

The controversial extradition Bill, which triggered mass protests, is dead, but that has not put an end to the demonstrations and clashes with the police. When – and how, if ever – will it all stop?

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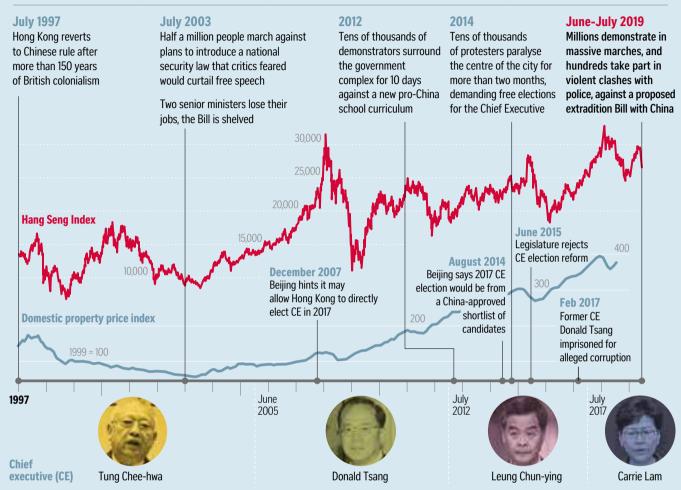
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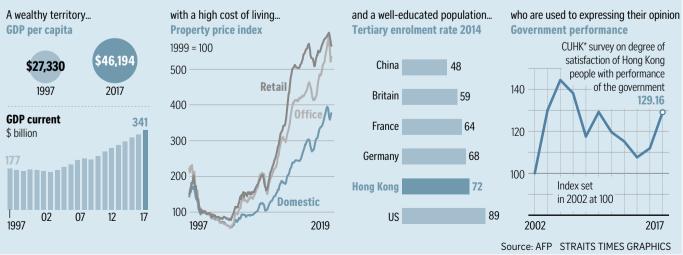
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Hong Kong since the handover

Here's a look at the major events since the city returned to Chinese rule and where things stand today.



Hong Kong population: 7.48 million



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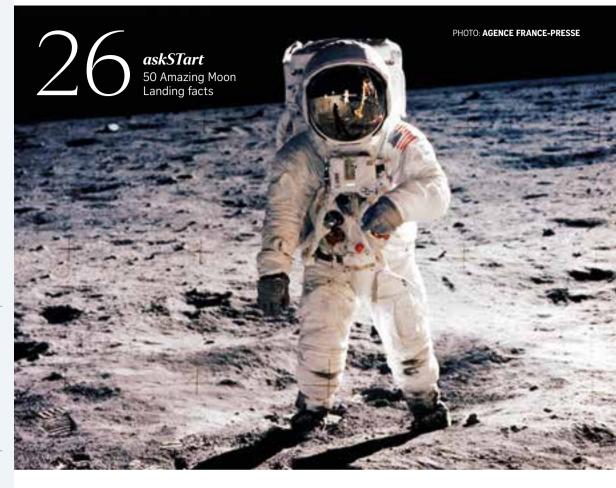
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Big Picture

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'I can't even see tomorrow'

Never before has Hong Kong seen such turmoil. Of a 7.5 million population, some two million have taken to the streets protesting an extradition Bill that would enable the city to send suspects to China because they distrust the opaque judicial system there. The protests have since evolved to one against all forms of authority, as well as reigniting an old issue, universal suffrage. On several occasions, following peaceful mass protests, young protesters have clashed with the police on Hong Kong's streets. Here's a look at why this is happening and where things might lead.



ELIZABETH LAWRegional Correspondent
In Hong Kong



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EVENTS ORGANISER ADRIAN LAM WANTS TO marry his long-term girlfriend, buy a place to live and maybe have a child. But all these seem increasingly unlikely on his pay of HK\$22,500 (\$3,900) a month, slightly above average by Hong Kong standards.

"We don't qualify for public housing because our combined salary is above the threshold but if we want to buy an apartment, it's going to cost us far too much. Of course some people say if we spend less and save every dollar, we would be able to afford an apartment," the 29-year-old said, adding that renting is "putting money into a sinkhole."

Even if they could afford a flat reasonably close to town, having a child is another concern.

An increasingly competitive and complicated public education system has led many parents to send their children to private or international schools, where fees can go up to HK\$100,000 a year.

"Why do I have to suffer because of bad policies?" Mr Lam told The Straits Times.

Priced out of the housing market and faced with an education system that appears to disadvantage the poor, and with growing wealth inequality, Hong Kong's youth feel forgotten by their government. Hopelessness has turned to anger, which has manifested in weeks of mostly youth-led mass protests. On several occasions, this has resulted in dramatic scenes, with protesters storming the legislature, laying siege to the police headquarters and most recently, vandalising Beijing's liaison office in the city.

The protesters are against a contentious extradition Bill that, if passed, will allow for case-by-case extraditions to jurisdictions that Hong Kong does not currently have a permanent treaty with, including mainland China.

Officials say this is to plug a legal loophole but the speed at which the city's administration tried to rush the Bill into law led Hong Kongers to see this as Beijing increasing pressure on the city.

Following the handover from Britain to China in 1997, Hong Kong has been promised a high level of autonomy, protecting rights unseen in the mainland, including the right to peaceful protest and freedom of speech.

But in recent years, residents have seen their privileges being gradually eroded: A rule barring insult of the Chinese national anthem is making its way through the legislature, compulsory national



education in schools has been mooted and there has been an increasing emphasis on Mandarin in a city whose lingua franca is Cantonese.

There is also fear that should the extradition legislation pass, political dissidents and activists could be targeted by Beijing.

Many protesters said they took to the streets because they felt they had nothing left to lose.

The night after protesters stormed the Legislative Council (LegCo) – and struck deep into Hong Kong's political heart – film student Yanis Wong cried herself to sleep.

The 19-year-old, who was among the young protesters outside the LegCo complex, was worried for her peers who rammed down the glass walls, but she was also shocked at how the initially peaceful demonstrations had taken a violent turn.

"(We) Hong Kongers like peace, we don't like violence," she said, adding that they were frustrated and angry at being ignored by the government.

By his own admission, Mr Wilfred Yeung, 27, hates attending protests because they are hot, sweaty affairs where "nothing changes at the end of the day."

But he has attended every one of the anti-

extradition Bill rallies in the in June, including the effort to surround the legislature on June 12 that ended with police firing tear gas and rubber bullets to disperse the crowd.

"If I can't even look forward to buying a house, or knowing I can't climb up the social ladder, while all these other people own multi-million-dollar properties, what future is there?" he said.

Hong Kong's Gini coefficient – which measures income distribution, with 0 being equal income distribution – was 0.473 in 2016, official data shows.

Home prices are also among the highest in the world, driven by the insatiable Chinese appetite for properties, with the average price of a home at US\$1.2 million (S\$1.63 million) last year, based on research by real estate firm CBRE.

This discontent had already reared its head in 2014 during the Occupy Movement, when students occupied the city's business district, calling for electoral reforms.

According to Hong Kong's Statistics and Census Department, a youth refers to anyone aged between 15 and 24. At the end of last year, there were 707,800 youth in the city, representing some 9.5 per cent of the 7.5 million population.

Protesters holding placards and strips of cloth with protest messages at the July 5 rally. But discontent had already reared its head during the Occupy Movement in 2014. ST PHOTO: LIM YAOHUI Brian Leung Kai-ping (far right), 25, who openly revealed his identity, gesturing as he speaks after breaking into the main chamber of the Legislative Council building during the annual July 1 pro-democracy march in Hong Kong.

ST PHOTO: LIM YAOHUI

If those in the 25-to-34 age group are included – the Home Affairs Bureau considers anyone below 35 a youth – there would be 1.75 million youth, or 23.6 per cent of the population.

Shortly after taking office in 2017, Chief Executive Carrie Lam admitted that connecting with youth would be one of her administration's biggest challenges.

That year, she announced the creation of a new youth development forum so that young people can play a bigger role in public affairs; first-time homeowners were also allowed to buy cheaper apartments under a new initiative.

But that has done little to alleviate the situation, and most who took to the streets were fairly young.

Protesters have organised themselves into groups, some helping with logistics or serving as medics, while others provide reinforcements to those on the front line.

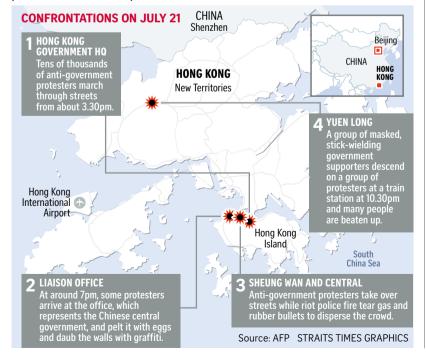
They often keep their faces hidden behind masks and worry about having their pictures taken, for fear of actions by schools or employers wary of offending Beijing.

Much of the protests have been organised via social media or chat applications with no clear leader, but student unions have been encouraging their members to turn up in support.

"We know it can be hard to effect (political) change just by coming on the streets, but having

Turmoil in Hong Kong

The special administrative region in southern China has plunged into its worst crisis in recent history after weeks of anti-government marches and sporadic violent confrontations between police and pockets of hardcore protesters.





students on the street is at least a gesture that we hope will send a message to the government," said vice-president Hedy Ng of the provisional executive council of the Education University of Hong Kong Students' Union.

Retired legislator and former Democratic Party chairman Emily Lau said much of the unhappiness has been building up over the years because youth feel they cannot have a good future when the government only "looks after the rich and the property developers".

"They feel very unhappy, and then Beijing is cracking down on us, trying to undermine our freedoms." she said.

Pro-democratic lawmaker Claudia Mo noted that this hopelessness has led to a "martyr mentality", where they take risks with no regard for their lives.

"They think if this legislature, which is supposed to reflect the people's voice, is not functioning in that manner... 'let's do acts to try to help restart something," she said.

They feel that if they die, their deaths could serve as a wake-up call to force those in power to bring some positive change to Hong Kong, she added.

Protesters are trying to build on the momentum of the previous protests, said history professor Jeffrey Wasserstrom of the University of California, Irvine.

"The challenge for protesters is that they have proved successful in the past... delaying or stopping new moves to encroach on Hong Kong's freedoms, but this does not roll back moves that have already happened," he said.

Many also see this as the last stand against Beijing's increasing influence, which would erode the values Hong Kongers hold dear, Professor Wasserstrom added.

Recently, since Chief Executive Carrie Lam ordered the shelving of the Bill before later declaring it "dead", the protests have evolved into one against all forms of authority as the public anger shows little signs of abating.

It has also revived an old clarion call: universal suffrage, or the right of each person to a vote. Many of the protesters now believe systemic reforms are the only way out of the political quagmire the city has found itself in.

But there have been pushbacks too, amid escalating amounts of violence. Pro-government protesters have held similar mass rallies in support of the police and authorities on at least two occasions, albeit with a far smaller turnout.

And on July 21, things took an ugly turn when mobs dressed in white – the preferred colour of the pro-government side – attacked black-clad passersby in Yuen Long, a satellite town close to the border with China.

Many were young people returning from taking part in the earlier rally on Hong Kong Island. Some 40 people were injured in the incident, which many blamed on the slow response of the police, many of whom had been engaging in a street battle with pro-

testers nearly 30km away, and had to be redeployed.

Miss Wong, the film student, said: "We can only succeed now, if not all those people who have sacrificed would've sacrificed for nothing."

"This Bill (if passed) will speed up Hong Kong's transformation into China. Now I'm still proud of being a Hong Konger, but maybe in the next 10 years I might not be anymore."

Asked about what comes next, Mr Lam said: "I can't even see tomorrow and feel hopeful about it, how can I even think about 2047?" \$\frac{1}{2}\$

- Additional reporting by Danson Cheong

Students in Hong Kong being driven to despair: Experts

AFTER WEEKS OF PROTESTS, ANGER AND frustration among young protesters in Hong Kong are reaching a tipping point and driving many of them to despair, said mental health experts.

The mounting sense that the government is ignoring protesters and their demands is driving many to take extreme actions.

The violent storming of Hong Kong's Legislative Council on July 1 is one example, the experts said.

"The distress and frustration is accumulating as the government has not responded to their requests. Some people think it is hopeless and we are seeing symptoms of depression," he added.

His group's suicide helpline has received 42 calls for help from protesters since June 9, when the first mass protest took place. That figure is about 30 more than what the group receives each month for social issues.

So far, there have been at least three suicide cases reportedly linked to the protests.

On Wednesday, dozens of students gathered at Pacific Place mall to look for a young man who had threatened to take his life over the proposed Bill. He was eventually found safe nearby.

"These young people are lashing out because they want to get their message across; they're doing anything to get the government to react," said social worker Richard Ip, 31, who had joined the search on July 3.

The situation has reached "breaking point", said Mr Tsang, who added that it was not as dire during the 2014 "Umbrella Movement".

Professor Paul Yip, director of the University of Hong Kong's (HKU) Centre of Suicide Research and Prevention, said the stress of living in a fast-paced city like Hong Kong, along with possible family or mental issues, has left some youth in a vulnerable state, and the added psychological stress from the protests could push some over the edge.

"The government needs to be more forthcoming and address the concerns of demonstrators. We need to have an exchange of ideas. At the moment,



everyone is just living in his own echo chamber and not talking to one another," said Prof Yip.

To help students, educators in universities, including HKU and the Hong Kong Baptist University (HKBU), have set up networks to provide counselling and a listening ear to those in distress.

HKBU's associate dean of arts Professor Wee Lian-Hee had sent out mailers – containing private phone numbers of faculty members – to students in case they needed to speak to someone they trust in confidence.

Regardless of their views on the protests, students are facing the same "anxiety, trauma and stress" and want to be heard and understood, said Prof Wee, a Singaporean who has been in Hong Kong for 13 years.

"I urge our young people to see the strength in being a candle (as opposed to fireworks) because it lasts through the night and gives a steady light that reveals obstacles," he added. \$\mathbf{3}\mathbf{1}\$ People removing Post-it notes with messages about democracy and universal suffrage from the "Lennon Wall" at the Central Government Complex in Hong Kong on July 2, 2019.
ST PHOTO: LIM YAOHUI

China Correspondent

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Events organiser Adrian Lam standing at the memorial at Lennon Wall near the Central Government Complex in Admiralty, Hong Kong. Protest artwork and post-it notes have been torn down and all that remains are bouquets to commemorate the three people who died during the recent protests.

Voices from the streets

The Hong Kongers who have turned out in force to protest against the extradition Bill run the gamut of society but the most active have been young students. Here are what some of them have to say.

WORRIED ABOUT CHANGES, WHAT THEY MAY BRING

- ADRIAN LAM, 29, Events organiser

BY HONG KONG STANDARDS, EVENT ORGANISER Adrian Lam earns a decent salary. He goes on holidays at least twice a year, eats out at a nice restaurant at least twice a month and has spare cash for savings.

But he has attended nearly every mass rally, driven by a fear of what the extradition Bill would mean for the city.

"There are people like us, whose family has worked in the mainland, who know what the system is like there," he said, a reference to what many call an "opaque" legal system.

"It's not just about preventing the law from getting passed. It's also about what it means to be

a Hong Konger," he said. "I worry about what is happening to our culture and our way of life."

He firmly disagrees that other countries should step in as this is a matter for residents of the city.

"Some are calling for sanctions against China or even for Britain to help. What they don't understand is that if there are sanctions, it is our economy that suffers which, in turn, affects our livelihoods," he said.

REMINDING THE GOVERNMENT THAT PEOPLE STILL HAVE A SAY

- HEDY NG, 21, Student

AS VICE-PRESIDENT OF A STUDENT UNION, Greater China Studies major Hedy Ng understands the power of mass action.

The student at the Education University of

Hong Kong has been helping to provide emotional support for peers and other fellow protesters as the movement moves into its first month.

She said: "We cannot afford to lose even one person. People may be feeling very tired and don't know what else they can do because there seems to be no change, so we are working to keep their spirits up."

She said that her political awakening came during the Umbrella Movement in 2014, but she became more involved only after political figures like Joshua Wong went to prison.

"The government's attitude to us now is an indication of how they think they can just push things through, but we need to remind them that the people still have a say."

She added that she sees herself as stepping out to maintain freedom in Hong Kong.

"Having the voice of the young people (on our side), we need to call for universal suffrage. This way, there can be a true reform of the system and, hopefully, things can really change."

TAKING ON 'BURDEN' FOR NEXT GENERATION

- YANIS WONG. 19. Film student

THE NIGHT AFTER PROTESTERS STORMED THE Legislative Council (LegCo) on July 1 and struck deep into Hong Kong's political heart, film student Yanis Wong cried herself to sleep.

