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Digital Asia

*Asia's digitally
transforming
economies*

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Digital Asia executive breakfast forum

This event summary paper, *Digital Asia: Asia's digitally transforming economies*, is based on an executive breakfast forum of the same name held by The Economist Corporate Network in Hong Kong on June 28th 2018. The event contents entailed a presentation by Robert Koepf, Director of ECN Hong Kong, and panel discussion. We appreciate the support of the event sponsor, Equinix, and time and insights contributed by the panellists, listed alphabetically:

- Christopher Brewer, Senior Consulting Partner, Asia Pacific, Ogilvy Consulting
- Diarmid Massey, Senior Vice President, Asia Pacific; Equinix
- Jing Pan, Chief Marketing Officer, Dianrong
- Mike Whittaker, Chief Technology Officer, Asia Pacific & Middle East; FOX Networks Group



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Introduction, acknowledgements

New applications of digital technology have been sweeping economies, industries, and markets across the globe. The accompanying multitude of novel opportunities and challenges for companies are the stuff of daily business headlines.

Asia, the fastest growing region in the global economy, also stands out for its embrace and development of digital economics. To better understand what this represents for executives in this part of the world, The Economist Corporate Network (ECN) in Hong Kong organised a breakfast forum, "Digital Asia: Asia's digitally transforming economies". This event summary paper recaps and expands upon the contents of that forum.

ECN gratefully acknowledges the support of Equinix, who sponsored the Digital Asia event and this report. We further recognise and express thanks for the valuable commentary contributed by our event panellists whose remarks appear throughout this paper.

Irrespective of sponsorship and panel participation, ECN organised the Digital Asia event and conducted the analysis in this document according to the editorial independence that characterises all output by The Economist Corporate Network. Maggie Stern, Membership Relations Manager, and Mabel Chang, Operations Assistant, at ECN Hong Kong handled preparations and execution of the Digital Asia forum. Robert Koepp, director of ECN in Hong Kong, chaired the event and wrote this summary paper. Florian Kohlbacher, director of ECN in North Asia, provided helpful editorial comments. Gaddi Tam, Graphic Artist at The Economist Intelligence Unit in Hong Kong, rendered the report graphics.

The author thanks all his colleagues for their assistance both with producing the event and this document while noting that in regards to any errors associated with either, they are of his own making.

August 2018



Executive summary

- Asia is home to just over half of the world's online population. Yet the internet penetration rate of its largest economy, China, is under 60%. Its second most populated economy, India, has an internet penetration rate of under 40%. On the back of fast economic growth, internet usage will spread and the digital economic power of these and other markets in Asia will grow.
- Unlike the West where personal computers popularised digital technology among average people, smartphones are propelling the digital wave in Asia. The two key drivers are rising incomes and the popularity of affordable Chinese made handsets.
- China and India lead the world with adoption of fintech. Results are more mixed for other major Asian economies. Japan, otherwise highly advanced in technology, is a relative laggard in this regard. As one of the Digital Asia executive forum panellists noted: fintech is part of "basically everything" in China's digital economy today.
- In terms of population size and GDP per person, Asia presents wide-ranging current and future possibilities for Big Data. Yet Big Data on its own is of limited value. As another panellist observed, Big Data's value derives from interconnecting information. Other panellists further emphasised the benefits of integrating data insights into company operations and strategy.
- Some of Asia's long-term innovative potential can be seen with the high ranking for patent filings in Asian technology hubs such as Tokyo-Yokohama and Shenzhen-Hong Kong. The impact of Asia-based venture capital and other means to support digital economics can further enhance the digital economic power of the region and its influence worldwide.

