

THE STRAITS TIMES

Asia report

MCI(P) 056/08/2018 January - February 2019

INDEPENDENT • INSIDER • INSIGHTS ON ASIA

- Storm clouds in 2019
- Rohingya refugees
- Shenzhen beckons



DOES AI THREATEN YOUR JOB?

Artificial intelligence (AI) opens new pathways to progress but can affect livelihoods. Where are we headed? AI expert Kai-Fu Lee gives his answers inside.



WE BRING YOU SINGAPORE AND THE WORLD



UP TO DATE

News | Live blog | Mobile pushes
WhatsApp | SMS



IN THE KNOW

Web specials | Newsletters | Microsites
Special Features



IN THE LOOP

Facebook | Twitter | Instagram



ON THE WATCH

Videos | FB live | Live streams



To subscribe to the free newsletters, go to str.sg/newsletters
All newsletters connect you to stories on our [straitstimes.com](https://www.straitstimes.com) website.

Data Digest

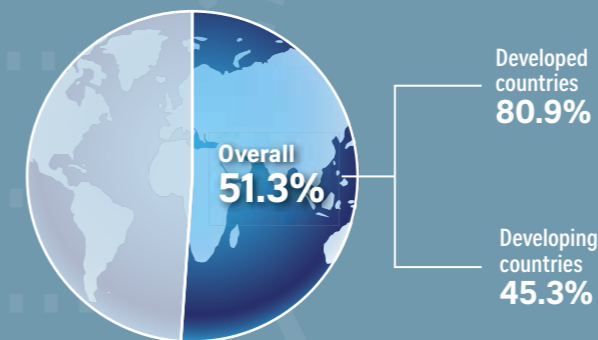
Living in a virtual world

The start of the year marked an important milestone. The International Telecommunications Union (ITU), the United Nations specialised agency for information and communication technologies estimates that 51.2 per cent of the global population or 3.9 billion people are now using the Internet. Mobile access to basic telecommunication services is becoming ever more predominant while broadband access continues to demonstrate sustained growth. Nearly the entire world population, or 96

per cent, now lives within reach of a mobile cellular network. And, 90 per cent of the global population can access the Internet through a 3G or higher speed network. All this means that as the world sprints towards bringing virtually all things online – to be captured, analysed and actioned in an instant – there is a growing need to ensure that we are working towards a digital future that will benefit all, with the need of the hour to redouble efforts to ensure access for the remaining 50 per cent.

Half the world's online

Percentage of population using the Internet*



Fixed and mobile broadband subscriptions*

Penetration rate

69.3 subscriptions
per 100 inhabitants

Number of active
mobile-broadband
subscriptions

5.3 billion

Households with Internet access*



Number of households with
Internet access

60%

Opportunities will explode, so will challenges



Companies would have spent US\$1.2 trillion (S\$1.65 trillion) on digital transformation efforts in 2018



At the same time, one billion people have no formal identity, excluding them from basic services and participation in society



By 2020, the average Internet user will have over 200 online accounts



By 2022, Identity verification as a service will grow to a US\$16 billion–US\$20 billion market.



By 2022, 60% of global GDP will be digitised



By 2022, 50% of security alerts will be handled by AI automation

There has been significant progress. But as we think about leveraging the opportunities of the digital economy, let's remember all those who are not yet connected. Let's use digitalisation as a powerful enabler of inclusive economic growth.

”

HOULIN ZHAO
Secretary-General of the International
Telecommunication Union.

NOTE: *Data as estimated
at the end of 2018

Source: Article by Houlin Zhao, Secretary General, International Telecommunication Union and World Economic Forum Insight Report titled Our Shared Digital Future. STRAITS TIMES GRAPHICS

Warren Fernandez
Editor-in-Chief, The Straits Times & SPH's English, Malay and Tamil Media (EMTM) Group
Sumiko Tan
Executive Editor, The Straits Times
Dominic Nathan
Managing Editor, EMTM
Tan Ooi Boon
Senior Vice-President (Business Development), EMTM
Paul Jacob
Associate Editor, The Straits Times
Eugene Leow
Head, Digital Strategy, EMTM
Irene Ngoo
Vice-President (Editorial Projects Unit) EMTM
Jeremy Au Yong
Foreign Editor
Shefali Rekhi
Asia News Network Editor, The Straits Times & Editor, ST Asia Report

DESIGN
Peter Williams
Head, Visual, EMTM & Art Editor, The Straits Times
Chng Choon Hiong
Cover photo illustration
Marlone Rubio
Executive Artist
Anil Kumar
Graphic Artist

COPY DESK
Ronald Kow
Sub-editor, The Straits Times

CIRCULATION
Eric Ng
Head, Circulation Marketing
Tommy Ong
Senior Manager (Circulation)

REACH OUT TO US:
For advertising enquiries:
Sharon Lim Ling
Senior Manager (Business Development)
lims@sph.com.sg

Circulation & subscription:
Delia Gan
Executive
deliagan@sph.com.sg

WE WELCOME YOUR FEEDBACK AND VIEWS
Letters can be sent to
stasiareport@sph.com.sg

Published by
The Straits Times, Singapore Press Holdings (SPH)

Printed by
Times Printers Private Limited

All rights reserved. No part of this publication may be reproduced in whole or in part without written permission from the publisher.



33

Lunch with Sumiko

Heng Swee Keat's steely resolve behind genial manner



26

Special Report

Rohingya refugees: Yearning to break free

contents

4

Cover Story

Does Artificial Intelligence threaten your job?

Loving the job – but loving life and family even more

A law for robots in the works



12

By Invitation

How to balance the benefits of Big Data with our privacy

14

Thinking Aloud

Seat-belt warning as storm clouds loom in 2019

18

Asia Update

Many view Priyanka's entry as boost for Congress party

20

Trade Watch

US-China tariff ceasefire doesn't mean end of trade war

31

Speaking of Asia

Mission: Impossible – Fallout and the Indo-Pacific

36

Singapore Watch

Singapore's 4G leaders step up

38

Asia Focus

Shenzhen, city of opportunities

42

Defence & Security

Japan moves to beef up its defence capabilities



44

Science

Bright side of landing on dark side of Moon?

48

askStart

The future of transportation

50

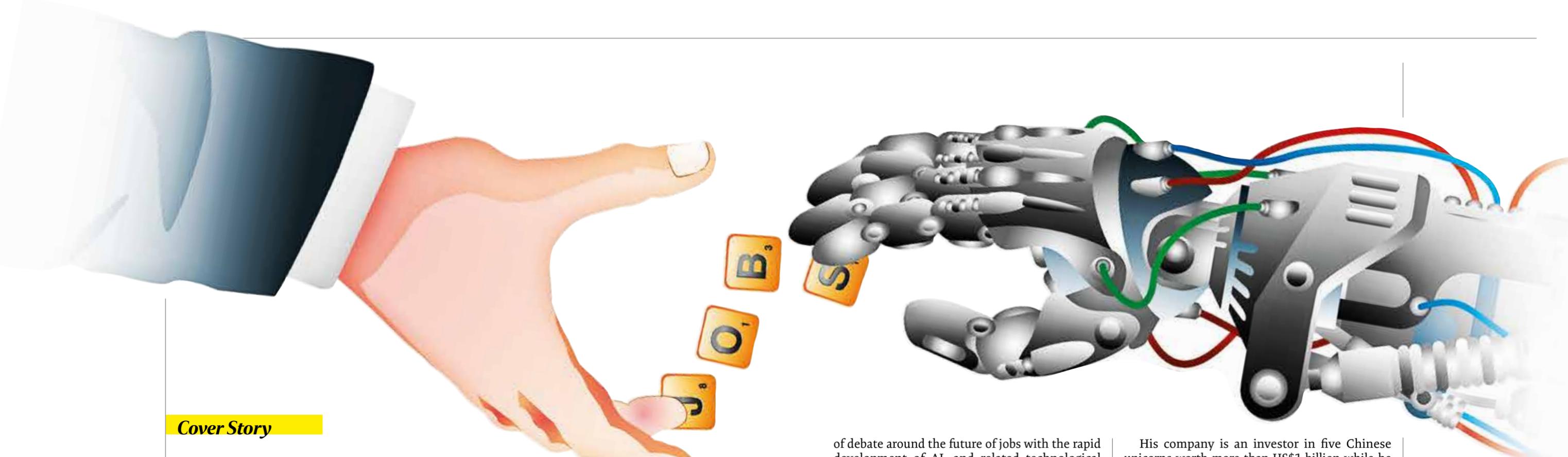
Lifestyle

Tech Trends 2019

52

Big Picture

A place ruled by women



Cover Story

‘AI will displace routine jobs, but create new ones too’

SHEFALI REKHI

Asia News
Network Editor



✉ shefali@sph.com.sg

CREATIVITY HAS ITS CHARM.

The magic of new creations can be intoxicating for those interested, goading them into pursuing its possibilities endlessly even if the end goals are not entirely clear and disruption of conventional ways seems a certainty.

One such smitten individual is China's leading artificial intelligence (AI) expert Kai-Fu Lee, 57, who has already spent 38 years working on AI and wants to do nothing more than letting its full potential unfold.

He got lured into this field quite by accident – when he was still in school, he wrote a program to print prime numbers. When he returned to check on the program, he found that it had continued running over the weekend, leaving the room full of paper. Needless to say, he was severely reprimanded by his teachers.

Dr Lee has been mesmerised by AI ever since, even though he agonises over the disruption it will cause by taking jobs away from people.

“The AI revolution will become the most important technology revolution for humanity,” he told The Straits Times during a visit to Singapore recently.

“This omni-use technology will disrupt all industries and create a net increment to our global GDP of between US\$13 trillion and US\$16 trillion (between S\$17.7 trillion and US\$21.8 trillion),” he said.

“For creatives, professionals and leaders, AI will be a great tool that will enhance their work and amplify their capabilities,” he said in reply to a question on AI's impact on jobs.

“For people in routine jobs, they need to be aware that AI will likely take their jobs or most tasks within their job, and (they should) start their own retraining process so they can remain competitive and not be displaced by AI.”

There are others who agree that the advance of robotics and AI will not mean fewer jobs for people, a theme that has been moving to the centrestage

of debate around the future of jobs with the rapid development of AI, and related technological advances.

The World Economic Forum, in its Future of Jobs 2018, notes that although 75 million jobs could be displaced by the coming shift in labour, there will be 133 million new jobs created as well. And while certain jobs are becoming redundant, human skills remain in demand in other areas.

There are two reasons to be optimistic about the impact of jobs on AI, writes John Hawksworth, chief economist, PwC, in an online article titled AI And Robots Could Create As Many Jobs As They Displace.

“Firstly, just because a job has the technical potential to be automated does not mean this will definitely happen. There is a variety of economic, political, regulatory and organisational factors that could block or at least significantly delay automation.

“Secondly, and more importantly, AI and related technologies will also boost economic growth and so create many additional job opportunities, just as other past waves of technological innovation have done, from steam engines to computers,” he notes.

Still, there is agreement that there will be several types of workers who will be displaced.

“This presents a serious worry, as displaced routine workers are generally the lowest paid and least skilled in any society,” Dr Lee said while delivering an address at a conference in Singapore.

“This job displacement will not wait for another few decades. It is coming to us within five to 15 years.”

Dr Lee, who is chairman and CEO of Sinovation Ventures, a leading tech-savvy investment firm seeking to encourage the growth of next generation high-tech companies, has several achievements to his credit.

His company is an investor in five Chinese unicorns worth more than US\$1 billion while he himself is followed by more than 50 million people on social media, given his vast experience in the world of AI.

Born in Taiwan, he emigrated to the United States with his family when he was 11. His passion for AI led him to develop the first speaker-independent speech recognition system known as Sphinx and earned him his doctorate from the Carnegie Mellon University.

Soon, he was working with leading tech giants, among them Apple, Microsoft and eventually Google. He led Google's foray into China, becoming Google China's president until 2009, when he resigned to set up Sinovation and become an investor.

The author of 10 US patents and seven books released his latest book AI Superpowers – China, Silicon Valley And The New World Order last year, in which he discusses the future of AI, China's increasing role in this phenomenon and the lives that the advance of this phenomenon will encourage people to lead.

AI that crunches data to target and deliver better – which professional services firm PricewaterhouseCoopers (PwC) refers to as a form of “smart automation” – is a game and a game changer, according to Dr Lee.

“Data is the core. Once computing power and engineering talent reach a certain threshold, the quantity of data becomes decisive in determining the overall power and accuracy of the algorithm,” he writes in his latest book.

“Harnessing the power of AI today – the ‘electricity’ of the 21st century – requires four analogous inputs: abundant data, hungry entrepreneurs, AI

ST ILLUSTRATION: ADAM LEE

Even more, the biggest challenge to the human race will not be the loss of jobs but the loss of meaning. The work ethic born out of the Industrial Revolution has brainwashed too many of us to believe that work defines the meaning of our lives.

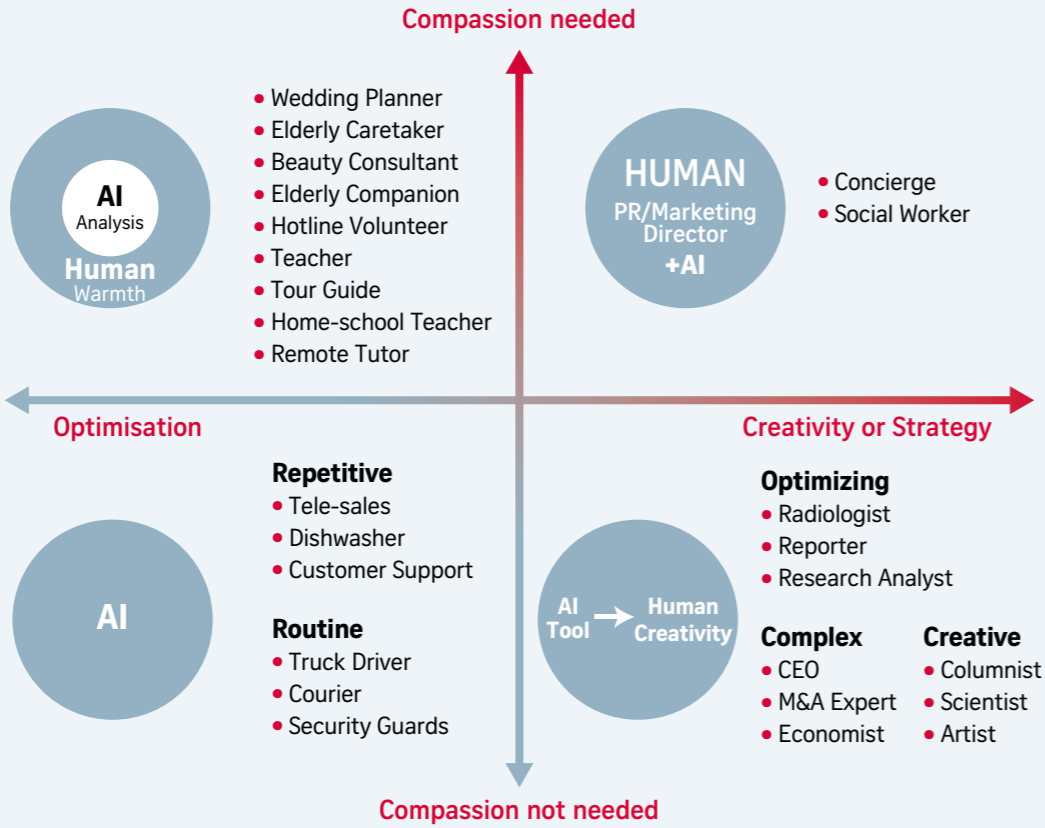
”

The battles (in AI) are life or death and your opponents have no scruples. The only way to survive this battle is to constantly improve one's product but also to innovate on your business model and build a "moat" around your company. If one's only edge is a single novel idea, that idea will invariably be copied, your key employees will be poached, and you'll be driven out of business by venture-capital subsidised competitors.

”

AI and jobs

Artificial intelligence applications thrive when compassion or creativity is not the need. Take a look:



Source: SINOVIATION VENTURES STRAITS TIMES GRAPHICS

scientists and an AI-friendly policy environment.

“By looking at the relative strengths of China and the United States in these four categories, we can predict the emerging balance of power in the AI world order.”

And the ongoing transitions in this area mean that the playing field is now tilted towards China.

“China’s alternate digital universe now creates and captures oceans of new data about the real world. The wealth of information on users will prove invaluable in the era of AI implementation,” he says.

Some of the other changes that Dr Lee foresees are:

- The ongoing match between China and the US will lead to productivity gains not seen since the Industrial Revolution.
- “PwC estimates AI deployment will add US\$15.7 trillion to global GDP by 2030. China is predicted to take home US\$7 trillion of that total, nearly double North America’s US\$3.7 trillion in gains,” he says.
- AI will completely wipe out billions of jobs up

and down the ladder – among them, accountants, assembly line workers, warehouse operators, stock analysts, quality control inspectors, truckers, paralegals and even radiologists.

- Rising in tandem with unemployment will be astronomical wealth in the hands of new AI tycoons.
- Inequality will not be contained within borders.
- AI-driven automation will undercut the one economic advantage developing countries historically possessed: cheap labour.
- Tumult in job markets and turmoil across societies will occur against the backdrop of a far more personal and human crisis – a psychological loss of one’s purpose.

“For centuries, human beings have filled their days by working: trading their time and sweat for shelter and food,” he writes in his book.

“We’ve built deeply entrenched cultural values around this exchange and many of us have been conditioned to derive our sense of self-worth from the act of daily work.

“The rise of AI will challenge these values and threatens to undercut that sense of life-purpose in a vanishingly short window of time,” he says.

And the world is still in the early stages of witnessing the impact of AI.

“The complete AI revolution will take a little time and ultimately wash over us in a series of four waves: Internet AI, business AI, perception AI and autonomous AI.

“Each of these waves harnesses AI’s power in a different way, disrupting different sectors and weaving AI deeper into the fabric of our daily lives,” Dr Lee notes.

In coming years, efforts will be on ways to apply AI to enhance human creativity, especially in scientific exploration that requires data analysis, pattern recognition, anomaly detection and search.

Alongside, the world will also witness a greater human-AI symbiosis.

For example, in medicine, in the next 30 years, AI will become increasingly more accurate in diagnosis and prescribing treatment for the patient, Dr Lee said. But he added that, even if an AI diagnostic tool is 10 times more accurate than a doctor, patients will not want a cold pronouncement from the tool.

And consequently, humanistic service jobs will blossom, he said.

In all of this, Dr Lee regards the ability to learn to be the most important.

“Singapore is doing a good job on AI education, and connecting AI with local industries. But it should also recognise that, in AI, quantities of data make a big difference, so the country should strengthen either its Asean connections and leadership or its China connections.

Also, Singapore still doesn’t have a strong early-stage venture-capital industry, while it is very strong in late-stage and public markets/financial markets, that is not the same as early-stage. Early-stage venture capital and the ability to help entrepreneurs is very critical, as seen in China’s success.”

– AI expert Kai-Fu Lee

“There are many changes happening, faster than ever.

“AI will create many jobs, but we don’t yet know what they are (just like at the onset of the Internet, we had no idea about the Web designer jobs, data scientist jobs, digital marketing jobs or Uber driver jobs),” he said.

“So the best things we can do to get ready are: be curious, learn new things, know what your strengths are, and recognise that routine jobs will not last.” AR

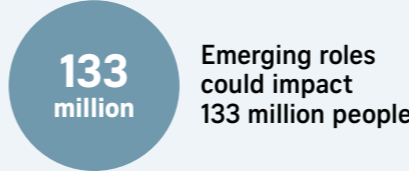
The writer is Editor, ST Asia Report

Love is what differentiates us from AI. Despite what science-fiction movies may portray, I can tell you responsibly that AI programs cannot love. AlphaGo may beat the world champion in the game of Go, but the AI program felt no happiness from winning, and had no desire to hug a loved one after it won.