She was outside the LegCo complex and worried for her peers who had rammed down the glass walls, but was also shocked at how the peaceful protests against the extradition Bill had taken a violent turn.

"Hong Kongers like peace, we don't like violence," she said.

But the protesters had lashed out as they were frustrated and angry at the government for ignoring them, she added.

"We don't have a lot of hope for the future, so there's nothing to lose. What has happened in the past month is good, but it is just the beginning," she said.

She and other young protesters have risen up in opposition against the proposed extradition Bill that will allow suspects to be sent to mainland China, which they believe will erode Hong Kong's autonomy.

Ms Wong had her first taste of civil disobedience when she was 14 years old and attending secondary school.

Her older sisters had taken her to the Occupy Central sit-in in 2014. At those demonstrations, the teenager tasted the sting of tear gas, but also gained the realisation that freedoms and beliefs were things that one had to fight for.

"The older generation have more responsibilities. They say 'keep a low profile and focus on your work'. But if we don't do anything, things will be even more difficult for the next generation. I'm scared, but this burden and responsibility has fallen to us," she said.

FIGHT IS FOR HONG KONG WAY OF LIFE

- ALAN CHENG, 27, Venture capitalist

DRESSED IN A TAILORED SUIT AND A SHINY Rolex on his wrist, Mr Alan Cheng, 27, does not look like the typical young Hong Konger taking part in the fierce protests on the territory.

But that does not mean he feels any less strongly about the government's proposed extradition Bill, which he described in stark terms as the "death of Hong Kong", its identity, and way of life.

"Being 'Hong Kongese' is a kind of civilisation, a different culture, and having different values," he said, separating his compatriots from those on the mainland.

Mr Cheng, who has lived in San Jose in the United States for the past three years, says he has always had a keen interest in public service, adding that this was inculcated in him when he attended a Catholic primary school in Hong Kong as a boy.

Now a member of the Northern California Hong Kong Club, he helped organise a protest march in San Francisco against the Bill on June 9.

But he flew back in late June to "see how he could be of help", pointing out that it broke his heart to find out that young protesters had reportedly committed suicide over the controversial legislation.

"I've not been able to eat and sleep well for three weeks... these lives should not have been wasted," he said.

Mr Cheng took part in the Hong Kong protests on July 1, and intends to stay on until the end of the month.

Hong Kong was promised autonomy by Britain and China in 1984, he said.

"We are not asking for anything more," he added.

- Elizabeth Law and Danson Cheong

Dressed in a tailored suit and a shiny Rolex on his wrist, Mr Alan Cheng (below), 27, does not look like the typical young Hong Konger taking part in the fierce protests on the territory.

ST PHOTO: LIM YAOHUI





Hong Kong protests over the years

2003

About half a million people turn up for the annual July 1 rally to mark the handover of the city to China. They are infuriated by a proposal to enact a national security law which they view as infringing on their freedom. It would have prohibited treason, secession, sedition and subversion against the Chinese government. It was shelved indefinitely after the peaceful march.

2012

Tens of thousands of Hong Kongers participate in a protest on July 29 against a proposal to add moral and national education to the curriculum of the city's schools. It is seen as an attempt to "brainwash" young people. In late August, a group of secondary students begin an "occupation" against the proposal and in early September the government announces that schools are given discretion whether to implement the curriculum.

Beijing waiting for tide of public

GOH SUI NOI East Asia Editor



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PROTESTS IN HONG KONG WENT UP ANOTHER notch on July 21 after the vandalising of the Legislative Council (LegCo) building earlier in the month.

For several weeks, those protesting against an extradition Bill had directed their wrath at the city's government in their rallies. But on that day, a Sunday, they turned on the central government in Beijing.

These pro-democracy protesters defaced the facade of the building of Beijing's Liaison Office on Hong Kong island, throwing eggs and splashing black paint on the national emblem of China.

Beijing, however, is not making any move just yet, beyond condemning the protesters and saying that they have violated the "one country, two systems" principle by which Hong Kong is governed and that they have "hurt the feelings of all Chinese people".

The city's government, in a statement two days later, quashed rumours that the People's Liberation Army (PLA) garrison in Hong Kong would be guarding the Liaison Office, the office of the Commissioner of the Chinese Ministry of Foreign Affairs, the Chief Executive's office and the LegCo building, saying these claims were unfounded.

Instead, it appears that supporters of the government in Hong Kong and Beijing have taken matters into their own hands.

That Sunday night, men in white T-shirts and carrying poles attacked black-shirted pro-democracy protesters in a subway station in Yuen Long, a town in the New Territories close to the China border.



ST ILLUSTRATION: CEL GULAPA



2014

Protesters, mostly students, occupy streets in the financial district, the Causeway Bay shopping belt and Mong Kok (a blue-collar district), to demand greater democracy. They believe that proposals to grant universal suffrage in elections for the chief executive are a sham because candidates are first to be vetted by Beijing. The 79-day largely peaceful sit-in protest, known as the Umbrella Movement or Occupy Central, ends without the protesters winning any concessions from Beijing.

2019

A proposed Bill to amend extradition laws that will allow criminal suspects in the city to be sent to the mainland brings Hong Kongers out to the streets in the millions. They oppose the Bill because of fear that it will erode their civil rights and political freedom. Younger protesters adopt more confrontational tactics in order to be heard, leading to clashes with police on June 12 and the storming of the Legislative Council building on July 1.

PHOTOS:
AGENCE FRANCE-PRESSE,
KUA CHEE SIONG

opinion to turn against protesters

One day before, at a pro-establishment rally, Mr Arthur Shek, vice-president of the Economic Times newspaper, had told those present to "get your cane out, beat up the kids" as a way of disciplining them.

This precipitated the attack, said political commentator Ching Cheong. It was a tacit mobilisation of the pro-establishment camp, he added.

Many people had received messages before the violent incident, informing them not to go to Yuen Long on Sunday, especially after 4pm, he noted.

This is not the first time gangsters have been used against protesters, analysts said, citing the case of the 2014 Occupy movement in which assaults against young protesters were also blamed on criminal gangs.

This time, however, the police took more than an hour to show up, leading some to believe they had allowed triad members to rough up the protesters.

As a result, the protesters have won some sympathy from Hong Kongers. Said Associate Professor Alfred Wu of the Lee Kuan Yew School of Public Policy: "It offers the pro-democracy protesters some leverage – people will be sympathetic towards them."

This would be counter to Beijing's strategy, which is to wait for the protesters to make a mistake and for the tide of public opinion to turn against them.

"Up to now, they are still sticking to this strategy of not engaging the protesters. You don't see (Chief Executive) Carrie Lam talking to the protesters; they are just waiting for the protesters to make mistakes," said Dr Willy Lam of the Chinese University of Hong Kong.

This is the same strategy used in the Occupy movement that dragged on for more than two months. "Near the end, public opinion turned against the protesters because they caused a lot of inconvenience to residents and the business sector was also affected," he added.

Dr Lam pointed out that the July 1 incident in which radical protesters broke into the LegCo building and Sunday evening's defacing of the Liaison Office could have turned the tide of public opinion against the protesters. But the Yuen Long incident on the same night cast the city government in a bad light and swung public opinion against it and Beijing.

Prof Wu said that what may be the next move is the setting up of an independent commission to investigate police brutality, one of the demands of the protesters.

In a recent newspaper article, pro-Beijing heavyweight David Lie, a delegate to the Chinese People's Political Consultative Conference, said that he favoured the move.

One other option Beijing has shown it is open to, is to send in the PLA. Recently, a military exercise was held near Hong Kong, a warning that the PLA could be deployed if the situation got out of hand, said Dr Lam.

It would be a last resort, however, as sending in the PLA would be an admission that after more than 20 years, Beijing has failed to win the hearts and minds of Hong Kongers.

This is not the first time gangsters have been used against protesters, analysts said, citing the case of the 2014 Occupy movement in which assaults against young protesters were also blamed on criminal gangs. This time, however, the police took more than an hour to show up, leading some to believe they had allowed triad members to rough up the protesters.

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Special Report

HUAWE

focusing on doing its own job right



PHOTO: **REUTERS**

Chinese telecom giant downplays result of latest US-China truce

LIM YAN LIANG China Correspondent



THE TWISTS AND TURNS IN THE UNFOLDING drama of Huawei's fortunes do not seem to faze company founder Ren Zhengfei much, seeing as his personal – and company – mythology involves thriving on long odds, whether they be surviving a famine or besting far larger competitors that have since exited the telecoms industry.

Mr Ren, 74, has been dismissive of punitive measures thrown at his company by the Trump administration, though Huawei has acknowledged that its blacklisting by the United States could result in some US\$30 billion (S\$41 billion) of lost revenue over the next two years.

It also emerged that Huawei will lay off almost 600 of 850 employees, at one of its US units, the research-and-development subsidiary Futurewei Technologies, as it continues to struggle with the US ban.

Yet, news of a partial reprieve for the beleaguered firm that came out of President Donald Trump's meeting with President Xi Jinping in late June – alongside a general truce to the ongoing US-China trade war – was met with a shrug by the Huawei leadership.

Huawei founder Ren Zhengfei attends a panel discussion at the company headquarters in Shenzhen PHOTO: **REUTERS**



Mr Trump's move to relax restrictions preventing Huawei from buying US components without government approval will have little impact on its business as it adjusts to a new era of American hostility, Mr Ren told the Financial Times (FT) in July.

While Huawei is willing to continue buying American goods, "we don't see much impact on what we are currently doing", he said. "We will still focus on doing our own job right."

That includes extending its lead in advanced areas such as semiconductors, and particularly in 5G technologies such as core networking and optical transmission, where Huawei is "well and decisively ahead of the US", Mr Ren said in an earlier interview with FT.

The telecoms giant also indicated it could be unveiling its own operating system (OS) – Hongmeng OS – at its annual developer conference in August, with Mr Ren promising that it would run better than both Google's Android and Apple's iOS while also able to power a range of smart devices besides phones and tablets.

Huawei said it had been working on Hongmeng in secret for years as a fallback, after Google said in May it would have to cut off the Chinese firm's access to Android to comply with the US government blacklist. A 90-day reprieve given to Google to continue providing software support for Huawei phones ends on Aug 19.

Lobbying, behind-the-scenes negotiations

Despite Mr Ren's public indifference, the US government's reversal of restrictions on Huawei suggests heavy lobbying by the US chip industry, that coupled with Chinese political pressure could resume US technology sales to the Chinese firm.

American chip suppliers such as Intel and Qualcomm, for whom Huawei represents a major client, have been quietly pressing the US government to ease the ban, reported Reuters, quoting industry insiders. They argued that products such as smartphones use commonly available parts and are unlikely to pose national security concerns, compared with networking equipment.

Some US\$11 billion of the US\$70 billion that Huawei spent buying components last year went to US companies such as Qualcomm, Intel and Micron.

"This isn't about helping Huawei. It's about preventing harm to American companies," one of the people said.

Huawei chairman Liang Hua also told reporters in June that Google has advocated so that it can keep selling to the Chinese firm, which surpassed Apple in May to become the world's second largest smartphone maker, behind Samsung.

Things have moved quickly since Mr Trump's announcement following his meeting with Mr Xi. A senior US official told one firm's representative that Washington may approve licences for companies to restart sales to Huawei as early as this month and

Huawei tops in number of 5G essential patents



Source: ETSI, BLOOMBERG INTELLIGENCE, UBS as of May 2019 STRAITS TIMES GRAPHICS

US chipmakers said they have been applying for additional licences to resume sales to the Shenzhenbased firm.

Commerce Secretary Wilbur Ross has since clarified that Washington would grant licences to US firms on a case-by-case basis, but that Huawei would still remain on its Entities List.

Huawei has also scored some victories in recent months that might help change countries' perceptions that the firm is at the centre of a brewing tech cold war that could split the world and lead to competing technological standards.

The US has pressured its allies to shut Huawei out of their national 5G networks or face curtailed intelligence sharing, and so far countries such as Australia and Japan have announced effective bans.

But in July, a British parliamentary committee found no technical grounds to exclude Huawei equipment from Britain's 5G infrastructure.

The UK Parliament's Science and Technology Committee found that its telcos did not believe Huawei's products were any less secure than its competitors', and that a ban would instead reduce UK operators' leverage to demand higher security standards from other vendors.

The findings came after Germany, too, had earlier resisted US pressure, with Chancellor Angela Merkel saying that Berlin would not single out individual firms even as it toughens security standards for its mobile networks.

Caught between two superpowers

The future remains uncertain for Huawei, not least because the Trump administration views the firm as emblematic of many things wrong with China's trade practices and industrial structure.

Besides alleging that Huawei spies for the Chinese government, the US has accused the firm of stealing trade secrets from its American partners. A series of earlier entanglements with partners such as Cisco over alleged intellectual property theft has also darkened Huawei's reputation in the eyes of many US lawmakers.

Mr Ren's military connections and the perception that Huawei's rise over the past three decades was due in part to its access to massive state funding, which allowed it to undercut foreign competitors and gain market share, has also raised questions about the company's ties with Beijing, despite repeated denials by Mr Ren over suggestions that Huawei aids the Chinese government.

While Mr Ren has tried to distance himself and Huawei from the Chinese government, Beijing has turned the firm into a cause celebre in its ongoing trade dispute with the US.

Since the start of the year, Huawei has been a regular mention in the Chinese foreign ministry's daily press briefing, while senior officials have become more direct in equating any action against Huawei as efforts to suppress China's high-tech supply chain ambitions.

Officials such as former vice-minister of the National Development and Reform Commission Zhang Xiaoqiang have said US blacklisting of Huawei has brought into stark relief the need for indigenous innovation in core technologies so that China cannot be threatened, echoing President Xi's

Huawei's recent moves

Here are some measures the tech giant has taken in recent weeks:



China's Huawei - the world's biggest maker of telecoms network gear - has filed to trademark its Hongmen operating system in countries such as Cambodia, Canada, South Korea, Peru and New Zealand. PHOTO: AGENCE FRANCE-PRESSE

HONGMENG MOBILE OPERATING SYSTEM

Huawei has applied to trademark its "Hongmeng" operating system (OS) in at least nine countries and Europe, data from a UN body shows, in a sign it may be deploying a back-up plan in key markets as US sanctions threaten its business model. News out of Huawei's Shenzhen headquarters in early June revealed that its employees were working round the clock to take its new HongMeng mobile operating system to market by the fourth quarter. Mr Richard Yu, CEO of the firm's consumer division, told German newspaper Die Welt that Huawei has a back-up OS in case it is cut off from USmade software. Its applications to trademark the OS show Huawei wants to use "Hongmeng" for gadgets ranging from smartphones and portable computers to robots and car televisions.

\$4.2 BILLION INVESTMENT IN ITALY

The Chinese telecom giant plans to invest US\$3.1 billion (S\$4.2 billion) in Italy over the next three years, making its latest move to leverage European technologies for future growth amid challenges from the United States, China Daily reported. Mr Thomas Miao, Huawei's Italian unit chief executive, said the investment plan would create 1,000 new direct jobs from this year to 2021. The Italian investment came after Huawei said it plans to build and operate an optical device R&D base in Britain in the next five years.

NEW ECOSYSTEM FOR ARM-BASED SERVER CHIPS

To beef up its prowess in semiconductors, Huawei said on July 22 that it plans to invest three billion yuan (\$\$590 million) over the next five years to build an ecosystem for its ARM-based server chips, according to China Daily. The paper says Huawei's move is part of its broader push to build server chips based on the ARM architecture for data centers, a booming market dominated by Intel's x86-based processors.

PLANNED JOB CUTS AT US UNIT

Huawei Technologies is planning to cut more than 600 jobs (Reuters) at its US subsidiary, Futurewei Technologies, a research-and-development subsidiary that employs about 850 people in the United States, including Texas, California and Washington, according to the Wall Street Journal.

call in recent months for China to be self-reliant in technology.

State media have also jumped on the bandwagon, urging the Chinese people to support Huawei through nationalistic language.

A People's Daily's editorial in May, for instance, called Huawei's struggles against US sanctions "in the spirit of perseverence and heroic courage", and drew comparisons with China's historical battles such as its campaign against the US in the Korean War.

"In a certain sense, Huawei is a benchmark and a mirror (for our) companies, the country and the people," it wrote.

On his part, Mr Ren appears to believe that Huawei would be better off if it could extricate itself from the ongoing tensions between the US and China.

In the FT interview, Mr Ren demurred on whether he would be willing to speak with Mr Trump on the phone, if the opportunity presented itself.