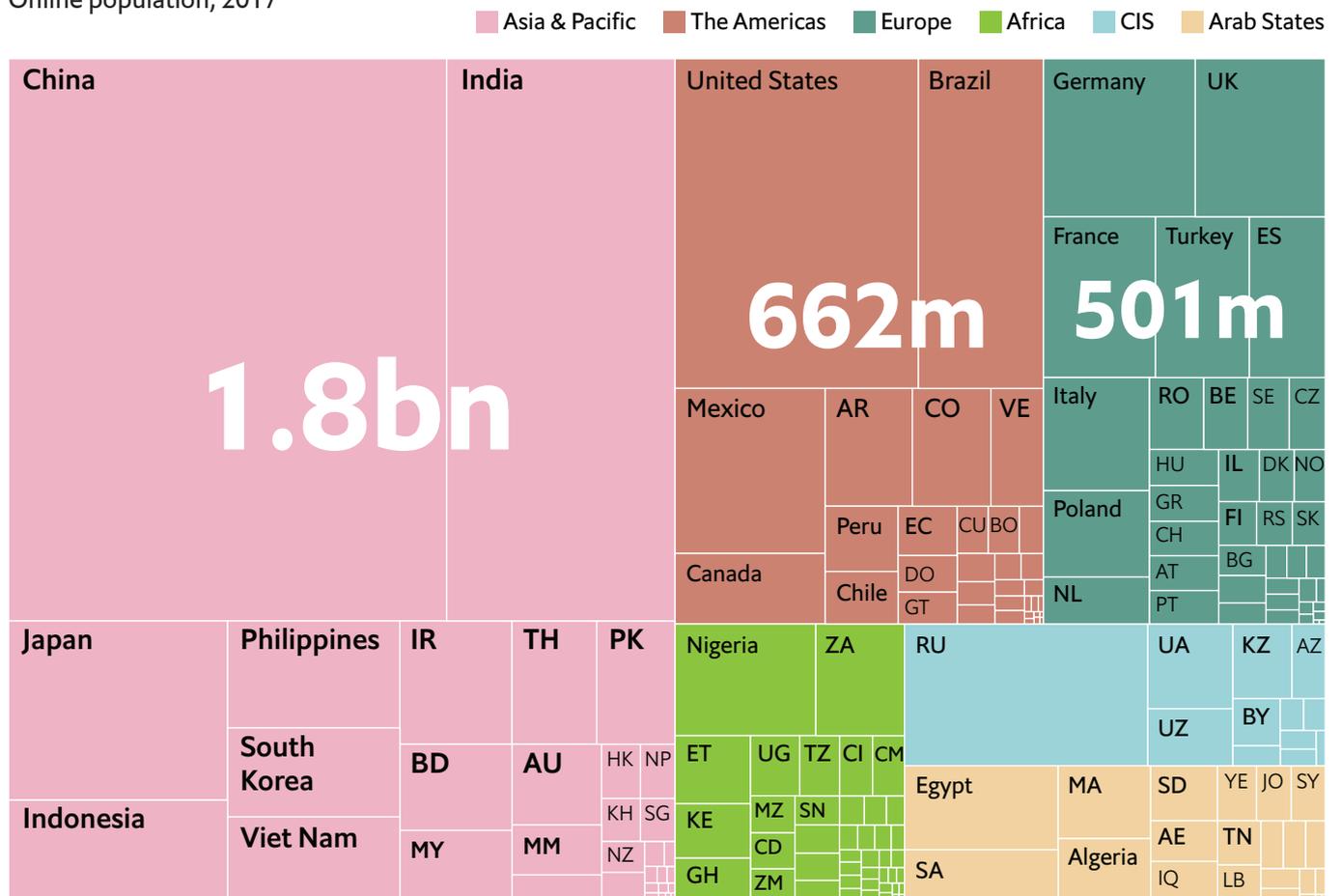
Strength in numbers

Asia's already massive market and still more massive potential

A sia's 1.8bn internet users comprise 51% of the world's total online population. This basic measure—among a host of many that reveal Asia's technological pre-eminence—illustrates the region's enormous edge over other geographies of the digital

A regional map of the online world

Online population, 2017



Source: ITU.



Digital Asia

economy. The Americas, the next largest online region, have less than 40% as many internet users. The some 500m people who access the web in Europe represent less than 30% of those going online in Asia.

Communications scientists in the United States built the original infrastructure backbone of the internet. At the European nuclear research lab, CERN, English computer scientist Tim Berners-Lee invented the World Wide Web. From these Western roots, the internet has geographically expanded and developed a predominant usage base in the East. Looking at numbers of netizens, today's internet is more an Asian phenomenon than a Western one.

For businesses, an especially attractive feature of Asia's dominant internet market size is that these figures merely touch on the region's long-term potential. Most of Asia's inhabitants live in developing market environments: the majority of those in India, those in the non-urbanised parts of China, and many residing throughout South-east Asia. Home to approximately 60% of the world's total 7.6bn people, Asia boasts an internet user base, although enormous, that still falls notably short of its share of world population. Moreover, because multiple devices can be used by a single person to access the internet, the region's potential user market exceeds that of its population base.

