

UMP cipta casis dinamometer basikal elektrik

➔ Inovasi mampu kurangkan kos
kepada pengusaha industri automotif

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► Pekan

Sekumpulan penyelidik Universiti Malaysia Pahang (UMP) berjaya membangunkan casis dinamometer untuk kegunaan kenderaan elektrik dua roda (ETW), yang mampu membantu mengurangkan kos kepada pengusaha industri automotif.

Ia dibangunkan pensyarah Fa-

kulti Kejuruteraan Mekanikal, Dr Daing Mohamad Nafiz Daing Idris, dibantu Dr Ahmad Fitri Yusop, Dr Mohamad Firdaus Basrawi, Dr Azri Hizami Rasid, Muhammad Hadi Hassan dan Samad Rahin.

Daing Mohamad Nafiz berkata, inovasi yang dihasilkan menerusi penyelidikan sepanjang tahun lalu itu, kini dalam proses penambahbaikan supaya lebih praktikal untuk dikomersialkan bagi kegunaan industri.

"Kita menghasilkannya selepas melihat potensi basikal dan mo-

tosikal yang menggunakan bateri sebagai medium pengangkutan jarak dekat di Malaysia," katanya ketika ditemui NSTP di UMP Kampus Pekan di sini, baru-baru ini.

Menjelaskan penggunaannya, beliau berkata, basikal atau motosikal elektrik itu akan diletakkan di atas platform casis dinamometer dan ujian dilakukan dengan memusingkan penggerak sehingga maksimum.

"Tayar belakang kenderaan akan memusingkan roller pada casis dinamometer untuk mendapatkan data kelajuan, yang akan dianalisis menggunakan perisian dibangunkan.

"Menerusi analisis berkenaan, pemain atau syarikat industri dapat mengenal pasti prestasi kenderaan dihasilkan mereka dan melakukan penambahbaikan supaya sesuai digunakan oleh orang ramai," katanya.

Anggaran harga RM25,000

Beliau berkata, anggaran awal harga bagi casis dinamometer itu, termasuk perisiannya adalah RM25,000 dan ia adalah murah berbanding produk sama yang dibawa dari luar negara.

"Ia sudah tentu dapat mengurangkan kos operasi syarikat. Pada masa sama, inovasi ini juga me-

nyokong usaha kerajaan dalam inisiatif teknologi hijau menerusi pembangunan lebih banyak basikal serta motosikal elektrik," katanya.

Beliau berkata, inovasi yang dibangunkan dengan geran penyelidikan UMP berjumlah RM31,050 itu turut mendapat pengiktirafan tertinggi dalam pameran inovasi, antaranya pingat emas pada Ekspo Penyelidikan, Penciptaan, Inovasi dan Teknologi (CITREX) 2018.

"Kami turut menerima anugerah khas bagi automotif pada CITREX 2018 dan pingat emas pada Pameran Antarabangsa Penciptaan, Inovasi dan Teknologi (ITEX) 2018," katanya.



Dr Daing Mohamad Nafiz bersama pelajar menunjukkan anugerah khas bagi automotif pada CITREX 2018 dan pingat emas pada Pameran Antarabangsa Penciptaan, Inovasi dan Teknologi (ITEX) 2018 di UMP Kampus Pekan.

Hello, Industrial Revolution 4.0

COMMENT

by Dzulkifli Abdul Razak

"HELLO Fourth Industrial Revolution" (4IR) by Nurul Izzah Anwar caught my eye on my way home from Tehran last week. In contrast, I had the chance to say "hello" to sustainable development at a conference. The gap between the two is daunting to say the least.

While much of what Nurul said makes sense, it is overdue. The TVET (technical vocational education and training) story is not only a sad one but misunderstood. Nurul mentioned a German programme (GDVT) in Penang. Indeed, the 4IR is all German in its origin when they advanced the notion of Industrie 4.0. The rest was history by the time Malaysia jumped onto the bandwagon following the Davos foray more recently. It became a buzzword with little appreciation of what the Germans are up to and where they are coming from. We seem to miss the context each time piggy-backing on ideas from elsewhere in the hope to emulate their success. The education sector is a minefield of such carelessness.