"He is probably too busy to have the time to call me...we speak different languages, and have very different ways of expressing ourselves," he said.

Huawei's inclusion in any trade agreement between the two countries would also have little benefit for the firm, which has zero sales in the US, said Mr Ren.

"If these two countries were two large balls smashing against each other, Huawei would be a sesame seed being smashed between them," he said.

"As they knock against each other, oil is being squeezed out of this sesame seed."

CEASED SOLAR INVERTER SALES IN US MARKET

The world's biggest solar inverter manufacturer also shut down its US sales of solar inverters, according to a research note by Roth Capital Partners recently. The exit came months after US lawmakers suggested that Huawei be banned from supplying solar inverters in the US, citing concern that the Chinese government could use them for spying.

5G ROLL OUT

As of July 8, Huawei had secured 50 5G commercial contracts and shipped 150,000 base stations worldwide, said Huawei chief technology officer Aaron Wang. Of these 50, 28 were signed in Europe, according to the South China Morning Post. In early July, Cambodia's Smart Axiata said it had begun 5G trials in partnership with China's Huawei Technologies, and could start rolling out the mobile network by this year. The Cambodian government signed a memorandum of understanding in April with Huawei to help develop its 5G telecoms system. While Washington has pushed its allies to drop Huawei equipment from their 5G plans, the world's No. 1 network equipment maker has actually gained market share in recent months, partly due to its leading role in its domestic market.



SIGNING 'NO BACK DOOR' AGREEMENT WITH INDIA

In early July, the Chinese telecom gear maker offered to sign a "no backdoor" agreement with the Indian government to allay concerns that it might use its telecom gear for surveillance, said the Business Standard. Under the proposed agreement, the Indian government will be able to ban Huawei from operating in the country if there is serious evidence of security breach on its part.



LAUNCH OF SUB-BRAND HONOR 20

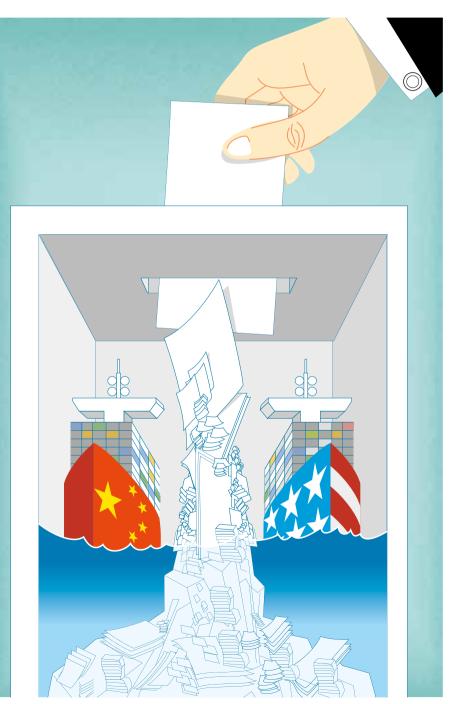
Despite restricted access to US technology, Huawei went ahead with the launch of its subbrand Honor in London on May 21, days after Google barred the phone maker from some updates to the Android operating system. Honor 20 Pro and Honor 20 smartphones sport identical 6.26-inch LCD screens, flashy glass backs and the latest mobile technologies, such as a tiny punchhole cutout for the front selfie camera.

- Compiled by Dominique Nelson

A man takes a picture of an Honor 20 Pro smartphone at a launch event for the Honor 20 Series smartphones at Battersea Evolution in London on May 21, 2019. Outside China, the Honor 20 phones will come with Google apps and services. PHOTO: AGENCE FRANCE-PRESSE

Thinking Aloud

What impact will the US election season have on the trade war?



ST ILLUSTRATION: CEL GULAPA

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There is hope for a truce on tariffs, with trade a key pillar of Trump's re-election platform

JUST AS THEY DID AT THE G-20 SUMMIT IN Buenos Aires seven months earlier, US President Donald Trump and Chinese President Xi Jinping left the G-20 Summit in Osaka agreeing to a ceasefire on tariffs and to talk about a trade deal.

While there is every reason to cheer a deescalation of tensions in the long-brewing trade war, hopes are rightly tempered by the experience of having seen a similar process fail.

But there is also a key difference between the circumstances surrounding the December 2018 tariff truce and the June 2019 one: Mr Trump is now officially in election mode.

Ordinarily, one would assume trade policy has very little to do with elections.

Foreign policy as a whole – never mind the more technical details about trade imbalances and free trade deals – has generally been considered secondary issues in American elections.

Voter views on foreign policy do not tend to be particularly predictive of how they are going to vote, hence politicians usually don't pay all that much attention to such issues, although wars in foreign lands and terror attacks at home are notable exceptions.

At the height of the anti-trade rhetoric during the last election cycle in 2016, when both Mr Trump and then Democratic candidate Bernie Sanders were rubbishing the Trans-Pacific Partnership free trade deal, polls consistently found that foreign policy lagged far behind issues like healthcare and the economy in voters' minds.

Most pollsters will tell you that the economy

is the single most important issue in modern American elections. And while trade affects the economy, research has suggested that most ordinary people lack the knowledge to understand how trade policies affect them. That disconnect between trade/ foreign policy and how people vote can also be seen in how the opinions of the American public often diverge quite significantly from those articulated by their politicians.

Poll after poll has shown that the American public is not as rabidly anti-free trade as the rhetoric coming out of Washington might suggest. In May of 2016, polling organisation Gallup found that 58 per cent of Americans thought foreign trade was an "opportunity for economic growth through increased US exports" compared with just 34 per cent that considered it a threat.

Additionally, while businesses in the US have voiced growing frustration with how Beijing treats foreign companies, they reject tariffs as the answer.

In June, around 660 companies and associations called on the Trump administration to return to the negotiating table and not impose further tariffs on Chinese goods. Over 300 officials from US businesses were making the same case at a hearing at the US International Trade Commission.

All that might suggest that the trade negotiations and the elections can run on mutually exclusive tracks, but there is reason to believe that this time will be different. In this cycle, trade could well turn out to be a key election issue.

For one thing, the US President has simplified the link from trade to the economy and then incorporated that heavily into his political messaging.

He clearly sees trade not just as a political issue but one that serves as a winning argument for him.

In his speech launching his re-election campaign in Orlando in June, he provided a good example of how he intends to make that argument work.

"We rebuilt China. They've done a great job, but they took us for suckers, and that includes Obama and Biden. We took – they took us for suckers. Five hundred billion, five hundred billion," he told the crowd, referring to his own claim that US has an annual trade deficit of US\$500 billion (S\$680 billion) with China.

"We're fighting against the same far-left politicians that ravage our great cities and crush the dreams of African-American middle class, the same people who threw open our borders and allowed drugs, gangs, and illegal labour to devastate our poorest American communities, you know that," he added.

In short, Mr Trump is "winning" in trade against foreigners looking to sabotage the US economy.

He also began the morning of his re-election rally with a tweet about restarting trade talks with China.

Whether by design or not, it ensured that headlines on the day of his campaign launch would be shared between his event and a significant development in the US-China trade war.

Mr Trump has, in essence, done a masterful job of giving him a clear and very direct way of taking credit for the economy. There's no talking about market forces or global trends here. He is arguing that the economy – so often the top issue at the ballot box – is a direct result of something he is doing.

That works, as long as the economy is doing well. Should the US numbers start to dip, a winning argument could turn into a big liability.

That suggests that Mr Trump is banking on the economy continuing to do well to 2020.

However, the global turmoil caused by current trade tensions is threatening to end the US current economic hot streak. For all the tough talk, it seems a truce would be a desirable outcome for Mr Trump.

Mr Trump has, in essence, done a masterful job of giving him a clear and very direct way of taking credit for the economy. There's no talking about market forces or global trends here. He is arguing that the economy – so often the top issue at the ballot box – is a direct result of something he is doing. That works, as long as the economy is doing well. Should the US numbers start to dip, a winning argument could turn into a big liability.



He has already backed away from threats to impose tariffs on Mexico after dire warnings about the impact it would have on the US economy. Mr Trump found a face-saving way to do that by declaring some new concessions from Mexico that thus far remain unsubstantiated, but that will matter little to his base.

That the process has been long, complicated and full of twists and turns so far doesn't necessarily take away from the likelihood of a deal.

After all, a deal which is very easy to come by would have been of little value to Mr Trump. This works best when it feels like a reality TV show and he can talk about the blood, sweat and tears that went into achieving the victory.

This is not, by the way, a suggestion that the US-China tensions are temporary. The erosion of trust now appears deep-seated and unlikely to go away whoever gets elected.

But I believe there is reason to be optimistic that the truce will this time turn into a deal. \$\square\$

Trade Watch

History gets in the way of better Japan-South Korea ties

GOH SUI NOIEast Asia Editor



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Japan has said these moves are necessary out of security concerns, given South Korea's lax export control of materials with military warfare potential, but has provided little evidence of this. To South Korea, they are retaliation against the court ruling.

"



EVERY ONCE IN A WHILE, TEMPERS FLARE UP between the two North-east Asian neighbours Japan and South Korea. Often, these are over issues of history or territory that otherwise simmer below the surface like volcanoes waiting to erupt.

Emotions have run high before. In August 2001, 10 South Koreans sliced off their finger tips to protest against then Japanese Prime Minister Junichiro Koizumi's visit to the controversial Yasukuni Shrine that honours Class A criminals of World War II among Japan's war dead.

This time, tragically, a South Korean self-immolated near the Japanese embassy in Seoul on July 19. The two countries are embroiled in an escalating row over the use of forced Korean labour by Japanese companies during World War II. It was reported that the 78-year-old man's father-in-law had been conscripted as a forced labourer during Japan's occupation of the Korean Peninsula from 1910 to 1945.

Past flare-ups have brought the two countries close to open conflict. In April 2006, a row over the Dokdo/Takeshima islets that began in 2005 came to a head when Seoul sent 20 gunboats to the area to chase away Japanese survey ships attempting to map the seabed there.

The islets are controlled by South



Korea but claimed by both countries. It took United States intervention to cool things down.

This time, the US has waited till both sides engaged in tit-for-tat measures before stepping in. Japan has moved to restrict the export of high-tech materials that South Korea relies on for its thriving semiconductor and smartphone sector, threatening not only South Korea's but the world's supply chains for high-tech products.

US national security adviser John Bolton was in Japan and South Korea the last full week of July to try and diffuse tensions and help resolve the issue.

The US is stepping in not just because of the global economic implications of the export restrictions. The spat is also beginning to threaten the trilateral security alliance of the US, Japan and South Korea in the North-east Asian region that seeks to keep the nuclear-ambitious North Korea in check and balance the power of a rising and increasingly influential China.

On July 18, South Korean national security adviser Chung Eui-young told President Moon Jae-in and political party leaders at a meeting that Seoul could reconsider its intelligence-sharing deal with Japan should the situation worsen. The two neighbours and the US had signed a trilateral intelligence-sharing pact in 2014 to better deal with the increasing nuclear and missile threats from North Korea.

MUTUAL ANTAGONISM

The unhappy history of the two countries, particularly Japan's 1910-1945 occupation of the Korean Peninsula including the war years that saw some brutality towards Koreans, has led to fraught ties between the two sides. It is their common interests that have kept antagonisms in check.

"Japan and South Korea have conflicting identities and narratives about the Japanese imperial era," noted Dr Van Jackson of the Victoria University of Wellington, New Zealand.

He added that "mutual antagonism is the baseline of their bilateral relationship" but that strategic issues, including the shared threat from North Korea and their shared US ally, have encouraged them to suppress this antagonism most of the time.

"But nobody should be surprised when these issues of conflict emerge, they're always there. It's just a question of catalysts," said Dr Jackson.

In the past, visits by Japan's leaders to Yasukuni Shrine, disputes over the Dokdo/Takeshima islets that are a legacy of history and the issue of "comfort women" or Korean women forced by Japanese troops into sexual slavery in military brothels during World War II have surfaced to disrupt ties between the two countries.

This time, it was a ruling last October by South Korea's Supreme Court that Japan's steelmakers must pay compensation to South Koreans forced to work for these companies during the war.



This had come as President Moon last year effectively walked back on a "final and irreversible" agreement that was unpopular with South Koreans. The deal, struck by his predecessor Park Geun-hye and Japan's Prime Minister Shinzo Abe, was meant to put the comfort women issue behind the two countries once and for all.

So it was no surprise that Japan was highly incensed by the court ruling. To the Japanese, their country had already paid war reparations in full under a 1965 treaty to normalise ties in which it had paid out US\$500 million (US\$4 billion or S\$5.5 billion in today's terms) in grants and loans to South Korea.

But the Korean court ruled that individuals had the right to seek compensation above and beyond what was agreed by the two states.

After the ruling, Seoul turned down Tokyo's suggestions for talks or arbitration, instead proposing that the two sides form a private fund to compensate the wartime labourers. This was duly rejected by the Japanese. In the ensuing months, some assets of the Japanese companies have been seized by the Korean courts.

JAPAN'S RESPONSE

Japan in early July imposed restrictions on the export of three chemicals to South Korea that are needed by its tech companies to make semiconductors and smartphones. This move threatens the global tech supply chains as South Korean tech giants such as Samsung Electronics, SK Hynix and LG Display dominate the global market in memory chips.

South Korean protesters holding signs during a weekly anti-Japanese demonstration supporting "comfort women" who served as sex slaves for Japanese soldiers during World War II. After South Korea's high court ordered Japanese firms that used forced labour to compensate Korean victims. Japan in July restricted the export of several chemicals to South Korea. PHOTO: AFP



Trade Briefs

US, Japan eye possible small trade deal by September

WASHINGTON - The United States and Japan are working on a trade deal involving agriculture and cars that could be agreed by President Donald Trump and Prime Minister Shinzo Abe when they meet in New York in September.

A car industry official said the deal could involve Japan offering US farmers new access to its market in return for Washington reducing tariffs on certain



PHOTO: REUTERS

Japanese car parts, an industry source said. But he emphasised the talks remain fluid.

Such a deal would give Abe a win on cars, while helping Trump shore up support among farmers, an important constituency ahead of the 2020 presidential election.

Another source said the Trump administration was looking for increased access for US beef and pork products. **- REUTERS**



PHOTO: **AFP**

Indonesia business urges government to raise tariffs on China steel

JAKARTA - Indonesian business groups want the government to hike tariffs on Chinese steel to rein in cheap imports, as the South-east Asian country's top steel producer said its restructuring would bring large layoffs.

Thousands of workers at state-controlled Krakatau Steel protested in early July, near a production plant in Cilegon on the western coast of Java, after it announced plans for a 30 per cent cut in its workforce of 6,264 in stages through 2020, Indonesian media said.

Apart from the job cuts, Krakatau Steel said it would sell non-core assets and spin off some units to improve its financial condition.

The industry turmoil comes despite a boom in infrastructure investment by the government in the past few years, with business groups blaming imported steel as the main factor responsible for the pressure.

The Indonesian Iron & Steel Association (IISIA) said the bulk of imports came from China, adding that Beijing gave steelmakers tax incentives to boost their competitiveness. - REUTERS



PHOTO: REUTERS

Tricks used to dodge trade sanctions

SINGAPORE - As the United States looks to enforce sanctions aimed at halting trade with states such as Iran and Venezuela, there's increased scrutiny on the tricks being used to keep commodities flowing to and from blacklisted countries.

Ships vanishing from tracking screens, clandestine transfers on the high seas and fake destinations are among some of the tactics used to hide the business from the authorities, according to analysts who track flows around the world.

A common method to transport Iranian oil or North Korean coal with stealth is to turn off the Automatic Identification System, an electronic device that pinpoints a ship's location.

Known as going dark, a vessel flicks the switch before berthing and typically reappears days later, masking the location of its load or discharge port. Ships can sometimes still be tracked by satellites, but even that is limited by scope and weather.

Another method is ship-to-ship transfers. A first vessel will take its clandestine cargo away from the country in question before transferring it to a waiting ship, all of this happening out of sight. The vessels will then sail in different directions. - BLOOMBERG

Tokyo has also threatened to remove South Korea from a "white list" that exempts the 27 countries on it from a trade control law that requires Japanese firms to obtain a licence to export items that could be used in military applications.

Japan has said these moves are necessary out of security concerns, given South Korea's lax export control of materials with military warfare potential, but has provided little evidence of this. To South Korea, they are retaliation against the court ruling.

It has not helped the situation that Japan had to hold its Upper House elections on July 21.

An anti-Korea card would not have hurt Mr Abe's Liberal Democratic Party although it would not have had a major impact on the elections as people were more worried about pocketbook issues, noted Professor Jeff Kingston of Temple University, Japan.