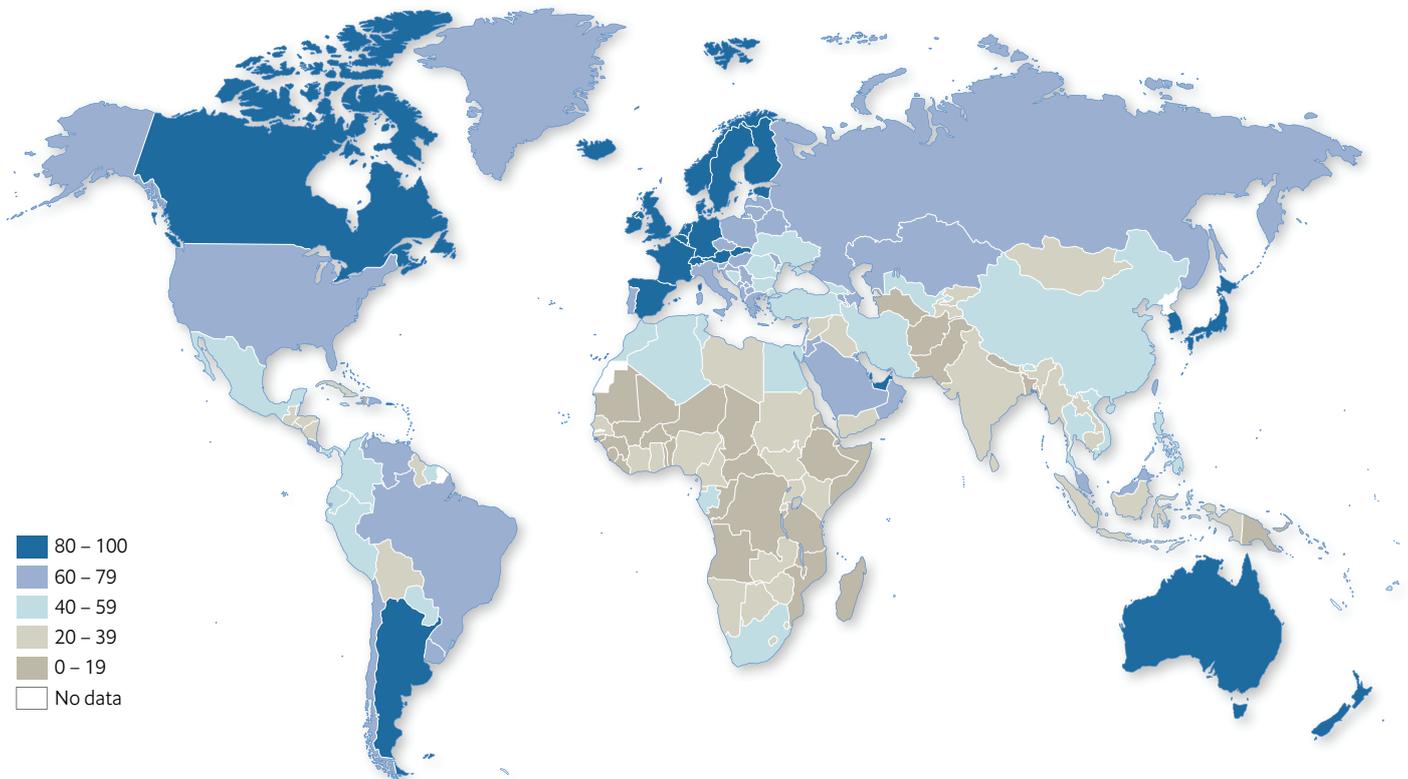
POWER AND POTENTIAL

The map on the next page displays global levels of internet penetration. As shown, other than highly developed Asia Pacific economies (Japan, South Korea, Australia, New Zealand) where 80% or more of their people are online, most of Asia has far lower levels of internet access.

China, representing the lion's share of Asia's internet users and its largest economy, has an internet penetration rate of under 60%. Yet as of the writing of this report, China's economy is growing at a rate of over 6%, more than double the world GDP growth rate. India, the region's third largest economy, is growing at a rate of close to 8% while having an internet penetration rate of under 40%. Similar relatively low levels of internet adoption pertain to the fast-growing key emerging Asian markets of Indonesia (5.2%), Vietnam (6.7%), and the Philippines (6.1%). For all the sheer mass of Asia's internet populations, there remains tremendous room for additional user growth based on simple demographics and the momentum of economic expansion. Even with a tapering of growth anticipated for China, it and the region as a whole are still expected outpace the global growth average well into the next decade. This combination of relatively modest levels of internet penetration coupled with high levels of economic growth in Asia point to a booming digital marketplace that has much further to expand.

World geography according to internet penetration

% of total population, 2016



Source: ITU.

TECHNOLOGY DRIVERS

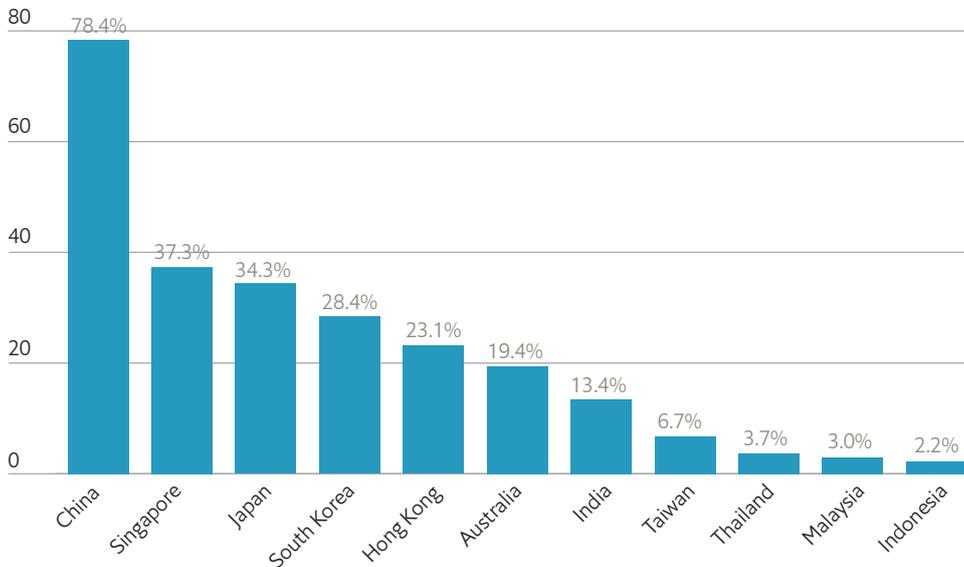
Unlike the West where personal computers ushered in a technology revolution going back to the 1980s, the digital transformation taking place across Asia is more recent and largely being led by smartphones. Rising incomes are allowing greater numbers of people in Asia to afford more advanced handsets and devices. From another angle, Chinese phone manufacturers such as Huawei and Xiaomi have led the world in developing inexpensive smartphones affordable to low-income consumers. These separate but related trends are fuelling the proliferation of the internet-enabled mobile devices that are driving Asia's economic digitalisation.



