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NEW STRAITS TIMES (OPINION) : MUKA SURAT 16
TARIKH : 29 JUN 2018 (JUMAAT)

LONG AND SHORT OF DIGITAL REVOLUTION

Given the global reach of digital technology, there is a need for policy cooperation similar to that of international sea and air traffic, writes **MARTIN MÜHLEISEN**

Digitalisation requires devising smart policies to maximise the benefits. FILE PIC

DIGITAL platforms are recasting the relationships between customers, workers and employers as the silicon chip's reach permeates almost everything we do — from buying groceries online to finding a partner on a dating website.

As computing power improves dramatically, and more and more people around the world participate in the digital economy, we should think carefully about how to devise policies that will allow us to fully exploit the digital revolution's benefits while minimising job dislocation.

This digital transformation results from what economists who study scientific progress and technical change call a general-purpose technology — that is, one that has the power to continually transform itself, progressively branching out and boosting productivity across all sectors and industries.

Such transformations are rare. Only three previous technologies earned this distinction: the steam engine, the electricity generator, and the printing press. These changes bring enormous long-term benefits.

The steam engine, originally designed to pump water out of mines, gave rise to railroads and industry through the application of mechanical power. Benefits accrued as farmers and merchants delivered their goods from the interior of a country to the coasts, facilitating trade.

By their very nature, general-purpose technological revolutions are also highly disruptive. The Luddites of the early 19th century resisted and tried to destroy machines that rendered their weaving skills obsolete, even though the machines ushered in new skills and jobs. Such disruption occurs precisely because the new technology is so flexible and pervasive.

Consequently, many benefits come not simply from adopting the technology, but from adapting to the technology. The advent of electricity generation enabled power to be delivered precisely when and where needed, vastly improving manufacturing efficiency and paving the way for the modern production line. In the same vein, Uber is a taxi company using digital technology to deliver a better service.

An important component of a disruptive technology is that it must first be widely adopted before society adapts to it. Electricity delivery depended on generators. The current technological revolution depends on computers, the technical backbone of the Internet, search engines, and digital platforms.

Because of the lags involved in adapting to new processes, such as replacing traditional printing with online publishing, it takes time before output growth accelerates. In the early stages of such revolutions, more and more resources are devoted to innovation and reorganisation whose benefits are realised only much later.

Perhaps it is no wonder that the digital revolution doesn't show up in the productivity statistics quite yet — after all, the personal computer emerged only about 40 years ago.

But make no mistake — the digital revolution is well under way. In addition to transforming jobs and skills, it is also overhauling industries such as retailing and publishing and perhaps — in the not-too-distant future — trucking and banking.

Looking forward, we may see even more disruption from breakthroughs in quantum computing, which would facilitate calculations that are beyond the capabilities of traditional computers. While enabling exciting new products, these computers could undo even some new technologies.

Digitalisation will also transform people's jobs. The jobs of up to one-third of the US workforce, or about 50 million people, could be transformed by 2020, according to a report published last year by the McKinsey Global Institute.

The study also estimates that about half of all paid activities could be automated using existing robotics and artificial and machine learning technologies. For example, computers are learning not just to drive taxis but also to check for signs of cancer, a task currently performed by relatively well-paid radiologists.

While views vary, it is clear that there will be major potential job losses and transformations across all sectors and salary levels, including groups previously considered safe from automation.

But economic disruption and uncertainty can fuel social anxiety about the future, with political consequences. Current fears about job automation parallel John Maynard Keynes's worries in 1930 about increasing technological unemployment. We know, of course, that humanity eventually adapted to using steam power and electricity, and chances are we will do so again with the digital revolution.

The answer lies not in denial but in devising smart policies that maximise the benefits of the new technology while minimising the inevitable short-term disruptions. The key is to focus on policies that respond to the organisational changes driven by the digital revolution.

Electrification of US industry in the early 20th century benefited from a flexible educational system that gave people entering the labour force the skills needed to switch from farm work as well as training opportunities for existing workers to develop new skills.

In the same way, education and training should give today's workers the wherewithal to thrive in a new economy in which repetitive cognitive tasks — from driving a truck to analysing a medical scan — are replaced by new skills such as web engineering and protecting cyber security. More generally, future jobs will probably emphasise human empathy and originality: the professionals deemed least likely to become obsolete include nursery school teachers, clergy and artists.