”

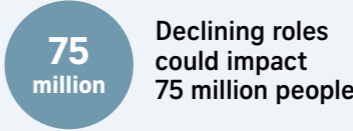
The jobs landscape

Here’s a look at the impact on jobs by 2022



Top 10 emerging roles

1. Data Analysts and Scientists
2. AI and Machine-Learning Specialists
3. General and Operations Managers
4. Software and Applications Developers and Analysts
5. Sales and Marketing Professionals
6. Big Data Specialists
7. Digital Transformation Specialists
8. New Technology Specialists
9. Organisational Development Specialists
10. Information Technology Services

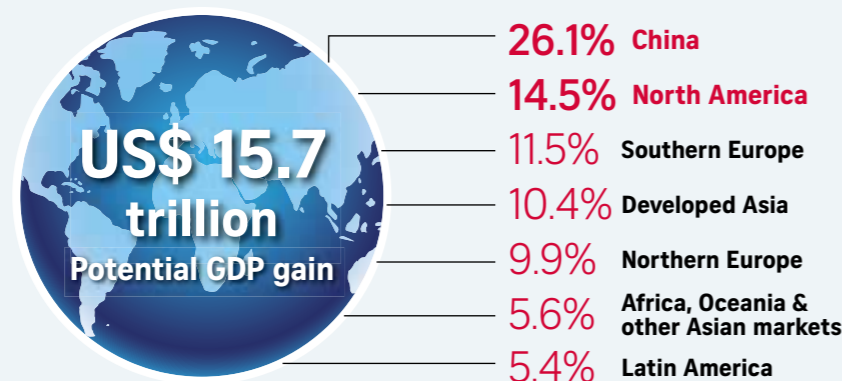


Top 10 declining roles

1. Data Entry Clerks
2. Accounting, Bookkeeping and Payroll Clerks
3. Administrative and Executive Secretaries
4. Assembly and Factory Workers
5. Client Information and Customer-Service Workers
6. Business Services and Administration Managers
7. Accountants and Auditors
8. Materials-Recording and Stock-Keeping Clerks
9. General and Operations Managers
10. Postal Service Clerks

Source: FUTURE OF JOBS REPORT 2018, WORLD ECONOMIC FORUM STRAITS TIMES GRAPHICS

China and North America will see biggest AI gains by 2030



Source: PWC GLOBAL ARTIFICIAL INTELLIGENCE STUDY, 2017 STRAITS TIMES GRAPHICS

8 predictions for the near future of AI

Here are 8 insights to shape business strategy around AI, based on a report by professional services firm PricewaterhouseCoopers (PwC).

1 AI will impact employers before it impacts employment

This will be apparent in the near term. The challenge for organisations hoping to embrace AI will be that it works best when it brings together data and teams from different disciplines. But most businesses have both people and data in discrete silos, not available for agile collaboration.

2 AI will come down to earth – and get to work

AI will enter furtively and be gradually woven into existing applications and processes. It will remove a lot of time-consuming, repetitive work from people's jobs, allowing for better decision-making and smarter working.

3 AI will answer the big question about data

AI's ability to cut through a lot of the drudge work or background noise that afflicts IT projects, such as cleaning up data or conducting asset audits, will mean that a project can start with identifying a business problem and taking steps to solve it, allowing for further data-driven AI solutions.

4 Functional specialists, not techies, will decide the AI talent race

While the creation of AI engines and algorithms will always be important, for it to truly deliver business value it will need to be directed by domain experts who know what success looks like.

5 Cyber attacks will be more powerful because of AI – but so will cyber defence

The arms race in cyber security is getting more intense. Hackers have more sophisticated tools than ever, and AI will only add to their armoury.

Whether it is malware, ransomware, machine intelligence coordinating global cyber attacks or advanced data analytics that can customise attacks, the only hope organisations have of containing these attacks will be to fight AI with AI.

6 Opening AI's black box will become a priority

AI is not the Frankenstein technology it is sometimes depicted as. But overcoming some of the concerns is going to be a priority in order to increase its acceptance and adoption.

7 Nations will spar over AI

Excellence in AI is expected to deliver huge economic gains, so many governments want to make sure that their countries get a big piece of the pie. Canada, Japan, Britain, Germany and the United Arab Emirates all have national AI plans.

There are hopes that in the United States a series of tax-reform and deregulation initiatives will give the US AI sector a boost. However, China currently stands head and shoulders above the rest for prioritising the role of AI in its economic future.

8 Pressure for responsible AI won't be on tech companies alone

AI will have great swathes of personal data at its disposal, which it could use to form detailed conclusions about individuals. There is, however, a global consensus forming around the responsible use of AI. Without formal compliance regulations, organisations will have to self-regulate, but they will do so as much out of self-interest as a desire to be good corporate citizens.

Source: PwC, World Economic Forum



SITTING AMID SEVERAL DELEGATES ATTENDING a conference in Singapore a short while ago, Kai Fu-Lee catches me struggling to reach him.

Soon, he is within earshot and I share my disappointment over his decision to cancel an interview with The Straits Times.

He's been saving his voice for a speech he's due to deliver and can't talk much, due to an infection, he says.

But he asks me join him after the session.

"You ask the questions, and I'll type my responses. I type really fast," he says.

This is his story, and part of the interview, in

his words.

My childhood dream was to become a scientist or astronaut, because I was always curious and asked a lot of questions.

When, as a sophomore in college, I saw artificial intelligence (AI), I decided this was the field for me, because it inquired into the human mind and aimed to solved the "final" question for humanity.

When I was in middle school, I wrote a program that printed all the prime numbers, and left it running over the weekend. On Monday, I found the printer room full of papers, and was reprimanded and asked not to leave programs running again.

I would like to see AI liberate humans and allow us to think what it means to be one.



– Kai Fu-Lee

I thought getting computers to do what people cannot do (I could not as a person do the maths that would print so many prime numbers) was exhilarating to me, and encouraged me to push further into getting computers to do even more challenging things that people cannot do.

In my sophomore year, I wrote a program to talk like my professor (in text). A lot of fun, but didn't really succeed.

In my junior year, I wrote a program to predict human joint movement in a three-dimensional space. Also a lot of fun, but the data was simulated and not real.

In my senior year, I worked on a parallel processing technology that is the beginning of today's Map-Reduce (which is a much better version invented by Google).

Then I went to graduate school, where I did two things: (1) developed the first game that beat the world champion (in Othello) and (2) developed the world's first speaker-independent, large-vocabulary, continuous-speech recognition system.

I had two inspirations. One was our Department Chair at Carnegie Mellon University (CMU) Noco Habermann.

When I entered the graduate school, and asked him what it meant to be a PhD from CMU, he said "to become the very best in the narrow area where you did your thesis."

And added "but that thesis is not your most valuable asset. What's the most valuable is your



ability to do any new independent work."

Another inspiration was my PhD adviser, Turing Award recipient Raj Reddy.

He gave me a direction to work on for speech recognition.

But when I got stuck, I found the courage to ask him: "I believe in the direction you set, but the techniques you gave are not the ones I think will work. I want to use machine-learning for speech recognition."

He said something to me that I will never forget: "I don't agree with you, but I'll support you."

He spent over US\$100,000 (S\$136,000) of his budget to buy me machines, hard disks, and collected data, which were instrumental to making my PhD thesis (the first speaker-independent, large-

vocabulary, continuous-speech recognition system) possible.

As I matured and moved up in the corporations, I realised that what he said was not just a demonstration of magnanimity and open-mindedness, but it was an important form of leadership – if you want to manage smart people, it is not possible to expect them to all agree with you or follow you.

By giving people with different opinions genuine support, you win their heart and support.

That became a management motto for me, as I managed smart people in Apple, Microsoft and Google.

The biggest celebration in my career was the building of Sinovation Ventures, which was created from ground up, and has now become a leading Venture Capital firm in China.

While I had successes earlier, it was never clear whether it came from the platform of the company (Microsoft, Apple, Google, etc), or whether it was my personal contribution.

Building something from the ground up was validating for me, and the resulting company felt like my own baby.

But the real biggest celebration in life is my family. They have always supported me, despite my (earlier) workaholic patterns, and not devoting enough time to them.

And my biggest failure was not realising the value and meaning of my family.

It took a death-facing experience (diagnosed with

4th stage lymphoma five years ago) to make me realise that all the hard work and accomplishments earlier in life were for nothing.

I realised that if I had only months to live, I wouldn't spend one minute on work.

I realised that my family was tolerant of my inattention and gave me love, support and especially care during the hardest days facing the uncertainty of my health.

And I was determined that, if I got better, I would change my life and re-prioritise my family and people who love me. That includes my wife, two daughters, five sisters, one brother and my mother (who just passed away).

I am now in remission, and am doing just that.

Yes, I've gone against the tide many times.

I learnt that, when I felt strongly and passionately about something, I have to follow my heart and do it. I trust that my intuition always leads me to the right direction (with proper analysis, of course). If I had just followed what others told me, I wouldn't have done any of these things.

I would like to see AI become viewed as a positive contribution to humanity – that it would liberate humans from having to do routine tasks, free us to do what we love and think more about what it means to be human.

I would like to spend more of my life loving people who love me, and following my heart to do what is my calling. **AR**

– Shefali Rekhi

A law for robots in the works

SEAN LOO

PEPPER IS DR KARL KRUUSAMAE'S MODEL student. An expert in the Estonian language, Pepper works tirelessly on assignments and projects.

Pepper's previous job experience includes being a reception officer at a telecommunications company, Telia.

But, unlike fellow students and workers, Pepper has no rights.

This, however, might change, depending on the outcome of a debate among Estonian lawmakers.

Pepper is a humanoid robot developed by Japanese conglomerate SoftBank, and is currently under the supervision of Dr Kruusamae, an associate professor in robotics engineering at the University of Tartu's Institute of Technology.

Since last year, Estonia has been redefining the legal status of artificial intelligence (AI) actors in disputes. Lawmakers are considering whether they should be given legal personhood.

The increase in the number of self-driving

vehicles is behind the questions about AI's ethical and legal rights. Some want AI recognised as an entity that can be held accountable by law.

A task force is trying to create a "general algorithmic liability law", a law aimed at guiding a judge in arriving at a verdict in cases that involve AI. The Estonian legislators have studied laws regarding self-driving cars since 2016.

National Digital Adviser Marten Kaevats likens self-driving cars to "robots on wheels." Their decision-making algorithms are similar to those in drones and autonomous devices like self-driving ships and smartphones, he said.

While "sectoral-based regulation" is cumbersome, an all-encompassing law could help to address grey areas in issues concerning AI, he said.

The proposal under consideration by the task force is also known as the Kratt Law.

Kratt is a mythical slave formed from hay and household objects.

It comes to life when its master makes an offering of three drops of blood, sealing a pact with the devil.

Kratt does everything its master orders it to, and has to be kept busy for fear that it might turn against the master. "It is exactly the same as artificial

intelligence," Mr Kaevats said.

Complex AI systems rely on algorithms that react to situations with no fixed rule book. The system knows only the statistical likelihood of an event happening, but another outcome could take place, with unexpected consequences.

If the law is passed, the legal status of AI will resemble that of a company, Mr Kaevats said. AI will be seen as an entity that can enjoy limited liability separate from its stakeholders.

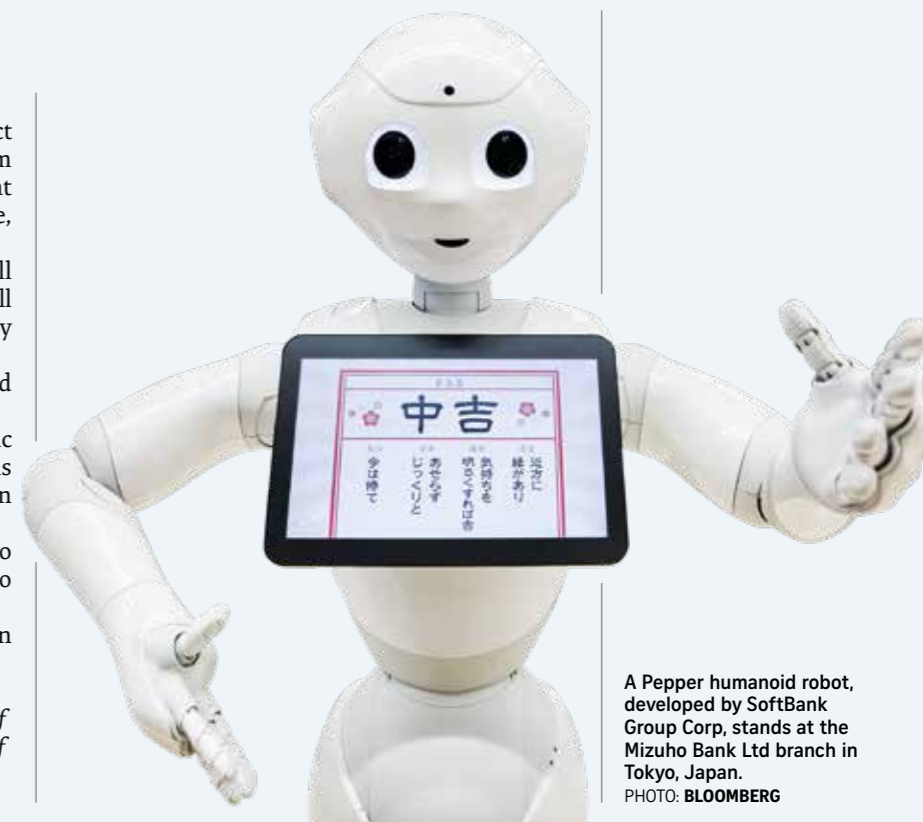
However, the owner-creator could still be traced and held responsible separately, he added.

The government has been consulting the public in an effort to understand concerns about AI. This is because the question of who is at fault is often emotionally charged.

For example, it is difficult for many people to accept that, in some instances, there is no one to blame, said Mr Kaevats.

"It's important to have the whole society on board with this question," he said. **AR**

The writer is a student of NTU's Wee Kim Wee School of Communication and Information. This article is part of the school's Go-Far overseas reporting programme.



A Pepper humanoid robot, developed by SoftBank Group Corp, stands at the Mizuho Bank Ltd branch in Tokyo, Japan.

PHOTO: BLOOMBERG

How to balance the benefits of Big Data with our privacy

The Internet's convenience and freedom of use come at a price – the personal data and privacy of billions of individuals are compromised. The mining of such information, ostensibly for commercial reasons, could lead to worst nightmares for users.

And history gives us ample reason for concern that the biggest long-term problem with cyber security is the use of voluminous data files and online surveillance technologies to alter the relationship between government and the governed, akin to the Big Brother dystopia conjured by George Orwell.

AL GORE

For The Straits Times

THE WORLDWIDE DIGITAL INFORMATION revolution, with the simultaneous deployment of the Internet and ubiquitous computing, has led to the emergence of a rudimentary “Global Mind” and a planet-wide extension of the human nervous system that transmits and shares information, thoughts and feelings among billions of people at the speed of light. Moreover, this revolutionary and still-accelerating transformation is driving a storm of innovation and creativity that is bringing with it disruptive and widespread societal, political and economic change.

These developments present us with an enormous source of hope for our ability to deal with some of our greatest challenges, including, for example, the climate crisis. We are now at a point where over half of the global population is connected to the Internet and has growing access to the sum total of human knowledge at their fingertips. As this percentage continues to grow, the Internet will increasingly bring about ever more transformational changes for human civilisation.

However, some of these changes will also bring unpredictable costs. We are just now beginning to better understand this “Faustian bargain” – just as the fictional Dr Faustus did not fully comprehend the price for the vast new power he sought when he first entered the bargain. For us, part of the price many are belatedly recognising involves the new vulnerability of our personal privacy and data security.

For example, in exchange for the new and seemingly magical convenience these companies offer us, we are allowing them to routinely collect vast amounts of information about all of their customers and users without a full understanding by those customers of the

ways in which their personal data will be used, and often without their permission – or at least without the meaningful granting of permission that can only be based on a full and true understanding of all that is being permitted.

Search engines and social-media platforms – along with many other companies whose business models are based primarily on the advertising revenue that allows them to provide these convenient services for “free” – are now constantly collecting all of this information on users in order to personalise and precisely tailor advertising to match their individual interests. Yet, in diligently collecting this information over time, many companies end up compiling vast dossiers of information about their customers. That is precisely what the advertisers want and the money they pay in return for the information in these voluminous files of information about each user is simply too

valuable for the companies providing “free” services to give up. To use one of the clichés of the computer age, these dossiers are “not a bug, but a feature.”

It is past time to examine the wisdom and sustainability of this model, because the information collected – including websites visited, searches initiated, day-by-day and minute-by-minute geographic location, intimate questions asked by users about diseases and disorders from which they may suffer, relationships they may have, pictures of their children, purchases they make, their “likes” and dislikes, their political views and so much more – when combined, can constitute an encyclopaedic narrative of a person's life, including details and patterns that most would not want to be compiled.

This threat to privacy and individual freedom comes not only from the private sector. What is initially collected in the private sector often becomes all too easily available to governments, which can add that information to what many of them already collect themselves. And history gives us ample reason for concern that the biggest long-term problem with cyber security is the use of voluminous data files and online-surveillance technologies to alter the relationship between government and the governed, akin to the Big Brother dystopia conjured by George Orwell. If such powers go unchecked, they may well be used in abusive ways when placed in the hands of less scrupulous leaders.

Moreover, even governments that do not abuse their power to secretly gain access to these dossiers can be subverted by less scrupulous governments – or non-state actors – that do find ways to gain access to these dossiers and then use them to “hack” into the sacred algorithm at the heart of self-government – “all just power is derived from the consent of the

governed” – and thereby manipulate elections in order to covertly control policies of other nations in a hostile manner.

As the world is aware, this has already been attempted – and some of the attempts may have already succeeded. One of the more recent examples is the exposure of Cambridge Analytica's use of such information to influence elections around the world – by one count, their parent company played a role in over 100 electoral campaigns in 32 countries.

In everyday life, the word most frequently used to describe the pervasiveness of online tracking is “creepy.” But, in spite of the obvious risks we are running, many users of the Internet still do feel that the Faustian bargain they are making is an acceptable one. Many, perhaps, take comfort in the fact that hundreds of millions of others are facing the same risks. However, for the Internet to fulfil the blessings it is capable of providing our society and individual lives, we must ensure that it is made more trustworthy, and that we protect our privacy as a basic human value.

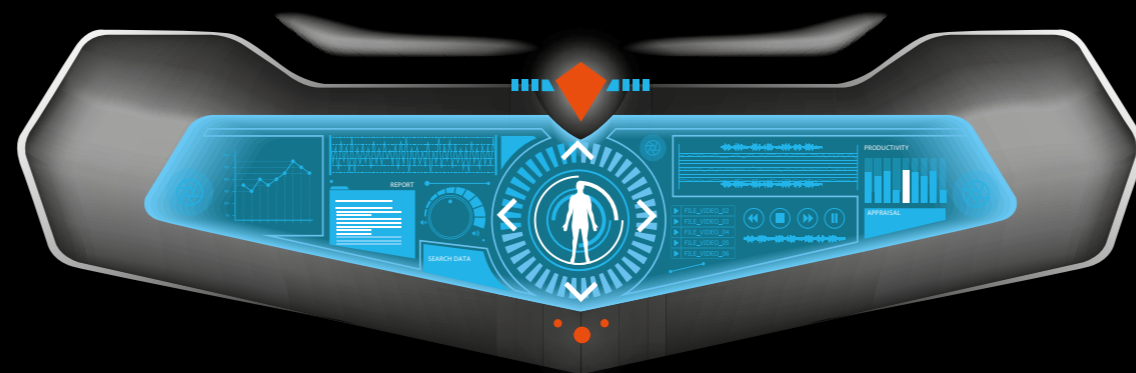
The ancients taught us that knowledge is power. Lord Acton taught us that power corrupts and absolute power corrupts absolutely. Taken together, these lessons should teach us that the compiling of “absolute knowledge” about billions of individuals in all the nations of our world poses a danger to human freedom and to the integrity of the collective decisions humanity must make to secure a safe, healthy and prosperous future. **AR**

The writer served two terms as Vice-President of the United States from 1993 to 2001. He is now the Co-founder and Chairman of Generation Investment Management, a sustainable investment management firm. This article is published in collaboration with The World Economic Forum.



Former U.S. Vice President Al Gore speaks at the COP24 UN Climate Change Conference 2018 in Katowice. As the number of online users grow, he says, the internet will increasingly bring about ever more transformational changes for human civilisation. PHOTO: REUTERS

We are just now beginning to better understand this “Faustian bargain” – just as the fictional Dr Faustus did not fully comprehend the price for the vast new power he sought when he first entered the bargain.



BT ILLUSTRATION: SIMON ANG

Seat-belt warning as storm clouds loom in 2019

A new great-power rivalry, tired old squabbles with Malaysia, and unfolding events point to some turbulence ahead

WARREN FERNANDEZ
Editor-in-Chief



✉ warren@sph.com.sg



ST ILLUSTRATION: CEL GULAPA

YOU HAVE BEEN HERE BEFORE. AS YOU SETTLE into your comfortable seat for the long flight ahead, a voice crackles from the cockpit.

“Our flying time today will be 12 hours, 40 minutes, and we expect a smooth journey ahead, but there looks to be some pockets of turbulence along the way,” your captain says, sounding vaguely assuring. “We suggest you keep your seat belt on.”

So was said on my recent Singapore Airlines flight home from holidaying abroad. It prompted several

hours of meandering musings from 30,000 feet in the air about what lies ahead in the new year. Some of the storm clouds that appear to loom on the political horizon include:

1. US-CHINA: RIVALRIES AMONG FRENEMIES

Three recent developments sum up the precarious state of relations between the world’s two main powers, now on a tentative 90-day hiatus while officials struggle to dial down simmering trade tensions.