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Which of the following Asian economies do you see as leaders for technological change within in your industry?

ECN 2018 *Asia Business Outlook Survey* respondents



Source: The Economist Corporate Network.

Although having a population more than six times larger than Europe's, as recently as 2005 Asia was home to only 50% more mobile phone subscribers than in Europe, the next largest user base at the time. Data from ITU, a United Nations agency for information technology, indicate that since then Asia's mobile phone user base has surged. Growing from 833m users to today's 4.2bn, Asia is now at least 3.7 times larger than the world's second largest regional market, today a position held by the Americas. As mobile communications have evolved, Asia's vast marketplace has disproportionately swelled through a combination of economic and technological development.

A sense for specific economies that have been driving change within Asia comes The Economist Corporate Network's 2018 *Asia Business Outlook Survey*.¹ In this assessment of opinions by Asia-based executives, China rates as a technology leader of change across industries by a large majority, nearly 80%, of those surveyed. Other economies frequently cited—though notably less so than China—are Singapore, Japan (both noted by just over one-third of respondents), South Korea, and Hong Kong. The results do not only relate to technological change in the digital sphere but instead all types of technological advancement across all industries. Nevertheless, the figures show which economies in Asia stand out in the minds of executives for leading industrial innovation. With digital

¹ The Economist Corporate Network, *Asia Business Outlook Survey*, 2018. This and other reports by ECN are available at www.corporatenetwork.com.

platforms—from consumer-based mobile devices to industry-specific applications such as fintech—at the heart of Asia's industrial transformation, the survey data offers a useful proxy on which economies are at the forefront of pushing the digital envelope.



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Asia's digital distinctiveness

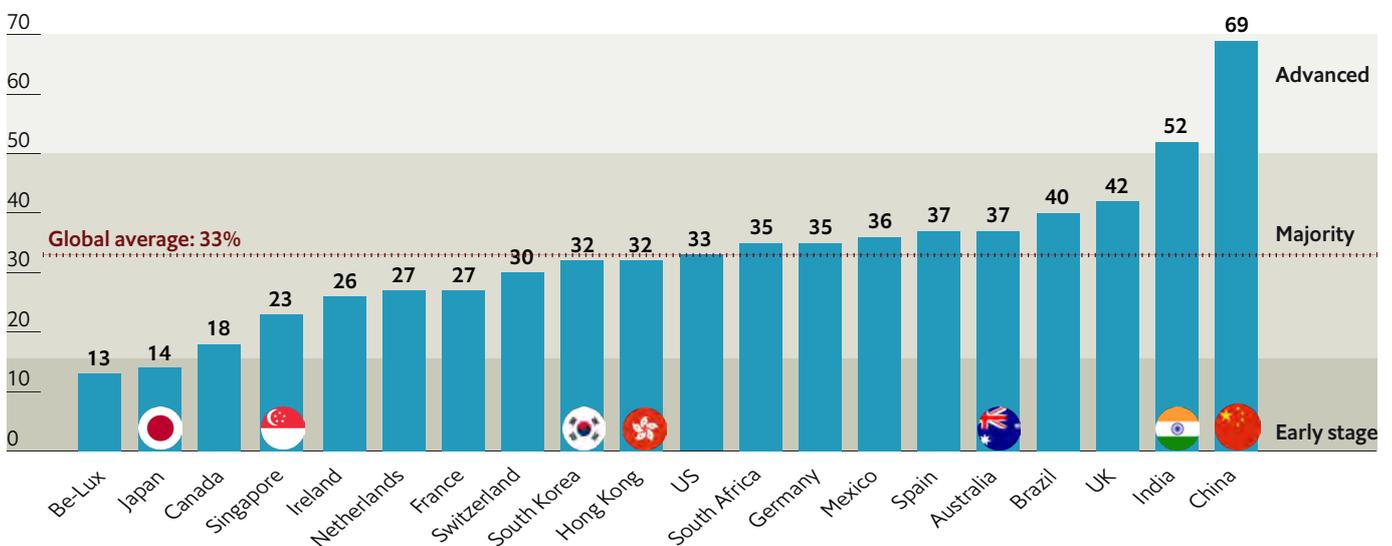
The region's special contributions to and potential for digital economics

Varied levels of adoption of financial technology (“fintech”) across Asia illustrate how digital technologies are allowing the region’s new-growth economies to leap ahead while more established economies are being challenged to catch up with certain innovations.

According to an assessment of fintech adoption by EY, China and India are far ahead with their advanced levels of fintech integration, not only for within Asia but on a global basis. At the same time, Asia’s longest-standing technology powerhouse, Japan, notably lags in this area new technology. Another nation well known for its innovative capabilities, Singapore, also comes up short compared to the global average rate of adoption. South Korea, Hong Kong, and Australia fare better coming close to or slightly above the global average and placing solidly amongst the majority of fintech adopters.

Progress of Fintech adoption globally and across 20 markets

% rate of adoption, 2017



Source: EY.