Let me try and illustrate where we failed in bringing TVET up to speed. It goes back to when the Ministry of Education (under the same premiership in the 1990s) introduced the concept of kolej-university or university-colleges based on a German experiment that focuses on working with industry and solving industry-based problems. The university-colleges were intended to be lean institutions (hence the name) of no more than 10,000 students dedicated to TVET, facilitated by practitioners rather than academics (or at least fewer), while "twinning" with relevant local industries - electronics being one (automotive was emerging then) and collaborating with polytechnics as feeders to the university-colleges. Headed by rectors instead of vice-chancellors, they were supposed to be nimble and flexible (less bureaucratic) so as to "dance" with industry counterparts like any business entity for mutual benefit beyond the conventional. Some were even destined to

work with German counterparts. The minister then was in full control of the idea (being a former academic) when he established six university-colleges. But the ending was not a good one.

As always, when the prime minister changes and so too the minister; a new education "plan" was put forward to "create" a better system. In this case, it did not when the "kolej-universiti" concept was "expanded" to a full-fledged university, the so-called MTUN (Malaysian Technical Universities Network) of today, taking it away from what it was crafted for even before it got started in earnest. So the number of universities ballooned, creating even wider gaps to fill.

Today we are unsure where TVET will fit in since so much turbulent water has flowed under the bridge. And now that TVET has taken yet another turn in the context of sustainable development goals (SDGs) including green TVET and bio-mimicry to better shape the world that we want as per the six SDG targets, namely dignity, justice, partnership, people, planet and prosperity, the scenario is even murkier. My hunch is that the MTUNs are still groping in the dark as to what the full extent of this implies for Malaysia. To make it worse, unlike the 4IR, Malaysia has yet to embrace the SDGs - an agenda it signed in 2016. Especially given our dismal ecological record (think the frequent and more severe floods of late).

But that is another grim story for another time. For now unless all these mis-aligned acts are put together in a coherent perspective within our own context, chances are NUTP will be spot on in blowing the warning whistle. That Nurul is magnanimous enough to urge NUTP to do so loudly provides another opportunity for the TVET agenda to be presented in an appropriate "light" in line with Education 3.0. What with another academic helming the ministry under the same prime minister once again.

Hopefully, by then we will have an organisation that is nimble enough to dance to the TVET tempo for the sake of "new" Malaysia we desire. Lest it will be goodbye TVET.

Comments: letters@thesundaily.com

China's tech giants splash out in cartoon arms race

By Pei Li, Anita Li
and Adam Jourdan

GROWING up in the Chinese port city of Dalian in the 1990s, Zhang Hongchang spent hours immersed in Japanese cartoons like *Dragon Ball* and *Naruto*.

China's homegrown cartoons paled in comparison to the Japanese anime series on television and in comic books that captured the imaginations of Zhang and his generation.

Today, Zhang is one of China's hottest cartoonists and at the forefront of a new wave of Chinese animation that is being driven by the country's technology and internet giants. His latest hit comic — which stars a high school student who is also a Taoist priest with secret super powers — has been viewed 160 million times online.

China's tech firms are engaged in a cartoon arms race to develop or buy Chinese characters in an animation market expected to hit 216 billion yuan (RM133 billion) by 2020, according to the EntGroup consultancy, trying to emulate the success of Walt Disney Co's ensemble, which ranges from *Mickey Mouse* to *Iron Man*.

A key to that effort, has been the development of artists like Zhang.

"When I started, I was copying Japanese cartoons, but slowly I got my own style," Zhang said in the Hangzhou studio where he draws comics that are made available to readers on a platform operated by the local gaming firm NetEase Inc.

"I had to spend a lot time getting to understand the Chinese market and what Chinese comic readers wanted."

Chinese tech giants like Tencent Holdings, Baidu Inc and NetEase are trying to figure out the same thing.

Part of the winning formula has been the use of traditional Chinese religious and cultural themes, and characters. That, and improved quality in terms of art and storytelling, helped China's comic and animation market reach 150 billion yuan (RM92.3 billion) last year, according to EntGroup's estimates.