First, Apple’s profits warning – its first since 2002 – sent global markets into a tailspin when they reopened for trading at the start of the year, on concerns about the slowing demand in China and widening impact of the ongoing Sino-US trade spat. Jittery investors regained their composure somewhat on Friday, while some continued to fret about the less than ominous beginnings.

On Jan 3, China’s dramatic landing of a lunar probe on the far side of the moon signalled the country’s growing technological and economic prowess. Inevitably, this forced the world’s scientists, policymakers and commentators to shake off any holiday-induced stupor they might have been languishing under.

Such concerns about China were reflected starkly in the remarks by the new Acting US Defence Secretary Patrick Shanahan, who stepped up to replace his predecessor James Mattis, who resigned over policy differences with President Donald Trump.

In one of his first statements since taking on the job, he told civilian leaders of the US military that, for all the other strategic challenges around the world, their top priority was to focus on “China, China, China.”

This made plain that the shift to a mode of “strategic competition” with China, first mentioned in a US defence position paper last January, is very much part of a nascent Washington consensus.

The latest issue of Foreign Affairs reflects this, with its cover story headlined, “Who will run the world?” In the lead essay, the US-based publication’s editor Gideon Rose laments how much the Trump administration’s view of the world is at odds with

the liberal global order that American leaders have sought to foster for decades.

“Trumpianism is about winning, which is something you do to others. The (liberal world) order requires leading, which is something you do with others,” he notes.

In any case, those who dismiss the sunny internationalist outlook as a “fairy tale”, believe “its day is done”, he adds, noting that these sceptics say: “Americans don’t want it. The world does not want it. US power is declining; China’s is rising. A return to great-power conflict is inevitable; the only question is how far things will go.”

Just how far things go in the months to come matters greatly to many countries, not least Singapore, which have thrived on the open, rules-based international trading order, and are loath to see the rise of a new great-power rivalry that will force an awkward “with-me-or-against-me” taking of sides.

Some are now saying that a new Cold War, between the US and China, is likely if not inevitable. Yet, most commentators agree that this is a blind alley no one wants to go down, so the question that arises is whether leaders – and their people – will have the wisdom to avoid doing so.

Perhaps the wise words of US President Franklin Roosevelt, who helped shaped the post-World War II global order, as quoted by Mr Rose in his essay, might help focus minds.

“We have learnt that we cannot live alone, at peace; that our own well-being is dependent on the well-being of other nations far away. We have learnt that we must live as men, not ostriches, nor as dogs in a manger. We have learnt to be citizens of the world, members of the world community. We have learnt the simple truth, as Emerson said, that ‘the only way to have a friend is to be one.’”

2. MALAYSIA-SINGAPORE: HAVE WE NOT LEARNT?

Those words ring true on matters closer to home, where several bilateral issues flared up from out of the blue in the dying days of last year.

Disputes over airspace and maritime boundaries, food supplies and water prices, and talk of crooked bridges, have a deja vu, “oh-so-yesterday” ring about them. Sadly, they smack of zero-sum thinking, and of a desire to be “winning, rather than leading” the way forward to better lives for the peoples of both countries.

3. 4G LEADERS: THE END OF THE BEGINNING

Significantly, these bilateral tensions come at a time of political transition on both sides of the Causeway.

Inevitably, Malaysia’s new-old Prime Minister Mahathir Mohamad will have to make way for a successor at some point, although to whom, or how this might unfold, remains a little hazy.



The new leader will need to establish himself, domestically and internationally, hopefully without being saddled with bitter disputes that belong in the past.

In Singapore, while the speculation that raged for most of last year – on the likely successor to Prime Minister Lee Hsien Loong – has finally ended, the handover process remains a work in progress, with the critical endorsement of the electorate having to be sought, quite likely later this year.

PM Lee spelt out the challenge for all concerned in plain terms in his New Year’s message: “Our model of governance is quite exceptional, and has served us well. It has enabled Singapore to make the most of what we have and stand out in a highly competitive world.”

“Singapore politics cannot afford to be riven and destabilised by the rivalries, contestations and factions so often seen elsewhere. Instead, Singaporeans must stay united, and work together resolutely, to strengthen and renew our social compact.”

4. BREXIT: FLATTERING ALLUSIONS OR DELUSIONS?

Even as the clock ticks down to March 29, when the United Kingdom is due to leave the European Union, its Foreign Secretary Jeremy Hunt – touted as a man who might replace Prime Minister Theresa May – was in Singapore, drawing parallels with how Britain might “plug into the international economic grid”, just as Singapore had done and thrived, contrary to what many predicted in the 1960s.

While the remarks might be flattering, few Singaporeans would crave them, given that the economic implications of Britain crashing out of the EU without a deal on how best to do so are grave. That would leave the UK adrift, and at odds

In this file photo taken on September 12, 2018, Apple CEO Tim Cook waves to the audience during an event in Cupertino, California. Apple’s profits warning sent global markets into a tailspin when they reopened for trading at the start of the year, on concerns about the slowing demand in China and widening impact of the ongoing Sino-US trade spat. PHOTO: AFP

with itself, at a time when the world could do with some phlegmatic British sense and sensibility.

5. ELECTIONS AND EVENTS: EXPECT THE UNEXPECTED

All of the above will play out against the backdrop of major elections around the world, from Indonesia to India, Australia to Argentina. These, and other events, will throw up their share of surprises. Politicians focused on the short term need to secure their own futures will be less inclined to take the long-term measures needed to grapple with the technological disruptions shaking industries and societies everywhere.

So, fasten your seat belts, everyone, as the turbulence ahead looks likely to make for a bit of a bumpy ride.

At tricky and testing times such as these, my mind drifts inexorably to words consigned to heart

a long time ago, for solace and sustenance. So, along with my best wishes for the New Year, I offer you these lines from British poet Alfred Tennyson's Ulysses:

*Come, my friends,
'Tis not too late to seek a newer world.
Push off, and sitting well in order smite
The sounding furrows; for my purpose holds
To sail beyond the sunset, and the baths
Of all the western stars, until I die.
It may be that the gulfs will wash us down:
It may be that we shall touch the Happy Isles,
And see the great Achilles, whom we knew.
Though much is taken, much abides; and though
We are not now that strength which in old days
Moved earth and heaven; that which we are, we are;
One equal temper of heroic hearts,
Made weak by time and fate, but strong in will
To strive, to seek, to find, and not to yield.*

Elections, 2019

Here's a look at some of the key elections coming up this year in Asia.

THAILAND

General elections March 24, 2019

Thailand is expected to hold its first election in eight years on Feb 24. By then, the coup-prone kingdom would have spent almost five years under military rule.

Critics of the ruling junta allege the polls have been rigged to extend military influence and engineer a second term for Prime Minister Prayut Chan-o-cha, a retired general who had led the 2014 coup.

They also warn that his term could last for another eight years because of a transitional constitutional provision.

This election promises to be intensely competitive, thanks to a new electoral system that narrows the gap between top-performing and second-most popular parties.

The junta lifted a ban on political activity only on Dec 11, giving parties a very short runway to the polls.

The new Constitution enacted after the coup makes it very difficult for big parties such as the former ruling Pheu Thai Party to dominate any more. Instead, small- or medium-sized parties will gain ground, making a coalition government very likely.

— Tan Hui Yee, IndoChina Bureau Chief



Incumbent President Joko Widodo and his running mate Ma'ruf Amin (left) exchanged verbal punches with challengers Prabowo Subianto and his running mate Sandiaga Uno - during the televised debate yesterday, which was broadcast live by 18 television and radio stations across Indonesia. The topics covered were on the hot-button issues of corruption, terrorism, human rights and the law. PHOTOS: EPA-EFE, REUTERS

INDONESIA

Presidential and Legislative elections April 17, 2019

More than 192 million voters in Indonesia will head to the polls on April 17 to cast their ballots in the 2019 presidential and legislative elections.

This will be the first time that citizens in the world's third-largest democracy will pick their president and MPs on the same day.

All eyes, however, will be on the high-stakes contest between President Joko Widodo and his old rival, former general Prabowo Subianto.

While the presidential race has been billed as a rematch of the 2014 election between the two, Mr Joko - better known as Jokowi - is no longer the dark horse, but the incumbent, whose track record will be up for scrutiny by voters.

The question now is whether he has done enough, particularly in his infrastructure push, in beefing up the economy and raising wages, to convince Indonesians to give him a second five-year term.

— Francis Chan, Indonesia Bureau Chief

INDIA

General elections April-May, 2019

Prime Minister Narendra Modi has travelled the world to raise India's profile, ushered in one of the biggest reforms of modern-day India with a goods and services tax, and presided over one of the world's fastest-growing economies.

Yet, as the popular leader heads into a general election next year, he is going to find it difficult to replicate the landslide win that brought him to power in 2014, said analysts.

There is nationwide distress among farmers over low prices for their produce, and a lack of jobs that is creating disenchantment among different groups, including the Dalits, who are at the bottom of the caste hierarchy and have been the target of Hindu nationalist groups.

— Nirmala Ganapathy, India Bureau Chief

The biggest stories in Asia - in one snappy, smart read.

The Straits Times Asian Insider newsletter seeks to provide an independent, balanced perspective on the latest developments.

Get insights from our network of over 30 correspondents in almost every major Asian capital, as well as in the United States and Europe. Delivered to your e-mail inbox every weekday.



Asia in context, in your mailbox.
Sign up now.

str.sg/newsletters

1 | Crunch time for Jokowi



By all accounts, Indonesian President Joko Widodo should win the upcoming presidential elections: He holds a big lead in the polls in his rematch with challenger Prabowo Subianto and enjoys the built-in advantages of incumbency.

2 | Trade woes



There was a bloodbath in December 2018. This week, as economies around the region total up the numbers for last month, many are finding export figures well below expectations.

3 | The wait goes on for Thai polls



Many view Priyanka's entry as boost for Congress party

She is seen as capable of taking on Modi but may not have enough time to prepare for election battle

NIRMALA GANAPATHY

India Bureau Chief
In New Delhi



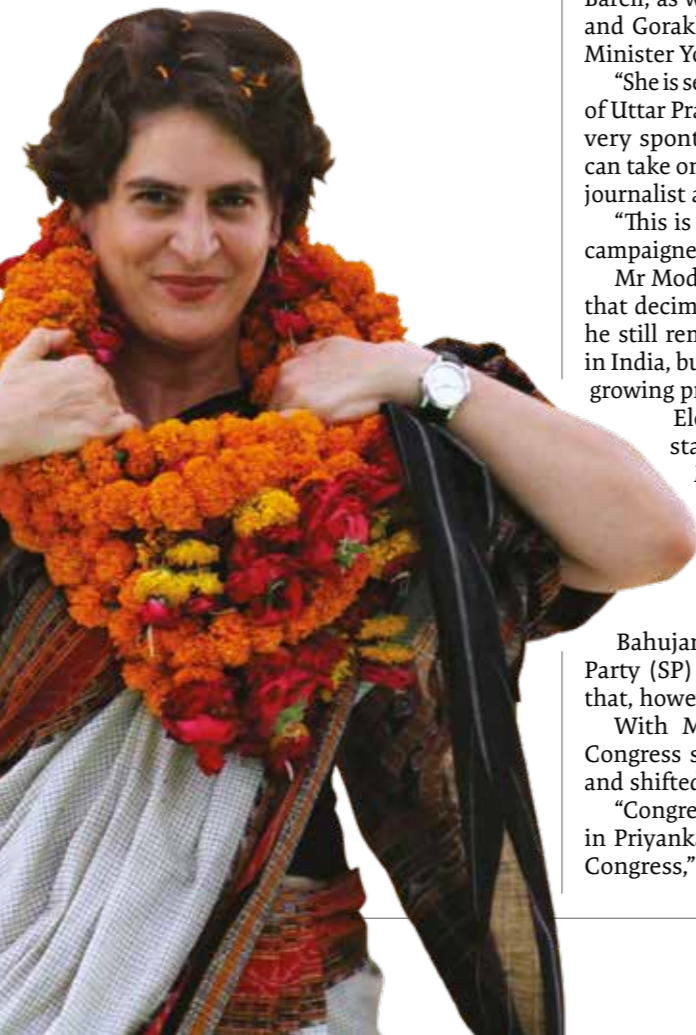
✉ gnirmala@sph.com.sg

Mrs Priyanka Gandhi Vadra faces major challenges such as her being part of the Nehru-Gandhi lineage, attracting more BJP accusations of nepotism and dynastic politics in the Congress party, while her husband Robert Vadra's real-estate dealings have also been under government scrutiny. PHOTO: REUTERS

A MEMBER OF THE POWERFUL NEHRU-GANDHI political dynasty, Mrs Priyanka Gandhi Vadra, has formally entered politics, a surprise move that analysts say will give a big boost to the opposition Congress party.

The 47-year-old mother of two had, for the most part, stayed out of public view and surfaced mostly during election time to help campaign in the family boroughs in the central state of Uttar Pradesh.

But, in January, the Congress announced her appointment as the general secretary in charge of east Uttar Pradesh, a key part of the politically important state that, in total, has 80 seats in the Lower House of Parliament.



The announcement comes around three months shy of the country's general elections.

Many political observers, however, were caught by surprise as Mrs Vadra makes her political debut in eastern Uttar Pradesh, where a high-stakes battle is almost certain among the Congress, Bharatiya Janata Party (BJP) and regional parties.

While analysts say her entry will enthuse Congress party workers, they also noted that she has a very short time to organise the Congress campaign and help revive the party's fortunes in Uttar Pradesh.

Eastern Uttar Pradesh includes the Gandhi-Nehru family constituencies of Amethi and Rae Bareilly, as well as Mr Modi's constituency Varanasi and Gorakhpur, from where Uttar Pradesh Chief Minister Yogi Adityanath fights.

"She is seen as somebody who appeals to Brahmins of Uttar Pradesh, youth and women because she is very spontaneous. She is seen as someone who can take on (Prime Minister Narendra) Modi," said journalist and author Rasheed Kidwai.

"This is a very clever ploy to pin down two key campaigners: Modi and Yogi Adityanath."

Mr Modi powered to victory in 2014 on a wave that decimated the Congress party. Five years on, he still remains the most popular political leader in India, but his re-election bid is burdened by two growing problems: joblessness and farm distress.

Electoral defeats in the BJP's stronghold states of Chhattisgarh, Rajasthan and Madhya Pradesh by the Congress last year have also hit Mr Modi's party and energised the opposition.

Efforts are under way to build an opposition alliance.

In Uttar Pradesh, regional parties Bahujan Samaj Party (BSP) and Samajwadi Party (SP) formed a much-talked-about alliance that, however, did not include the Congress party.

With Mrs Vadra's entry, analysts said, the Congress stole attention away from the alliance and shifted it to the Congress.

"Congress has made a smart move. By bringing in Priyanka, it has enthused the rank and file of Congress," said Dr Anil Kumar Verma, chair of

the Centre for the Study of Society and Politics, a research centre in Uttar Pradesh.

"They have also stolen the narrative of the SP-BSP alliance, which everybody was talking about here. Now, it has shifted back to the Congress."

Mrs Vadra, however, faces some major challenges.

Her entry has strengthened the BJP charge of nepotism and dynastic politics in the Congress.

Mr Modi alluded to it, saying that for some, "family is the party but, for the BJP, party is family."

She is also expected to get heat because of her husband Robert Vadra's real-estate dealings, which

have been under government scrutiny, analysts noted.

Also, she has very little time to build up the party's organisational structure in Uttar Pradesh, where the Congress has largely performed poorly in recent years.

Mrs Vadra is well aware of the challenge, said a Congress functionary who spoke on condition of anonymity.

"In a way, it is a challenge for her. It is not easy but she has accepted that challenge," added the functionary. **AR**

Malaysia's new king

Pahang ruler elected as Malaysia's new king after special meeting

MALAYSIA'S NEW KING WAS ELECTED IN JANUARY by following strictly the order of succession that had been laid out since independence 60 years ago.

This was despite some speculation that there could be a surprise in the ascension of the new constitutional monarch.

The Malay royal houses elected Sultan Abdullah Ri'ayatuddin, the 59-year-old ruler of Pahang, after a special meeting of the Conference of Rulers.

Eight of the nine rulers were present, including Sultan Abdullah himself.

Only the Kelantan ruler, Sultan Muhammad V, was absent. It was the abdication of Sultan Muhammad V on Jan 6, after just two years as king, that brought about the ascension of Sultan Abdullah.

The abdication followed news that he had married a Russian beauty queen outside Malaysia.

Till today, neither the Kelantan ruler nor the Malaysian government has confirmed this despite widespread photos of the supposed wedding on social media.

Under the succession order laid out after independence from Britain in 1957, the Pahang house would be next in line to become the Malaysian king, followed by Johor and Perak.

Sultan Abdullah will now reign for five years as the king under a unique rotation system involving the nine Malay royal families.

Top state officials and Malaysians poured their congratulations through mainstream media and on social media.

Muhammad Izwan Shah posted on his Facebook account: "Congratulations Tuanku (Your Majesty). May Allah bless the country under your reign and may the country prosper and become more developed."



The sixth Sultan of Pahang, Sultan Abdullah ibni Sultan Ahmad Shah (seated, left) and his consort Tunku Azizah Aminah Maimunah Iskandariah, on their thrones during their coronation at Istana Abu Bakar Palace in Pekan, Pahang, near Kuala Lumpur. PHOTO: AFP

Although the Malay rulers have rather limited roles as constitutional monarchs at state and federal levels, they are seen as important symbols of Malay political power and protectors of Islam in the Malay-majority country of about 32 million people.

Sultan Abdullah became Malaysia's Yang di-Pertuan Agong, or Supreme Ruler, just over a week after he was installed as the new ruler of Pahang, after his father, Sultan Ahmad Shah, 88, stepped down due to declining health.

In a grand installation ceremony at the royal palace in Pekan, Sultan Abdullah was bestowed the full royal title of Al-Sultan Abdullah Ri'ayatuddin Al-Mustafa Billah Shah ibni Sultan Ahmad Shah al-Musta'in Billah.

The new King is known to be a keen sportsman, while his wife, Tunku Azizah Aminah Maimunah Iskandariah Sultan Iskandar, is an avid cook.

Tunku Azizah, 58, is the younger sister of the ruler of Johor, Sultan Ibrahim Sultan Iskandar.

Sultan Abdullah has nine children. **AR**

TRINNA LEONG

Malaysia correspondent
In Kuala Lumpur



✉ ltrinna@sph.com.sg

US-China tariff ceasefire doesn't mean end of trade war

The US-China agreement last year to suspend additional trade tariffs is welcome, but underlying strategic competition rules out an end to the ongoing trade war.

JONATHAN EYAL
Global Affairs
Correspondent



✉ jonathan.eyal@gmail.com

THE AGREEMENT BETWEEN UNITED STATES President Donald Trump and Chinese President Xi Jinping to suspend the imposition of further punitive tariffs on their countries' respective goods represents a welcome ceasefire in a trade war. And it is possible that it may work as a prelude to a broader trade agreement.

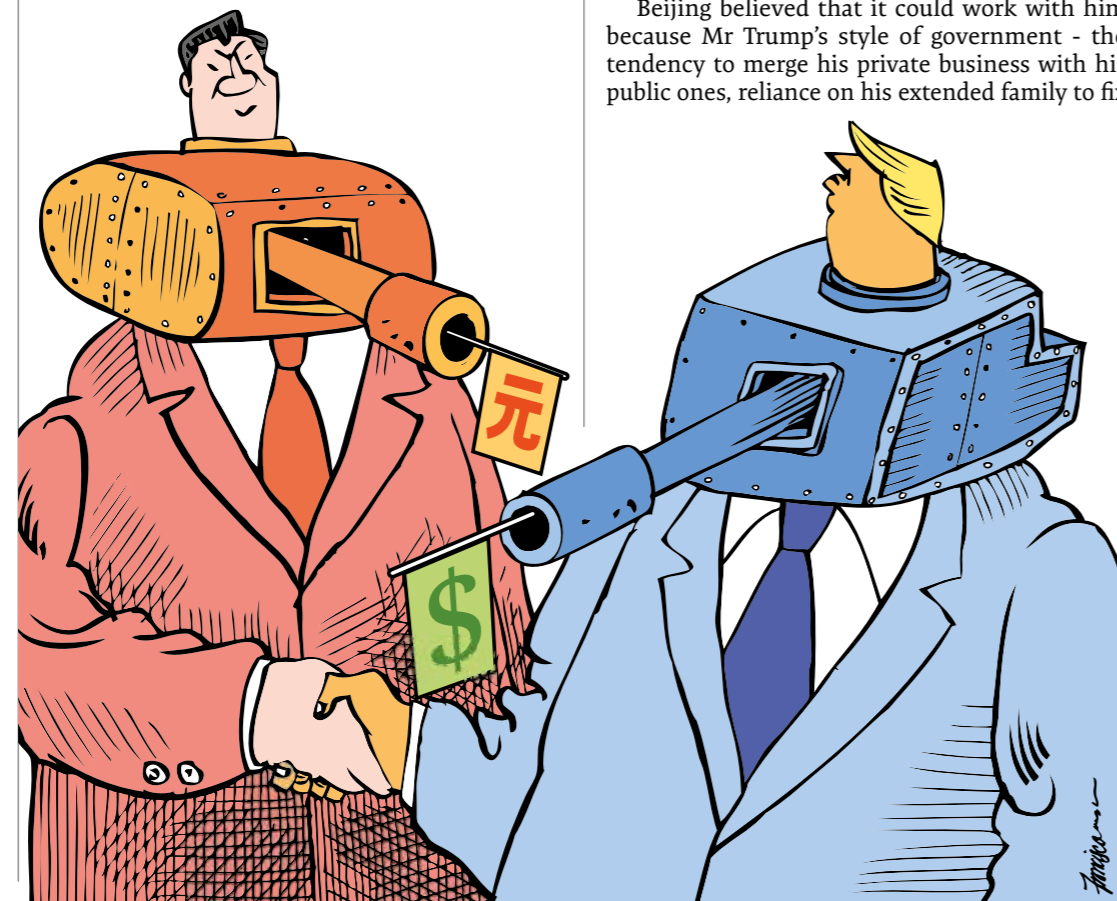
But don't allow any such deal to mislead you into believing that the current Sino-American confrontation is an aberration which will soon go away.