China: personal economic wealth and internet penetration levels



The reasons for advanced integration of fintech in India and China vary between those two economies as well. India, which despite its high economic growth underachieves much of its potential due to domestic impediments such as poor physical infrastructure, has successfully introduced a Unified Payments Interface (UPI) for digital transactions. UPI's electronic infrastructure already serves close to 200m Indian citizens and provides a fundamentally enabling means of economic participation. In China, private enterprise has helped solve a financial payments bottleneck that had arisen from underserving retail banks and credit card systems. The Chinese tech giants Alibaba and Tencent created consumer fintech solutions that have revolutionised the way average Chinese find and pay for goods and services.



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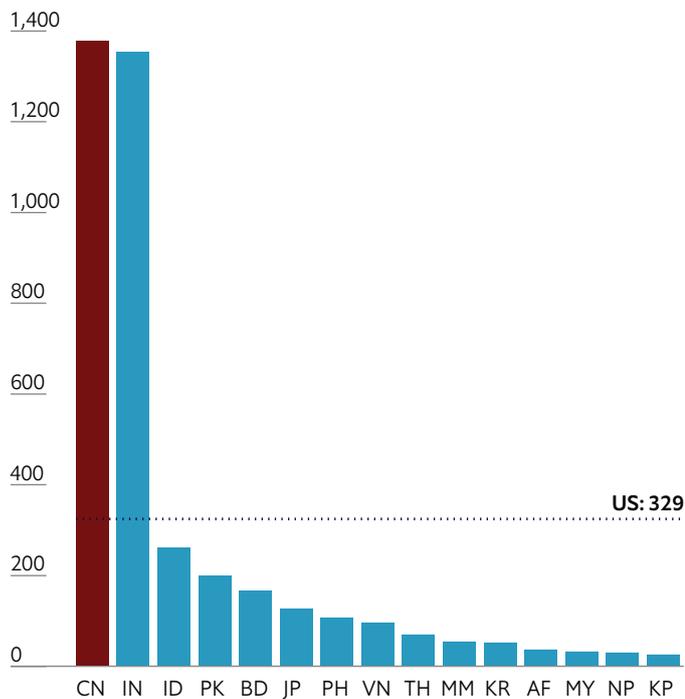
Chief Marketing Officer of Chinese online financial services company Dianrong and a panellist at ECN's Digital Asia executive forum, Jing Pan, sees fintech in China as a product of the nation's wider embrace of digital services.

Fintech is a newly created industry in China and its background is the whole China digital economy. Chinese people use the internet not only for e-commerce and social media but for daily life. People use it to get food delivery each day, you swipe your phone to get a cab, to unlock a [shared] bike, arrange courier services—basically everything. Behind all this is data accumulated daily and minute by minute. Data is actually replacing collateral for companies like ours to understand the personal particulars and credit worthiness of consumers. We are able to confirm, with their permission, where they live using GPS location data, automatically verify identity through facial recognition. And by connecting to third-party data, we're able to validate if information that a consumer provides is true at a very small cost.

Big Data fundamentals

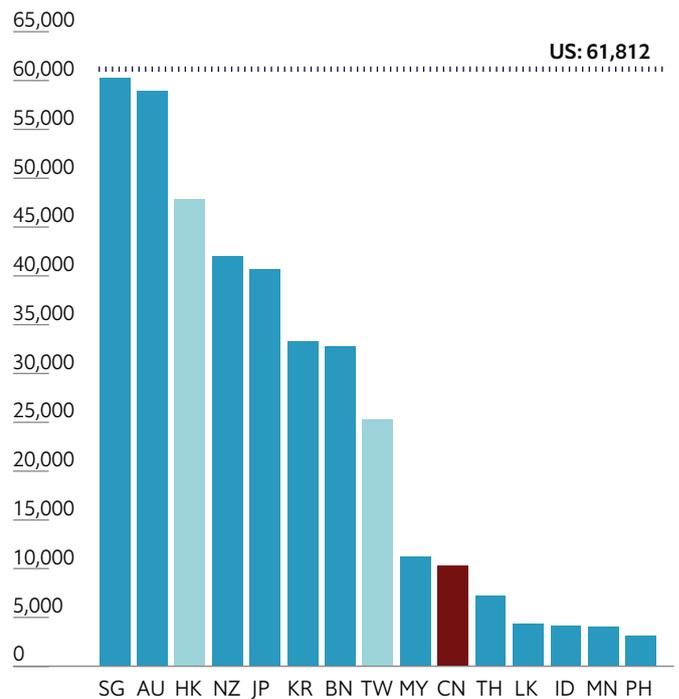
Top 15 Asian economies by population

(m, 2018)



Top 15 Asian economies by GDP per head

(US\$, 2018)



Source: The Economist Intelligence Unit.

“BIG” BIG DATA

The value of personal and business data that is currently—and still more, potentially—available within Asia is immense. Big Data (the quantification of vast amounts of transactions and other economic behaviours) in Asia is truly “Big”. China and India are the world’s two most populous nations. In digital economic terms, their combined 2.7bn people offer an unparalleled base of human resources, from natural repositories of genomic data to their societies’ already advanced stages of fintech adoption. In an age where novel applications of personal data translate to new opportunities for economic value-add, economies with disproportionately large populations enjoy something of a Big Data natural resource windfall.