Tokyo's hardline approach has led to more retaliation in South Korea, with some plaintiffs seeking to liquidate assets of the Japanese companies that have been seized by the courts.

U.S. INVOLVEMENT

Into this fray the US has stepped, and not a moment too soon.

If anything, analysts think US President Donald Trump's administration has been passive and late in responding. But getting either side to back down is not going to be easy, in part because public opinion has hardened on both sides.

In South Korea, there have been calls to boycott Japanese products, with a recent poll showing 54.6 per cent of respondents shunning Japanese goods. Tourism has also been hit, with major travel agencies reporting cancellation rates of 60 per cent to 80 per cent.

In Japan, a poll showed that 70.7 per cent supported Tokyo's curbs on South Korean firms on the basis of security.

Importantly, prospects for some face-saving compromise don't look promising, noted Prof Kingston.

Mr Abe's administration believes it has the advantage if the row escalates into tit-for-tat reprisals, while Mr Moon cannot capitulate under pressure, he added.

Dr Jackson warned that "a naval clash is conceivable."

It would take all the dexterity of the US' diplomats to cool the temperature between the two neighbours.

In the meantime, the spat will weaken the trilateral alliance and this is good news for China. "Troubles among adversaries improve its geostrategic position," said Prof Kingston.

Until Japan and South Korea can find ways to bury the hatchet, flare-ups through the years show that history will often get in the way of their bilateral ties and the trilateral alliance, important though these are. The waning US leadership in the region will not help.

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MONDAY, JAN 17 2019





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



By Invitation

The new geopolitics of the Moon

More space-faring countries and tech tycoons are new players in a new space race, raising questions of rights to celestial bodies



ST ILLUSTRATIONS: MANNY FRANCISCO

C. RAJA MOHAN
For The Straits Times



WHEN THE APOLLO 11 SPACECRAFT LANDED THE first humans – Neil Armstrong and Buzz Aldrin – on the Moon five decades ago, the lunar mission was very much part of a sweeping political rivalry with the Soviet Union on Earth.

Yet, despite the Cold War competition, the Moon mission and, more broadly, the United States' space adventure in the 20th century were both tempered by a sense of scientific internationalism, an awareness of man's cosmic insignificance and the belief that outer space will eventually be a stage for human cooperation, rather than competition.

As we celebrate the 50th anniversary of Apollo 11, there is an uneasy sense that humans are beginning to take many of their familiar political problems to outer space.

The near-Earth space is becoming a contested zone among nations; the passive militarisation of the 20th century in the form of communication and intelligence gathering is shifting towards active weaponisation in the 21st. Plans are afoot to develop and deploy weapons in space.

Farther still from Earth's orbit, a different form of great power rivalry in space is unfolding – in the scramble for the Moon.

The contest is raising a host of difficult questions, including the nature of permitted and prohibited activity on the Moon, and whether the new strategic rivalries in space can be effectively regulated.

At the same time, the quest for commercial exploitation of the Moon is generating questions about property rights on the Earth's only satellite. Who owns the Moon?

THE FIRST LUNAR RACE

President John F. Kennedy's proclamation in May 1961 that America would land a man on the Moon "within the decade" was about correcting the perception that the US was falling behind the Soviet Union in the race for space.

That impression, in turn, was driven by Russia's initial successes: orbiting the first satellite in 1957, landing the first man-made object on the Moon in 1959, and putting the first man in space in 1961.

The fear that the Russians were winning the space race was never really true. While the Soviet Union was making symbolic gains, the US was making big progress on a secret project to build remotesensing satellites. The publicly known US space missions such as Mercury, Gemini and Apollo were all impressive evidence of the country's abilities on the scientific and technological fronts. Few experts doubted America's lead in microelectronics, computing and aerospace technologies – the product of its strong pool of scientific talent.

It was the logic of politics, however, that drove president Kennedy into setting a spectacular target for America – a successful manned Moon mission. Prestige was very much part of it and so was what we now call "soft power"; the Apollo missions were accompanied by huge space diplomacy and public outreach.

Although the Moon mission dispelled any doubts about America's technological prowess, considerations of prestige and propaganda value were not strong enough to sustain the Apollo programme after the early 1970s.

At the peak of the Apollo mission, the National Aeronautics and Space Administration (Nasa) was consuming nearly 4 per cent of the US federal budget.

After 10 other astronauts – all American men – followed in the footsteps of Armstrong and Aldrin on the Moon, Washington decided to shut down the costly Apollo programme. Russia's competing lunar mission also ran into serious trouble and had to be cancelled.

But the competition of the 1960s turned into a

measure of space cooperation in the 1970s, amid a brief relaxation of political tensions between Washington and Moscow.

After the collapse of the Soviet Union, the cooperation flowered. One notable example has been the US-built International Space Station (ISS). Scores of Russians have worked on it, and in recent years, the US has relied on Russian rockets to get its scientists to the ISS. Along the way, interest in the Moon waned and it fell off the priority lists of both nations.

NEW PLAYERS, GRANDER PLANS

The current focus on the Moon is being restored by new space-faring nations and private companies.

The idea is not to simply return to the Moon in a repeat of the Apollo mission. The idea is to build "Moon villages" that can be sustained by resources available there. The grander ambition is to make the Moon into a way station for man's exploration of Mars and deep space.

Among the new players, India orbited its Chandrayaan-1 spacecraft around the Moon in 2008. It hopes the Chandrayaan-2 launch, which was suspended in mid-July due to a technical glitch, would lift off smoothly later in the month.

A successful soft landing of a rover on the Moon will make India only the fourth country to do so, after the US, Russia and China. Other parties, including Japan and the European Union, are beginning to put the Moon on their national space agenda, and Russia too has plans to return to the Moon.

But it is the Chinese programme that is drawing concerns in Washington. Beijing's lunar mission, named after the Chinese Moon goddess Chang'e, was unveiled in 2007. Since then, China has put two spacecraft in lunar orbit – Chang'e 1 and 2 – and landed two rovers on the Moon: Chang'e 3 and 4.

Chang'e 4 had the distinction of being the first landing on the far side of the Moon that can't be seen from the Earth; Chang'e 5 – expected to be launched later this year or early next year – is expected to bring lunar material back to Earth. And that is not all. China is expected to land crews on the Moon in the early 2030s, with plans for a research station at the lunar South Pole.

To support China's space-faring ambitions, the State Council has come up with a five-year plan that includes a powerful rocket able to lift huge payloads into orbit, as well as a space station expected to be fully operational in about three years. As President Xi Jinping made clear in a speech earlier this year, the Chinese Communist Party will push hard in pursuit of the country's "unyielding dream of flying into the sky and reaching for the Moon."

The broad advance of China's space programme, across the civilian and military domains, has given at least some in the US establishment the feeling of being left behind.

Spurred by the growing rivalry with Beijing, the Trump administration is taking a fresh look at the Moon.

In a major speech in March, Vice-President Mike Pence announced Washington's ambition to put Americans back on the Moon in 2024. Although the deadline may be unrealistic, there is no doubt about the intent and the urgency in Washington about restoring America's primacy in space, in the face of the Chinese challenge.

"Make no mistake about it: We're in a space race today, just as we were in the 1960s, and the stakes are even higher," said Mr Pence.

The Trump administration is seeking an extra US\$1.6 billion (S\$2.2 billion) for the current fiscal year to fund Artemis, the programme for the country's return to the Moon.

PRIVATE-SECTOR INTERESTS

While the US government may be late in rethinking the possibilities on the Moon, that is not the case for US companies. Amazon's Jeff Bezos and Tesla's Elon Musk have been pressing the agenda for some years now, and have put time and money into their space projects.

In the Trump administration's lunar drive, the government's space agency will not be going it alone. Instead, Nasa will be looking to the likes of Mr Musk's Space Exploration Technologies and

Mr Bezos' Blue Origin to power America's return to the Moon.

Blue Origin, for instance, has a Nasa contract to build lunar lander systems, while Mr Musk's engineers are focused on rockets that can transport space voyagers to the Moon and beyond.

The bold plans of both tech billionaires reflect the new weight of the US private sector in a business that was once driven entirely by the state.

Nasa contracts aside, the US government is also buttressing its efforts in other ways. In 2015, the US Congress passed an Act permitting American companies that find minerals on the Moon to extract and trade them.

The measure, however, runs into trouble with the main legal instrument of international space law: the 1967 Outer Space Treaty (OST). The OST says that outer space, including the Moon and other celestial bodies, "is not subject to "national appropriation by claim of sovereignty, by means of use or occupation, or by any other means." It declares that outer space shall be the "province of all mankind" and its use "be carried out for the benefit and in the interests of all countries."

The US argues that the OST does not apply to

The idea is not to simply return to the Moon in a repeat of the Apollo mission. The idea is to build "Moon villages" that can be sustained by resources available there. The grander ambition is to make the Moon into a way station for man's exploration of Mars and deep space.

At the same time, the quest for commercial exploitation of the Moon is generating questions about property rights on the Earth's only satellite. Who owns the Moon?

77

private corporations and entities, and that they should be free to exploit lunar resources.

Tiny but rich Luxembourg has also passed a similar law to attract future space businesses to its territory. The United Arab Emirates is reportedly following suit. The moves by the US and Luxembourg are based on the interpretation that the OST does not explicitly prohibit states and private entities from exploiting celestial resources.

Many countries, including Russia and China, oppose this interpretation. But they are unlikely to hold back if they think some states and their companies are gaining unilateral advantage.

NEW RULES NEEDED

Many of the propositions of the OST, drafted more than five decades ago, are now being strained amid advances in technology. The international community then could not have imagined what might be possible in the future. Few in the 1960s thought of the prospect for property development on the Moon. Today, it is a real possibility.

Mining in outer space is still at an exploratory stage, but is also no longer a remote proposition. Such activities need a clearer understanding among nations on the rules of the road for managing space resources.

This is not a problem that is entirely unfamiliar to the international community. In the past, it has addressed legal questions on managing the so-called commons – territories that were under no nation's sovereign control, such as Antarctica and the seabed.

But the notion of outer space as a "commons" is being publicly challenged in the US. And the contestation could express itself first on the Moon.

The Moon could also become a theatre for military rivalry. The OST, of course, insists that the Moon and other celestial bodies shall be used "exclusively for peaceful purposes." It also prohibits the deployment of weapons of mass destruction or the establishment of military bases on the Moon.

As in the commercial domain and the military, the world has experience in regulating new technologies. But the tension between technological change and international law is a perennial one.

That the spirit of internationalism and the imperative of cooperation survived some of the most difficult times of the Cold War offers hope, as humanity enters a new phase in the exploration of space and celestial bodies such as the Moon.

But the answers are less likely to come from multilateral agreements such as the OST, with its sweeping but simplistic propositions. They can emerge only out of sustained consultations among the major space-faring nations.

The initial focus must be on small confidencebuilding measures that can pave the way for a new set of practical guidelines on regulating the commercial and military uses of the Moon.

The writer is director of the Institute of South Asian Studies at the National University of Singapore.

India's Moon Mission

India successfully launches mission to Moon's south pole

Bigger challenge is to guide craft into Moon's orbit and navigate lander onto lunar surface

INDIA HAS SUCCESSFULLY LAUNCHED ITS mission to explore the south pole of the Moon, in the most complex space mission by a country keen to maintain a place at the forefront of space exploration.

The rocket carrying spacecraft Chandrayaan-2 blasted off from the Indian Space Research Organisation (ISRO) space station in Sriharikota, off the coast of Andhra Pradesh state, at 2.43am local time (5.13am Singapore time) on July 22.

"It is the beginning of a historical journey of India to the Moon and to land at a place near the south pole to carry out scientific experiments to explore the unexplored," said ISRO chairman K. Sivan.

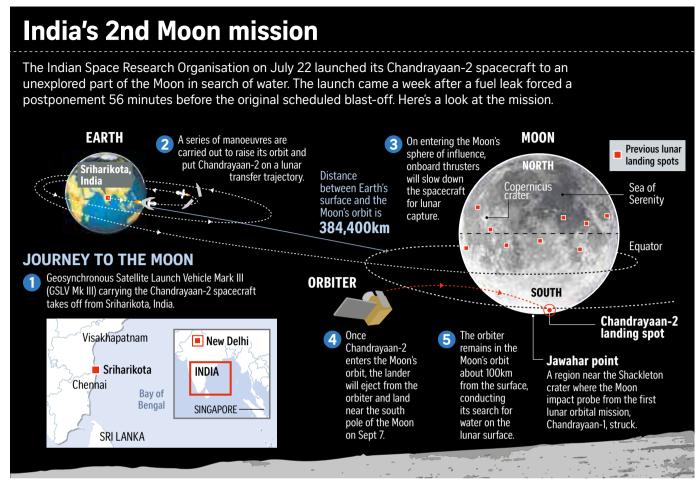
It was the second attempt at take-off after the first one on July 15 was called off due to a technical snag.

Prime Minister Narendra Modi tweeted: "The launch of #Chandrayaan-2 illustrates the prowess of our scientists and the determination of 130 crore (1.3 billion) Indians to scale new frontiers of science. Every Indian is immensely proud today!"

If India succeeds in landing on the Moon and sending out a rover, it will be the fourth country to do so, after the United States, Russia and China.

This is India's second mission to the Moon. The first mission, Chandrayaan-1, was launched in October 2008. It did not land on the Moon but searched for water using radar.

While the latest launch went off as planned, the bigger challenge is to guide Chandrayaan-2 into the orbit of the Moon and navigate a controlled landing of the lander on the surface of the Moon.



Source: ISRO, NASA, AFP PHOTOS: NASA ST GRAPHICS: BILLY KER

The rover will then be sent out to study the surface and search for water in a mission that costs 10 billion rupees (\$\$195 million).

"The next 54 days are crucial. It will have to travel from the Earth's orbit to the Moon's orbit," said Professor Ajey Lele, a senior fellow at the Institute for Defence Studies and Analyses.

Maintaining communication between the lander, rover and orbiter will also be a challenge.

"After landing, the rover will get out and can communicate only with the lander, which (in turn) can communicate only with the orbiter, which will send communication to a deep space network in Bangalore," said Prof Lele.

India has built up its space programme indigenously over the past few decades. It has emerged as the leader in low-cost satellite launches, sending dozens of foreign satellites, including eight satellites from Singapore, into space.

The space programme, which was earlier geared towards improving satellite communications and remote sensing applications, such as weather forecasting and disaster management, has in recent years increasingly branched into space exploration.

In May 2014, India launched the Mars Orbiter,

becoming the first Asian nation to reach the planet after China failed to do so. The orbiter cost around US\$70 million (\$\$95 million), compared with Nasa's US\$671 million Maven mission.

In April this year, India shot down a live satellite in space, becoming the fourth country with such capabilities. It plans to launch a manned mission to space by 2022.

Much is riding on the Moon mission, noted space scientists.

"It is a very critical milestone in India's space programme. It represents a high level of complexities," said Dr K. Kasturirangan, a former ISRO chairman.

India's long-term goal in space exploration requires "basic capabilities like calculating trajectory, interplanetary flights, precise control guidance and navigation", he said, adding that the mission is the first important step towards that goal.

Science journalist Pallava Bagla noted "the stakes are very high", adding that the capabilities for the Moon mission are also needed to send humans into space.

"If colonies have to be set up outside the Earth's orbit. India should not be left behind."

NIRMALA GANAPATHY

India Bureau Chief In New Delhi



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THE SPACECRAFT

Module

"Eagle"

BLAST OFF

A three-stage rocket called Saturn V launched the astronauts on July 16, 1969 to a velocity of more than 40,000kmh to leave Earth.

TIGHT SQUEEZE

Command module "Columbia" carried the three astronauts while in Moon orbit. Space for three astronauts is less than 6 cubic metres, approximately the interior space of two sedans.

COST OF LANDER US\$388m



Liberty.

TALLER THAN

than the Statue of

THE LADY Saturn V has a height of 111m, about 18m taller

HEAVY DUTYSaturn V weighed close to 3 million kg at launch, about the weight of 14 Statues of Liberty.

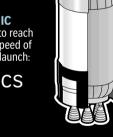


The landing area, thought to be a smooth plain, was strewn with boulders. Astronaut Neil Armstrong searched for a clear spot and finally landed with less than 30 seconds of fuel left.

SUPERSONIC

Time it took to reach Mach 1 (the speed of sound) after launch:

66 secs



STAGE 2

GAS GUZZLER

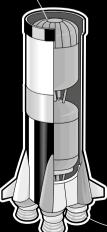
Stage 1 burned more than 2 million kg of fuel at launch. That's the fuel capacity of 22 Boeing 777s, used up in just 2.8 mins.