For, the reality is that it is impossible for China and the United States to turn the clock back to

a period of cooperation; those days are gone, and the future belongs to an almost permanent confrontation between the two powers. This may not necessarily translate into military clashes. But it will most certainly result in frequent spats and an incessant drumbeat of hostility.

It is easy to dismiss Mr Trump as just a unique, one-off US president, someone who holds odd ideas, acts oddly and is therefore outside the normal blueprint of American leaders. That's how Chinese officials tended to see the new occupant of the White House soon after his surprise electoral triumph in 2016.

Beijing believed that it could work with him because Mr Trump's style of government - the tendency to merge his private business with his public ones, reliance on his extended family to fix



ST ILLUSTRATION:
MANNY FRANCISCO

things and the belief that everything is possible if the price is right - accords very well with China's own ways of doing business at home and China's preferred way of conducting business abroad.

But China miscalculated badly on this occasion, and it is a miscalculation of a historic magnitude although, in the time-honoured tradition, nobody in Beijing would ever own up and say so. For, far from being a businessman first, Mr Trump was always a politician who merely used his supposedly macho approach to trade as part of his ascent to power.

STRATEGIC APPROACH TO CHINA

Although Mr Trump may not be an intellectual and may have little time for ringing speeches at think tanks of the kind pundits and the media appreciate, there is a very precise structure to his China policy and, as surprising as it may seem, it is shared by a wide portion of the US political and economic elite.

It starts from the observation that the gamble of previous US presidents who pushed for China's admission to the World Trade Organisation back in 2001 has backfired.

Hopes that, as a result of being a member of the WTO, the Chinese will gradually reduce state interference in their trade activities and admit investment into their domestic market on an even-playing basis have not only been confounded; but under President Xi, matters are going in precisely the opposite way, with more rather than less state guidance in economic activities, and a greater use of political consideration in determining China's foreign economic forays.

The second pillar of Mr Trump's China approach is a belief that the way his predecessors dealt with China betrayed American impotence and ultimately achieved nothing.

He is not interested in extracting small concessions in a few economic sectors, some of which are more apparent than real and most of which are in any case often reversed by the Chinese at a later stage or reinterpreted in such a way as to render them meaningless.

He wants China to transform the way it does business, to cease insisting on formal transfers of technology as part of joint-venture partnerships (which are themselves often the only way to penetrate Chinese markets) and to accept that China cannot enjoy trade and investment benefits it is not prepared to extend to others.

And he is determined to achieve this not by negotiating for even more, but by accomplishing what previous US presidents failed to achieve: Acquiring what strategic experts call "escalation dominance", which means that the Chinese will have to accept that the US is prepared to continue the trade dispute and even expand it, and that China cannot win this confrontation.

Far from treating everything relating to China as simply questions of trade imbalances, Mr Trump sees the current confrontation with China as

primarily a strategic one. Yes, he is interested in shrinking China's trade surplus with the US and even has a figure in mind: a redress worth US\$200 billion (\$274 billion) in America's favour by 2020. But the US President also wants to persuade US producers that, if they still have to run some of their manufacturing and assembly operations overseas, they should move away from China and relocate to places such as Mexico.

That was the logic behind the rather swift renegotiation of US relations with Mexico and Canada, and the signing of the new trade deal between the three North American nations which also took place on the margins of the G-20 summit in Buenos Aires over the weekend.

Ignore the gruff Trump statements or his often simplistic tweets; Mr Trump's approach to China is largely strategic rather than purely transactional. And it is more in tune with the changed mood on China throughout the industrialised world.

CONGRESSIONAL SUPPORT

In the latest midterm Congressional elections, Mr Trump's Republicans may have lost some votes in agricultural states because of China's imposition of tariffs on soya beans, for instance, in retaliation for the US tariffs. But the damage to his electoral base was smaller than what China anticipated or privately hoped.

Interestingly, Mr Trump's China approach has faced almost no institutionalised business opposition inside the US. Three big Washington trade groups that have led nearly every free trade battle in the past - the Business Roundtable, the US Chamber of Commerce and the National Association of Manufacturers - are now calling for changes in Chinese industrial policies.

And the chief executives of major US companies with big trade interests in China have also kept quiet this time for one simple reason: All of them are fed up with the alleged Chinese theft of technology secrets and with broken promises of market access.

Want just one example of a broken promise? A year ago, China announced that it was opening its financial sector by raising the ownership limit which foreign firms could take in Chinese security ventures from 49 per cent to 51 per cent. That was hailed in Beijing as a major concession. And how many US security firms were approved under this scheme? Precisely zero.

More significantly, the newly elected US Congress may challenge Mr Trump on many trade policies - including those on Latin America and Europe - and quiz the White House's approach to Russia. But nobody in Congress is planning to challenge Mr Trump's policies on China.

Indeed, Congress may want the President to be even tougher. Not many people noticed probably that, just before he departed for the G-20 summit, Mr Trump received a letter from Senator Chuck Schumer and Senator Sherrod Brown, both senior Democrats, who claimed to be alarmed: "We have

It is highly unlikely that we would see any return to the "constructive engagement" of the past between the two nations. Instead, what we will witness is a new era of strategic competition.

”

seen disturbing reports that you may be considering backing down on further action against China in order to reach an agreement at the G-20," they wrote; "We urge you to stand firm against China if meaningful concessions are not made."

None of this means that compromise deals cannot be struck, and some of them could be rather big. "I think at some point, we are going to end up doing something great for China and great for the United States," said Mr Trump in his inimitable style at the end of his dinner with President Xi in Buenos Aires at the weekend.

But it is highly unlikely that we would see any return to the "constructive engagement" of the past between the two nations. Instead, what we will witness is a new era of strategic competition.

And for two reasons.

The first is the fact that China's political system is simply incapable of addressing America's demands to dismantle its state-led economic development model; the Chinese have not even brought themselves to admitting that they force

foreign companies to transfer technology, although everyone who works on such matters knows this to be the case.

And, second, the Chinese have given plenty of evidence that, despite their previous denials, they are engaged in precisely the task of transforming economic power into military prowess. Beijing may be fully justified in doing so, and may be doing nothing more than exercising a right every nation has to go down this route.

Nevertheless, as seen from the US perspective, the failure to create a true market economy coupled with the all-too-obvious success in forging China into a truly global military power can elicit only one response from Washington.

So, even if the current ceasefire in the trade war proves to be permanent, the war itself endures, and will continue to be waged through investment restrictions on Chinese companies, law enforcement against cyber espionage and export controls. The future "ain't all rosy", as they say in the US. **AR**

China's economic woes take toll on Asia

Region's economies off to rough start for year, amid sharp drop in Chinese trade

LAST YEAR, DURING THE RUN-UP TO CHINESE New Year, Mr Heru Purnomo, founder of Indonesia's biggest live fish exporter, Pulau Mas, could count on a spike in demand to prop up prices, as Chinese families and businesses splashed out on live lobster, grouper and other reef fish as part of elaborate banquets to ring in the new year.

A red coral trout, or snapper, would set a host back US\$65 (S\$88) per kg. This year, it is more like US\$55.

"It's absolutely because the economy there is slowing down," Mr Heru said, referring to China. "After the (Chinese) New Year, prices will drop sharply."

A sharp drop in Chinese trade is taking a bigger-than-expected toll on its Asian neighbours. Imports into the world's second-largest economy contracted 7.6 per cent in December. Taiwan, South Korea and Indonesia have so far this year posted steep declines in their trade data. In mid-January, Singapore followed suit, posting an unexpected slump in non-oil trade.

The value of China's exports unexpectedly fell 4.4 per cent in December after expanding at a rapid clip of more than 14 per cent as recently as October, according to recent Chinese data.

Taiwan's exports also slumped 3 per cent in

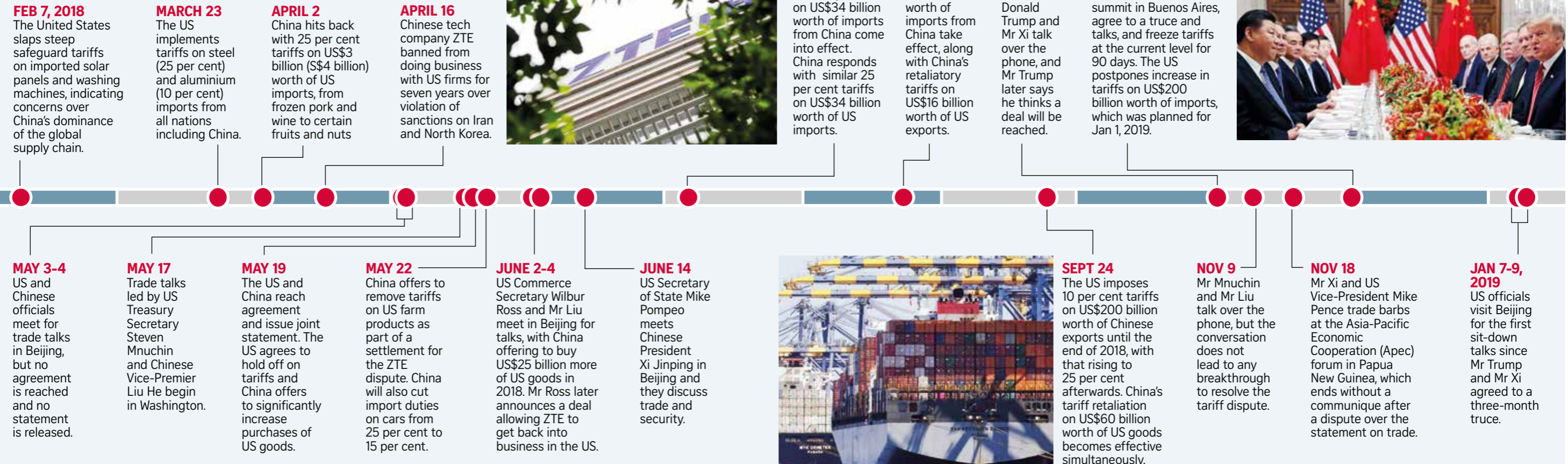
JEFFREY HUTTON

Regional
Correspondent



✉ jdhutton@sph.com.sg

The trade war



Sources: REUTERS, BLOOMBERG PHOTOS: AFP, REUTERS STRAITS TIMES GRAPHICS

We're seeing a contraction in manufacturing activity, particularly in North Asian economies such as Taiwan and South Korea.



— KHOON GOH,
ANZ's head of Asia
research.



The value of China's exports unexpectedly fell 4.4 per cent in December after expanding at a rapid clip of more than 14 per cent as recently as October. PHOTO: AFP

December, extending their decline into a second month, while South Korea's exports contracted 1.3 per cent. In October, South Korean exports surged nearly 23 per cent as manufacturers rushed to order components ahead of US tariffs of 25 per cent on more than US\$260 billion of Chinese goods that were slated to go into effect on Jan 1.

But both the United States and China have agreed to a 90-day truce on new tariffs while they negotiate an end to their trade war.

The slower pace of Chinese economic growth – expected to be 6.5 per cent this year – and US tariffs were bad news for the region, said Bloomberg Intelligence banking analyst Diksha Gera.

Australia, Japan, South Korea and the Philippines, each of which relies on China for more than 20 per cent of their exports, were the most vulnerable, Ms Diksha said.

“China's economic slowdown bodes poorly for many Asian countries”, she warned in an e-mail.

Even so, analysts say, China's troubles would not affect everyone similarly.

That is because, in part, size matters. While Bloomberg expects the rate of gross domestic product (GDP) growth in most Asian economies to slow, countries with big consumer bases may weather the shock of a China slowdown. The Philippines, Japan and Indonesia, where household spending comprises 57 per cent of GDP, will clock GDP growth more or less in line with last year's. India's GDP will accelerate to 7.3 per cent, according to Bloomberg Intelligence.

In Vietnam, which also boasts a young and

increasingly affluent consumer base, the economy has been the beneficiary of an ongoing effort among manufacturers to move production of low-margin goods, such as some electronic products and clothing, away from China. The value of Vietnamese exports expanded 6.5 per cent in December.

Another factor determining prospects would be a diversity of trading partners. Singapore's web of free trade agreements, not only with China, but also the US, European Union and others, may help cushion the impact of China's difficulties, said ANZ's head of Asia research Khoon Goh. “We're seeing a contraction in manufacturing activity, particularly in North Asian economies such as Taiwan and South Korea,” he said ahead of mid-January's trade results.

How well the region's economies perform could also depend on governments' and central banks' latitude to splash out on infrastructure or cut interest rates respectively to stimulate spending.

Indonesia's five interest-rate hikes last year, which were intended to shore up the value of the rupiah, have provided room for the central bank to lower borrowing costs, Mr Goh said.

China's December GDP figures and the possible resolution of its trade war with the US would determine prospects for the region, Mr Goh said.

But there is no denying that 2019 has had a rough start.

“We were expecting a slowdown in trade but not an outright contraction,” Mr Goh said, referring to results for most Asian countries. “Conditions are tougher than what we were expecting.” **AR**

Trade Briefs

CPTPP 'open to all economies'

TOKYO – Members of a landmark 11-nation Pacific Rim trade deal signalled their openness to expand the agreement by taking in new members, after meeting for the first time since the pact came into force on Dec 30.

Following a meeting in Tokyo, Japan, on Jan 19, participating countries to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) highlighted in a joint statement the importance of maintaining and strengthening an open, inclusive and rules-based trading system.

This comes amid growing concerns over recent trends towards protectionism, they added, reiterating that the agreement is “open to all economies” which accept these principles and are willing to meet its high standards.

They then “confirmed their strong determination to expand the agreement through the accession of... new economies”.

Negotiated and signed on March 8 last year, the CPTPP is a revived version of the Trans-Pacific Partnership (TPP), following the United States' withdrawal. It brings together economies from both sides of the Pacific, representing 14 per cent of the global economy.

For now, seven nations – Australia, Canada, Japan, Mexico, New Zealand, Singapore and Vietnam – have ratified the deal. The other countries involved are Brunei, Chile, Malaysia and Peru.

— The Straits Times



PHOTO: DPA/AFP

China's new superfast train

China has unveiled three types of Fuxing trains, a report in the Telegraph of London said. The longer Fuxing trains, 440m long and seating 1,283 passengers, are the longest high-speed trains in China, with a maximum speed of 355kmh. Two other Fuxing trains are expected to run at maximum speeds of 250kmh and 160kmh.

China now has the world's largest high-speed rail network of 29,000km at the end of last year, about two-thirds of the world's total, the report said. This file photo shows a model of the Fuxing (Rejuvenation) bullet train made by Chinese rail giant China Railroad Rolling Stock Corporation on display at Innotrans, the railway industry's largest trade fair, in Berlin.

India's North-east eyes S-E Asia as trading partner via Myanmar

The new age, homegrown brands of the “Seven Sisters” of India's North-east and the state of Sikkim – He Man 9000 Beer, Freshy Sauces, Elrhino dung paper, made from rhino droppings, and a bevy of online start-ups – are looking at integrating with their neighbours in South-east Asia, as the region of mountains and forests shakes off militant insurgencies, and ethnic and political turmoil.

The seven sister states – Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura – are witnessing a mushrooming of new companies that are keen to trade across their long land border with Myanmar, which serves as a natural land-bridge to South-east Asia.

— The Straits Times

China seeks talks with India to conclude RCEP

China has sought talks with India to allay concerns on a regional free trade pact it is spearheading, two people familiar with the matter said, as Beijing seeks newer markets amid the ongoing trade war with the US.

The 16-country Regional Comprehensive Economic Partnership (RCEP) has been in the works for a while and China is keen to conclude it by end of 2019, the people said, asking not to be identified as the matter is not public yet. India's wariness about a possible flood of Chinese goods, and its demand for looser immigration rules for its tech professionals remain sticking points.

India's foreign ministry didn't immediately respond to a message seeking comments.

— The Business Times



Special Report

Rohingya refugees: Yearning to break free

This is the day-to-day existence endured by nearly a million Rohingya in refugee camps in Bangladesh, after fleeing violence in Myanmar that culminated in a massacre by the military nearly 18 months ago. The Straits Times visited the camps in July last year, to bring this first-hand account, in this Special Report.



THE FAMILY'S POSSESSIONS ARE FEW AND ALL their clothes are strung across a short nylon line in the flimsy structure of bamboo and tarpaulin that serves as home.

But when Mohd Abdul Hamid starts to speak of life in the Rohingya camps, his wife Madam Salama Khatoon goes to a corner of the hut and fishes out two articles of clothing that she keeps apart from the rest. One is pink, the other blue and they belonged to the couple's daughter, Unaishya, who died in this Cox's bazaar camp where the family live with their three remaining children.

The couple stare in silence at the only items they can remember their daughter by.

There is no trace, on the other hand, of their oldest child Kamal Sadiq, 10, who died when the family crossed two rivers to flee the violence in Myanmar for the safety of Bangladesh across the border. They abandoned his body in the hills.

Unaishya reached Kutupalong in Cox's Bazar safely. Mr Abdul Hamid, 33, says that she was three years old, and pretty.

"We had to sleep in the open while my wife and I assembled this hut. Sometimes there was enough to eat and sometimes there was not. Sometimes it was wet. Unaishya caught pneumonia and we buried her about 2km from here.

"We thanked Allah when we got here because we thought we were safe. But now I have lost one child in Myanmar and one in Bangladesh. The rest of us have nowhere to go."

For if he and 919,000 other Rohingya refugees thought they had escaped the death penalty in Myanmar by fleeing from their home state of Rakhine to Bangladesh, they now find themselves staring at a life sentence – squashed in cell-like

units, ill, hungry and stuck with endless time on their hands.

Home now is a place called Kutupalong megacamp in Bangladesh's Cox's Bazar district that till last year was known for its hills and forests and 120km of unbroken beach.

Today, a stretch of hills has been hacked down for the megacamp complex. About 626,000 people are squeezed into a 12 sq km area, with 6,000 overflowing latrines, the smoke from firewood and that morning's rain creating a warm, wet stink. The remaining Rohingya – whom everyone calls refugees while speaking, but never in writing – are placed in similarly squalid smaller camps.

For a people who worked on farms and fished in rivers, it is the feeling of being boxed in that galls the most. The huts touch each other in an unending labyrinth. "I can hear my neighbours fight. I can hear their children throw up. And I can't leave the camp because I am not allowed to," says Mr Abdul Rahim, 61.

Someone his age is rare in the camps where only 3.3 per cent of the people are above 60.

NO PERMANENT HOMES, NO WORK, NO CASH

The Bangladesh authorities laid down the camp rules early: the Rohingya would not be given cash or allowed to work, except for odd-jobs in camps; they could be given relief only in kind; they could not put up any permanent structures in camps.

"They are afraid that if we are allowed to build proper homes, we will settle here and never go back," says Mr Mohibullah, chairman of the Arakan Rohingya Society for Peace and Human Rights – a grouping that has become the main voice of the

This is what the world's biggest refugee camp looks like, from end to end. The Straits Times artist Pradip Kumar Sikdar accompanied Associate Editor Rahul Pathak and Executive Photojournalist Kua Chee Siong to cover the Rohingya crisis, and captures what a photograph can't in this ink wash drawing – the sheer scale of the camps

The original story appears here: <https://www.straitstimes.com/asia/se-asia/rohingya-refugees-trapped-in-a-half-life-yearning-to-break-free>



At the Rohingya camps in Cox's Bazar, Bangladesh – to capture the story behind the story of the Rohingya crisis – are The Straits Times team of (from left) Rahul Pathak, Pradip Kumar Sikdar and Kua Chee Siong.

The story behind the story

The three journalists had walked through the Rohingya camps in Cox's Bazar, Bangladesh, more than nine hours each day, for nearly three days, when it struck them that something was not right.