One clear difference between the digital revolution and the steam and electricity revolutions is the speed at which the technology is diffused across countries. While Germany and the United Kingdom followed the US take-up of electricity relatively quickly, the pace of diffusion across the globe was relatively slow.

The revolution will clearly affect economies that are financial hubs, such as Singapore and Hong Kong, differently than, for example, specialised oil producers such as Kuwait, Qatar, and Saudi Arabia. Equally, the response to automated production technologies will reflect possibly different societal views on employment protection.

Where preferences diverge, international cooperation will likely involve swapping experiences of which policies work best. Similar considerations apply to the policy response to rising inequality, which will probably continue to accompany the gradual discovery of the best way to organise firms around the new technology.

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SAMBUNGAN
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Policymakers need to respond nimbly to changing circumstances

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Education and competition policy will also need to be adapted. Schools and universities should provide coming generations with the skills they need to work in the emerging economy. But societies also will need to put a premium on retraining workers whose skills have been degraded.

Similarly, the reorganisation of production puts new strains on competition policy to ensure that new techniques do not become the province of a few firms that come first in a winner-take-all lottery.

In a sign that this is what is already happening, Oxfam International recently reported that eight individuals held more assets than the poorest 3.6 billion combined.

Given the global reach of digital technology, and the risk of a race to the bottom, there is a need for policy cooperation similar to that of global financial markets and sea and air traffic.

In the digital arena, such cooperation could include regulating the treatment of personal data, which is hard to oversee in a country-specific way, given the international nature of the Internet, as well as intangible assets, whose amorphous nature and location can complicate the taxation of digital companies.

And supervisory systems geared towards monitoring transactions between financial institutions will have trouble dealing with the growth of peer-to-peer payments, including when it comes to preventing the funding of crime.

To be successful, policymakers will need to respond nimbly to changing circumstances, integrate experiences across countries and issues, and tailor advice effectively to countries' needs. **IPS**

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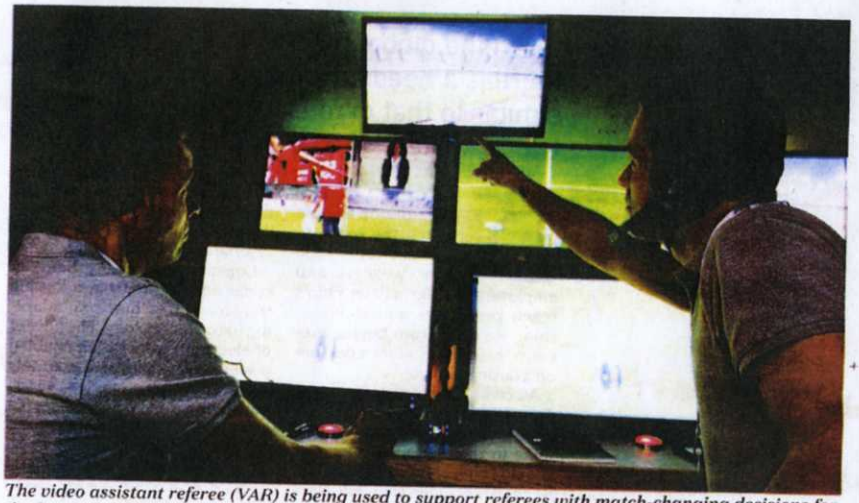
TECH-ING OVER THE WORLD CUP

Video review is probably for the best, but there's something not only familiar but also perversely self-satisfying about hollering over a bad call in real time, writes **TALMON JOSEPH SMITH**



The video assistant referee (VAR) is being used to support referees with match-changing decisions for the first time in the World Cup. FIFA.COM PIC

MANY a game has been coloured, to use a neutral term, by the split-second inkling of a harried official: Was the player offside when the ball, 30 yards away amid a jungle of legs, was passed to him? Should that game-winning penalty have even been given? Did the ball even go in?

In such a lively sport — governed with relatively rigid rules but characterised by free-flowing movement and a ball that blurs when powerfully struck — human vision can often be rendered a guesstimate.

To alleviate human error, FIFA has slowly but steadily introduced technology to major tournaments. Four years ago in Brazil, "goal line technology" was employed for the first time with success and few complaints.

This year in Russia, the Video Assistant Referee system, or VAR, has joined the officiating teams. It is monitored by remotely headquartered rules officials who watch the match with dozens of camera angles and chirp into earpieces of referees when they spot potential mistakes. It is the first use of technology in the game on this scale. And, it has already had a major influence on the tournament.