China still lags behind the Japanese and American markets, but is catching up. Japan is the top producer of animation, while the United States dominates in terms of sales, taking a nearly 40 per cent share of the global industry, estimated at US\$220 billion (RM880 billion) in 2016, according to a report from Research & Markets. China had around 8 per cent that year.



People walk past a booth of NetEase Comics at the China International Cartoon and Game Expo in Shanghai, China. NetEase signed a deal last year with Disney to create Marvel style superheroes. — Picture by Reuters

For Chinese companies, the development of compelling series and characters could also open up new business opportunities that companies like Disney have exploited, like branded theme parks, games, movies, TV shows, lunch boxes and clothes.

"To make it work there have to be good stories, good production, and content that can resonate with consumers," said Xu Zhiwei, animation and comic copyright senior manager at Tencent in Beijing.

Tencent is already seeing some success that could help the firm maintain rapid growth and a high valuation.

The gaming-to-social media company bought up *Fox Spirit Matchmaker*, which depicts romances between humans and demons, when it was a little-known comic, created by an artist called Xiao Xin.

The comic has been developed into an animation series that's been viewed more than 3 billion times, Tencent said,

making it one of the hottest hits on its video platform, which has over 60 million paying subscribers.

Tushan Susu, the animation's main character, has been featured in a commercial for the fast food chain KFC. Tencent is now looking to create a television series and a video game using *Fox Spirit* characters.

China's tech giants play an outsized role in Chinese entertainment. Tencent, the search company Baidu, and Alibaba, the e-commerce giant, control most of the top online platforms from movies to sport, and are dominant in social media and online gaming.

These firms are looking to latch on to a surging sub-culture being driven by a young generation with a taste for animation, called *dongman* in Chinese. This group is keen for more local-style heroes, according to industry executives.

They are also wealthier than their parents were, and have money to spend.

"Youngsters, especially the post-2000s, are very willing to spend money," Geng Danhao, senior vice-president at Baidu's online streaming platform, iQiyi, said at an event in Beijing.

Zhang Tuo, a 21-year-old college student in Sichuan, said he had spent more than 7,000 yuan (RM4,305) on comic-related merchandise, from plastic figurines to T-shirts. His favourites are local comics like *Spiritpact* and *Monster List*.

Tao Jie, 20 a student in Chengdu, said Chinese cartoons had improved in terms of storylines and animation technique. The use of local tales was also an attraction, he said.

"A lot of the Chinese comic and animation are developed from online novels that I have already read. I like them because I'm already a fan of the stories," said Tao.

That shift has been helped by supportive government policies to ensure that peak-time television slots are kept for domestic animation.

The big tech firms are starting to spend, though not yet at the level of Disney, which bought Pixar Animation Studios for US\$7.6 billion (RM30.4 billion), as well as Marvel Entertainment, and the *Star Wars* producer Lucasfilm Ltd for about US\$4 billion (RM16 billion) each.

Tencent has invested in more than a dozen comic and animation companies since last year, according to public records, while its film arm launched a "100 animations" project to support domestic productions.

Baidu's iQiyi, is also splashing out on domestic comics, planning to spend 200 million yuan (RM123 million) to sign Chinese artists and develop local characters, which comes on top of an earlier investment in 10 animation projects, the company said in May.

Alibaba and the news aggregator Toutiao have snapped up production companies and launched animation platforms on their own sites. NetEase signed a deal last year with Disney to create Marvel style superheroes, but with Chinese characteristics.

Luo Qianan, marketing director of NetEase Comics, said the firm was using big data from its platform to analyse what comic consumers wanted and would feed this back to artists.

It was also adopting other elements such as Chinese brush painting techniques and religious themes.

"Everybody is trying to use Chinese elements and Chinese style," she said. — Reuters

LAMPIRAN 4
THE STAR (ECOWATCH) : MUKA SURAT 8
TARIKH : 26 JUN 2018 (SELASA)

By YANG HAN

AS heavy snow swept across China early this year, local media in Central China's Hubei province reported that farmers used unmanned aerial vehicles, or drones, to spray de-icing agent, saving over 500 snow-covered vegetable greenhouses from collapse.

In the midst of climate change, technology is enhancing the resilience of the agriculture sector to weather extremes, helping the sector face the challenges of producing more food to feed the world's growing population.