There were nearly a million people in that cramped, makeshift township, and The Straits Times associate editor Rahul Pathak, executive photojournalist Kua Chee Siong and artist Pradip Sikdar had seen and spoken to hundreds of them. But where were all the teenage girls?

It took some more digging around to establish that while there were nearly 60,000 girls between the ages of 12 and 17 in the camps, their conservative community did not permit them to step out of their tiny huts – despite all the tragedy that had befallen them.

Their moving package of stories has won the ST team the top place in the news or event feature category at the prestigious Editor & Publisher (EPPY) Awards.

ST's package tied for this top global award with a CNN feature on illegal executions in El Salvador.

"The Rohingya crisis is a major humanitarian issue playing out in our backyard and we wanted to bring this story home to our audience. Credit to Rahul, Chee Siong, Pradip and the team for the gripping stories and pictures they came back with," said Mr Warren Fernandez, ST editor and editor-in-chief of the English/Malay/Tamil Media group.

"Their accounts were heart-wrenching and helped many readers to grasp the full extent of the suffering on the ground in Cox's Bazar.

displaced Rohingya in Bangladesh. But as time passes, these rules are taking their toll.

At 11.30am in the Balukhali camp, no one in Mr Nurul Amin's family of seven has had a bite to eat, except his daughter Nur Fatimah, eight, who was given a biscuit at a learning centre she attends.

"They give us rations of rice, lentils and oil every fortnight," says Mr Amin, 32. "By the 12th day we start running out of food."

It has been 11 months since he ate meat or vegetables. That was at his village in Myanmar the day before the army came gunning for them on Aug 25. He has not had a cup of tea since then, or a slice of bread. Every meal is rice and lentil cooked on a clay stove with brackish water over damp firewood by his wife Anwar Jahan, until the rations run out.

In theory, they could buy stale vegetables or cigarettes from Myanmar from one of the little stalls that have sprung up at the mouth of the camps.

Till earlier this year, camp residents used to earn some money by helping build latrines and bridges in the camp. Mr Amin found work for a total of six days over 11 months, earning 400 takas each time, or a total of S\$40.

Now the army has taken over most of the construction work to speed things up and, ironically, this has cost the Rohingya a source of income. Mr Amin has found no work since June. "I have exactly zero takas with me," he says.

Mr Mohammed Abdus Salam, head of the Humanitarian Crisis Management Programme of BRAC, a key NGO offering relief agency, says this policy – which assumed that the Rohingya would be in Bangladesh for only a short time – must change.

"We have to give them cash for work. How else do you expect them to survive in the long run?" he says. His organisation is helping to build shelters, provide water and teach children.

NGOs as a whole are fighting heroically to help, but they, too, are starved for funds and have raised only US\$260 million (S\$355 million) of the US\$950 million that they need.

Meanwhile, people need cash to get by. Some are encashing their food vouchers while others are selling the relief material that they get to buy things they need from the stalls. "Already the food is not enough for them," says Dr Anik Sanjoy at a health centre in Kutupalong. "When they sell some of it to buy other things, they eat even less."

Almost 13,500 children below the age of five have already been treated for severe malnutrition. The camp is sick, with worms coming out of children's mouths, skin problems breaking out amid poor hygiene and contagious diseases multiplying.

"When 12 people sleep in a room, they pass the germs to each other," says Dr Sanjoy. Hunger among adults is growing fast, he says. "When there is a shortage of food, the parents go hungry so that their children can eat."

It is normal for Mr Amin and his wife to get by on a single meal a day.

He wakes up at what he guesses is around 5.30am in time for the first namaaz (prayer). After that, it is a question of wondering how to spend the day. "When it gets too muggy inside, I go out. When it rains outside, I come in. Sometimes I take a walk to look for firewood, but today there is nothing to cook. Then I lie down inside for many hours, but sleep doesn't come."

Having taken them in, Bangladesh cannot very well send them back to their deaths, but it refuses to treat them as refugees with rights.

With mounting evidence that the Myanmar army plotted the events of Aug 25, 2017, precisely to eject the Rohingya Muslim minority from the country – it treats them as stateless – it is not reopening its doors to them.

Mohd Eliyas, a rare Rohingya graduate, says the overwhelming feeling in the camps is of mounting depression and helplessness.

"We have mouths but cannot speak," he says. "We have legs but cannot walk. No mouth power, no money power. Only eye power and ear power." Less eloquently, but more wearily, Mr Amin says he wants to return to Myanmar, even though it is where he dodged death.

He and his family of seven cannot continue to live like this, he says. "There is no future here. My children cannot study. The camp is like prison and I cannot leave it or find work. My wife has no rice to cook. Maybe the world will make it possible for us to go back. Otherwise, I will just spend every day like this and die here." **AR**

When 60,000 teenage girls hide in fear

They swelter inside – rape, violence an ever-present danger, little water, few toilets and another ordeal, resulting in an overwhelming stench.

WHETHER IT IS ON THE TREACHEROUS SLOPES of Kutupalong's camps, in the makeshift learning centres in nearby Balukhali or on the winding paths of Nayapara, there is one face that you never see: the face of a teenage girl.

It is as if she has been airbrushed from the scenery.

Between them, the camps hold more than 60,000 girls between the ages of 12 and 17. But even in this cramped, makeshift township, where shanties lean on each other and there is no place to hide, these young females have been banished from public view.

When non-governmental organisations tried to find out why no teenage girl attends a learning centre, they were told: "A girl's modesty is more important than education."

In fact, of the 117,000 young people between the ages of 15 and 24, only 2,000 attend any sort of training or educational programme and almost none of them is female.

The girls stay locked indoors, in the shanties, where the blazing sun and the clay ovens push temperatures into the 40s. "I sit under the tarpaulin and sweat," said Rukhmah, 17. "I want to step out but there are so many strangers."

The fear of strangers is not unfounded. Of the 1,922 locations that the International Organisation of Migration surveyed across all Rohingya camp settlements in Bangladesh, it found that women had been sexually assaulted at bathing points or latrines in 70 per cent of them. In more than 1,800 of these locations, the toilets were not segregated by gender.



That, and the shortage of water, kept these young women from bathing for days on end during the summer. "Our women smell so bad that sometimes it is hard for us to stay indoors with them," said Mohd Fazal, a father of six.

The bad odours are outdoors, too, as the latrines overflow. In one block at Nayapara, there are 10 common toilets for 3,072 camp residents. Or one for every 300.

"If I want to use the toilet in the morning, I

Rohingya women getting medical advice from a volunteer doctor at the NGO-run, BRAC clinic which helps pregnant women at the Kutupalong camp on July 19, 2018. Some 48,000 women, many of whom are victims of rape or violence, are expected to give birth in the camps this year.

ST PHOTO: KUA CHEE SIONG



A woman dressed in a burqa walks past a man tending to a farm in the Kutupalong camp on July 18, 2018. More than 19,000 women from the camps have received counselling in connection with violence, usually from the men in their family.
ST PHOTO: KUA CHEE SIONG

have to stand for so long that my knees hurt,” said Malika, 32.

And if she and other women wait till night, the camp is plunged into darkness, without a single lamp to light it up. That is when most attacks take place.

Some of the women feel particularly vulnerable as there are more than 6,000 widows of last year’s violence in the camps. Of every 100 households there, 10 have women who were raped by the army in Myanmar last year. Women sit and talk about rape even to strangers, but the pain has not been numbed.

Madam Noor Beghum, 30, tells you matter-of-factly how she saw her husband hacked down and how several soldiers raped her that night. When she emerged from her unconsciousness next morning, she gathered her four children and escaped to Bangladesh. By now she has started to weep, though she is saying: “I got lucky. A family with seven children took us in. Even though their home is small, they share it with us. I feel safer staying with them.”

Her quarters are so tiny that she can touch the tarpaulin walls on either side just by stretching her arms. She and her children don’t venture out after dark. “Sometimes it is so hot at night that we can’t sleep,” she said. “And sometimes when I sleep I wake up screaming.”

Other women at the camps have also discovered a darker truth. Sometimes the enemy is not the stranger, but the man sleeping by your side.

NGOs have set up spaces that shelter women who are victims of domestic violence. As each tells her story, it becomes clear that it is essentially the same story.

Sadiah mumbles without opening her mouth much and the reason soon becomes clear. She is missing two front teeth. Her children, aged three and five, had started to cry as they were hungry, and “my husband smashed my head against the wall and broke my teeth,” she said. “Then he left me for another woman.”

Another woman, Fareeda, got beaten up because she complained to her children that her husband was having an affair with a woman from a neighbouring quarter. In turn, the woman who was having an affair got beaten up by her own husband.

WOMEN ARE EASY TARGETS

“These are small, squeezed spaces and everyone is frustrated,” said Mohd Eliyas, a community volunteer. “The women are easy targets. They get beaten up by their husband who are having an affair, and they also get beaten up if they have an affair themselves.”

Already, more than 19,000 women from the camps have received counselling in connection with violence, usually from the men in their family.

Dr Anik Sanjoy, a medical practitioner at the camp, said he never ceases to be amazed by how much the Rohingya women have endured in silence. “They have been raped, beaten up and seen their family members die. Still, they continue to care for their children. When the pregnant ones come to give birth, I see them get up and walk away with the baby just 15 minutes after delivery.”

Some 48,000 women are expected to give birth in the camps this year. The miracle of motherhood comes in many forms, but none, perhaps, as remarkable as in the case of Rukhiya.

The 25-year-old was fleeing Myanmar with her husband when she heard a sound on a hillside. Someone had abandoned an infant aged around two amid a clump of plants. “I picked her up and hugged her to my chest,” said Madam Rukhiya. “I didn’t have any children and this was a gift from God.” Now she pampers the child that she has named Arifa. She sells off her food vouchers to buy toys for the girl. “She is always asking me for things but I can’t afford to buy most of them,” she said.

But there is no tale of unalloyed joy in the camps. Some months after Madam Rukhiya found her daughter, her husband left her because she, herself, had not borne him a child. **AR**

Speaking of Asia

Mission: Impossible – Fallout and the Indo-Pacific

Strategic equations are changing, and popular culture is reflecting it

TWO DECADES IS A RELATIVELY SHORT TIME IN history but in foreign policy – and the movies – it could sometimes be an age.

When the James Bond movie *Tomorrow Never Dies* was released in 1997, Michelle Yeoh was cast as the attractive Chinese spy Wai Lin who works with Pierce Brosnan’s Bond to save the world.

Their common enemy: a mad media mogul intent on starting a war between China and the West. The evil – and as it turns out, wholly dispensable – brain working for the villainous Elliot Carver is a Dr Gupta. Who could have thought of a more Indian name?

All that of course was before China declared the South China Sea to be a core interest and opened a logistics base in Djibouti, the US announced its pivot and rebalance to Asia, and President Donald Trump arrived on the scene, waving his America First flag and vowing to confront the Chinese head-on.

In July, when *Mission: Impossible – Fallout* was released in cinemas around the world, audiences would have noticed that a key part of the film was set in Kashmir.

Although bits of it were censored in India, apparently because of references to “India-controlled Kashmir” (New Delhi claims the whole area, which is part occupied by China and Pakistan), it ends with Tom Cruise and his team being under the protective guard of the Indian Army as they savour victory.

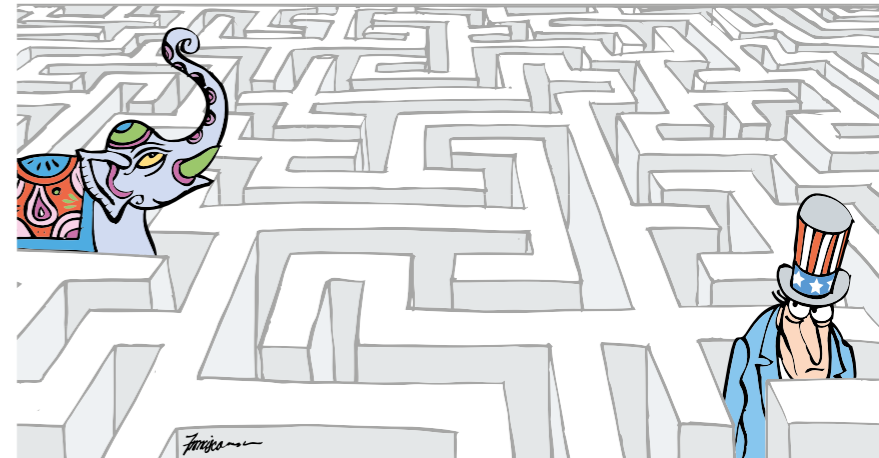
Tellingly, a key dust-up in the movie is a magnificent martial arts versus raw muscle brawl between a Chinese-looking bloke working for the dark side and the Western agents.

The Oriental is supremely tough, but eventually vanquished.

Sometimes, all this is carefully orchestrated, a phenomenon that started with World War II when Hollywood dropped its neutral approach to film-making after the US was dragged into the conflict in Europe with the Japanese bombing of Pearl Harbour.

The US government thereafter drafted Hollywood into the war propaganda effort with the setting up of the federal Bureau of Motion Picture Affairs in Los Angeles. Those links have never been severed completely.

But, more often than not, movie producers play to public perceptions and the concerns of the day.



ST ILLUSTRATION: MANNY FRANCISCO

Japan’s rapid economic advance and reckless acquisition of real estate in the West may have set off alarm bells in an earlier era but there was never any question about where Tokyo’s strategic loyalties lay.

That’s why, in *You Only Live Twice*, Sean Connery as Bond had a great ally in “Tiger” Tanaka, the young and dashing head of the Japanese Secret Service.

While no one is suggesting that the US government influenced the latest *Mission: Impossible*’s storyline, the introduction of Kashmir and the Indian Army’s cameo appearance is not a surprise. The US today conducts more military training with India than with any other power.

FROM HOLLYWOOD TO BOLLYWOOD

Indeed, the geostrategic concept of the year is surely the “free and open Indo-Pacific” – a coinage that has been around a while but gained momentum after it was robustly championed by President Trump during a trip to Vietnam late last year.

Loosely put, it seeks to gather those who believe in freedom of navigation in the air and sea, open economies and, preferably, democratic systems of government.

While that makes room for many nations, including Japan and Australia that have significant military power, the nomenclature is meant to flatter India – perhaps the only Asian power that has the men and potential muscle – to stand up to an assertive China.

The physical contours of this concept were initially thought of as the region between Hawaii and the east coast of Africa but latterly there seems to have been some modification.

RAVI VELLOOR
Associate Editor



✉ velloor@sph.com.sg

**READ MORE
ONLINE:**

‘City’ of children,
old before their time
str.sg/ouGC

Loosely put, the geostrategic concept of the year is the “free and open Indo-Pacific” that seeks to gather those who believe in freedom of navigation in the air and sea, open economies and, preferably, democratic systems of government.



In June, as he renamed the US Pacific Command as Indo-Pacific Command, Defence Secretary James Mattis had a delectably pithy description: “Hollywood to Bollywood”

Amid the confusion, conflicts and cross-signalling emanating from Washington, it is clear that a council of greybeards in the Trump administration has somehow succeeded in keeping this strategy on track.

In late July, before embarking on a swing through three South-east Asian nations, highlighted by his stop in Singapore for Asean-related meetings, US Secretary of State Mike Pompeo launched the Indo-Pacific Business Forum. Many think it lays the seeds for America’s counter to China’s Belt and Road Initiative.

In the presence of envoys from Japan, Australia, India, Indonesia and Singapore – all participants at the inaugural forum – he described the Indo-Pacific as an arc stretching from the West Coast of the US to the Western coast of India.

To underscore America’s seriousness of purpose and to stress that this was a “whole-of-government” effort, Mr Pompeo trotted out several other senior administration officials, including Commerce Secretary Wilbur Ross.

Significantly, Mr Ross used the podium to announce that India had moved into Tier-1 of the US Department of Commerce’s Strategic Trade Authorisation licence exception.

This puts India alongside America’s Asian allies, Japan and South Korea, in the access it gains to US high-technology and military items.

The strategic alignments reflect broader US narratives on India that have witnessed a sea change in the last two decades. According to Atlantic Council chief executive Fred Kempe, the US and India now enjoy “the warmest relations we’ve ever had.”

That reality is based both on India’s steady advance towards being a US\$3 trillion (S\$4.1 trillion) economy – it recently passed France to take sixth place – as well as the influence of Indian-Americans stateside.

Mr Kemp notes that from 3,000 Indians in the US when then-Prime Minister Jawaharlal Nehru visited the country in 1949, there were 3.3 million in 2014 when Mr Narendra Modi took charge of India.

What’s more, Indian-American households constitute the single highest income level of any group in the US – more than twice as high as the general population.

The Indian diaspora in the US added weight to the nuclear deal the two countries signed in 2005 – a watershed moment in the once-testy bilateral ties.

Naturally, popular culture does not miss all this. As a telling example, look no further than Madam Secretary, the popular television series on Netflix that portrays the challenges of a former Central Intelligence Agency analyst handpicked by the US President to be his Secretary of State.

Elizabeth McCord’s instinct is to make her first overseas trip as Secretary to Turkey, a move that would carry much meaning since it would be an endorsement for a modern-minded Muslim democracy.

Instead, she is directed by her president to fly to India, where her key engagements include the opening of an energy facility in the heartland state of Uttar Pradesh.

In Madam Secretary’s storyline, India’s “Prime Minister Saigal” is a hyper-nationalist leader who pushes for “Make in India”, not unlike Mr Modi, the real-life incumbent.

Indeed, this is a matter of frustration for the US, particularly since it is now run by a trade warrior such as Mr Trump.

However, the strategic compulsions of the day and the need to enrol powers that could potentially stand up to China are such that Washington has no choice but to give New Delhi a pass on several issues of concern. Hence, the continued American soft-soaping of India.

ONE-SIDED ROMANCE?

What is still not clear is whether India is as excited about these developments as the US would like it to be.

The momentum of ties was interrupted in Manila last year thanks to a rough meeting between Mr Trump and Mr Modi, forceful personalities both. It left a bitter aftertaste that both sides are trying to wash away.

Meanwhile, Mr Modi has had long meetings with Chinese President Xi Jinping. Last week, while foreign ministers from South-east Asia sat down in Singapore with Mr Pompeo and other counterparts from key powers such as Australia, Canada, China, Japan and the Koreans at Asean-related meetings, Indian Foreign Minister Sushma Swaraj was in Central Asia and was represented only by a deputy.

New Delhi has been miffed that a 2x2 dialogue between the US and Indian foreign and defence ministers had been postponed a second time – this time because North Korea took precedence for Mr Pompeo’s attention.

Likewise, India’s external affairs ministry responded to Mr Ross’ announcement on Tier-1 level with a dry “We look forward to the US side operationalising the decision at an early date”

Corralling the Indian elephant may not be mission impossible, but it will take more time than the Americans may want it to.

Outlining America’s long history of involvement with Asia, its “partnership not domination approach” and commitment to a “free and open Indo-Pacific”, Mr Pompeo noted last week that the State Department had established a consular presence in Kolkata – then called Calcutta – in 1794.

That is indeed true. But it also should not be missed that the consulate stands on a road named after Ho Chi Minh. **AR**



Lunch With Sumiko

Heng Swee Keat’s steely resolve behind genial manner

Soft-spoken and polite, Singapore’s future Prime Minister Heng Swee Keat comes with a solid CV and a wealth of experience.

FINANCE MINISTER HENG SWEE KEAT REMEMBERS how, as a young police officer, he encountered a traffic light that was not working and had to get out of his patrol car to marshal traffic.

There he was, smack in the middle of Lower Delta Road with honking cars whizzing by. He had to impose some order quickly.

“You have to do some gut feel and say, ‘OK, enough cars have passed, let me now not cause a hold-up,’” he recalls.

That gut feeling also guided him when, as commander of Jurong Police Division later, he and his men had to raid construction sites to sniff out illegal immigrants.

Police operations involve split-second decision-making.

“You decide what you do there and then. Arrest, not arrest. Shoot, don’t shoot.”

He says all this in his trademark mild-mannered way, but his eyes are serious. It occurs to me suddenly that he’s someone who would not hesitate to do what’s necessary.

The man considered to be one of the front

runners to be Singapore’s next prime minister has a reputation for being decent and likeable.

Up close, Mr Heng, 57, is indeed amiable and polite. He is soft-spoken, speaks in clear, complete paragraphs and has an engaging way of relating anecdotes. He uses the word “nice” a lot and has a calming presence.

Behind this modest, genial front, though, is an impressive curriculum vitae.

In his career that spans 30-plus years, he has been a police officer, principal private secretary to the late Mr Lee Kuan Yew, senior civil servant, head of Singapore’s central bank and Education Minister, and is now Finance Minister.

His wealth of experience – both in policymaking and hands-on operations – means he is comfortable with police constables and G-20 ministers, students and central bankers.

And that mild manner, I discover during our 2½-hour lunch, also belies a steely resolve and a strong sense of fair play.

He has chosen to meet at Our Tampines Hub in his Tampines GRC ward.