ENOUGH POWER

Apollo 11 computer's processing power:

4kb (RAM)

Less than that of a modern smartphone.



ROCKET SALVAGED

Amazon boss Jeff Bezos funded an expedition that recovered the stage 1 engines of Apollo 11's Saturn V rocket in 2013. They were found some 4,270m at the bottom of the Atlantic Ocean.

STAGE 1

ask**S**Tart

Half a century ago today, human beings set foot on the Moon for the first time. To celebrate the feat, here are...



AMAZING MOON LANDING

THE SUIT -

RELIABLE AS A TUX

The suit was the same model (A7L) used on the Apollo 7 through 14 missions.

X-RAYED

All spacesuits are X-rayed at least twice before use to ensure that no sewing pins are left behind.

LIQUID COOLING

Astronauts wear a liquid-cooled undergarment to keep cool, minimise sweat and fogging of the helmet.



COST IN 1969

Each spacesuit cost about

US\$100,000

THROWN OUT

The boots, visor assemblies and backpacks were left on the surface to offset the weight of lunar rock cargo.

LAYERED COMFORT

The suit consists of 21 layers of synthetics, neoprene rubber and metalised polyester films to protect against the extreme heat and cold of space.

MADE BY A BRA COMPANY

Created and engineered by International Latex Corporation, makers of Playtex bras and girdles.

DEFYING GRAVITY Total weight of the suit and its components:

PROTECTIVE SHADES

The protective visor is made of polycarbonate and a gold-coated polysulfone visor that could be pulled down to shade the eyes from intense solar energy.



ULTIMATE INSTAGRAMMABLE PH

This iconic image of Aldrin (above), was Armstrong using a Hasselblad Data Cal 60mm lens. Although never tested in s camera performed perfectly under har The film magazines were brought back the camera and lens were left behind of About 100ka On Earth

About 13.6kg On the Moon



HOTOGRAPH captured by mera with a pace before, the sh conditions. to Earth, while n the Moon.



"THAT'S ONE SMALL STEP FOR MAN, ONE GIANT LEAP FOR MANKIND."

ON THE SURFACE

TOTAL TIME SPENT ON THE SURFACE 21hrs 36mins **TOTAL DISTANCE** TRAVELLED 1km

SMALL STEP?
The "one small step for Man" wasn't that small. Armstrong set the lander down so gently that its shock absorbers didn't compress. He had to hop about 1.06m from the lander's ladder to the Moon surface.

"CONTACT LIGHT."

These are the first words spoken on the Moon, uttered by Aldrin as their lander touched down on the surface. Not "The Eagle has landed."



WHAT'S LEFT BEHIND

An American flag, a patch honouring the fallen Apollo 1 crew, and a plaque on one of the lander's legs, that reads, "Here men from the planet Earth first set foot upon the Moon. July 1969 A.D. We came in peace for all mankind."

REFLECTIONS

A set of special mirrors was planted on the Moon. Experiments using the mirrors revealed the Moon is moving away at a rate of 3.8cm per vear.

QUICK THINKING

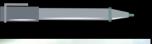
Edwin Aldrin used a felt-tipped pen to activate a broken circuit breaker that was crucial to getting off the Moon. His innovative thinking may have saved the mission.

THE NOSE KNOWS

The astronauts described the smell of moon dust as "wet ashes in a fireplace". Oddly enough, on Earth it's scent-free.

LUNAR SAMPLES Total weight collected:

21.5kg



ALTERNATE SPEECH

President Richard Nixon had prepared an alternate speech in case the mission failed.



The first watch on the surface of the Moon is the Omega Speedmaster, the one worn by Aldrin (left). Legend has it that Armstrong left his on board the Lunar Module as it malfunctioned. Aldrin's watch later disappeared in 1970, when it was sent off to the Smithsonian museum.

THE CREW

COLLINS, 38

Performed a space-walk in a 1966 mission and became the first person to meet another spacecraft in orbit.



DESIGN HERO

Collins designed the Apollo 11 mission insignia, which features an eagle on the Moon, with an olive branch in its talon.

PACKING A PUNCH

In 2002, 72-year-old Aldrin punched conspiracy theorist Bart Sibrel in the face after Sibrel provoked

space.

TOON HERO

Aldrin is the inspiration for Buzz Lightyear from Toy Story, and even MTV's Moonman trophy



EDWIN "BUZZ"

ALDRIN, 39

astronaut with a

doctorate to fly in

The first

for the awards show.



NEIL

ARMSTRONG, 38

and Apollo 11).

SHY HERO

He was the first civilian to

command two American

space missions (Gemini 8

When asked years later, Collins said he didn't feel lonely as he orbited the Moon while waiting for Aldrin and Armstrong, At least his coffee was warm.

Armstrong did not like the spotlight even though he

knew how popular he would get after the mission. He

INSURANCE TOO COSTLY

Instead of taking out a life insurance policy, the astronauts signed a stack of envelopes marked with important dates of the event, that would be given to their families to be sold in case they failed to come back.

HOLY COMMUNION

Aldrin marked communion on the Moon with wine and bread, reading a passage from the Book of John.

SPACE HEALTH

Calories the astronauts require per day:

2,800

AND THEN SOME

BACK TO EARTH

Aldrin with a bible.

The astronauts were quarantined for 21 days after returning. The quarantine facility didn't have a kitchen due to the risk of fire hazard. The microwave was invented as a means for the astronauts to reheat three frozen meals a day.

TRAVEL CLAIMS

Travel expenses claimed by Aldrin for the trip, via Florida, the Moon and Hawaii:

US\$33.31



MMM... BACON First meal on the Moon: Bacon squares and peaches, with sugar cookies for dessert.



PAIN-FREE

72 aspirin tablets were carried on mission, though none were taken.

LUNAR BAG DISPUTE In 2015, a mislabelled lunar sample bag was accidentally sold in an auction for US\$995. The US government tried to get it back, but the buyer, Nancy Carlson, was ruled the legal owner in 2016. The bag was later resold for US\$1.8m.



TV AUDIENCE

650m

people worldwide watched the landing.



KEEPSAKE DISPUTE

Armstrong once sued Hallmark for using his name and likeness in a Christmas ornament in 1994. They came to an out-of-court settlement which he donated to a university.



WOMAN POWER

Katherine Johnson was one of several women who helped Nasa put the first humans on the Moon. Johnson, who is also African-American, made calculations that helped sync the Lunar Lander with the Moon-orbiting Command and Service Module.



Special Report

Drones: Boon or Bane?

KARAMJIT KAUR Senior Aviation Correpondent



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DRONE SIGHTINGS ARE NOT COMMON AT CHANGI Airport, so when one showed up unannounced on the night of June 18, there were serious concerns.

First spotted from the ground, it was flying over Changi Beach. The control tower was immediately alerted.

The next few hours were tense.

As ground officers tracked the drone, air traffic controllers acted quickly to move flights out of the way; the task exacerbated by limited airspace and uncertainty about the drone's movements.

Instead of taking the usual half-hour breaks after every 60 to 90 minutes, they returned sooner.

In the air, anxious passengers were glued to their seats as their flights circled, waiting for approval to land.

On the ground, departures were held back at Changi and, where possible, at other airports for Singapore-bound flights.

By the time the mayhem ended at 9am the next morning, 37 flights had been delayed and one diverted. During the 10 hours that preceded, one of Changi's two runways was suspended for a short period of time.

Less than a week later, another drone was sighted.

On June 24, a combination of unauthorised drone activities and bad weather led to delays of 15 departures and three arrivals. Another seven flights were diverted.

The culprit - or culprits - have reportedly not been caught yet.

WEAPONS OF MASS DISRUPTION?

Changi is not the first, nor will it be the last, airport to be disrupted by drones.

In one of the worst reported cases, about 1,000 flights were delayed or cancelled and 140,000



passengers affected when drones disrupted operations at Gatwick Airport near London over three days last December.

Three weeks later, on Jan 8, London's Heathrow Airport suspended all departing flights for over an hour after reports of a drone sighted in the area.

Experts told The Straits Times they expect the number of such airport incursions – intentional or otherwise – to increase because the unmanned aircraft industry is still nascent.

In 2015, the United Nations' International Civil Aviation Organisation (ICAO) formed the Unmanned Aircraft Systems Advisory Group (UAS-AG) to develop guidance material and expedite the development of provisions to help member states regulate unmanned aircraft systems.

At the end of the Unmanned Aviation Week series of events held in Montreal, Canada and Chengdu, China last September, ICAO secretary-general Fang Liu noted that industry estimates showed that Chinese manufacturer DJI, which accounts for nearly 70 per cent of the non-military small UAS market, has seen revenues jump – from just over US\$4 million (\$\$5.4 million) to a billion dollars between 2011 and 2015.



Some flights were affected at Changi Airport on the night of June 24 because of unauthorised drones. The Straits Times understands that more than one drone was sighted and the drones were reportedly not of recreational make. The Civil Aviation Authority of Singapore is investigating the incident.

ST PHOTO: JASON QUAH

The European market is expected to be worth over €10 billion (S\$15.3 billion) annually in 2035. and over €15 billion by 2050.

While acknowledging the new opportunities that UAS would offer, Dr Fang warned about safety and other risks to legacy aircraft and operations. These include potential collision with manned aircraft and the use of unapproved communications spectrum.

She also spoke of the need to focus efforts on concerns surrounding UAS operations over the high seas. These could be related to activities for oil platforms, ship inspections, fisheries resource monitoring and compliance, atmospheric research and weather measurement, search and rescue, and security operations.

DRONES NOT GOING TO FLY AWAY

Associate Professor Foong Shaohui at the Singapore University of Technology and Design, who deals with unmanned aerial vehicles as part of his engineering focus, said there is great potential for a strong UAS industry in Singapore.

"UAS is more than just aerial filming and recreational flying. There is much more that is currently being done here that is very important but perhaps less visible," he said.

For example, drones are used by many government agencies for inspection of buildings, trees, sewerage tunnels, bridges and MRT viaducts.

Such tasks can be difficult, even dangerous for humans, but perfect for aerial robots to perform, Prof Foong said.

He added: "The Environment Ministry has been using drones to tackle mosquito breeding and the Home Team also has specialised drones to support ground operations."

The Transport Ministry also has big plans for drones.

In March, Senior Minister of State for Transport Lam Pin Min said a "maritime drone estate" to test unmanned aircraft for use at sea will be set up near Marina South Pier.

It will be run by the Maritime and Port Authority of Singapore and Civil Aviation Authority of Singapore (CAAS), and act as a "regulatory sandbox" to help the authorities draw up standards for maritime drone operations.

Dr Lam noted that companies such as maritime firm Wilhelmsen and aircraft maker Airbus are already testing the use of drones to deliver goods

AN **INCREASINGLY** VITAL TOOL

It's hard for Singapore to do without UAS. We would be left behind as a smart nation if we limit the growth and application of the technology.

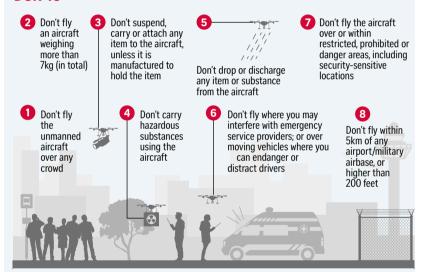
- Associate Professor Foong Shaohui

Fly it safe

Advisory on the safe and responsible operation of unmanned aircraft



DON'Ts



HOW DRONES CAN DAMAGE PLANES



Researchers at the University of Dayton in the US fired a drone weighing about 1kg at the wing of a light aircraft at a speed of 383kmh



The drone did not shatter on impact but blasted a large hole in the plane's wing



The drone lodged itself in the wing, causing extensive damage to the main structural frame or spar

The level of damage depends largely on the weight of the drone and the speed of the plane. Test was conducted using a DJI Phantom 2 quadcopter drone and a wing of a Mooney M20 light aircraft.

Source: CIVIL AVIATION AUTHORITY OF SINGAPORE, UNIVERSITY OF DAYTON STRAITS TIMES GRAPHICS

from shore to ship, to increase productivity and reduce the need for manpower.

Prof Foong said: "It's hard for Singapore to do without UAS. We would be left behind as a smart nation if we limit the growth and application of the technology."

THE NEED FOR REGULATION

With more drones getting off the ground in Singapore, and Changi expected to handle a growing number of flights in the coming years, managing an already-tight airspace will not be easy.

Events that have unfolded since the incursions at Changi Airport reflect urgency in addressing the conundrum.

Just a week after the chairman of a governmentappointed panel looking into unmanned aircraft operations told The Straits Times that it was likely to propose mandatory registration for drones above a certain weight, and tougher penalties for those who flout flying rules, the Transport Ministry made a stand.

In Parliament on July 8, Senior Minister of State for Transport Lam Pin Min said that there will be mandatory registration for all drones, as early as before the year end. There will also be a licensing framework for pilots of large and more capable drones

Penalties are likely to be raised and there will be stricter enforcement actions against errant drone operators, he said.

Currently, there is a ban in Singapore on flying drones within 5km of airports or military airbases, or at altitudes above 61m, without a permit. Offenders can be fined up to \$20,000 and jailed for up to a year.

Singapore is not alone is stepping up efforts to tackle the challenges posed by unmanned aerial vehicles.

In the United States, Ireland, China and United Arab Emirates, there are rules that require drones – in many cases, above a stipulated weight – to be registered, for a

fee. Britain and Australia are also planning to introduce similar rules.

More critical, though, is for the authorities to put in place an air traffic management system for UAS.

Prof Foong said: "Singapore already has significant airspace dedicated to commercial and military aviation, and there is a critical need to ensure that these spaces are not disrupted by UAS operations.

"Even within zones where UAS activities are allowed, with greater usage of drones, there needs to be a way to manage all the traffic in the air at any one point of time."

This should be similar to how commercial air travel is currently regulated by a network of air traffic controllers.

Prof Foong said: "While UAS technology has been maturing, the infrastructure to support UAS operations has not proceeded with the same vigour. This is where efforts need to be stepped up."

RSAF's Drone Catcher

system that

uses a net to

snare errant drones.

KELVIN CHNG

ST PHOTO:

Catching a drone

FLY A DRONE WITHIN 5KM OF AN AIRBASE, AND you could find it taken down by one of the Republic of Singapore Air Force's (RSAF) latest weapons.

These include the Jammer Gun, which consists of a rifle with two large barrels. When fired, it emits a signal to jam the control signals of the drone, which will then be unable to survey the premises of the base.

The RSAF also has the Drone Catcher system, which uses a net to snare errant drones.

Elsewhere, some government agencies in Europe, the US and Asia are equipped with the SkyWall100 system, a large bazooka that can fire a net and parachute at a target, using a scope for accuracy.

Others such as South Korea and Japan make use of "interceptor drones" that can lock on to a target, release a net and disable it in mid-air.

This was deployed at last year's Winter

Olympics in South Korea.

The US and China have experimented with using anti-drone lasers to shoot down a drone within seconds of locating it, according to a BBC report.

Engineering company Boeing has developed a high-energy beam that locates and disables small drones from a distance, even in low visibility, said the report.



A royal eagle catches a drone during flight during a military exercise at the Mont-de-Marsan airbase, southwestern France. London's Gatwick Airport. PHOTO: AFP

China has also come up with a laser gun called "Silent Hunter" that it claims is effective in helping police intercept drones and other small aerial targets with "high accuracy."

Alongside, Dutch police have explored using specially trained eagles to attack drones, reports The Guardian. The eagles are trained to latch on to the propellers with their talons to disable them, a method believed to be the first in the world.

But the police said in December 2017 that they will stop using the birds because training them was more expensive and complicated than they anticipated. 31

- The Straits Times

Fast-evolving drone technology increases threat to aviation security

THE BRITISH GOVERNMENT IS BEING WARNED by its own security experts that its newly introduced legislation is not sufficient to deal with the threat to infrastructure from potential drone attacks.

Speaking at a recent conference on aviation security organised by the London police, Ms Claire Dimmock from the national counter-terrorism unit said that fast-evolving drone technology is presenting a frightening challenge which could overwhelm the authorities' defence capabilities.

As technology improves and the capabilities of drones increase, "the countermeasures struggle to keep pace", Ms Dimmock told security specialists.

Britain has experienced a number of security scares involving drones. The most serious incident occurred last December at Gatwick, the country's second-largest airport, where around 90 different sightings of unidentified drones led to a three-day shutdown of most traffic, resulting in the cancellation of 1,000 different flights.

In total, more than 140,000 passengers either suffered massive delays to their schedules or had their travel plans ruined altogether just before the

Christmas holiday season.