Yet Big Data is more than just a numbers game. From a marketer’s perspective, economic quality usually counts more than sheer quantity. The most valuable aspects of Big Data relate to insights offered on active consumers, especially those with means. The more enriched a population, the higher its market value. In this regard too, Asia presents other powers and enticing possibilities in the digital economy.

Analysing Asian economies in terms of GDP per person (a standard measure of individual wealth) produces an ordering of Big Data economic fundamentals quite unlike those based on raw population figures. By this metric, economies that are small in scale—Singapore, Hong Kong, New Zealand—rank near the top. Conversely, Mainland China, which The Economist Intelligence Unit estimates has per person GDP of only about US\$10,000 for 2018, places towards the lower end of the middle range of Asia’s 15 biggest economies. An encouraging potential leading indicator for the Mainland is that the Greater China economies of Taiwan and Hong Kong have already attained much higher per capita GDP levels. Sharing modern socioeconomic factors with them, the fast developing, rapidly urbanising parts of the Mainland can anticipate similar degrees of wealth creation and look forward to generating increasingly valuable Big Data resources.

DERIVING AND PROTECTING VALUE

Of course, the inherent power of Big Data comes not simply from the numbers it contains, but how the data is analysed and correlated. Panellist Diarmid Massey, Senior Vice President, Asia Pacific at Equinix, an interconnected data centre operator and the Digital Asia forum sponsor, sees a grasp of digital connectivity as key.

As the world moves towards a more digitised economy, interconnection is the driver. It’s not just about data because anybody can park data, collect data, horde data, and stick it in the side somewhere and claim it has some value. It has value when you interconnect it and use it and bring it close to the edge and



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make decisions on it. That's what we're seeing with every industry. It's what every business, large and small, needs to do to get close to their customer.

Of course, a corollary to the rising value of personal and business information is growing need to protect this data. The EIU rates a crippling cyber-attack as one of the top 10 risks for the global economy.² Within the rapidly evolving digital landscape of Asia, cyber-security and data protection takes on added importance. Allegations of state-sponsored hacking from China against the US government and American companies is part of the negotiations that address US-China trade frictions. At another level, new policy developments in Asia, notably China's Cyber-security Law, require companies to abide by processes for collection and storage of personal data that are unlike regulations found in the EU and US. Principles of cyber-security and data protection in Asia and West are in many ways tending towards divergent directions. For multinational companies operating across Asia and other parts of the globe, regulatory incompatibilities and risks in cyber-security add downside considerations to Asia's flourishing digital ecosphere.

²The Economist Intelligence Unit, *Cause for concern? The top 10 risks to the global economy, 2018.*

Wider implications

Where current trends are taking things in Asia and beyond

The surging popularity of digital technologies in Asia is drastically impacting markets. Taking full advantage of the powers of these technologies means responding to the market signals they provide as well as integrating the insights they offer into a company's operations.

"We're always looking for the next thing," explains Mike Whittaker, Chief Technology Officer, Asia Pacific & Middle East at FOX Networks Group and another Digital Asia panellist. Although he speaks from the perspective of a media company executive, his remarks have broader relevance. Content features in the digital economy in ways that all companies must manage. Digital platforms that facilitate close and frequent communication between firms and markets effectively turns any company in any industry into a content creator.

It's all about telling stories. Even covering a sporting event is still telling a story. So how do you make that more relevant in real time? ... One of the challenges for organisations like us is that traditionally we used an affiliate model. So we haven't had a direct relationship with our customers. That is changing. We now have a digital app, Fox+. That gives us lots of opportunities, not just in terms of how we curate content and offer content but how we tell stories as well. I'm particularly interested in how we can harvest the data from social media platforms for how it might influence story lines.

Christopher Brewer, Senior Consulting Partner, Asia Pacific at Ogilvy Consulting, likewise sees the "pull" of end user feedback in the digital age as further enabling the "push" of what companies deliver to their markets. His comments at the Digital Asia forum went slightly further in noting a curiously secondary role for technology amidst all the disruptive forces at work.

What we're really seeing is how the "speed of consumer" is changing the way that a lot of our clients are thinking about their businesses. That's stretched the definition of what marketing is for us. It's not just the marketing strategy or the brand strategy but also organisational and technological change. Actually I always put tech last. I think it's easy to kind of focus on the tech the enabler,



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but actually it's about consumer behaviours. Blockchain and AI is disrupting all industries but it is the consumer behaviours that have changed the most. Consumers are mobile natives, digital natives—cashless has become the norm, especially in Asia and more so in China. That changes the way that our clients see the market. Whether its adult diapers in Korea, financial services across the region, or a healthcare company trying to enter a new market in Southeast Asia.

