 as a fun and engaging way to encourage Singapore residents to lead healthier and more active lifestyles. The HPB offers eligible Singaporeans and Permanent Residents with a free fitness-tracking wearable device, paired with a proprietary Healthy 365 mobile application. Participants track their steps and fitness activity

to earn Healthpoints, which can be redeemed for shopping vouchers and more. The seasonal challenge remains a strong movement that dovetails with other nationwide campaigns. Over 800,000 participants took part in the National Steps Challenge™ over the 2018-2019 season, including less digitally-savvy segments such as the elderly.

# National Steps Challenge™

## Why it matters

The growing attention to P4 healthcare—predictive, preventative, personalised and participatory—to hold off the need for curative healthcare has been encouraged by the increasing affordability and usability of wearables. The feasibility of implementing individual healthcare monitoring at scale is contributing to the growth of the global preventative healthcare market, which is estimated to be US\$240 billion by 2025.

Wearables can offer real-time activity data and immediate feedback on the wearer. From movement levels to diet options, behavioural nudging in the physical world will only become more prevalent as digital tools land into more hands. When introduced alongside incentives and goals, wearables open up new ways for governments and corporations to motivate higher-risk groups to stay healthy, mitigating hefty healthcare costs down the line. Insurance companies are also testing similar models by gifting wearables to their customers and rolling out policies that get underwritten based on data collected from digital touchpoints.



Technisation  
of Healthcare



Partnership  
Models

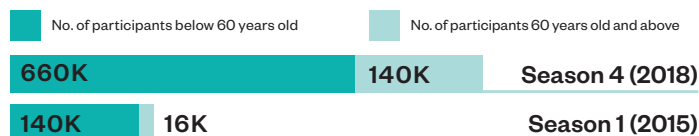


Internet of  
Things



Demand for  
Customisation

## NATIONAL STEPS CHALLENGE™ IN NUMBERS



## Average daily steps clocked by participants (60 years old and above)



## ASEAN P4 HEALTHCARE MARKET OPPORTUNITY

Projected % of population over 65

**26.6%**

Singapore  
by 2035

**20%**

Vietnam by  
2038

**22.8%**

Thailand by 2035

ASEAN dietary supplements  
estimated market size

**US\$10.6B**  
by 2026

**US\$6.92B**  
in 2018



# Ruangguru

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Mobile screen time,  
quality school time



Ruangguru is an education technology startup that provides affordable learning tools for after-school tuition, workplace learning (Ruangkerja), upskilling through massive open online courses (Skill Academy), and more. Since its founding in 2014 in Indonesia, it has expanded to Vietnam in 2019 under the brand Kien Guru, and to Thailand under the brand StartDee. By being

able to deliver its resources to the masses in a more efficient and accessible way, it has helped to level the playing field in markets with uneven distribution of tutoring resources and facilities. Its non-profit arm, Ruangguru Foundation, also collaborates with private and public sectors to provide free resources for teachers and underprivileged students.

## Why it matters

The increasing penetration of mobile internet access in Southeast Asia opens up the opportunity to enhance education experiences to the wider population beyond traditional institutions. Internet penetration in the region has grown rapidly from 25% to 63% from 2014 to 2019, with more than 90% of users accessing the internet through mobile phones.

Where online pedagogical methods are effective, affordable, and accessible – through partnerships with governments or otherwise – the scaling of edtech solutions bodes well for human capital development, as it promises to enhance resources for areas with inadequate teachers, or provide access to education for disadvantaged groups. In 2020, during the COVID-19 pandemic, Ruangguru provided access to its platform for zero charge after striking a deal with a telecommunications company to provide 30GB of free data for studying. It also joined the Indonesian government's initiative to provide nationwide skills training for the workforce.



Digitisation



Competition  
for Talent



Concentration  
of Wealth



Partnership  
Models

## USERS OF RUANGGURU

# 17 Million

Users on the platform

# >92%

of users report improvement in academic performance after three months of using Ruangguru

# >300,000

Teachers on the platform

# 70%

of users in Indonesia come from middle-to-low income families and had no previous access to after-school tuition

## FILLING A GAP

Average number of pupils per teacher in a primary school in 2018



# 17

Thailand

# 17

Indonesia

# 20

Vietnam

# 42

Cambodia

# Close to 7 Million

Estimated number of children of school-going age in Southeast Asia who are not in school

# ASEAN-Singapore Cybersecurity Centre of Excellence

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Fighting formless and formidable foes

Deloitte Center *for*  
the Edge



*Singapore's Minister-in-charge of Cybersecurity S Iswaran announcing the launch of the ASCOE at the 4th ASEAN Ministerial Conference on Cybersecurity in October 2019*

The ASEAN-Singapore Cybersecurity Centre of Excellence was launched in 2019 to increase cybersecurity cooperation in Southeast Asia through policy, technical training, and research. The centre, which has S\$30 million earmarked for five years, represents governmental commitment to coordinated cyber capacity building to level up the skills of the region to tackle increasingly sophisticated and prevalent cyber threats.

ASEAN's efforts to beef up cybersecurity comes at the dawn of 5G internet for a population that is highly receptive to digitalisation, in an environment that remains vulnerable to cyberattacks. This initiative follows from a string of bilateral and regional initiatives amongst ASEAN member states to improve cybersecurity and build a resilient cyberspace and to safeguard national interests and citizens.

# ASEAN-Singapore Cybersecurity Centre of Excellence



## Why it matters

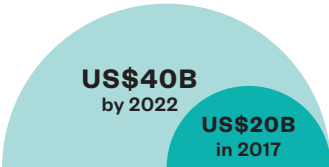
The increasing sophistication and damage posed by cybersecurity threats is pushing governments to cooperate and develop the sector. As it stands, the Asia-Pacific cybersecurity market is outperforming the global market and is set to double in size from 2017 to 2022.

Cybersecurity solutions are difficult to pin down as the crimes are evolving rapidly with technological advancements. Faced with invisible criminals and nefarious state actors, many governments are balancing between unilateral policies and multilateral approaches to contain the formless but formidable foe. In 2016, the Philippines implemented the Cybersecurity Protection Act and Data Privacy Act, after a major hack compromised data security for more than 50 million people. The same year, Singapore launched its Cybersecurity Strategy, outlining the nation's priorities for a resilient and trusted cyber environment, and initiatives for regional cooperation.

As we embrace the benefits of digitalisation, the problem of cybersecurity is going to be increasingly omnipresent. Initiatives such as the ASCOE play a significant role in coordinating capacity building efforts to help ensure that the region is well-equipped to tackle the cyber challenges - together.

### CYBERSECURITY MARKET

Asia-Pacific market projection



**14.6%**

CAGR

**US\$1.9B**

ASEAN expenditure on cybersecurity in 2017

Average expenditure on cybersecurity, as percentage of GDP —

**0.13%**

Global

**0.06%**

ASEAN

### CYBERATTACKS IN ASEAN

Average organisational cost of data breach

GLOBAL	US\$3.92M
ASEAN	US\$2.62M

Average number of records leaked per breach

GLOBAL	25,575
ASEAN	22,500

**14 Million**

Phishing attempts in ASEAN in the first six months of 2019