It is my first visit to the Hub, which opened last

Finance Minister Heng Swee Keat in a cafe at Our Tampines Hub, Singapore’s first integrated community and lifestyle destination. The Hub tapped residents’ views to re-imagine how space can be used, with facilities grouped together to make them more convenient for users. It is an example of how innovation can improve lives, says Mr Heng. ST PHOTO: KEVIN LIM

SUMIKO TAN
Executive Editor



✉ sumiko@sph.com.sg

year and is billed as Singapore's first integrated community and lifestyle destination. He has arranged for me to get a tour prior to our lunch. It has left me envious and open-mouthed with awe.

The Hub is basically a community centre on steroids. Across a massive interconnected space, there's a football/rugby stadium with 5,000 seats, the five-storey Tampines Regional Library, an arts theatre, six swimming pools (including an indoor pool), a 1km jogging track, many other sports courts and a bowling alley.

There's also a hawker centre and 24-hour supermarket, food outlets and nooks for students to study. One floor is for health and wellness services. A one-stop centre houses several government agencies.

There's even a snazzy recycling area where food waste from the Hub is converted to compost which is used in the eco-community garden on the roof.

Vegetables there are sent downstairs to the cooking classes and dishes shared with residents.

The recycling effort has cut down the number of trucks needed to cart away food waste, in turn helping traffic flow in the area.

The Hub is impressive, I tell him as we settle

There were several hundred homes in the kampung, which was "a rather rough neighbourhood."

But he has good memories too. "Our house had quite a lot of nice vegetation and I used to spend time on the trees, so it was quite fun. And then we had chickens and pigs."

He's Teochew but speaks Hokkien more fluently. I ask him about rumours that his father was the late comedian Wang Sa of Ah Pui-Ah San fame. He smiles and says: "I'm very amused by that. Many people have asked me."

So is it true? "If they associate me with having some good humour, I don't mind. I'll take it with some good humour," is all he will say.

He does not want to reveal too much about his family, beyond that it wasn't very large. When he entered politics, he made an agreement with them and wants to keep to it. "I think the family deserves some privacy and their own space. I mean, I would like to know you as Sumiko and not you as the daughter of somebody."

He attended a primary school that no longer exists and went to Raffles Institution. He loved his time in RI where he was in the Interact Club, did the school magazine, tinkered with electronics and played volleyball, "but I don't think I had great dexterity."

A schoolmate remembers him as being very well liked, genial, serious and hardworking.

His nickname was Sweat, not because he was sweaty but because it was a combination of his name Swee Keat and "symbolic of his industrious nature", says the schoolmate. "He's that kind of a sweet guy that that's the most fun people would poke at him. He continues to respond to that today."

After A levels at RI, he got a police scholarship to do economics at Cambridge. Going to Britain was his first trip overseas and that was another happy phase. He spent holidays in Europe and had stints with the Surrey Police and London Metropolitan Police.

Cambridge was where he met his wife, fellow Singaporean Chang Hwee Nee, a President's Scholar.

"I was at Christ's College and she was at Jesus College and our colleges were next to one another. I always had the privilege of escorting her back from student events."

They were film buffs in their younger days. She is now chief executive officer of the National Heritage Board and they have a daughter and a son in their 20s.

He enjoyed his 15 years in the police. Among other things, he was heavily involved in conceptualising and implementing community policing and spent five years in the Criminal Investigation Department. He also attended the nine-month Command and Staff Course conducted by the Singapore Armed Forces. His last rank was assistant commissioner.

In 1997, he moved to the Administrative Service. He did a spell in the Education Ministry, was Permanent Secretary at the Ministry of Trade and Industry, and managing director of the Monetary Authority of Singapore (MAS).

For three years in the late 1990s, he was principal private secretary to then Senior Minister Lee Kuan



Yew. He describes this as the highlight of his public service career.

He learnt a lot from how Mr Lee interacted with world leaders and saw how he viewed thorny issues like the 1997 Asian financial crisis.

It was "a good process of osmosis." Mr Lee once described him as "the best principal private secretary I ever had."

The insights he got from Mr Lee came in handy a decade later when the global financial crisis broke while he was at MAS.

Singapore rode out the crisis.

His years in public service have taught him that there are two types of decision-making. There are split-second decisions, like when he was doing front-line police work and also when he was Education Minister and Singapore students on Mount Kinabalu were hit by the Sabah earthquake. He had to decide very quickly what to do.

Then there are other decisions – like abolishing PSLE T-scores in school – that need more time, greater thought and consultation.

He has found that when a decision needs to be implemented through many layers, the more everyone along the line is convinced that it is the right decision to take, the easier and faster the implementation, and the faster the results.

Planning is really part of implementation in such cases.

He entered politics in 2011, becoming Education Minister and then Finance Minister in 2015.

In May 2016 during a Cabinet meeting, he suffered a brain aneurysm. He has since fully recovered from what he himself describes as a close shave.

Miraculous is how some have described his comeback.

I ask if the episode changed him. He chooses to answer by first thanking his Cabinet colleagues who helped him, the ambulance crew, doctors, nurses and all the well-wishers. He mentions his gratitude several times.

His doctors have given him a very good prognosis and he has resumed all grassroots work and long-haul travelling.

"Has it changed me? Well, I think it gave me perspective on what are the things that are important. So I must say I'm very grateful."

And what might the important things be? He smiles, places his right hand over his heart and says simply: "Well, that is something which shall remain within us."

I wonder if he has a religion. No, he says, although he was raised a Buddhist and went to temples.

But he adds: "When I was down, I was very touched by the number of different people with different religions who prayed for me. And every time I see them, they say, 'Oh, Mr Heng, my prayer group prayed for you.' I'm very, very grateful."

"And I must say that when you think about our lives, the life on earth, it's wonderful. There are many things that we don't understand. And do I believe that there is a supreme being that is designing all this? Yah, a good chance, and we must keep an open mind about this."

He gives off such positive vibes that I wonder if he has a temper.

Yes, he says, he does lose his temper. He recalls how a couple once came to his Meet-the-People Session with their young daughter. The wife insisted that he, then the Education Minister, change the secondary school the girl had been posted to. He explained why this wasn't possible but the woman got angry, grabbed her daughter, shouted and stormed off.

Annoyed, he called the couple back while his volunteers looked after the daughter. He told the woman that it didn't matter that he was the MP or anyone, but for her to have an outburst like that set a bad example for the daughter. She was also making it hard for the girl to adjust to the new school.

It would also be wrong for him to direct his ministry to accede to the unreasonable request just because they were his constituents, he told her.

"That would be wrong in principle. We must never do that in Singapore... If I felt that our policy was wrong, I would be prepared to review it. But from what I could see, it was the right thing to do."

I suppose you lost a vote that night, I say.

"I don't know, but I don't think we should do the wrong thing," he replies.

"And I trust that Singaporeans at the end of the day will understand what is good for the country, and that if you do lose one or two votes because you have to do the right thing, I think we must be prepared to do that. Otherwise how do you govern? We will lose any moral authority to do it."

In the last few months, his name has been mentioned as a possible choice for the next PM. Does the speculation get tiresome, I ask.

He views the chatter in a positive light. He says it is encouraging that Singaporeans regard political leadership as important to the country's long-term future, "and so I'm very comforted by that"

Does he want to be PM? "When I entered politics, I did not have in mind a particular position," he says.

He was just grateful to have benefited from the system and wanted to do his bit to "at the very least

It was "a good process of osmosis". Mr Lee once described him as "the best principal private secretary I ever had". The insights he got from Mr Lee came in handy a decade later when the global financial crisis broke while he was at MAS. Singapore rode out the crisis.

For three years in the late 1990s, he was principal private secretary to then Senior Minister Lee Kuan Yew. He describes this as the highlight of his public service career. He learnt a lot from how Mr Lee interacted with world leaders and saw how he viewed thorny issues like the 1997 Asian financial crisis.

”

down for lunch at I Am...@HomeTeamNS Tampines, a halal cafe on the third floor. I wish I had something like that in my neighbourhood, I add. "Everyone is welcome to use it," he smiles.

The Hub, he says, is an example of how innovation – a key theme in his speeches – can improve lives. It also shows how innovation applies not just to the economy and industry but also to social spaces.

He relates how a middle-aged resident told him that the Hub has changed her mother's life.

The wheelchair-bound elderly woman previously did not want to leave the house.

Now, she is eager to visit the Hub because she loves its vibrancy and how wheelchair-friendly it is.

He always tells his civil service colleagues that it's important to see how policies translate into improving lives, he adds.

The waiter is waiting to take our orders. We both get the Cajun spicy chicken linguine and are persuaded to start with some cheese bread.

He gets a cafe mocha and I get tea.

The Singapore of today is a far cry from the one he grew up in.

He was born in 1961 and when I ask which part, he says "the part with gangsters." Geylang, I suggest. Redhill, he replies.

maintain this system or, better still, strengthen" it. Would he support whoever is PM if it's not him? "Yes," he says. "I think the person who is most suited for this, every one of us would give his or her full support because, after all, this is really a matter about our young nation, not a matter about our personal ambitions.

"We must see it as much larger than ourselves."

He believes that with society becoming more diverse, good leadership and governance must also involve more leadership at all levels of society, yet having a common sense of purpose on where to take Singapore.

He has been generous with his time and we've come to the end of a long lunch. The table we are at overlooks the Hub's stadium. A women's football match between two junior college teams has started.

A place like the Hub where teenagers can play in such a beautiful, state-of-the-art stadium is probably only possible in a wealthy country, I remark.

"We are very, very lucky", he says. "And that's why I said that we must continue to grow our economy."

As guardian of the country's purse strings at the Finance Ministry – and should there be more responsibilities coming his way – he will be there to help make sure this continues. **AR**

Singapore Watch

Singapore's 4G leaders step up

Singapore's 4G leaders have been nominated but we need more open political leaders who are willing to share power with the people

CHUA MUI HOONG
Opinion Editor

✉ muihoong@sph.com.sg



THIS IS THE YEAR MY GENERATION STEPPED UP from the side into the front and centre of political and public life.

2018 began with much anxiety over political succession that ebbed and flowed over the ensuing months, reaching a feverish pitch when the ruling People's Action Party held its party conference on Nov 11.

On Nov 23, things settled down when Mr Heng Swee Keat was made first assistant secretary-general and Mr Chan Chun Sing, his deputy, second assistant secretary-general.

They were chosen by their peers, noted Prime Minister and party secretary-general Lee Hsien Loong.

In a post on Facebook, he said: "The younger ministers and political office holders have been meeting in recent months to discuss who should lead them" and the consensual choice was Mr Heng, 57.

Mr Heng asked Mr Chan, 49, to be his deputy, and the younger team supported this.

The appointments of Mr Heng and Mr Chan were then endorsed by PAP MPs at a party caucus held by Mr Lee.

The year thus ended with worries quieting down over who is likely to succeed Mr Lee as PM. Next year will see changes formalised with a Cabinet reshuffle around March after the Budget debate.

Apart from a few in their 50s like Mr Heng, most of the other so-called 4G, or fourth-generation, leaders were born after Independence, and are in their 40s.

They are stepping up to take over the reins of government. In keeping with the PAP's style, the political transition so far has been orderly.

As someone of the same vintage who went to school or university with (but was not particularly close to) some of the 4G ministers, I have watched the transition with some angst and anticipation.

The angst lies in realising that the care of this precious jewel called Singapore now lies in the hands of people not so different from me.

The country's future no longer relies on the fabled Pioneer Generation of Lee Kuan Yew's era; or the gritty generation of Goh Chok Tong; and it is not in the hands of super-achieving technocrats like Lee Hsien Loong or Tharman Shanmugaratnam.

The future of Singapore and Singaporeans lies in the hands of Heng Swee Keat, Chan Chun Sing, Ong Ye Kung, Lawrence Wong, Tan Chuan-Jin, Desmond Lee, Janil Puthuchery, Josephine Teo, Maliki Osman, Sim Ann and their generation.

My generation.

The Pioneer Generation Cabinet was led by Oxbridge-educated, English-speaking professionals whose lives were far removed from the dialect-speaking, working class masses. Yet they cared deeply for, and forged a close bond with, the people, eschewing privilege and wealth, and leading by frugal example. The 2G and 3G leaders valiantly sought to continue that tradition.

But the 4G leaders come of age in a different Singapore. The social distance that tends to add a halo effect to authority figures has narrowed.

Today's leaders are seen more and more as people like us – or as people not so different from other professional, successful Singaporeans – and not as especially gifted or better-endowed individuals.

This makes the bond between the governing elite and the masses both easier and harder to forge. Easier because there should be a greater bridging of expectations and life experiences. Harder because citizens are less deferential to political authority and more likely to question it.

The basis of the people-government bond now lies in the shifting sands of inter-generational changes in values.

The 4G leaders will have to win the trust and respect of Singaporeans across the ages. There are older Singaporeans who may still hanker after the old days and ways.

My generation – now in our 40s and 50s – wants to see a government that retains core pragmatic values but also has a progressive bent reflecting the values of our post-Independence mindset.

And most of all, the 4G leaders will have to

articulate a vision for Singapore that wins over the millennial generation and anchors their hopes and future in Singapore.

Now their roles are supportive, but they will increasingly anchor public communications, whether it is during the Budget debate, crisis situations, or policy change announcements.

What will the 4G leaders – across the Government and public sector – represent? What values do they uphold? What vision do they have of Singapore, for Singaporeans?

They have, at most, a couple of years to make their mark, before the next general election is due by April 2021.

With 2019 marking Singapore's Bicentennial or 200 years after its founding as an open port by the British, there are expectations of an early election next year.

However, as a group, they have yet to make their mark on Singapore society and it is not very clear what they stand for individually or collectively.

Will they steer Singapore society onto groundbreaking paths or marshal it along tried and tested – and increasingly tired – routes?

In the very brief interactions I have had with some of the 4G leaders in politics and public service, I sense that some have individual views on policies that differ from the Government's conventional, stated positions, such as on social and media policy.

Rather than close ranks and maintain a grimly uniform front, my hope is that 4G leaders have the confidence and authenticity to show their true faces to voters, and articulate their dissenting viewpoints, and embrace publicly the various causes they may quietly champion.

Singapore has had three generations of pragmatic, conservative politicians who brought Singapore extreme wealth.

We now need political leaders who are progressive in views, going beyond consulting citizens to co-creating solutions with them; who dare to be more open with data, decision-making and democratic processes. Leaders who go beyond sharing the nation's wealth via increased subsidies, to sharing power with the people.

Mr Lee's 1G government ruled by control; he is famous for saying he preferred to be feared than loved. Mr Goh's 2G aimed to be kinder, gentler. The current PM Lee made inclusiveness a trademark of policies.

From the 4G, I hope to see more openness. Openness to diverse viewpoints. Openness to the world. Openness to changing social mores, adapting our policies along the way.

Having the confidence and humility to engage constructively with critics and activists, and being open to criticism and challenge.

And most vitally, having the courage to withstand the xenophobic and parochial tides sweeping the world, to keep Singapore vibrant and open to the world while rallying Singaporeans to understand and support the need to do so. **AR**

We now need political leaders who are progressive in views, going beyond consulting citizens to co-creating solutions with them; who dare to be more open with data, decision-making and democratic processes.

”

ST ILLUSTRATION: CEL GULAPA



Shenzhen was an experimental field for China's economic reforms which began in 1978. Today, it is a booming mega-city of 20 million people, with skyscrapers lining the metropolis' Shennan Boulevard.
ST PHOTOS: DANSON CHEONG

Asia Focus

Shenzhen, city of opportunities

One of four special economic zones picked to be market-oriented hubs in 1978, the metropolis' GDP grew by 22.6% annually on average from 1979 to 2016

DANSON CHEONG
China Correspondent



✉ dansonc@sph.com.sg

WHEN MR XIE YIFA ARRIVED IN SHENZHEN 26 years ago, it was a very different city. Then, the Nantou village where he lived – one of several that dotted the nascent metropolis – was criss-crossed by dirt tracks, which would become a wet slurry when it rained.

Today, butcher and provision shops still hawk their wares along the narrow alleys, now paved with concrete. The city – once just fields, hills and salt pans interspersed with farming and fishing villages – is a jungle of glass and concrete.

Said the 46-year-old contractor: “So much has changed, you look around and there are skyscrapers

everywhere.”

Shenzhen was an experimental field for China's economic reforms which began in 1978. Then, Communist Party elders led by Deng Xiaoping launched China's reform and opening up policy with the goal of transforming the country's centrally planned economy to one that was more market-driven.

Shenzhen was picked as one of four special economic zones (SEZs) along the southern coast to pilot market-oriented policies – the others being Zhuhai and Shantou, also in Guangdong province, and Xiamen in nearby Fujian province.

Manufacturers, many from across the border in Hong Kong, came – attracted by tax breaks and the mainland's plentiful labour.

In four decades, Shenzhen has transformed from a collection of rural villages of 300,000 people, to a mega-city with an estimated population of 20 million, and a gross domestic product of 2.24 trillion yuan (\$456 billion), the third-highest for a city in China after Shanghai and Beijing.

CITY OF MIGRANTS

Shenzhen's success has been hailed by state media, but its fortunes were built on the backs of ordinary Chinese – migrants from all over the country such as Mr Xie, who took a chance and came seeking a better life.

This diverse fabric is made plain in the “urban villages” within the metropolis like the one Mr Xie lives in. In a single street, there are shops selling noodles from the north-western city of Lanzhou, Chongqing hotpot, and smelly tofu from central Hunan province. The city's lingua franca is not Cantonese like elsewhere in Guangdong province, but putonghua, or Mandarin.

Urban villages came about because while the city's officials acquired farmland for development, they left the farmers' residential land – their

villages – alone. Farmers developed housing on these plots that they rented cheaply to migrants, providing much-needed affordable housing and other amenities to workers on low wages.

Mr Xie arrived in Shenzhen in 1992, the same year Mr Deng completed his landmark Southern Tour of Wuchang, Shenzhen, Zhuhai and Shanghai, where he threw his weight behind economic reforms. The country's reforms had stalled in the aftermath of the June 4, 1989, Tiananmen incident in which hundreds – possibly thousands – died in the crackdown on pro-democracy demonstrations in Beijing. Mr Deng's Southern Tour revitalised the reforms.

“In the 1970s, it was very different, people lived and worked in collectives. But with the reform and opening up, we had a choice to make a living for ourselves,” said Mr Xie, who is from Ganzhou in Jiangxi province. In Shenzhen, he worked for a decade in a factory making plastic casings for electronics, and saved up enough money to set up his own renovation business, employing up to 10 workers each time he gets a project.

“How long will I stay here? I don't know, but I know in Shenzhen there will be opportunities, it just depends on whether you can grasp them,” he said.

Millions of others thought so too, and crammed into the city, where they fuelled the economic boom.

THE HONG KONG FACTOR

Another factor responsible for Shenzhen's success is its proximity to Hong Kong, from which it drew ideas, capital and technology.

This was evident in Shekou, the first free-market industrial area set up in Shenzhen.

“When the Shekou Industrial Zone was being built, its way of management and the talents that ran the place were from Hong Kong,” said Mr Brian Chen, who runs TAS, a social organisation that gives educational talks on Shekou's history.

The zone's founder, Communist Party cadre Yuan Geng, also learnt a thing or two about the

Mr Xie Yifa, who arrived in Shenzhen 26 years ago and now runs his own renovation business, said: “I know in Shenzhen there will be opportunities, it just depends on whether you can grasp them.”



free market when he was trying to get investors in Hong Kong to invest in the area.

“Shekou has a well-known slogan – Time is money, efficiency is life – the first part of the slogan is something Yuan Geng learnt dealing with investors in Hong Kong,” said Mr Chen.

Professor Li Jinkui, senior research fellow at the China Development Institute, a Shenzhen-based think-tank, noted that in the days before reforms began, Shenzhen was still a farming society.

It was a far cry from Hong Kong which – ruled by the British as a colony from 1841 to 1997 – was an advanced industrialised society, with access to Western technology and capital.

He compared this difference to a “waterfall between civilisations” – once the doors were open, technologies and capital rushed in like water and,

coupled with the plentiful labour on the mainland, powered the growth of Shenzhen.

“Of the four SEZs, Shenzhen is the closest to Hong Kong, and this favourable position gave it a rare advantage,” said Prof Li.

These factors led Shenzhen’s GDP to grow a ferocious 22.6 per cent annually on average from 1979 to 2016, and last year it grew 8.8 per cent, higher than the national growth rate of 6.9 per cent.

PRICE OF PROGRESS

But the city’s progress has also left some people trying to catch up.

Madam Shen Xia, 38, who makes a living selling yellow wine in Nantou, said her rent has increased five-fold since she came to Shenzhen in 2001.

“The city is getting too expensive for migrants

like me. If it keeps going up, I think I will have to go home,” said Madam Shen, who is from Meizhou, another city in the same province.

Other migrants have also paid a price for helping build a city from nothing.