FAST FORWARD

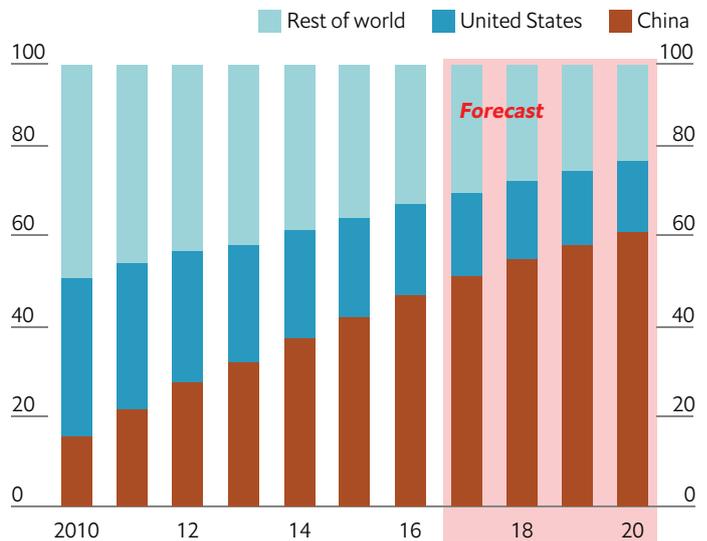
Beyond Asia's market size and sophistication, for the region to lay claim to true leadership in the digital sphere will require demonstrating a capacities in fundamental innovation and the nurturing of breakthrough technologies.

The smartphone revolution is being pushed by Asian industry giants. Samsung (South Korea), Huawei (China), Xiaomi (China), and OPPO (China) all occupy top-five shares in the global market according to data from IDC. The functionality combined with attractive price points of Chinese handsets have brought mobile phone technology to hundreds of millions of users in China and throughout developing markets around the world. Yet Apple, the world's number two smartphone maker, essentially pioneered that market with its iPhone. Apart from bragging rights, Apple's widely admired technology features mean its phones command an estimated 60% profit margin. Lower priced Chinese makers, although dominating global market share, generally forgo profitability to compete on affordability. Xiaomi, for example, famously caps its hardware profit margins at 5% in order to maximise the accessibility of its products.

The wisdom of varying profit strategies can be debated. Regardless, if Asia is to lead in technology origination and be able to reap the benefits that affords,

Global retail e-commerce sales

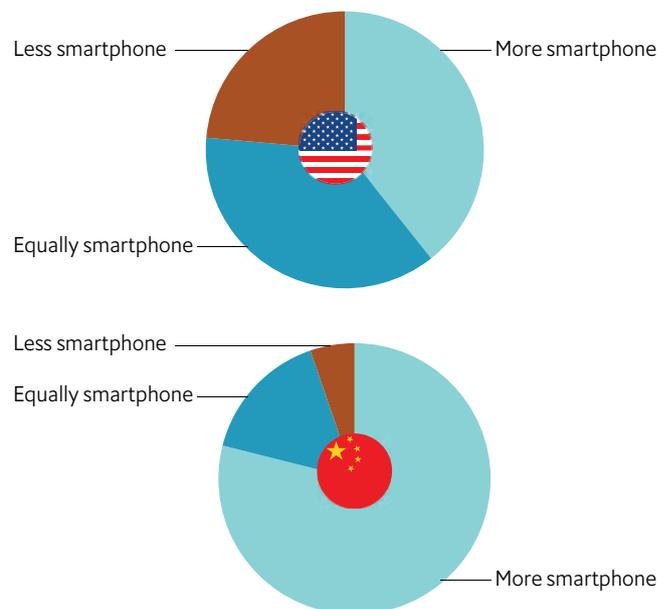
Share of total, %



Source: eMarketer.

Devices most often used to go online

2018



Source: Google.

Top 10 clusters of inventive activity

Ranked by international patent filings

City or city cluster	Country	Largest inventor	Main technological field	Main co-inventing cluster	Rank
Tokyo-Yokohama	Japan 	Mitsubishi Electric	Electric machinery	Osaka-Kobe-Kyoto	1
Shenzen-Hong Kong	China-Hong Kong  	ZTE Corporation	Digital communication	Beijing	2
San Jose-San Francisco	US	Google	Computer technology	Portland, OR	3
Seoul	South Korea 	LG Electronics	Digital communication	Daejeon	4
Osaka-Kobe-Kyoto	Japan 	Murata Manufacturing	Electric machinery	Tokyo-Yokohama	5
San Diego	US	Qualcomm	Digital communication	San Jose-San Francisco	6
Beijing	China 	BOE Technology Group	Digital communication	San Jose-San Francisco	7
Boston-Cambridge	US	MIT	Pharmaceuticals	San Jose-San Francisco	8
Nagoya	Japan 	Toyota	Transport	Tokyo-Yokohama	9
Paris	France	L'Oréal	Transport	Lyon	10

Note: 2011-15 data for patent filings through the Patent Co-operation Treaty (PCT) system. Main co-inventing cluster is defined as the cluster accounting for the largest share of external co-inventors within the top 100 clusters.

Source: World Intellectual Property Organisation, The Economist Intelligence Unit.

the region must foster environments that encourage creating the technologies of the future, not just enhancing new technologies invented elsewhere.

There are encouraging signs. Asia is now home to six out of the world's top 10 clusters for international patent filings, a measure of fundamental inventiveness, according to a global indexing measure by The Economist Intelligence Unit.³ Two of these technology hubs, the Tokyo-Yokohama and Shenzhen-Hong Kong clusters, score even higher in this index than San Jose-San Francisco, the world's original Silicon Valley. Moreover, the Shenzhen-Hong Kong cluster is set to be supercharged by a string of infrastructure projects and favourable government policies to better integrate the Greater Bay Area, a territory combining the Hong Kong, Macau, and the cities of Guangdong Province.