The circumstances have never been clarified. A couple arrested by the police on suspicion of involvement were subsequently cleared of all charges, and all other criminal investigations drew a blank.

Still, in January and March this year, both Heathrow - Europe's busiest air hub - and Gatwick airports had to close briefly again due to fresh sightings of drones.

Nor is this a purely British phenomenon. In Singapore, unauthorised drone incursions have been thrust into the spotlight after two incidents of air traffic being disrupted at Changi Airport in less than a week in June.

No culprit has been caught yet for either incident. Even before the events in Singapore, drone activity grounded flights in places as far afield as Dubai, Israel, New Zealand and New Jersey in the United States.

According to the Federal Aviation Administration (FAA), the United States experienced 2,350 drone sightings at various locations around airports last

JONATHAN EYAL Global Affairs Correspondent



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Britain has experienced a number of security scares involving drones. The most serious incident occurred last **December** at Gatwick. the country's second-largest airport, where around 90 different sightings of unidentified drones led to a three-day shutdown of most traffic. resulting in the cancellation of 1.000 different flights.

"

year, a 40 per cent increase on the previous year.

And the trend for such incidents is clearly upwards: The FAA also projects that the number of operating drones in the US will top seven million by next year.

In February, the British government rushed through legislation enlarging drone exclusion zones around airports to a maximum radius of 5km, from the previous 1km. The government also gave police new powers in relation to drones. These include so-called stop-and-search powers to seize drones or access relevant electronic data.

And from November this year, any British owner of a small drone will have to take an online safety test as well as register the equipment with the authorities.

But everyone acknowledges that these are insufficient measures. The real answer lies in technology.

One approach is to restrict drones' capabilities through geofencing. Drones commercially available to the public could, for instance, be pre-programmed to avoid flying either deliberately or inadvertently into sensitive or protected airspace by having their software tweaked accordingly.

"We believe this is the most effective way to ensure that unsafe drone use does not have major consequences," said Ms Karen Dee, chief executive of Britain's Airport Operators Association.

Another approach is to improve data sharing between operators of drones and governments. Surprisingly in this age of electronic surveillance, there is no unified traffic control system for drones in the way commercial aviation operates.

Many of the airport closures which took place as a result of drone scares occurred because the government authorities simply did not know where



Stranded passengers waiting in the South Terminal building at Gatwick Airport yesterday. Flights were halted at Gatwick at 2103 GMT on Wednesday (5.03am in Singapore yesterday) after two drones were spotted flying near its airfield. Police said more than 20 units were searching for the drone operators.

PHOTO: REUTERS

the drones came from, and whether they were hostile - two problems which would disappear if air control regulations include drones.

But that would require setting up new automated data systems to process the huge amount of additional information resulting from unmanned traffic management – or UTM, as the specialists call it – because current air traffic controllers are already overstretched.

Furthermore, motivating manufacturers and operators of drone technology to cooperate is a delicate task as it could stifle technological innovation and force companies to share commercially sensitive information.

A lot of the data would have to be anonymised before it can be shared, a process which in itself will require regulatory coordination, perhaps of a more global scale.

Unsurprisingly, therefore, much of the current attention is on software and hardware devices the authorities can acquire quickly to paralyse or destroy drones behaving suspiciously.

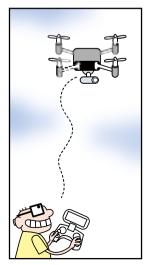
At the Paris Air Show in June, French manufacturers displayed jamming equipment which has already been deployed around airports or around key sensitive but temporary potential targets. These include French President Emmanuel Macron's reviewing stand at this year's national day military parade in Paris, where the risk of an assassination attempt with drones was deemed high.

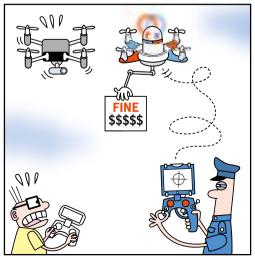
Other technologies being developed elsewhere include various "guns" or heating devices which can literally "fry" suspect drones in the air.

But the increased commercial use of drones, coupled with artificial intelligence and face-recognition software, means that these unmanned devices will become much more accurate, far better at avoiding detection and destruction and, as a consequence, potentially much more lethal.

miel's TAKE

Unlicensed drones





Singapore President: Draw from diversity as a source of strength

Diversity is a source of strength for societies, and engaging meaningfully with difference is not easy, but it is necessary, President Halimah Yacob said at the opening dinner of the inaugural International Conference on Cohesive Societies on June 19 in Singapore, where she outlined the roles individuals can play in building bonds and bridging differences. ST Asia Report reproduces the text of her significant speech here:

THANK YOU FOR PARTICIPATING IN THE International Conference on Cohesive Societies, and a very warm welcome to our friends who have joined us from all over the world. Indeed, I am deeply heartened to see many participants from all parts of the world, and I hope the message will continue to reverberate way beyond this conference.

We are here because we believe in a common ideal – that diversity in all forms, within and across societies, is a source of strength that can enrich our lives, our countries and our world.

Individuals with more diverse social networks are more likely to encounter new ideas, new opportunities, new horizons. Understanding different perspectives promotes curiosity, openness and humility.

Societies that are diverse enjoy a rich variety of cultures, each with its own style, grace, customs, cuisine, music and manners. Each community contributes to a more interesting and vibrant national life.

The world would be all the poorer if it had no room for difference. If we were all the same, we would have nothing special to offer, nor anything to learn from others. Each of us has something precious that only we can give. The more diverse we are, the richer we become.



ST ILLUSTRATION: CEL GULAPA



President Halimah says dialogue and interaction are necessary to foster familiarity and friendships between people.
ST PHOTO: KELVIN CHNG

Nonetheless, engaging meaningfully with diversity is not easy. Globalisation and technology have closed the distance between people and places, allowing people, goods and ideas to move across borders more freely than ever before. This in turn has enabled economies to prosper and changed the lives of many for the better. But people do still instinctively bond and connect with those who are like them. The colour of one's skin, the beliefs one holds, the customs one cherishes, are markers of identity, and can sometimes also become the fault-lines of mistrust and conflict. Indeed, there is growing urgency to our work in our respective countries and communities, to build bridges across such divides.

The ease in flow of ideas with modernisation has inadvertently accelerated the spread of extremist ideologies. In the past 10 years alone, there have been nearly 20,000 terror-related fatalities worldwide annually. Religions have been hijacked by terrorists and radical preachers to justify murder and destruction. Since its proclamation as the Islamic State in 2014, the terrorist group known as ISIS has directed or inspired terrorist attacks around the world, from Bandung to Berlin to San Bernardino, resulting in thousands of deaths and injuries. The direct human cost has no doubt been devastating. But just as extreme and deadly and fuelled by the same irrational fears and ignorance, is the menace and rapid rise of Islamophobia and acts of violence

promoted by a resurgent Far Right.

Global mass migration of peoples has also created its own challenges, by fuelling both segregationist and nativist instincts. Quite understandably, immigrants seek out their countrymen upon arriving in an unfamiliar land, and adherents of a faith find fellowship with their co-religionists. Those belonging to one culture find comfort and a sense of belonging among their own. But when taken to the extreme, such tendencies can invite host societies to see these immigrants as threats to their own cultural cohesion. Worse still, such anti-immigrant rhetoric may take on racial and religious overtones.

This weakens society. A society is fragile if its members view each other in mutual incomprehension. It is vulnerable when its communities live parallel lives and inhabit separate worlds.

A nation cannot prosper if its people are divided. A society cannot be proud if its people distrust each other. Only a cohesive society built upon mutual trust can harness the strength of its diversity, so that its people can build a better future. And this trust has to begin with a discourse anchored on cohesion, not division; on unity, not discord; on respect, not distrust; and on building bridges and common spaces, not walls and watchtowers.

Strong leadership and deep social mobilisation are vital elements to achieving cultural change.

Leaders play an important role in promoting peace and social cohesion at both the national and international levels. But often, we see political leaders articulate division and conflict for their own personal agenda. Hence, all societal actors must play a part in managing diversity – from government leaders to individuals, from the media to educational institutions. We need to take ownership of our social harmony. We need to be role models for one another.

Over the next two days (of this conference), I hope we can find new perspectives and insights among ourselves, about how we manage diversity in our different countries, with our different histories and contexts. Many in this room are global leaders and thinkers in this important area, so I do not profess to be able to guide you in the discussions. But if you allow me, I would like to share what I believe are the foundations of social harmony in any society.

First, there must be accommodation, which includes creating space to celebrate our own distinctive cultures, whilst accepting differences, and not imposing our practices or requirements on others. We should enable this by emphasising shared values such as empathy, kindness and respect, which are universal to all religions and cultures.

Second, there must be dialogue and interaction to foster familiarity and friendships with one another. Contact through informal interactions can go a long way to improve relations among diverse groups. This can be done in many ways, from eating and working together on a day-to-day basis, to sharing interests and passions in sports, music and the arts.

Third, social cohesion has to be cemented by a shared conception of the common good, and a felt reality of collective belonging. Without this, communal, ethnic and religious institutions can become pressure groups, representing sectional interests, and not the common good. Upholding the common good means holding our differences not in opposition to one another, but bringing our differences together to build a future that we all share. What makes us different is what we are; what unites us is what we do. However different we all are, we rely on one another for security, stability and prosperity. Ultimately, our victories – and our failures – are shared.

How these three principles manifest themselves will differ from place to place. There are many paths to social harmony. Our national journeys are unique, and we see great value for lessons and experiences to be shared, and better understood in our own countries. Tomorrow, His Majesty King Abdullah II Ibn Al Hussein of the Hashemite Kingdom of Jordan will be delivering the keynote address. Located at the crossroads of the beginnings of two major faiths, Christianity and Islam, Jordan has made great efforts in the past 20 years to strengthen social harmony within the country and internationally, by advocating for and supporting inter-faith initiatives. For example, King Abdullah

II advocated for and funded an interfaith initiative called "A Common Word Between Us and You" in 2006, which promotes peace and cooperation between Muslims and Christians. Jordan has also embraced the conservation of historical and religious sites, which has contributed to a greater appreciation of our shared human heritage.

For Singapore, this Conference is important because social cohesion is of existential importance to us. We are a small city-state, with no natural resources save our people. We mark Singapore's Bicentennial this year, a key turning point of our history. Forging unity and drawing strength from diversity has always been, and will continue to be, part of the Singapore story.

Singapore has come a long way from the days our immigrant forefathers formed ethnic enclaves, which were further entrenched by the colonial administration. When Singapore became independent in 1965, we were deliberate in moving away from that approach, and instead focused on growing national unity from diversity through legislation, policies and programmes. We expanded common spaces so that all Singaporeans can live, study and work together. No one is discriminated or disadvantaged on the basis of race, language or religion. That is also enshrined in our national pledge, recited by all the children in schools every day. Everyone progresses based on their abilities and talents.

Today in Singapore, we have a sense of confidence and belief in a shared future, one in which all Singaporeans can be a part of, as neighbours, friends and colleagues. We are not doing too badly – a recent survey showed that 94 per cent of respondents feel Singaporeans are able to stay united even when events threaten the racial and religious harmony in Singapore.

But ultimately, social cohesion is not something that can be commanded by any government. It can only be nurtured and inspired by each of us, and what we do every day. Friendships and connections will have to be built, face to face. Social trust has to be forged, one positive encounter at a time. Strength from diversity can only grow from dialogue, give and take, speaking and listening.

Ladies and gentlemen, Singapore, along with all countries, face a common challenge of overcoming the forces of division. We can do better with more ideas, inspiration and partnerships. There is much we can learn from one another's beliefs, practices and experiences, in our effort to build cohesive societies from many communities, and move together towards a brighter shared future for all.

So let me thank all of you once again for contributing to this meaningful and important discourse. I encourage everyone to use this conference as a global dialogue, where we can learn from one another in a safe and trusted space. I wish you a fruitful and meaningful conference ahead. Thank you.

The world would be all the poorer if it had no room for difference. If we were all the same, we would have nothing special to offer, nor anything to learn from others. Each of us has something precious that only we can give. The more diverse we are, the richer we become.



Forging community ties, one friendly gesture at a time

In nurturing social bonds, everyday things which seem the hardest to do have the biggest impact SINGAPORE IS WELL KNOWN ALL AROUND the world for its Third to First World economic transformation, its efficient, effective Government, as well as for being a very fine, clean and green city. The annual Shangri-La Dialogue, when defence chiefs from many countries gather on the ST ILLUSTRATION: MANNY FRANCISCO

island to thrash out the geopolitical issues of the day, is also well established.

Now, thanks to President Halimah Yacob, the Republic might also come to be recognised for its painstaking efforts over the years to foster a society where a disparate people manage to live in peace and harmony, despite their differences in race, language and religion.

This did not happen by chance. It took conscious, dogged effort.

Political, religious and community leaders made it possible, with the active support of the people. Over time, and through bitter experience, an abiding awareness emerged that this happy state of affairs remains a work in progress, requiring continuous tending.

Indeed, this unnatural state is all the more precarious in today's "with me or against me" world.

False prophets and populist demagogues are wont to pit communities against each other, and trumpet the building of walls rather than bridges.

It was against this backdrop that President Halimah threw up the idea of an international conference on cohesive societies, equal in scale and stature to the annual defence ministers' meet, but to talk about peace and promote harmony instead.

It was a bold, visionary proposal, and I am glad she made it happen, with help from many others, of course. The three-day event at the Raffles City Convention Centre drew about 1,000 delegates from 40 countries, people of all faiths and experiences.

But their message was a unified and clear one. This was summed up in a thoughtful opening speech by President Halimah.

She declared: "We are here because we believe in a common ideal – that diversity in all forms, within and across societies, is a source of strength that can enrich our lives, our countries and our world.

"Only a cohesive society built upon mutual trust can harness the strength of its diversity, so that its people can build a better future. And this trust has to begin with a discourse anchored on cohesion, not division; on unity, not discord; on respect, not distrust; and on building bridges and common spaces, not walls and watchtowers."

Social cohesion, however, cannot be mandated by government edict.

"It can only be nurtured and inspired by each of us, and what we do every day. Friendships and connections will have to be built, face to face. Social trust has to be forged, one positive encounter at a time. Strength from diversity can only grow from dialogue,

give and take, speaking and listening," she added.

More than 250 religious and community organisations responded by stepping up, right after her speech, to make a pledge to do their part to safeguard religious harmony in Singapore.

This included grand assertions to "uphold the constitutional guarantee of freedom of religion", and calls for simple everyday efforts such as the sharing of meals with people of other faiths, each with their own dietary needs, or joining in each other's festive celebrations.

This might seem natural enough, but therein lies the pity, because even these are anathema in some parts of the world.

Indeed, in building community ties, it is sometimes the everyday things which seem the hardest to do that have the biggest impact.

Making this point when he joined the discussion, Deputy Prime Minister Heng Swee Keat argued that more trust and understanding was needed all round to tackle common challenges, like countering religious extremists and terrorism.

Fostering such trust called for actions and deeds, not just grand pronouncements.

He said: "I hope that we can build a democracy of deeds, where everyone chips in with our various strengths and passions to build a society we can all be proud of.

"In many countries when they have democracy, they think of it just in terms of elections. But really, it is not just about free speech, but more fundamentally about what each of us can do in society."

This idea of a "democracy of deeds", first coined by Mr S. Rajaratnam, Singapore's first foreign minister, is one that the Republic's leaders have often alluded to.

It is a powerful if abstract notion that isn't easy for the man in the street to fathom.

To put it simply, if democracy is the rule of, for and by the people, then a "democracy of deeds" might be a society in which the challenge of addressing common problems is shared by a broad sweep of the people, coming up with practical solutions and working together to make things happen, rather than simply lamenting the state of the world, or waiting for someone else to sort things out.

This might mean doing things like attending a wedding or funeral even if it is held in another community's place of worship, or joining Muslim friends in a breaking of fast during Ramadan. In other words, making the effort to treat the "other" more like "one of us."

Loftier initiatives to do that were also highlighted during the conference. In his keynote address, for example, Jordan's King Abdullah II recounted how the "Common Word" was launched in 2007 with an open letter from Muslim leaders to their Christian counterparts.

Urging peace between Muslims and Christians, the letter pointed to common ground between both faiths, citing a line in the Quran that goes, "Say: 'O People of the Scripture! Come to a common word as between us and you, that we worship none but God", as well as the biblical commandment to love God and one's neighbour.

Such efforts to bring these two great religions closer have spanned the ages, as I learnt during a chance encounter at the conference.