More than 600 workers from neighbouring Hunan province are petitioning the city’s government for compensation. They had developed silicosis, an incurable lung disease caused by prolonged inhalation of airborne silica dust, when working on construction projects in Shenzhen.

Even so, the city has not lost its attraction – it continues to pull in people from all over China, these days often professionals in its technology or financial sector.

“Most of the people here are originally from elsewhere, so Shenzhen is inclusive, it’s a city of

young people, not like Beijing or Shanghai,” said computer systems engineer Chen Yongbin, 28, explaining why he came to Shenzhen from Jiangxi province five years ago.

Mr Chen, who has two children, has put down roots in Shenzhen and said he intends to stay for the long haul.

The poet Lu Xun compared hope to a path in the countryside – where once there was no path, after people begin to pass, a way appears.

For 40 years, millions in China have been drawn south to Shenzhen by the economic reforms that began there.

The city might have once been a muddy country road, but for the efforts of Mr Chen and the millions of others who came before him, it is now a wide boulevard. **AR**

Counterfeit goods capital morphs into innovation hub

MR ZHAO WANQIU WALKS THROUGH THE MAZE of stalls piled high with electronic components at one of Shenzhen’s Huaqiangbei electronic markets, wearing a look of expectation.

The 24-year-old, who has been building machines such as small motor-powered boats and cars since he was in primary school, is looking for a small plug the size of a fingernail.

Spotting what he needs, he places an order for 10 of the tiny component – parts that will go into a new circuit board that is being designed.

“An hour later, it will be ready, and I can come and collect it,” said Mr Zhao, a co-founder of Youibot, a Chinese start-up that makes robots.

This ease of obtaining virtually any electronic component isn’t possible anywhere else in China, he said.



Mr Zhao Wanqiu, a co-founder of robotics start-up Youibot, is one of the many hardware entrepreneurs drawn to Shenzhen.
ST PHOTOS: DANSON CHEONG

Mr Zhao is one of the many hardware entrepreneurs who have flocked to Shenzhen in recent years, drawn by the city’s concentration of skilled suppliers, engineering talent and ease of obtaining components. “We can very conveniently and easily find parts and components we need, and so when we design new parts we can get them done quickly,” he said.

Among the robots his company is building is one that can check bus tyres for punctures – a process which now requires workers to unmount and examine each tyre.

The firm is one of around 40 start-ups that Hax, an accelerator for hardware start-ups, accepts each year. Hax is perched atop Huaqiangbei Electronic World, one of half a dozen such malls in the area.

The accelerator, owned by American venture capital fund SOSV, invests in start-ups like Youibot and brings them to Shenzhen, where it says ideas can be developed faster than anywhere else in the world.

Hax managing director Duncan Turner said that, in terms of speed, Shenzhen cannot be beaten.

“You’ve got expert suppliers, supply chains for all of the components, the ability to specialise in certain areas – if you need a clean room or a particular testing requirement, all of that happens here. It is possible to do all of those things without coming to Shenzhen, it just takes a lot longer,” said Mr Turner.

The city’s transformation from a place once better known for knockoff iPhones and other counterfeit electronics into a hub for innovation can seem startling, but this journey has been years in the making.

The city’s roots as a hub for manufacturing electronics began with economic reforms in 1978,



One of Shenzhen’s Huaqiangbei electronic markets, where suppliers are packed elbow-to-elbow selling all sorts of electronic components.

which attracted manufacturers like Foxconn, that, among other things, makes Apple products. Over time, it became the manufacturing capital of the world, with 90 per cent of the world’s electronics reportedly churned out by the city’s factories.

But growing out of this manufacturing power was a culture of shanzhai or counterfeiting, where manufacturers collaborated to make copies of expensive gadgets.

One of these shanzhai manufacturers was Mr Robin Wu, known in Shenzhen as the “shanzhai king” for being the first to make a copy of the iPad when it was released.

He said many engineers and manufacturers honed their skills making copies in the noughties, sharing designs and improving on them.

“If we didn’t have those years of imitation, the manufacturing industry would not have been able to achieve its Spring of today,” said Mr Wu, now chief executive of MeeGoPad, a company that designs and makes gadgets like mini-PCs.

Mr David Li, founder of the Shenzhen Open

Innovation Lab – which helps connect hardware start-ups from around the world with Shenzhen’s suppliers – compared the city’s development to Germany’s in the late 1800s. Then, Germany was copying superior products made in the United Kingdom and selling them on the cheap in Britain and Europe. It forced the British to come up with the “Made in Germany” tag so consumers could differentiate.

“If you look at the development of modern industry, everyone started from copying. Now when you think ‘Made in Germany’, you think precision, high quality, good design and engineering, but it wasn’t always so,” he said, adding that Shenzhen is on a similar trajectory. Today, the city is home to some of China’s biggest tech brands like drone-maker DJI and telecom equipment firm Huawei.

Mr Abhishek Agrawal, from Singapore start-up Kinexcs, which makes medical devices, finds Shenzhen’s speed of growth mind-blowing: “Shenzhen is Singapore on steroids, things that would’ve taken me a month or two to do in Singapore I could finish in a day or two here.” **AR**

Japan moves to beef up its defence capabilities

By March 2029, Japan will come to own 147 F-35 fighter jets. These include the 45 new jets that Japan is committing to buy in the next five years and 42 more F-35A jets that have been ordered.
PHOTO: THE YOMIURI SHIMBUN/ANN



Decision due to 'increasingly hostile security environment'

WALTER SIM

Japan Correspondent in Tokyo



✉ waltsim@sph.com.sg

JAPAN'S CABINET APPROVED NEW FIVE-YEAR defence guidelines, in which its two Izumo-class helicopter destroyers will be modified into the nation's first aircraft carriers since World War II.

Both Defence Minister Takeshi Iwaya and Chief Cabinet Secretary Yoshihide Suga stressed the move was not in breach of Japan's post-war pacifist Constitution, and does not mark any shift from its exclusively defensive posture.

Mr Iwaya told reporters after the Cabinet meeting: "Chinese activity in the East and South China Seas have been gaining pace at an unimaginable speed. With our security environment changing at such a rapid pace, it is necessary for Japan to review our defence guidelines."

The new plan marks a significant upgrade to Japan's defence capabilities, as it seeks to form a "multi-dimensional joint defence force" to cope

with an increasingly hostile security environment.

Among the key threats identified in the plan are the assertiveness of China's and Russia's militaries in regional waters, a North Korea that remains nuclear-armed, and other emergent areas such as cyber, outer space and electromagnetic waves.

Big ticket orders from the US – which despite being a security ally has constantly assailed Japan for its huge trade surplus – will include 27 F-35A and 18 F-35B fighter jets, and two Aegis Ashore anti-ballistic missile systems. The orders are over five years, starting next April.

The Defence Ministry will also work on developing Stand-off Missiles that can strike sea-based targets up to 900km away, hypersonic guided missiles that can evade radar networks, and other electronic warfare capabilities.

These measures contributed to a record five-year

defence budget at 27.47 trillion yen (\$340 billion), about three trillion yen more than in 2013.

With the new guidelines, Japan's two Izumo-class vessels – named Izumo and Kaga – will be modified to carry F-35B fighter jets, which are short take-off and vertical landing aircraft that Japan will add to its arsenal for the first time.

The two ships, each 248m long and weighing about 27,000 tonnes, are as big in size as Japan's aircraft carriers during World War II.

Mr Iwaya stressed the two vessels will continue to perform their key defensive roles in anti-submarine warfare, disaster relief, as well as in patrolling waters around Japan.

"Fighter jets will be deployed only on an operational necessity basis and will not be permanently embarked on the two ships," he said, adding that Japan should not be judged as being an

offensive power solely by the capability of its arms.

Even after their conversion, the Izumo-class vessels will be designated as multi-purpose helicopter destroyers, and will not have any permanently assigned F-35B squadron.

By March 2029, Japan will come to own 147 F-35 fighter jets, comprising 105 F-35A and 42 F-35B aircraft. These include the 45 new jets that Japan is committing to buy in the next five years and 42 more F-35A jets that have been ordered.

The fact that Japan has only two Izumo-class vessels hinders them from being used strictly as a strike platform, Dr Narushige Michishita from Japan's National Graduate Institute for Policy Studies said, as this would blunt their defensive capabilities. "But by making it possible to also operate fighter aircraft, the Izumo gets new added air defence value as it can intercept both bombers that are trying to attack as well as other surface ships." **AR**

BIG TICKET ORDERS

27

F-35A fighter jets

18

F-35B fighter jets

2

Aegis Ashore anti-ballistic missile systems

Bright side of landing on dark side of Moon?



A handout photo made available by the China National Space Administration (CNSA) shows a 360-degree view from the lunar rover Yutu-2 or Jade Rabbit 2 on the far side of the moon taken by China's Chang'e-4 lunar probe, on 11 January 2019. PHOTO: EPA-EFE/CNSA



It would be better for mankind if the US and China could cooperate in space exploration

THERE WAS GREAT JOY AND PRIDE AMONG THE Chinese as the Chang'e-4 lunar probe scored a world first by landing successfully on the far side of the Moon.

It was all the more gratifying as Thursday's soft landing was a difficult feat fraught with risks. The United States, in its final lunar mission in 1972, decided against this because of the difficulties.

But already, there are questions about China's motivation in deciding to land on the dark side, with some suggesting it may have a darker purpose – of targeting the US' space-based assets such as its strategic surveillance platforms.

The challenge of landing on the far side of the Moon is that it never faces Earth, meaning the spacecraft attempting the landing will have no direct line of sight to Earth. Therefore, a satellite needs to be put in place beyond the Moon to relay communications between the spacecraft and its tracking stations on earth.

The Chinese launched such a satellite, Queqiao or Magpie Bridge, last May in preparation for Chang'e-4's landing.

This satellite poses concerns in the US, with Mr Jeff Gossel, the top intelligence engineer with the US Air Force's National Air and Space Intelligence Centre's Space and Missile Analysis Group, warning last October that it could be used to support anti-satellite weapons.

"You could fly some sort of weapon around the Moon and it comes back" to hit satellites in orbit around Earth and "we would never know because there is nothing watching in that direction", he told an Air Force Association gathering.

Writing on @thewarzonewire website, freelance journalist Joseph Trevithick suggested that the Chang'e-4 mission could "presage an all-new front in the steadily evolving nature of military activities in space".

Professor Emeritus John Logsdon of the Space Policy Institute at George Washington University said in an e-mail interview that Chang'e-4 is a step in a long-planned programme of robotic lunar exploration that is not closely connected to China's national security space programme.

Its space programme has "a variety of motivations, ranging from national pride and international prestige to scientific and economic payoffs", he said. However, he added that China's largely separate

national security space programme, "again like other major countries, draws upon the same technology base as its civilian programme."

While China is not behaving any differently from other countries with a space programme, the US has been particularly wary of it.

Since 2011, the US Congress has banned the National Aeronautics and Space Administration (Nasa) from working with China because of human rights issues and national security concerns. The US has blocked China from taking part in the International Space Station, a 15-nation collaboration, leading the Chinese to start their own space station project.

With the current China-US trade tensions threatening to spill into other areas and with the US seeing China as a strategic rival, it would be wishful thinking on the part of the Chinese to hope for cooperation with the US in its space programme although the nationalistic Global Times expressed this aspiration in an editorial on Jan 3.

The situation is made worse by comments from the head of the Chinese lunar exploration programme, Mr Ye Peijian, 74.

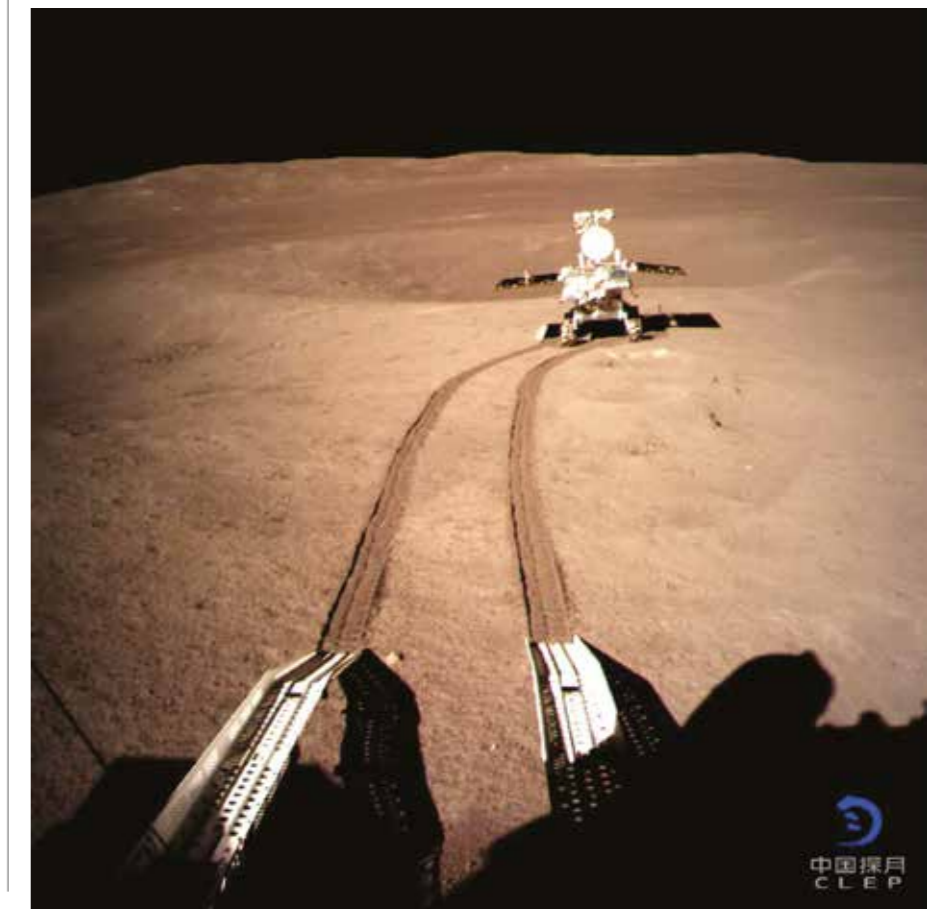
When asked by a reporter last March why China

GOH SUI NOI
East Asia Editor



✉ suinoi@sph.com.sg

China's lunar rover Yutu-2 or Jade Rabbit 2 rolling onto the far side of the moon taken by the Chang'e-4 lunar probe is seen in this image provided by China National Space Administration. PHOTO: CNSA/REUTERS



was going to the Moon, he said: “The universe is an ocean, the Moon is the Diaoyu islands, Mars is Huangyan island. If we don’t go there now even though we’re capable of doing so, then we will be blamed by our descendants. If others go there, then they will take over and you won’t be able to go even if you want to. This is reason enough.”

The Diaoyu islands, known as Senkaku to the Japanese, are claimed by both China and Japan. Huangyan island, also known as Scarborough Shoal, is claimed by both China and the Philippines.

Mr Malcolm Davis, a senior analyst at the Australian Strategic Policy Institute, wrote in an article last year that Mr Ye was “making clear that either China will control the Moon and other celestial bodies, or others will.” He added: “The US and allies must decide whether Chinese control of this high ground is acceptable.”

Right now, countries such as Britain have been willing to collaborate with China in some areas of space science research and there is talk of the Chinese and the European Space Agency collaborating on a human outpost on the Moon. But whether such cooperation will deepen or continue, given the West’s increasing concern over China’s growing military and technological strength and

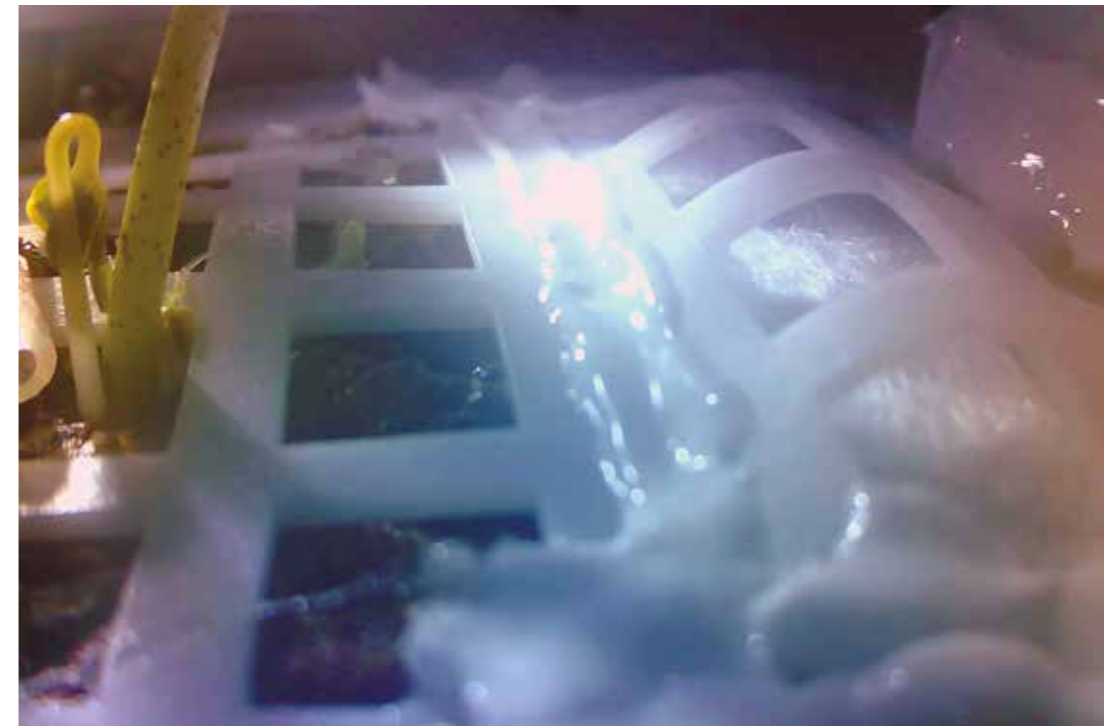
its geopolitical assertiveness, is uncertain.

US President Donald Trump has talked about starting a space force, an idea derided by some, but supported by others who think China’s increasing space capabilities call for such a force to protect growing US commercial and military interests in space.

While China, said Prof Logsdon, is very capable in advanced technology and does not have to depend on other countries to tutor it in space capabilities, it is still far behind the US, as admitted by the Global Times in its editorial. The US sent manned missions to the Moon 50 years ago, while China has yet to do so, it noted. Nasa spends US\$35.9 billion (\$48.9 billion) a year on its space programme, while China spends only US\$4.9 billion.

It would be better for China if it can persuade the US to collaborate with it, by winning trust through being more transparent about its space programme. Both sides could also work to strengthen the United Nations treaty system on outer space to better manage space activity and competition.

It would be far better for mankind if there could be global cooperation in space exploration even as the space-faring countries compete for economic and security benefits. **AR**



This handout photograph taken on January 12, 2019 and received from Chongqing University on January 15 shows a cotton sprout (L) growing in an “earth chamber” at the university premises in Chongqing, which mimics the conditions of the experiment inside the Chang’e-4 moon probe on the far side of the moon. Cotton seeds carried by China’s Chang’e-4 lunar lander have germinated inside the probe on the far side of the moon, becoming the first shoots to grow on Earth’s natural satellite, a scientist on the project said on January 15. PHOTO: CHONGQING UNIVERSITY/AFP

TAN DAWN WEI
China Bureau Chief
in Beijing



✉ dawntan@sph.com.sg

China’s next moon mission by year-end

BUOYED BY THE SUCCESS OF ITS LATEST LUNAR probe, China is set to launch another mission to the moon at the end of this year to collect samples on the side closer to Earth and bring them home.

It also has plans to send a probe to Mars in 2020, following an unsuccessful attempt in 2011, as well as further lunar explorations, and will even contribute to co-building a research station on the moon with other nations, the country’s space agency said.

The Chang’e-4 probe, named after the mythical moon goddess, made history when it landed on the unexplored far side of the moon on Jan 3 in a technical and risky manoeuvre.

Since then, the Chang’e-4 has gone to work,

with its rover Jade Rabbit 2 rolling around on the lunar surface and sending home the first pictures of an unseen side of the moon. It is conducting topography surveys, temperature and mineral make-up of the moon’s “dark side” and measuring cosmic radiation, the chief designer of China’s lunar exploration programme, Mr Wu Weiren, told reporters.

The probe carried 13 scientific payloads, including four in collaboration with Germany, Sweden, the Netherlands and Saudi Arabia.

China National Space Administration deputy head Wu Yanhua said the agency planned to send up Chang’e-5 around the end of the year and

subsequently Chang’e-6, 7 and 8. No timeline was given.

The mission for Chang’e-6 will be to collect samples on the South Pole of the moon. Chang’e-7 will conduct a “comprehensive exploration of the Moon’s Antarctic, including a comprehensive exploration mission on the topography, material composition and space environment of the moon”, he added.

Chang’e-8 will test some “key technologies” on the moon, such as whether structures could be built using lunar soil and 3D printing.