"Farming, being highly dependent on rainfall, soil health and temperature, is most vulnerable to change in climate," says Raj Paroda, former director-general of the Indian Council of Agricultural Research and a senior adviser of the Asia-Pacific Association of Agricultural Research Institutions (APAARI).

More than 2.2 billion people in Asia rely on agriculture to make a living, according to data from the Asian Development Bank. The region accounts for 90% of the world's rice production.

Although climate change will improve thermal conditions for agricultural production in some areas, its negative effects on food security and overall agricultural development are more profound, including declining crop quality and yield, decreasing arable land quality, rising prices of water and fertilisers, and more crop pests and diseases.

Smart farming, green solutions

In an effort to make its agriculture resilient in the face of climate change, China is turning to technology.

"The projected climate change is likely to reduce agricultural production by 7% to 10% in the next decade (by 2030) and beyond, if no adaptation and mitigation measures are initiated seriously," says Paroda, adding that climatic variability affects most of the processes that drive productivity of agricultural systems, including horticulture, livestock and fisheries.

"Agriculture is not only the cause but also the solution to climate change-related problems," Paroda says.

He says agriculture is contributing a significant share of the greenhouse gas emissions that are causing climate change – 17% directly through agricultural activities and an additional 7% to 14% through land use changes.

Due to China's large population, the country's per capita arable land and fresh water resources are much lower than the global average, according to Lam Hon-ming, a professor at the School of Life Sciences at the Chinese University of Hong Kong (CUHK). Lam is also the director of the State Key Laboratory of Agrobiotechnology, a CUHK partner laboratory.

"First-grade arable lands in



A man checking his mobile phone while making his way with his pony through rice terraces in Guangxi province. In China, ancient agricultural practices are being boosted by modern technology. — Bloomberg

China occupy less than half of total arable lands," says Lam. "To boost and maintain crop yield, China has used a lot of fertilisers and chemicals in the field, posing a challenge to sustainable agriculture."

The country's total population is expected to reach 1.5 billion by 2030, and such an increase requires an extra 100 billion kilograms of grain to meet demand, according to China's State Grain Administration.

Yet climate-related disasters account for the loss of 50 billion kg of grain in China every year, and climate change could further trigger uncertainties in the country's natural environment, according to the China Meteorological Administration.

A US\$313mil (RM52mil) project, funded by the Chinese government and the World Bank, is helping several hundred thousand rural households in six Chinese provinces adopt Climate Smart Agriculture to strengthen their resilience to climate change. As a result, yields of crops like rice and maize have all increased with better irrigation systems and improved soil conditions through technology.

In addition, farmers now enjoy more policy incentives as the country stresses modern agriculture. Financial support and training will be provided to develop a new generation of professional farmers and encourage the growth of a more diverse agriculture business, according to the State Council, China's Cabinet.

China saw zero growth in chemical fertiliser and pesticide use in 2017. A total of 800,000ha of farmland have been covered by pilot programmes to rotate crops or to leave the land fallow for ecological conservation and sustainable production, with a target to reach two million hectares this year, according to national news agency Xinhua.

Shenzhen-based DJI, the world's largest commercial drone maker, launched its first farm-specific drone, the MG series, in 2015 to

meet the country's demand for plant protection.

And other products such as its Phantom series high-end consumer drone have been used for agricultural science experiments, mapping, and data analysis, says Xie Tiandi, DJI's director of communications.

Nearly 10,000 drones had been put into operation in China's agriculture sector as of September 2017, according to a report by online agriculture magazine *Enongzi*.

In a test by DJI, an MG-1P agricultural drone could spray about 90 mu (6ha) per hour, 90 times faster than a human.

Compared with ground spraying done manually, using agricultural drones for plant protection can save on pesticides and water usage, by 50% and 90%, respectively, Xie says. Separating humans and pesticides also greatly improves safety for farmers and workers.

Xie says technology companies can play an important role by providing products and services that are both cutting-edge and affordable for the industry.

For example, the MG series has reduced the unit price of a plant protection drone from more than 100,000 yuan (RM62,000) to as low as 29,999 yuan (RM18,000), which is much cheaper than many agricultural automation devices, says Xie.