An old friend told me about an event to be held here in August as part of the commemoration of the 800th anniversary of the historic dialogue between St Francis of Assisi and the Egyptian Sultan Al-Malik al-Kamil.

That unlikely meeting took place in 1219, at the height of the Fifth Crusade, when Christians and Muslims were butchering each other. Undeterred, Francis decided to reach out to the Sultan to offer dialogue instead.

According to one account, when Francis and his party approached, soldiers "seized them fiercely and dragged them before the Sultan."

Francis greeted the Sultan with the invocation "May the Lord give you peace", similar to the traditional Muslim salutation of "assalamualaikum" or "peace be upon you."

Surprised, the Sultan asked why they had come, and who sent them.

Francis replied that "they had been sent by God, not by man, to show him and his subjects the way of salvation." Struck by the diminutive friar's courage and piety, he urged him to stay, and they went on to engage in a dialogue and forge a relationship.

But fostering interfaith understanding is not just the work of saints and sultans.

Which is why I was heartened that the event's organisers took the message out of the conference hall and into the community, by setting up an exhibition, titled Many Beliefs, One Future, in the heart of Raffles City Shopping Centre. It showcased artefacts from various religious groups, from a 150-year-old Jewish Torah scroll to a family Bible that dates back to 1892.

One artwork that struck me was that by British prisoner of war Richard Walker who, while interned in Changi Prison during the Japanese Occupation of Singapore, painted a picture for the chapel in 1942. It depicted a scene from the birth of Jesus Christ, portraying the Virgin Mary as an Asian woman, and with one of the three Magi dressed in Chinese garb, to make the point that faith transcends race and culture.

Perhaps it was British author Karen Armstrong, a former Catholic nun who has written many books on comparative religion, who summed up the conference best. At the heart of all our discussions on diversity and cohesive societies is the basic question of how we are all to live together on this shared planet, and what each of us might do to make things a little better each day.

She said: "It is about being human. It is about how we can live together... It is about imagining yourself in other people's circumstances so that you will enlarge your understanding and make a place for them in your minds and hearts." \$\infty\$

WARREN FERNANDEZ Editor-in-Chief



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Chinese-built Cambodian resort stirs geopolitical tensions

The luxury resort has the sun, the sea, golfing facilities, a casino, an airport and a deep-sea port. But the US is worried it will become a military base – a claim that has been denied.

KIRI SAKOR (CAMBODIA) – CROUCHING ON A verge with a shovel in hand, 21-year-old Phan Mai uproots flowering shrubs for replanting. Her widebrimmed hat provides little shield from the sun in this sprawling resort, shorn of the trees that once stood in Cambodia's largest national park.

Just around the corner, past a bridge with representations of mythical serpents moulded into the parapet, Chinese workers swarm over half-built faux European-style and contemporary villas. Above, the roar of helicopter rotor blades brings yet another group of Chinese guests who, on landing, are then

ferried by golf carts into air-conditioned comfort.

"This is the first time I have seen such a big resort," Ms Phan Mai tells The Straits Times. "It's nice, but it's a bit too hot."

Ms Phan Mai works at the Dara Sakor Seashore Resort, which is being developed by the Tianjin Union Development Group and sits on a land concession half the size of Singapore, by the Gulf of Thailand.

The resort also finds itself amid a geopolitical rivalry that has put this corner of Cambodia – the third smallest economy of Asean – under an international spotlight.

When Phnom Penh first inked the 99-year-lease with the Chinese firm in 2008, Chinese President Xi Jinping had yet to assume office. His Belt and Road Initiative (BRI) to link Beijing to regional economies had not quite become part of global power vocabulary.

In 2017, however, Dara Sakor made it onto a list of BRI projects published by an affiliate of China's Commerce Ministry, said Reuters.

Cambodia, amid pressure from Western governments to ease its crackdown on dissidents, has leaned heavily on China in recent years. China has, in turn, become Cambodia's biggest

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Golfers at the Dara Sakor Seashore Resort in Cambodia's Koh Kong province. The US\$3.8 billion (S\$5.2 billion) project, which occupies about 90km of the country's coastline, comprises not just hotels, golf courses and a marina, but also an international airport and a deep sea port - facilities that theoretically could be converted for military use by China.



source of aid, investment and loans. Last year, China accounted for 41.3 per cent of Cambodia's foreign direct investment, and 49 per cent of the government's gross external debt.

Phnom Penh says its public external debt is sustainable at 21.4 per cent of gross domestic product, well below the 40 per cent threshold used as an international benchmark.

Still, wary of debt traps that make it easy for Beijing to seize distressed foreign assets, Washington has flagged Dara Sakor for particular attention.

The US\$3.8 billion (S\$5.2 billion) project in Koh Kong province occupies about 90km, or one-fifth, of Cambodia's coastline. It comprises not just hotels, golf courses and a marina, but also an international airport and a deep sea port – facilities that theoretically could be converted for military use by China.

The US Department of Defence, in its Indo-Pacific Strategy Report released in June, wrote: "We remain concerned about reports that China is seeking to establish bases or a military presence on its coast, a development that would challenge regional security and signal a clear shift in Cambodia's foreign policy orientation."

Cambodian Prime Minister Hun Sen has repeatedly denied the possibility of a Chinese military base in his country, and personally reassured neighbouring Vietnam's Prime Minister Nguyen Xuan Phuc last year during a trip to Hanoi. "I hope these evil rumours will cease," Mr Hun Sen was quoted by the Khmer Times as saying.

Chinese Defence Minister Wei Fenghe waved away such talk at June's Shangri-La Dialogue security summit in Singapore. "There is no such thing out there," he said.

CONSPIRACY THEORIES

Many analysts agree that it would be foolhardy for Cambodia to allow a Chinese military base on its shores. "As a small state, we don't want to do this. It would create tension with neighbouring countries," says Dr Leng Thearith from the Asian Vision Institute, a Phnom Penh-based think-tank.

41.3%

China's share of Cambodia's foreign direct investment. China has become the country's biggest source of aid, investment and loans.

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He labels the claim as "psychological warfare".

"This is about testing Cambodia's reaction, rather than (telling) the truth," he says.

But stretch the horizon further, and the picture is not so clear. A fast-rising China eager to flex its muscles has already fortified disputed islands in the South China Sea and stoked tensions in the African country of Djibouti by building a military base just kilometres away from an existing US base.

"Instead of looking at what the governments are saying about one project, it's more instructive to look at the underlying trends and strategic thinking," says China researcher Adam Ni from Macquarie University in Sydney. "The People's Liberation Army Navy is looking for additional bases overseas and Cambodia is certainly a strong candidate for hosting one, especially because of the tight relationship between Beijing and Phnom Penh."

He adds: "While both China and Cambodia deny that a Chinese military base is planned on the Cambodian coast, there is little doubt that the Cambodian government is in a weak position to bargain with Beijing if it wished to use the port for military logistics."

Tianjin Union Development Group did not respond to repeated requests for interviews. Its vice-president Wang Chao – whom the firm identified as the sole spokesman – asked ST to send an e-mail when he was contacted on his mobile phone. But he neither replied nor answered calls after that.

At the group's spacious showroom in central Phnom Penh, staff declined to take questions, but let this reporter examine scale models and maps – laid out to entice prospective investors. Similarly, Mandarin-speaking staff at the Dara Sakor resort declined interviews but allowed this reporter free rein of a specially built exhibition hall featuring a



video wall playing Mandarin clips lauding the close relations between Cambodia and China, as well as Cambodia's strategic position in the BRI.

Outside, hoardings are few and far between at what is currently a part-retreat, part-construction site. Chinese visitors stroll past gleaming catamarans after lunching at a waterfront restaurant and slip into special utility vehicles parked near ageing shipping containers and discarded piles of wood. Caddies in pink shirts and plaid pants line up attentively on the greens in the shadow of an empty, fenced-up neoclassical edifice of a building whose purpose is unknown.

Cambodian croupiers file into a casino, as Chinese labourers cart debris away behind them.

In another corner of the concession, trucks hurtle across a flat expanse by the sea where a 3.2km airport landing strip is emerging from the sand. According to local media reports, this airport will be able to handle long-range jets, such as the Airbus A-340, when it launches next year.

EAGER FOR JOBS

Koh Kong residents say they cannot wait to see the resort completed. It straddles Kiri Sakor and Botum Sakor districts, where lush jungle meets mangroves and fishermen used to subsist on fish from teeming waters and produce from small plantations around their homes.

After Tianjin Union Development Group was granted the lease in 2008, these fishermen were forced to move inland and had to survive by way of odd jobs in nearby farms.

An influx of tourists holds the promise of better jobs - and higher prices for those who own land.

"If they could speed it up, it will be good," says Mr Kim Chandy, governor of Koh Kong's Kiri Sakor district. "Cambodia is developing so fast. I want to see my community benefit like those in other areas."

Mr Tou Sayuth, governor of Botum Sakor district. says officials are urging local fishermen to dry or package their catch to attract tourists. "After the airport is complete, local and foreign tourists will be able to visit the communities. This will give them a chance to earn higher incomes," he says.

'This area can become the next Sihanoukville." he declares. "Our forests, farms and waters make this a potential tourism destination."

Famous among holidaymakers for its white-sand beaches, Sihanoukville, over three hours' drive from Dara Sakor, has experienced a spurt of Chinesefunded hotel and retail development, as well as the proliferation of casinos, much to the dismay of poorer Cambodians who feel crowded out and threatened by pollution.

Mr Huang, a tourist from China's Fujian province on a two-week stay in Sihanoukville and its environs. who gave only his surname, is philosophical about the state of affairs. "You can't have everything at the same time when a country is developing," he tells ST at a quiet eatery outside Dara Sakor, while his friends use their mobile phones to translate food orders from Mandarin to Khmer. For them. Cambodia represents a frontier town full of promise. "It's not like in China, where even the most remote villages have already been turned into tourist spots," he says.

In Kiri Sakor's Peam Kay village, where locals affected by the Dara Sakor project were resettled. Ms Yun Toun, 51, lives in a wood and concrete house built with the wages of her eight children, five of whom are working in Thailand. She picks cashews at a nearby plantation for a living, but misses her life by the sea.

Over the Cambodian new year in April, she paid a visit to her old village, now almost unrecognisable. "It looks like a fun place. If they allowed us to move back, it would be even better," she says. "We would be able to go out to sea, and sell our fish to all the new tourists."

A 3.2km airport landing strip under construction near Dara Sakor Seashore Resort (left). According to local media reports. the airport will be able to handle long-range iets, such as the Airbus A-340, when it launches next vear.

ST PHOTO: TAN HUI YEE



STRAITS TIMES GRAPHICS

Country Reports

China's growth slows to 27-year low as trade war bites

Economy grows 6.2% in Q2 and analysts expect slowdown to continue, triggering more stimulus measures

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CHINA'S ECONOMY GREW 6.2 PER CENT IN THE second quarter of this year, its slowest rate in 27 years, as the country's trade war with the United States exacted its toll.

Analysts said they expect economic growth to continue to weaken for the rest of this year, which would likely prompt more aggressive stimulus measures from the government.

Data released on July 15, by the National Bureau of Statistics (NBS) showed that gross domestic product (GDP) growth in the second quarter slowed further from the 6.4 per cent in the first quarter of the year, but largely within expectations.

China GDP Quarterly growth %, y-o-y Q2, 2019 6.2 7.0 6.7 6.9 6.8 6.4 Q2 Q4 Q1 Q4 Q1 Q4 Q1 Q4 Q1 Q4 Q1 2015 2016 2017 2018 2019 Source: AFP STRAITS TIMES GRAPHICS



The economy grew by 6.3 per cent in the first half of the year, according to the NBS. The figure is still within the 6 per cent to 6.5 per cent target that Beijing has set for full-year GDP growth.

Last year, China's economy grew by a reported 6.6 per cent.

Economists are closely watching the performance of the world's second largest economy as the trade war continues, dragging down other economies, including Singapore, whose second-quarter economic growth slumped to 0.1 per cent.

Speaking at a briefing on July 15, NBS spokesman Mao Shengyong said that despite the slowdown, China's economy performed within a "reasonable range."

"Global growth is slowing, the external environment is more complicated than in the past. We are focusing our energy on restructuring and upgrading industries," he said when asked about what impact the trade war was having on the economy.



Economists are closely watching the performance of the world's second largest economy as the trade war continues, dragging down other economies. including Singapore, whose secondquarter economic growth slumped to 0.1 per cent.

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The data released yesterday showed several bright spots for the Chinese economy.

Domestic consumption, as indicated by retail sales, rose 9.8 per cent last month from a year earlier. This was up from 8.6 per cent in May and 7.2 per cent in April – the lowest figure since 2003.

Industrial production last month also grew 6.3 per cent year on year, 1.3 percentage points faster than in May, when it had slumped to a 17-year low.

Peking University finance professor Michael Pettis said GDP growth has slowed because of the trade war and Beijing's efforts to control debt levels.

One thing to watch going forward is whether growth numbers pick up. This would be a sign that Beijing is unleashing stimulus measures to boost the economy, which could also worsen existing debt risks, he said.

"The numbers (just released) are not surprising. What really matters is how Beijing will react to the numbers," said Professor Pettis.

Tsinghua University economist Yuan Gangming said he expects that economic growth in the third and final quarters will continue to fall, estimating full-year growth to come in at 6.2 per cent.

Domestic concerns will likely pose greater downward pressure on the economy, he said. "As China makes adjustments to restructure and upgrade industries, this process will also cause economic growth to slow down," he added.

Yesterday's data follows trade figures released last week, which showed exports and imports dipped last month following an escalation of the trade war in May with heightened US tariffs on Chinese goods.

Although both President Donald Trump and Chinese President Xi Jinping met at the G-20 Summit in Osaka and declared a truce in the trade war, tariffs remain on US\$360 billion (\$\$488 billion) worth of goods imposed by both sides while trade talks are under way.

A worker at a plastic packaging factory in China's Jiangsu province. It was not all bad news as China's industrial production last month grew 6.3 per cent year on year.

PHOTO: REUTERS

Country Reports

Abe's party wins big in Upper House polls

The win allows Abe to seek another term but the ruling LDP falls short of numbers needed to push through revision of Japan's Constitution

WALTER SIMJapan Correspondent
In Tokyo



JAPAN'S RULING LIBERAL DEMOCRATIC PARTY (LDP) won big in July's Upper House election, but fell just short of the numbers required to push through a revision of the pacifist Constitution.

Otherwise, there were few surprises amid the lowest voter turnout since 1995, although the LDP lost in key battlegrounds such as Akita and Okinawa

where defence issues took centre stage.

Still, after the big win, LDP secretary-general Toshihiro Nikai told a radio programme that it "will not at all be strange" were Prime Minister Shinzo Abe to seek another term as party chief beyond September 2021, given the stability he has brought to Japanese politics.



Internal LDP rules have already been changed once to let Mr Abe remain party leader for a third straight three-year term, and hence premier. A fourth consecutive term will mean, barring any electoral upsets, Mr Abe could stay in power until 2024. He will rewrite the record as Japan's longest-serving prime minister in November.

Mr Abe said on July 21 that he has not given any thought to the idea of another term.

A tally as of 12.55am showed the LDP and its coalition partner Komeito winning 69 of the 124 seats up for grabs. The opposition clinched 50 seats, with another five unaccounted for.

There are 245 seats in the Upper House, whose lawmakers serve six-year terms. A vote is held every three years to elect half the chamber, which cannot be dissolved for a snap election.

Attention was paid to whether the proconstitutional revision alliance comprising LDP, Komeito, as well as the Nippon Ishin no Kai and other independents will keep its two-thirds majority, or 164 seats, in the Upper House, eventually. It had 157 seats by July 21.

The top law, which Mr Abe is targeting for a revision by next year, has not been changed since its enactment in 1947. The election, Mr Abe said, was one where voters will "either choose a party that will discuss constitutional revision, or politicians who do not fulfil their responsibilities and refuse to even hold these discussions."

He needs the support of two-thirds of lawmakers in each of the two Houses of Parliament, before constitutional revision can be put to a public referendum. The alliance already had the numbers in the Lower House.

The losses in Akita and Okinawa will also complicate the government's defence strategy. Akita residents, angered by a flawed ground survey for a plan to install the Aegis Ashore anti-missile system, ousted the LDP incumbent. Okinawa was won by an independent who opposes the relocation of a US Marine Corps air base.

Voter turnout was low due to public apathy, despite businesses like Patagonia closing its stores to allow staff to vote, and eateries such as ramen chain Ippudo offering discounts to those who prove they have cast their votes.

Another possible reason was the heavy rain that lashed the southwestern island of Kyushu, triggering widespread floods and landslide warnings.