“China, the US, Russia and countries from Europe are all studying whether to set up a research base

or station on the moon,” said Mr Wu Yanhua. “We are going to test some technologies via Chang’e-8 and do preliminary exploration for a joint moon research base in the future.”

China’s first space station was expected to be operational by 2022. He said China hoped for international collaboration on its construction and welcomed other nations to use it for scientific purposes.

He also said the space agency had exchanged information on Chang’e-4’s mission with Nasa, its US counterpart, in what is believed to be a first since US lawmakers banned joint space activity with China on fears of cyber-spying. **AR**

This picture released by the China National Space Administration (CNSA) shows a 360-degree panoramic image made by China’s Chang’e-4 lunar probe on the far side of the moon. PHOTO: CNSA/AFP



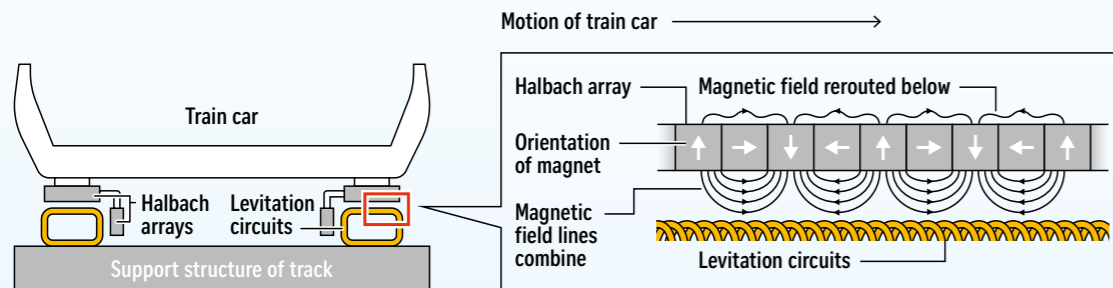
The future of transportation

The idea of travelling in a capsule hurtling at supersonic speed is fast becoming a reality. Hyperloop Transportation Technologies (HyperloopTT) is on the verge of a historic breakthrough in mobility with the launch of its first Hyperloop system in Abu Dhabi by 2020.

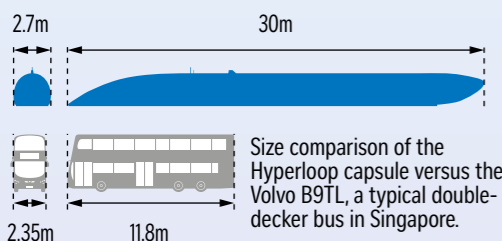
Up to 164,000 passengers per day	Up to 4,100 shipping containers per day	Departs every 40 seconds	Speed up to 1,223kmh	Capsule weight of 20 tonnes
--	---	---------------------------------------	--------------------------------	---------------------------------------

THE HYPERLOOPTT

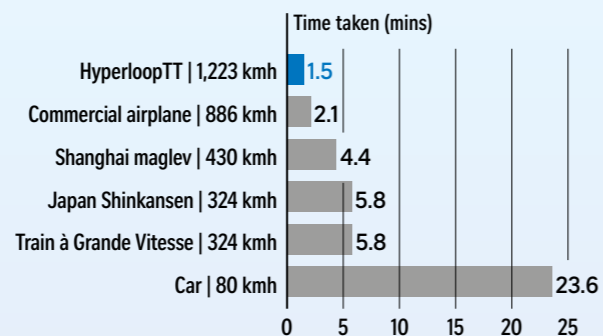
Hyperloop is a transport system that takes passengers and cargo capsules through a network of low-pressure tubes between cities at airplane speeds. California-based company HyperloopTT is one of several Hyperloop contenders that have sprung up to deliver on the transportation vision.



The full-scale passenger Hyperloop capsule, Quintero One, being presented by Hyperloop Transportation Technologies last October in El Puerto de Santa Maria, Spain.



From Boon Lay to Changi Approximate distance = 31.5km



*NOTE: Time is based purely on distance and average speed of the vehicle. It does not take into account acceleration, deceleration, traffic or weather conditions.

The capsule

- Each capsule is 30m long and weighs 20 tonnes. It can carry 28 to 40 passengers.
- Its aerodynamic body is made of a composite material called Vibranium that the company claims is 10 times stronger and five times lighter than steel.
- The skin is embedded with sensors that can wirelessly transmit data on stability, temperature and integrity of the capsule to the control station.

Smooth, faster journey

- Hyperloop is all about removing the two things that slow down regular vehicles: friction and air resistance. To do away with the former, you make the capsule hover above its track, like a magnetic levitation (maglev) train.
- The system is silent and emission-free.



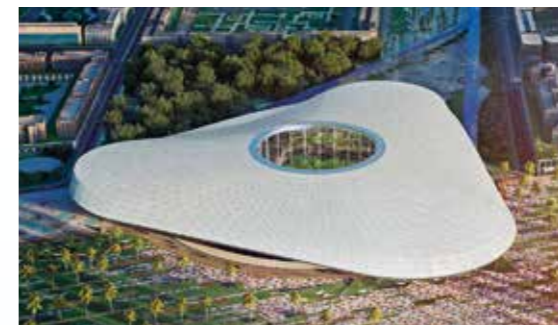
Tubes being transported for research and development in Abu Dhabi.

How maglevs work

- HyperloopTT will use a passive magnetic levitation system, which uses strong permanent magnets to generate levitation, instead of power-hungry electromagnets used in standard maglev systems.
- On the underside of a capsule is a flat, rectangular array of magnetic bars called a Halbach array (named after its inventor Kalus Halbach). The bars are arranged in a special pattern so that the magnetic field lines combine to produce a very strong field below the array.

The low-pressure tubes

- The tracks are enclosed inside tubes connecting the stations. The capsule will travel – or float – on a frictionless magnetic cushion within the tubes.
- Air inside the tube will be removed frequently to create a low pressure similar to airplane cruising altitude. Because there is less stuff to push through, a hyperloop needs only a little bit of energy to maintain the capsule's speed.



Artist's rendering of how the Hyperloop station in Abu Dhabi could look like.

Dewdrop station

Hyperloop terminal station prototype, circular guidance and operating system

Platform

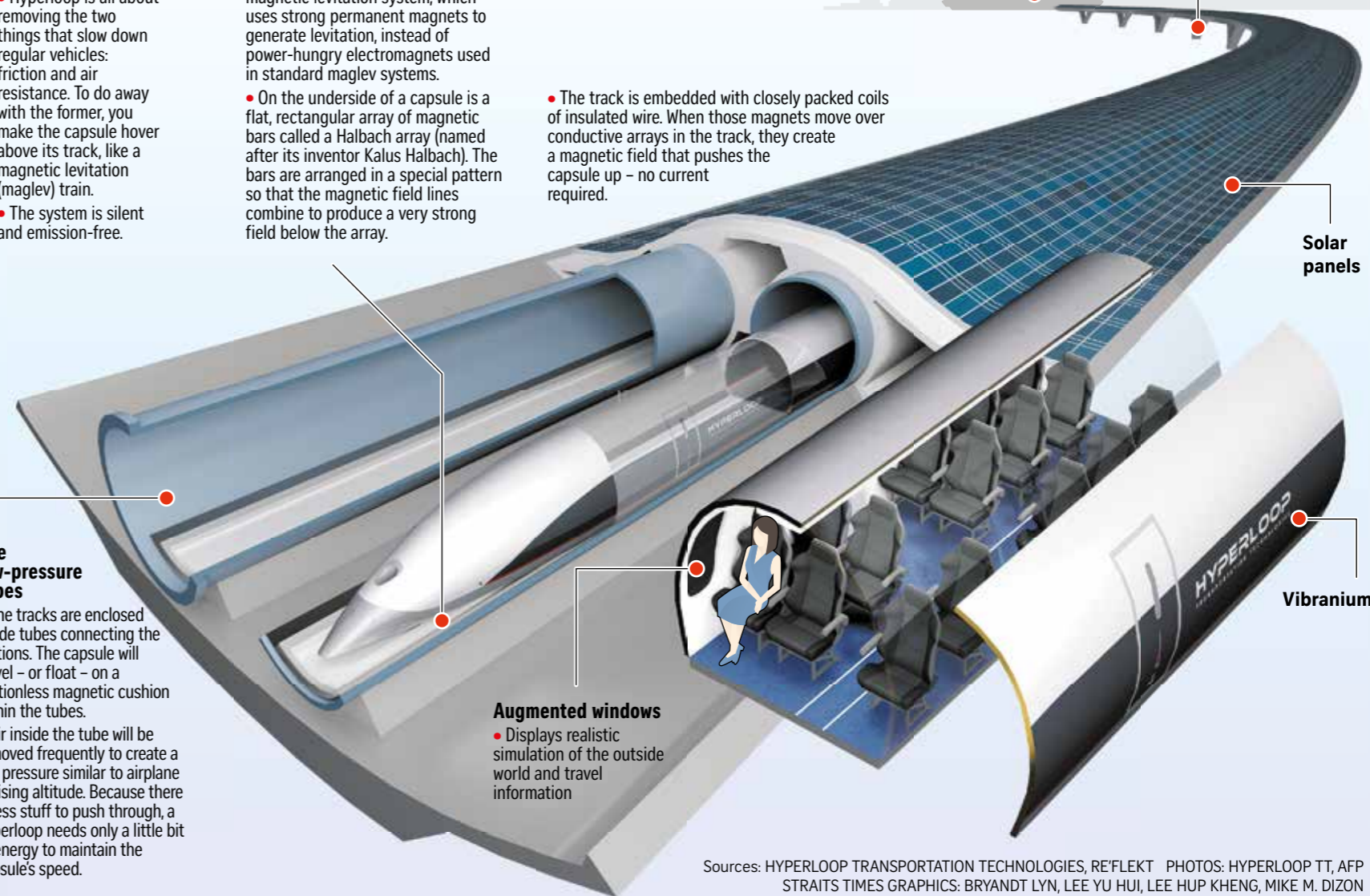
- Can handle about 3,600 passengers per hour
- Each gate can manage 180 people per hour

The world's first commercial HyperloopTT system will be located at Al Ghadeer near Al Maktoum Airport, in Abu Dhabi, and the Expo 2020 site. It is slated to operate in time for the expo.



Pylons

The elevated reinforced concrete pylons and beams above the ground will reduce the cost of land acquisition and it will be impervious to weather conditions and resilient to earthquakes.



Sources: HYPERLOOP TRANSPORTATION TECHNOLOGIES, RE'FLEKT PHOTOS: HYPERLOOP TT, AFP STRAITS TIMES GRAPHICS: BRYANDT LYN, LEE YU HUI, LEE HUP KHENG, MIKE M. DIZON



Lifestyle

Tech Trends 2019

Here's a look at what's coming your way in 2019

VINCENT CHANG
Correspondent



✉ vinchang@sph.com.sg

SLEEKER AND 5G-ENABLED PHONES

The idea that smartphones have peaked gathered steam last year among tech pundits. The numbers support this.

But the market slowdown appears to be forcing manufacturers to innovate out of the slump.

Take the foldable smartphone, which may actually become a thing this year. Chinese firm Royole Corporation was the first to announce such a device last year, but all eyes will be on market leader Samsung after it unveiled its own foldable prototype last November.

Besides the rumoured cost of this Samsung foldable phone (a hefty US\$1,800 or S\$2,460), there are questions about its usefulness.

"A foldable phone can indeed benefit business users and processes by arming mobile employees with a pocket device that can be converted into a larger screen for productivity purposes, in theory, at least," says Mr Bryan Ma, vice-president of client devices at market research firm IDC.

But he feels that it "will take time for developers

to write applications that dynamically adjust and take advantage of the larger screen."

Meanwhile, manufacturers continue to reduce the borders around smartphone displays.

The latest design innovation towards this goal is the hole-punch camera display, where a hole is made near the corner of the screen to accommodate the front camera.

"This technology is complex as it involves cutting through the layers of the display and adding the camera sensor below it. It may cause light dissipation around the edges," says Mr Parv Sharma, an analyst at Counterpoint Research.

He adds that the hole-punch display will co-exist with the notch one and make headway in the mid-range segment.

Huawei and its Honor sub-brand, as well as Samsung, have already showed off smartphones with this feature last year.

Notably, Samsung's next flagship smartphone, the Galaxy S10 series, is heavily rumoured to sport a similar hole-punch camera display.

PHOTO ILLUSTRATION: ISTOCKPHOTO, STRAITS TIMES GRAPHICS

5G – fifth-generation cellular mobile networks – is also on the cards. These networks, which promise peak speeds of up to 10Gbps and low latency, are being rolled out this year in markets such as the United States. Qualcomm's latest Snapdragon 855 chipset supports a modem for 5G networks.

Mr Will Wong, IDC's research manager, says the first 5G smartphones will be introduced this year, though most countries, including Singapore, do not have their 5G networks ready yet.

"The emergence of Chinese smartphone vendors has accelerated the market competition and stimulated the need to be the first mover in the market," he says.

Mr Sharma expects more than 15 manufacturers to introduce 5G smartphones this year. He estimates these phones to start at around US\$800.

Apple iPhone users, though, may have to wait until 2020 for a 5G-enabled iPhone. Qualcomm and Apple have locked horns in a patent lawsuit. The latter has switched to an Intel modem for its recent iPhones.



Samsung's next flagship smartphone, the Galaxy S10 series, is rumoured to have a hole-punch camera display.
PHOTO: QUALCOMM

TELEVISION SCREEN THAT HIDES ITSELF

Television sets with roll-up displays are on the cards for TV-maker LG. The South Korean electronics giant first revealed a prototype TV with a retractable Oled screen (right) at last year's CES trade show. According to Bloomberg, this "rollable" TV will be released commercially this year.

Designing a rollable version is a way to minimise the visual impact of TV sets, which increasingly sport bigger screens, says Mr Paul Gagnon, executive director at market research firm IHS Markit. "The idea of a rollable display that can be removed from the living environment is attractive and also makes transportation of a very large display easier."

Another example of this trend: Manufacturers such as Samsung and LG are making their TV sets look like picture frames that can blend in with the surroundings or display art. This ensures that the "TV doesn't become a giant black hole on the wall when not in use", says Mr Gagnon.

Also likely to make its entrance this year is Samsung's microLED television. Like Oled technology, the individual pixels in a microLED display emit light, which leads to better contrast and deeper blacks than LCD technology.

The difference is that microLED displays use inorganic material (gallium nitride), which is capable of higher brightness levels than the organic material in Oled screens.

Mr Gagnon expects the market to grow slightly, with about 223 million units shipped. Almost 99 per cent of these TV sets will use LCD technology while the rest will use Oled screens.

INNOVATIVE DESIGNS FOR PCS

Computers, unlike smartphones, have long reached maturity, with changes to PC designs and features often being incremental.

But PC vendors continue to experiment with new form factors.

Notable recent examples include HP's leather-bound Spectre Folio convertible and Lenovo's dual-screen Yoga Book.

In fact, Ms Mikako Kitagawa, senior principal analyst at market research firm Gartner, says more vendors may take a page from the Yoga Book, which comes with two displays – an E Ink screen and a standard touchscreen – and come up with their own versions.

Change is also brewing in computers. Over a year ago, Qualcomm revealed its plans to compete with Intel in the PC segment with a Windows 10 laptop powered by a Qualcomm chip.

The firm stepped up its efforts last month with the Snapdragon 8cx platform, which promises constant connectivity, including 5G support, as well as long battery life.

Qualcomm says these devices will be launched in the third quarter of this year. **AR**





PHOTO: AFP

Big Picture

A place ruled by women

THESE INDONESIAN DANCERS WERE PERFORMING in front of the Istana Basa Pagaruyung, the royal palace of the former Pagaruyung Kingdom, in late November, as part of the 2018 Minangkabau art and culture festival in Batusangkar, West Sumatra.

The event celebrates the Minangkabau culture with performances, exhibitions, fashion shows and even a coffee festival. The Indonesian Ministry of Tourism hopes that highlighting the distinct ethnic group will help boost tourism to the region.

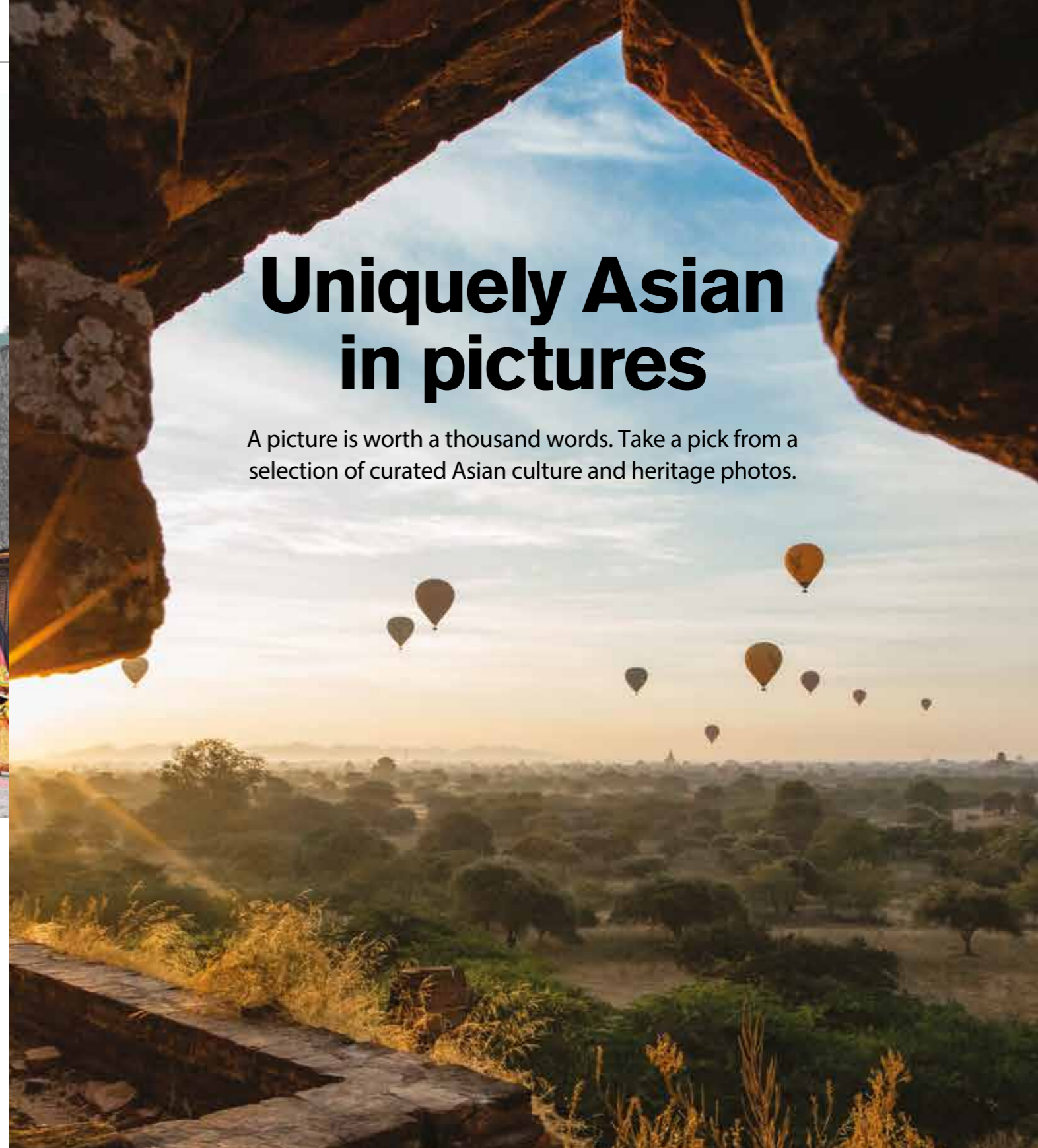
There are around 6.5 million Minangkabau people in Indonesia, according to 2010 figures from the

country's statistics department. Most of them reside in their Sumatran homeland and almost three-quarters of Indonesian Minangkabau speak the language.

According to the BBC, the Minangkabau ethnic group, indigenous to the highlands of West Sumatra, is the world's largest matrilineal society, with daughters inheriting ancestral property from their mothers and children taking on their mothers' names. And, after marriage, the Minang groom moves into the bride's ancestral home and lives with her family. **AR**

Uniquely Asian in pictures

A picture is worth a thousand words. Take a pick from a selection of curated Asian culture and heritage photos.



For all your creative and editorial photography needs

www.photonico.asia

You need to know Asia.

We do.

THE STRAITS TIMES



Get your complimentary* **2-WEEK**
full digital access to The Straits Times

**ONLINE
SMARTPHONE
TABLET**

Register now:

SG: **readsph.com/star**

Overseas: **readsph.com/staovr**



Receive full coverage of "Breaking News" on your mobile or tablet.
Get Push Notifications based on keywords you select.
Get access to the 7-day archive of past ST issues.

*The complimentary access to The Straits Times Digital is eligible to users who are not existing subscribers of The Straits Times, in accordance with the terms and conditions on readsph.com/star and readsph.com/staovr.