So far, referees have used VAR to finalise decisions on numerous occasions: Spain's first goal in their 3-3 draw with Portugal and France's all-important penalty in their 2-1 win over Australia were early high-profile examples.

Spain and Portugal were again centre stage in VAR controversies during their last group stage matches: Spain tied Morocco 2-2 as Portugal simultaneously tied Iran 1-1. Even though both teams went through to the knockout rounds, they first underwent VAR-induced heart palpitations.

Spain's equaliser to make it 2-2 in the final minutes was almost disallowed, but after a VAR review the Spaniards were given the goal. In a much trickier case, Portugal felt hard done by a VAR review of a 50-50 battle for a header in the box. The ball, nodded downward, struck a Portuguese defender's hand, and the remote officials deemed it worthy of a penalty, which Iran then converted.

These were only two of many VAR stoppages during the matches. (All the delays during reviews substantially extended each game's added-time — a rough estimate that is, technically, another aspect of the game at the sole discretion of the head referee.)

There have now been more penalties awarded in the 2018 World Cup than in any previous tournament thanks to VAR, but often there is more contention than clarity. Fans — who are quick to let their displeasure be known on Twitter — were also split on a technically correct, but, admittedly harsh hand ball call last week against Denmark that led to a goal off a penalty, which then led them to tie Australia.

Decisions to not use VAR, such as when Argentina were denied a penalty in their draw against Iceland, have also been deeply consequential. And Brazilian officials, still angered by tying Switzerland 1-1 in their first game, have demanded an explanation from Fifa for why VAR went unused for what they argue was a foul on Gabriel Jesus in the penalty area. For many, the dilute nature of the system inspires doubt.

"I'm not sure they will be able to select the angles quickly enough to get the decision back to the referee before the game has been restarted," the Sky Sports commentator Gary Neville said after the neglect of VAR as time ran out for Argentina during their battle against Iceland.

This newfangled technology will continue to make waves as the tournament progresses. And it is certain that someone — or entire nations — won't be very happy. Research indicates the deployment of these systems makes sense, and "getting it right" should supersede all other concerns.

It's also true that the game, as opponents feared, may lose a bit of its mystique and fluidity. For spectators at least, there's something not only familiar but also perversely self-satisfying about hollering over a bad call in real time, filled with righteous indignation that it can't be overturned.

Although in other sports it may be normal, for any longtime football fan, it surely feels foreign, stilted, even invasive to watch a referee pause a match midplay to consult a slow-motion video. It's yet another aspect of human expertise that we have conceded to the superior eye of technology. But better eyesight has never meant better judgment. In the end, it's still our call. **NYT**

The writer is on the editorial staff of The New York Times' Opinion & Sunday Review

This newfangled technology will continue to make waves as the tournament progresses. And it is certain that someone — or entire nations — won't be very happy. Research

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FAMOUS ROBOT

END OF THE LINE FOR ASIMO?

7th generation of Honda's brainchild may be last model

Honda Motor's humanoid robot Asimo interacting with visitors at the National Museum of Emerging Science and Innovation in Tokyo in 2013. AFP PIC

TOKYO

IT has played football with former US president Barack Obama and danced for German leader Angela Merkel, but Honda's Asimo robot may have reached the end of the line.

Launched in 2000, the humanoid machine resembling a shrunken spaceman has become arguably Japan's most famous robot, wheeled out to impress visiting politicians. But Honda said yesterday it may scrap future generations of Asimo, now on its seventh iteration.

"We will still continue research into humanoid robots, but our future robots may not be named Asimo," said Honda spokesman Hajime Kaneko.

The comment came after Japan's public broadcaster NHK reported that the carmaker had terminated Asimo and dissolved the team.

NHK suggested increasingly intense competition in the field as a reason, pointing to the example of United States-based Boston Dynamics' Atlas robot, which can jump on to a high step and even do a backflip.

Honda denied that it had dissolved the team working on Asimo, but the brains behind the bot look likely to shift their expertise to developing robots with specific applications.

"We have obtained lots of technologies while developing Asimo, and how to utilise them is one issue," Kaneko said.

The company is expected to focus on humanoid robots that can help care for elderly and disabled people, NHK said.

Though never sold commercially, Asimo attracted international attention, playing football with Obama in 2014, dancing for Merkel in 2015, and taking a selfie with Australian Prime Minister Malcolm Turnbull the same year.

There have been no upgrades to the model since its seventh generation, which debuted in 2011 and can listen to and understand three people talking simultaneously. **AFP**