MONEY AND MANAGEMENT

Harnessing technological potential also requires not just capital for investing in technology but, as the venture capital parlance goes, "smart money". The top-down, state capitalism models that have characterised much of Asia's economic development, especially its major technology powers of China, Japan, and South Korea, have not traditionally been welcoming environments for new economy venture financing.

Although Asia still has far to go to create integrated seed-to-IPO platforms on par with the US, pioneering Japanese tech entrepreneur and investor Masayoshi Son has made

³The Economist Intelligence Unit, *Preparing for disruption: Technological Readiness Ranking*, 2018.



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notable headway by establishing the first US\$100bn mega fund. The investment firepower of his SoftBank Vision Fund dwarfs even the largest of American private equity vehicles by a factor of about five times. As related in a cover article on Son's financing ambitions in *The Economist*, once the Vision Fund has reached its target of 70-100 companies, it will have stakes in "the world's largest collection of young tech firms".⁴ With its investment targets spanning the globe, the Vision Fund represents a unique, large-scale mechanism for strengthening Asia's high-tech startup base while also projecting Asian technology influence beyond the region.

A venture capital rule of thumb is to bet not on a technology, but the people behind it. The logic being that the promise of any innovation easily can be squandered by poor management. A good management team, on the other hand, can find ways to overcome adversity and the maximise potential of a technology, even one with less-than-stellar potential.

SOFT BEATS HARD

Research by The Economist Corporate Network suggests that the VC maxim on people over technology applies to Asia's future workforce needs, which as this report has shown are themselves being driven by the demands of digital economics.

In a survey of Asia-based C-level executives on their anticipated skills requirements, less than half of those polled strongly agreed that technological skills or (more broadly) hard skills will be necessary to respond to future business challenges in Asia.⁵ This finding is rather counter intuitive considering Asia's technology-infused business environment. Instead of technical and hard skills, however, in a future for Asia being heavily shaped by the digital advances, nearly two thirds of senior executives surveyed are convinced that the key workplace abilities will be soft skills and people skills. If this view of future workforce needs holds true, one of the best ways for companies to prepare for the Digital Asia of tomorrow will be to cultivate robust management capabilities in soft skills and people skills today.

SoftBank Vision Fund investments*

As of May 2018

■ Europe ■ Asia ■ United States

Company	Sector	Value, \$bn
Arm	Semiconductors	8.00 [^]
WeWork	Shared offices	4.40
Nvidia	Graphics processors	4.00 [^]
Paytm	Online payments	1.85
Ping An Medical	Health care	1.15
Roivant	Biotechnology	1.10
Fanatics	Sports e-commerce	1.00
Katerra	Construction	0.86
ZhongAn	Insurance	0.55
Improbable	Virtual reality	0.50
Auto1	Used care portal	0.46
Compass	Property	0.45
Ping An Good Doctor	Health-care portal	0.40
OYO Rooms	Hotel aggregator	0.37
Guardant Health	Biotechnology	0.36
Wag!	Dog-walking app	0.30
Slack	Work collaboration	0.25
Plenty	Agrotechnology	0.20
Mapbox	Digital mapping	0.16
Nauto	Self-driving cars	0.16
Brain Corp	Robotic software	0.11
Flipkart	E-commerce	SOLD
OSlsoft	Data infrastructure	no
VIR	Biotechnology	no

*As sole or lead investor ^ Estimate

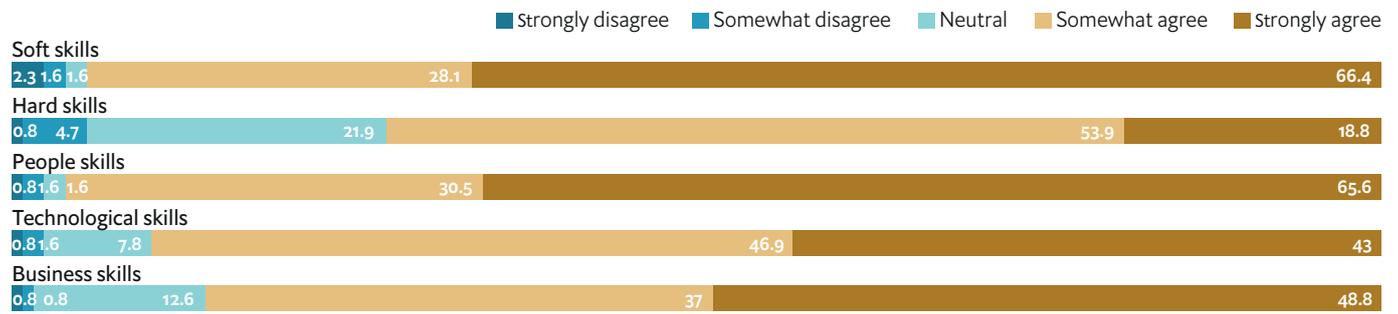
Source: Press reports.

⁴*The Economist*, "The Son kingdom", May 10th 2018.

⁵The Economist Corporate Network, *Skills 4.0: How CEOs shape the future of work in Asia*, 2016.

The skills required to respond to future challenges are likely to be:

% of Asia-based C-level ECN members surveyed, 2016



Source: The Economist Corporate Network.

While every effort has been taken to verify the accuracy of this information, The Economist Corporate Network cannot accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out in this report.

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