Voter turnout is likely to be under 50 per cent for the first time since 1995. Just 30.1 per cent had voted as of 7.30pm. Another 16 per cent cast their ballots in early voting.

During the campaign hustings, Mr Abe stressed the stability of his administration after 6½ years in power, citing an improving economy and a nation regaining its international clout.

On constitutional revision, Mr Abe wants to



Internal LDP rules have already been changed once to let Mr Abe remain party leader for a third straight three-year term, and hence premier. A fourth consecutive term will mean, barring any electoral upsets, Mr Abe could stay in power until 2024.

"

add a clause to the war-renouncing Article 9 to enshrine the Self-Defence Forces, so as to remove any doubt of their legitimacy. But there are fears that this will lead down a slippery slope towards greater militarisation.

University of Tokyo political scientist Yu Uchiyama said Mr Abe might be forced to compromise, noting that a few other parties are open to the idea of an amendment without Article 9.

"If Mr Abe wants to go down in the record books for successfully changing the Constitution, it may be politically easier for him to do so without changing Article 9."

Japanese Prime Minister and leader of the Liberal Democratic Party Shinzo Abe attaching paper flowers next to the names of winning candidates of the Parliament's upper house election at the party's headquarters in Tokyo on July 21, 2019. Mr Abe said last night he has not given any thought to the idea of another term. PHOTO: AFP

Country Reports

Rough ride likely for Duterte in second half of presidency

Analysts say Philippine leader yet to make major legislative changes despite popularity



RAUL DANCEL

Philippine activists burning a poster of presidents Donald Trump of the US, Rodrigo Duterte of the

Philippines and Xi Jinping of China during a protest in Quezon City on July 22, amid demonstrations by Mr Duterte's critics and supporters as he was

delivering his State of the

Philippines Correspondent In Manila



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PHILIPPINE PRESIDENT RODRIGO DUTERTE IS halfway through his six-year term.

He managed to pluck some low-hanging fruits: tax reforms meant to beef up the government's purse, a law creating an autonomous Muslim region, free public college education, free irrigation, universal healthcare, a 1,000 peso (S\$26) pension hike for senior citizens and easing of curbs on rice imports.

He also cleaned up Boracay.

But he has yet to deliver on his most dramatic promises: ending the drug menace, ridding the bureaucracy of corruption, shifting from a unitary to a parliamentary form of government, fixing Manila's horrible traffic and creaking rail system, wiping out terrorism, and building a grand network of highways, railways and airports.

In his annual address to Congress in July, Mr Duterte, 74, himself conceded that he has fallen short of expectations.

"The illegal drug problem persists, corruption continues," he said.

Methamphetamine, known here as "shabu", is still flooding the streets, and tons of cocaine from South America are washing up on the Philippines' coasts.

Mr Duterte conceded that despite firing over 100 government officials, corruption still plagued the bureaucracy.

He said the buck stops with him.

"We are now entering a period of consequences, the consequences of what we did and did not do but should have done," he said. "I assume full responsibility for that. I can't pass the blame on anybody. It's no me."

So, for the remaining three years of his term, he vowed to "push harder."

"I will not merely coast along or while away my

time during the remaining years of my administration. It ain't my style," he said.

But will he get his way?

His spokesman, Mr Salvador Panelo, is certainly optimistic. "Even as the majority of Filipinos are in awe of (Duterte's) accomplishments, the best is still to come," he said.

But analysts are not as ebullient.

"What we learnt over the past three years is that his popularity cannot be translated into legislative outcome," said Mr Rommel Banlaoi, head of the Philippine Institute for Peace, Violence and Terrorism Research.

His signature promise to break up the Philippines into several federal states to better spread the nation's wealth "is in intensive care", he said.

It is perhaps telling that Mr Duterte did not even mention this push for federalism at all in his annual address to Congress. Senator Franklin Drilon said it means Mr Duterte has put the matter "to rest."

Mr Duterte did press Congress to pass a law restoring the death penalty for drug dealers and corrupt state officials and politicians. But that faces a long, hard slog.

"Duterte could have done everything within his first three years. But now, you have a different dynamic. He won't be running for re-election," said Mr Banlaoi.

"If you're a politician with an eye on re-election, you won't stake your future on the agenda of a president whose term ends in 2022," he said.

Mr Banlaoi believes most politicians are likely to sit on the fence when it comes to divisive issues such as the switch to federalism or restoring the

DUTERTE'S REPORT CARD

ACHIEVEMENTS

- Tax reforms meant to beef up the government's purse
- A law creating an autonomous Muslim region
- Free public college education, free irrigation
- Universal healthcare
- A 1,000 peso (\$\$26) pension hike for senior citizens
- Eased restrictions on rice imports
- Cleaned up Boracay

YET TO DELIVER

- Ending the drug menace
- Ridding the bureaucracy of corruption
- Shifting from a unitary to a parliamentary form of government
- Fixing Manila's horrible traffic and creaking rail system
- Wiping out terrorism
- Building a grand network of new highways, railways and airports



death penalty. "Their battles won't be about Duterte's legislative agenda, but keeping him popular so they can ride on the coat-tails of that popularity."

Mr Ramon Casiple, executive director of the Institute for Political and Electoral Reform, said Mr Duterte could still pull a rabbit out of the hat. But he has to do it in the next year or two.

"He has momentum from the results of the midterm elections. He can use that momentum to pass his legislative agenda," he said.

But as his term nears its end, he will begin to lose that momentum.

His coalition Congress, for instance, will likely crumble as his former allies begin their own runs for the presidency.

"We will see if he's immune to the lame-duck syndrome. He may be strong now, but three years down the line, will his strength wither?" said Mr Lucio Pitlo III, a research fellow at the Asia-Pacific Pathways to Progress Foundation.

Mr Pitlo said the battle to become Speaker of the House of Representatives showed up deep fissures in Mr Duterte's "super-majority." Two of his closest allies – former senator Alan Cayetano and two-term congressman Lord Allan Velasco – battled for control of the House, which has power over the government's Budget.

With the infighting threatening to break his coalition apart, Mr Duterte stepped in last week and decided to have the two men share the post: Mr Cayetano will be Speaker for 15 months, with Mr Velasco taking over in the succeeding 21 months.

"This shows that (Mr Duterte's) political alliance is really shallow and weak," said Mr Pitlo.

But Mr Casiple said he still holds one trump card: his daughter, Davao city's mayor Sara Duterte-Carpio.

She steered a loose coalition of seven parties allied with her father to a landslide victory in the closely watched Senate race. That has catapulted her into pole position in the race to succeed her father.

She is, in a way, Mr Duterte's guarantee that even when he steps down, another Duterte will carry on and finish what he started.

President Rodrigo Duterte making his address as Senate president Vicente Sotto III (left) and House of Representatives Speaker Alan Peter Cayetano confer behind him. Mr Duterte vowed to make the most of the next half of his term. PHOTO: EPA-EFE

What we learnt over the past three vears is that his popularity cannot be translated into legislative outcome. His signature promise to break up the Philippines into several federal states to better spread the nation's wealth "is in intensive care".

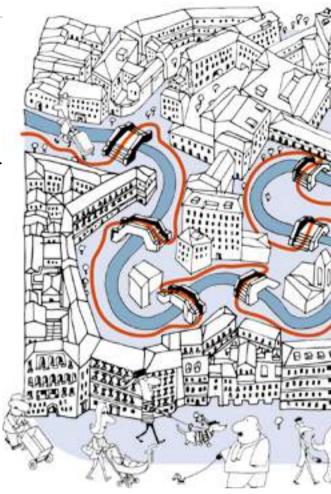
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- MR ROMMEL BANLAOI, head of the Philippine Institute for Peace, Violence and Terrorism Research. askSTart

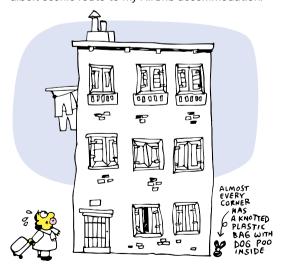


Through the eyes of Miel

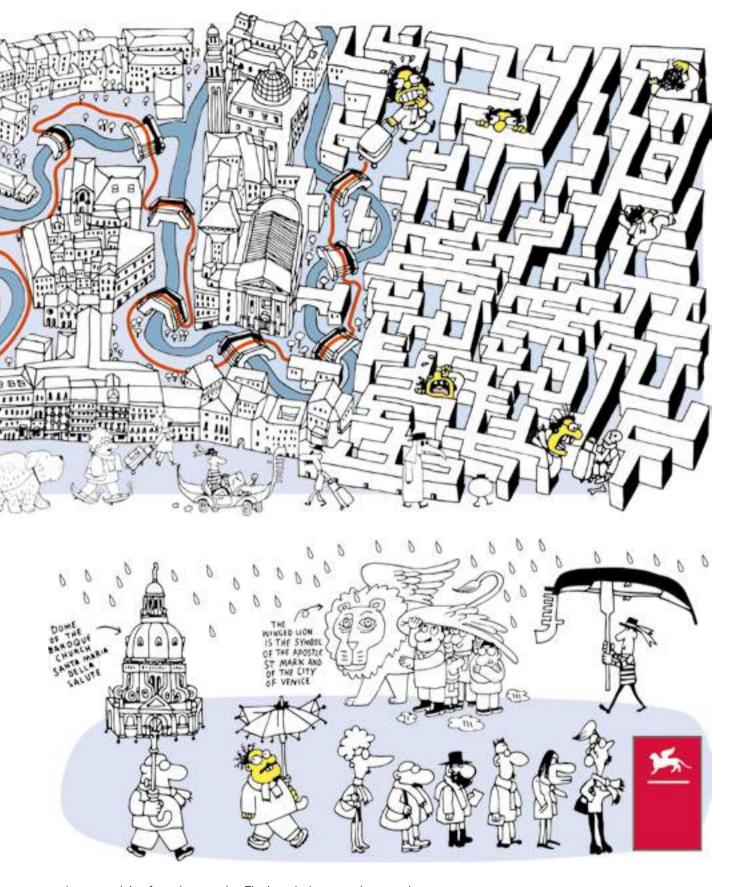
Straits Times cartoonist Miel went to the prestigious Venice Biennale to check out what is new in the Art World. And soaked in several treasures. Among them, mysterious British artist Banksy's stunning art work of a migrant child signalling for help, on a crumbling wall beside one of the Venice canals and world renowned American artist Martin Puryear's big, red, huggable Big Phrygian cap, associated with slaves in ancient Rome and rebelling peasants in pre-Revolutionary France. There was also artwork by Chinese artists Sun Yuan and Peng Yu, which shows an enormous robot with a mop at the end of its arm moves, that repeatedly attempts to control a flowing red substance that looks like blood and several displays by Singapore artists. Here's his report:



The weather is fine when I arrive in Venice. I'm here because I received an invite to the four-day preview before the Venice Biennale opens to the public. But first things first – I have to lug my luggage up and down 14 bridges! A punishing, albeit scenic route to my Airbnb accommodation.



The unit I stay in is on the third level, up 32 steps. An apt conclusion to the long trudge across 14 bridges earlier. You really have to suffer for your art.

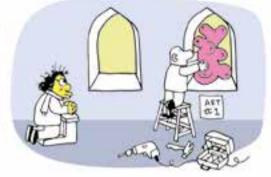


It starts raining from the next day. The icy rain, however, does not deter the art crowd from queueing up on the first day of the preview.



I take a picture of what looks like a Banksy. I am almost tempted to call it a RiverBank-sy, but the graffiti is by a canal.





Art exhibitions are scattered around the island too. Artworks are displayed inside churches turned into exhibition spaces. At the Venice Biennale, art is religion too.



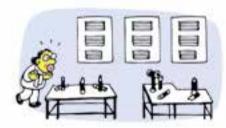
Art can be found in all places, inspired by just about anything and everything. Like this installation piece I see outside one of the exhibition halls.



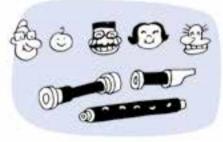
I was marvelling at how sublime it is – a Spring Mandala at the grounds of the Venice Biennale. A symbol of unity through art...



...Only to realise later that it is a structure to catch falling drain water from the exhibition hall's roof.



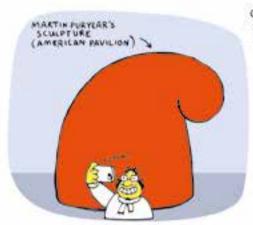
At the Singapore Pavilion, I encounter a time warp of sorts as posters of public concerts organised by the nascent Singapore Ministry of Culture in the 1970s and 1980s greet me. The pavilion is almost a counterpoint to the whole Biennale pomp and glitter.



Music For Everyone: Variations
On A Theme by artist Song-Ming
Ang showcases the lowly music
recorder on the world art stage.
The instruments are accessible,
they can easily be played by
anybody and everybody, regardless
of race, language and religion.



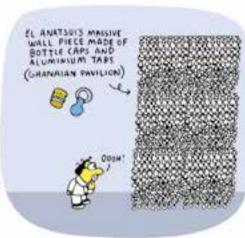
I could have explored the sculptural pieces displayed, but I am dissuaded from doing so.



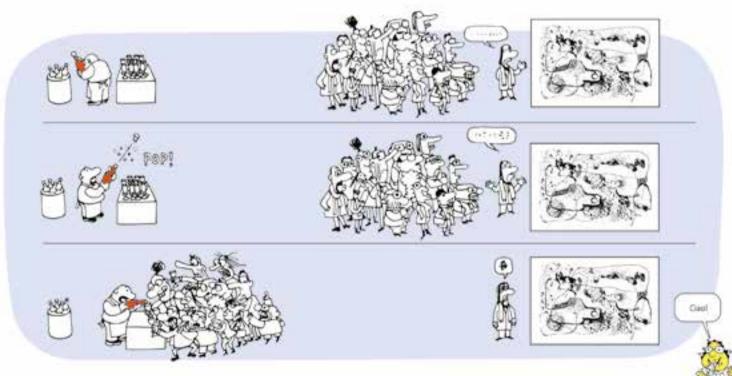
Back at the other pavilions, there is no denying that the art pieces displayed are Instagrammable.



Some are statements of economic might and are manifested in the well-conceptualised creations.



And in contrast, dirt and trash and other by-products of industry and colonisation can be as grand and eloquent.



In the end, when the party is over, all this razzle and dazzle will come to an end. And it will be two more years till the next Venice Biennale.



The Venice Biennale is on until Nov 24.



PHOTO: XINHUA

Big Picture

Looking good for take-off

SINGAPORE'S CHANGI AIRPORT MIGHT SOON have another competitor vying for its position as the world's best airport.

The Beijing Daxing International Airport not only boasts eye-catching architecture, but it also uses high-tech solutions to make travelling a breeze.

Multiple new technologies will power the airport, making it smarter and more efficient, according to the Civil Aviation Administration of China.

The new airport, which is having its final touches

done and will start operations in September, will use smart technologies such as self check-in, self baggage check-in and facial recognition in security checks.

The airport will also use radio frequency identification devices to track baggage.

It will be Beijing's second major civil airport and it aims to take the pressure off the overcrowded Beijing Capital International Airport.

- The Straits Times

Uniquely Asian

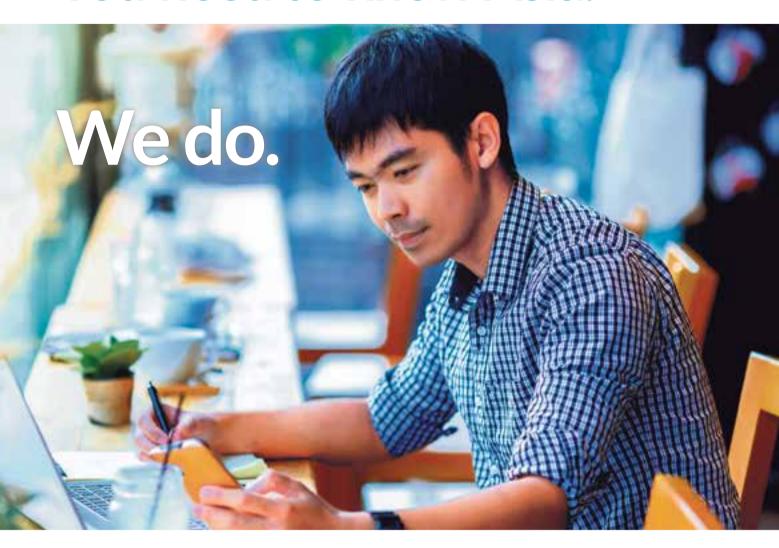
A picture is worth a thousand words.

Take a pick from a selection of curated Asian culture and heritage photos.





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