DJI, through its Unmanned Aerial Systems Training Center, offers training courses for plant protection. The company has also supported training provided by professional service teams for plant protection and even local agricultural materials stations.

"Geospatial technologies like drones, satellite remote sensing and artificial intelligence (AI) play an important role not only in China but everywhere," says Paroda from APAARI.

"China is much ahead in most of these (geospatial and AI technologies) – other countries need to learn from these initiatives," says Paroda, suggesting that a regional platform for community-supported

agriculture could be formed to help other Asian developing nations to move forward at a faster pace.

But imparting technological advances to ageing farmers in Asia can be challenging.

"There is a huge gap between existing technologies and farmers that can apply them," says Vanessa Teo, founder and CEO of the Brunei-based startup Agrome IQ, which provides agricultural business intelligence and data analytics.

The company aims to support farmers through the decision-making process to plan for an efficient and profitable farm.

"To ensure food security for nine billion people by 2050, farms will need to be more resilient to climate uncertainty, and data will play a huge role in the process of farm optimisation," says Teo.

Currently, Agrome IQ's platform collects specific data such as soil, genetics and weather, then provides information to support the farm management process.

"With our platform, farmers will have a step-by-step guide on how to grow their crop instead of relying on general information from a variety of sources, and also we provide a tracking system ... to ensure the resources are efficiently allocated to the farm," Teo says.

The company also offers educational technology programmes to cultivate innovation-based future farmers. The curriculum has been integrated into international schools and agricultural vocational training schools in Brunei, and Teo hopes to expand the platform to other member states in ASEAN, as well as the Chinese mainland and Hong Kong.

As Asia has a high concentration of smallholder farmers, Paroda says it is important to ensure they have access to new knowledge and technologies.

"Science, technology and engineering will continue to play a major role," says Lam at CUHK. "Science will help to pinpoint problems and predict the consequences." — China Daily/Asia News Network

LAMPIRAN 5
THE STAR (WORLD) : MUKA SURAT 24
TARIKH : 26 JUN 2018 (SELASA)



K9 drug buster

Children and adults being given a chance to watch a drug-sniffing dog at work at the Guangzhou Customs in Guangdong province. The Guangzhou Customs and the Guangzhou Children's Palace Organisation jointly held an open day activity for children to get to know the fight against drug trafficking and effectiveness of the special dog unit. — Xinhua

High-tech tools to be used for wildlife protection

BEIJING: The International Fund for Animal Welfare (Ifaw) and tech giant Baidu are using advanced technology, including big data and artificial intelligence, to help crack down on wildlife-related crimes online.

The effort aims to curb the online trade in wildlife parts and products, as well as trafficking in endangered species such as elephants, rhinos and pangolins.

The partnership, announced in Beijing, will see Baidu's AI tech applied to all Ifaw surveys to find effective solutions to the problem of the illegal wildlife trade online.

"We've summarised lists of frequently searched words in wildlife trading," said Jeff He, IFAW's China director.

"But who these searchers or potential traders are, what characteristics or behaviours they have in common, that's what we're hoping to find out by using big data, so that we'll be able to see how to change their minds and reduce the wildlife trade."

The two partners will also cooperate in cleaning up wildlife-trading information online, and promoting relevant policies and laws through various Baidu platforms.

According to the Ifaw, wildlife cybercrime has seen a surge worldwide, both in scale and access. A report released by the group in 2014 said that 280 online markets in 16 countries had sold more than 30,000 endangered animal products and live animals in a span of only six weeks.

The Internet plays a big role in wildlife-related crime in China.

Internet Research Institute said online trading accounted for 100% of all tortoise trade cases from January 2015 to May 2016, as well as 73% of cases involving reptiles and 67% involving rhino horns.

"Wildlife cybercrime is a global challenge," said Meng Xianlin, executive director of China's Endangered Species Import and Export Management Office.

"Government, organisations and companies all need to raise awareness and work together to protect endangered animals in the world."

In 2015, the Ifaw and the Nature Conservancy initiated a project with Chinese IT giant Tencent to encourage the public to report suspected cases of illegal wildlife trading found on social media. — China Daily/Asia News Network